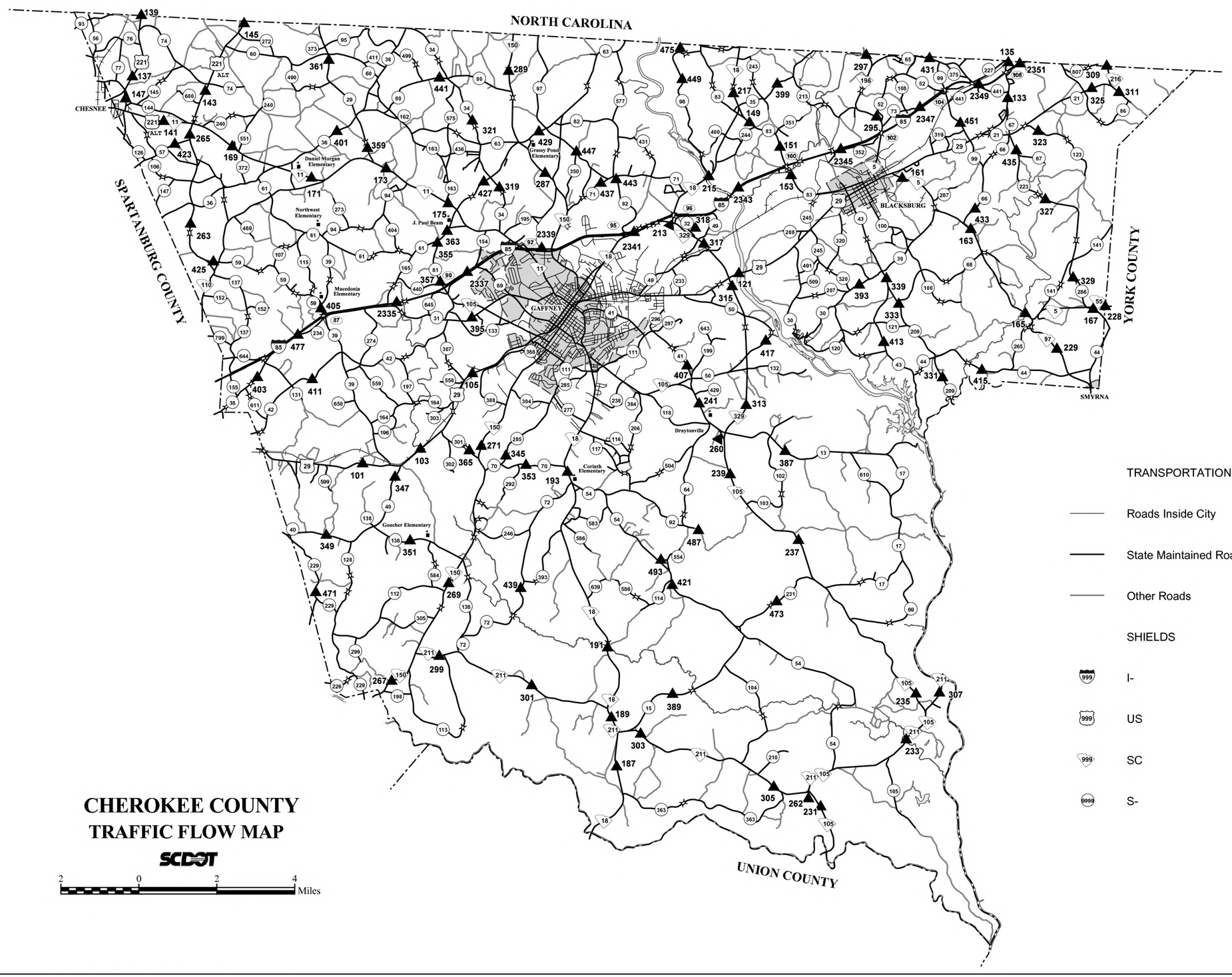
Appendix A

Interstate 85 Mainline Traffic Volume Data



CHEROKEE COUNTY
TRAFFIC FLOW MAP

SCDOT

2 0 2 4 Miles

LEGEND

TRANSPORTATION	TRAFFIC	OTHER FEATURES
Roads Inside City	Station Number	Schools
State Maintained Roads	Traffic Count Station	Bridges
Other Roads		Railroads
SHIELDS		Lakes & Rivers
I-		Municipal Area
US		County Boundary
SC		
S-		

Created Date: 2006 Revised Date: 2010

Produced By: GIS / Mapping, Road Data Services, Traffic Engineering

SHEET 3

GREENVILLE - SPARTANBURG METROPOLITAN AREA

TRAFFIC FLOW MAP

PREPARED BY

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

IN COOPERATION WITH

U.S. DEPARTMENT OF TRANSPORTATION

SCDOT

N

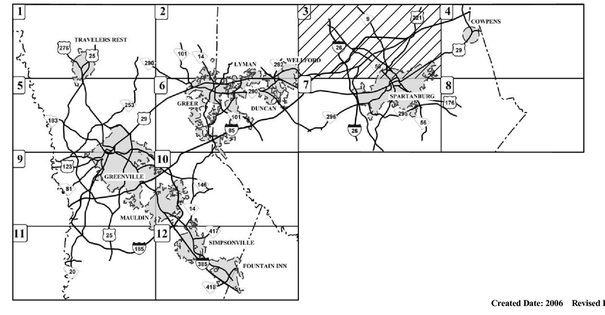
W E

S

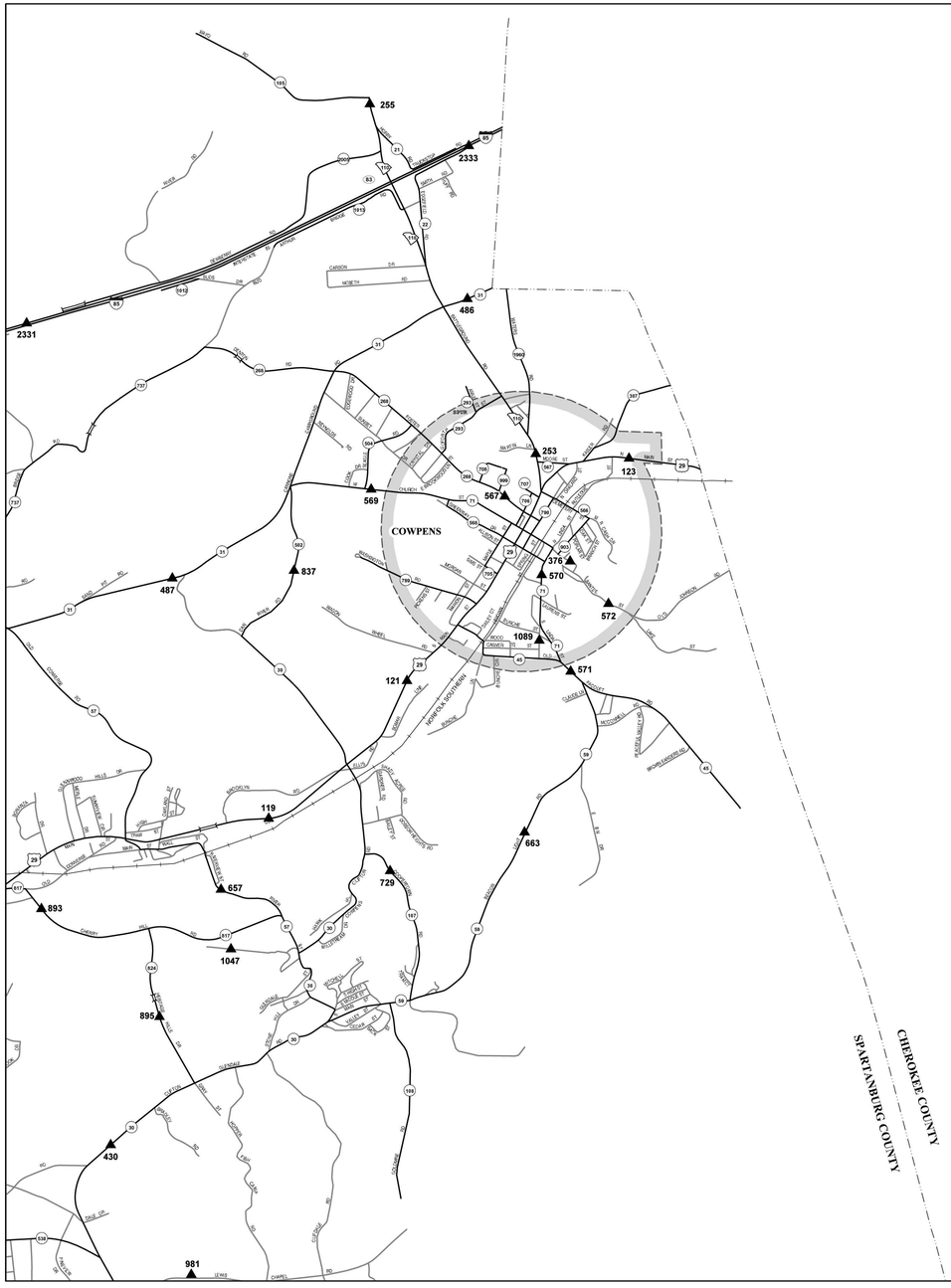
2000 0 2000 4000 Feet

LEGEND

TRANSPORTATION		TRAFFIC		OTHER FEATURES	
State Maintained Roads	111	Station Number		Schools	
Other Roads	▲	Traffic Count Station		Bridges	
SHIELDS				Railroads	
I-				Rivers & Lakes	
US				Municipal Boundary	
SC				County Boundary	
S-					



Created Date: 2006 Revised Date: 2010



SHEET 4

GREENVILLE - SPARTANBURG METROPOLITAN AREA

TRAFFIC FLOW MAP

PREPARED BY

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION

IN COOPERATION WITH

U.S. DEPARTMENT OF TRANSPORTATION

SCDOT

N

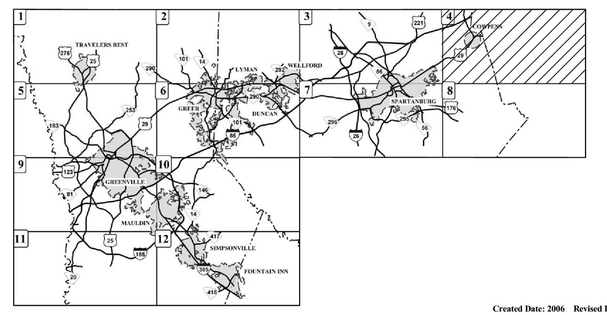
W E

S

2000 0 2000 4000 Feet

LEGEND

TRANSPORTATION		TRAFFIC		OTHER FEATURES
State Maintained Roads	111	Station Number		Schools
Other Roads	▲	Traffic Count Station		Bridges
SHIELDS				Railroads
I-				Rivers & Lakes
US				Municipal Boundary
SC				County Boundary
S-				



Created Date: 2006 Revised Date: 2010

Appendix B

Turning Movement Count Data

Exit 80

Gossett Road at Dewberry/Sha Lane TMC

File Name : count made april 25 recount Gossett at Dewberryrev20130425
Site Code : 00088888
Start Date : 4/25/2013
Page No : 1

Groups Printed- All vehicles - Trucks - Buses

	Northbound					Southbound					Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
07:00	2	59	12	0	73	7	7	1	0	15	0	4	6	0	10	12	5	2	0	19	117
07:15	8	23	30	0	61	7	7	0	0	14	1	6	11	0	18	10	4	1	0	15	108
07:30	12	26	38	0	76	12	12	3	0	27	0	6	7	0	13	6	1	4	0	11	127
07:45	9	54	29	0	92	7	7	2	0	16	0	4	7	0	11	5	3	1	0	9	128
Total	31	162	109	0	302	33	33	6	0	72	1	20	31	0	52	33	13	8	0	54	480
08:00	5	41	15	0	61	2	2	2	0	6	3	3	4	0	10	10	2	1	0	13	90
08:15	4	38	11	0	53	2	2	1	0	5	0	1	3	0	4	2	6	1	0	9	71
08:30	8	22	5	0	35	2	2	3	0	7	0	3	4	0	7	5	2	3	0	10	59
08:45	6	30	6	0	42	1	1	0	0	2	0	5	4	0	9	5	2	1	0	8	61
Total	23	131	37	0	191	7	7	6	0	20	3	12	15	0	30	22	12	6	0	40	281
*** BREAK ***																					
16:00	6	58	7	0	71	4	4	1	0	9	0	4	5	0	9	8	4	1	0	13	102
16:15	12	36	2	0	50	3	3	1	0	7	1	2	6	0	9	16	4	5	0	25	91
16:30	5	61	9	0	75	2	0	0	0	2	0	3	3	0	6	4	1	5	0	10	93
16:45	5	82	6	0	93	1	1	2	0	4	0	4	4	0	8	15	3	3	0	21	126
Total	28	237	24	0	289	10	8	4	0	22	1	13	18	0	32	43	12	14	0	69	412
17:00	6	50	3	0	59	3	3	2	0	8	0	2	3	0	5	17	3	3	0	23	95
17:15	13	89	2	0	104	4	4	1	0	9	0	4	7	0	11	22	10	7	0	39	163
17:30	13	72	9	0	94	3	3	1	0	7	0	3	11	0	14	17	5	3	0	25	140
17:45	6	61	10	0	77	2	2	1	0	5	0	8	7	0	15	17	5	3	0	25	122
Total	38	272	24	0	334	12	12	5	0	29	0	17	28	0	45	73	23	16	0	112	520
Grand Total	120	802	194	0	1116	62	60	21	0	143	5	62	92	0	159	171	60	44	0	275	1693
Apprch %	10.8	71.9	17.4	0		43.4	42	14.7	0		3.1	39	57.9	0		62.2	21.8	16	0		
Total %	7.1	47.4	11.5	0	65.9	3.7	3.5	1.2	0	8.4	0.3	3.7	5.4	0	9.4	10.1	3.5	2.6	0	16.2	
All vehicles	119	802	178	0	1099	60	60	21	0	141	5	61	88	0	154	154	57	43	0	254	1648
% All vehicles																					
Trucks	1	0	16	0	17	2	0	0	0	2	0	1	2	0	3	16	3	1	0	20	42
% Trucks	0.8	0	8.2	0	1.5	3.2	0	0	0	1.4	0	1.6	2.2	0	1.9	9.4	5	2.3	0	7.3	2.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	2.2	0	1.3	0.6	0	0	0	0.4	0.2

Gossett Road at Dewberry/Sha Lane TMC

File Name : count made april 25 recount Gossett at Dewberryrev20130425
Site Code : 00088888
Start Date : 4/25/2013
Page No : 2

	Northbound					Southbound					Eastbound					Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	2	59	12	0	73	7	7	1	0	15	0	4	6	0	10	12	5	2	0	19	117
07:15	8	23	30	0	61	7	7	0	0	14	1	6	11	0	18	10	4	1	0	15	108
07:30	12	26	38	0	76	12	12	3	0	27	0	6	7	0	13	6	1	4	0	11	127
07:45	9	54	29	0	92	7	7	2	0	16	0	4	7	0	11	5	3	1	0	9	128
Total Volume	31	162	109	0	302	33	33	6	0	72	1	20	31	0	52	33	13	8	0	54	480
% App. Total	10.3	53.6	36.1	0		45.8	45.8	8.3	0		1.9	38.5	59.6	0		61.1	24.1	14.8	0		
PHF	.646	.686	.717	.000	.821	.688	.688	.500	.000	.667	.250	.833	.705	.000	.722	.688	.650	.500	.000	.711	.938
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:45																					
16:45	5	82	6	0	93	1	1	2	0	4	0	4	4	0	8	15	3	3	0	21	126
17:00	6	50	3	0	59	3	3	2	0	8	0	2	3	0	5	17	3	3	0	23	95
17:15	13	89	2	0	104	4	4	1	0	9	0	4	7	0	11	22	10	7	0	39	163
17:30	13	72	9	0	94	3	3	1	0	7	0	3	11	0	14	17	5	3	0	25	140
Total Volume	37	293	20	0	350	11	11	6	0	28	0	13	25	0	38	71	21	16	0	108	524
% App. Total	10.6	83.7	5.7	0		39.3	39.3	21.4	0		0	34.2	65.8	0		65.7	19.4	14.8	0		
PHF	.712	.823	.556	.000	.841	.688	.688	.750	.000	.778	.000	.813	.568	.000	.679	.807	.525	.571	.000	.692	.804

Gossett Road at I-85 Sbd Off-Ramp TMC

File Name : gossett at i-85 sb off ramp20130428
Site Code : 00009999
Start Date : 4/24/2013
Page No : 1

Groups Printed- Unshifted - Trucks - Buses

	Gossett Road Northbound				Gossett Road Southbound				On-Ramp to I-85 Southbound Eastbound				I-85 Southbound Off-Ramp Westbound				
Start Time	U-turn	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	39	8	47	0	34	7	41	0	0	0	0	10	0	7	17	105
07:15	0	66	22	88	0	47	3	50	0	0	0	0	15	0	7	22	160
07:30	0	41	58	99	0	54	10	64	0	0	0	0	20	0	13	33	196
07:45	1	39	98	138	0	88	4	92	0	0	0	0	32	0	9	41	271
Total	1	185	186	372	0	223	24	247	0	0	0	0	77	0	36	113	732
08:00	0	84	71	155	0	54	4	58	0	0	0	0	41	0	10	51	264
08:15	1	60	38	99	0	42	5	47	0	0	0	0	24	0	5	29	175
08:30	1	46	23	70	0	53	6	59	0	0	0	0	23	0	14	37	166
08:45	0	30	18	48	0	39	9	48	0	0	0	0	11	0	5	16	112
Total	2	220	150	372	0	188	24	212	0	0	0	0	99	0	34	133	717
*** BREAK ***																	
16:00	0	44	27	71	0	41	5	46	0	0	0	0	10	0	8	18	135
16:15	0	66	29	95	0	43	3	46	0	0	0	0	10	0	9	19	160
16:30	0	44	40	84	0	32	6	38	0	0	0	0	12	0	8	20	142
16:45	0	69	31	100	0	58	22	80	0	0	0	0	11	0	10	21	201
Total	0	223	127	350	0	174	36	210	0	0	0	0	43	0	35	78	638
17:00	0	91	16	107	0	42	8	50	0	0	0	0	14	0	4	18	175
17:15	0	55	54	109	0	47	27	74	0	0	0	0	16	0	8	24	207
17:30	0	92	31	123	0	48	17	65	0	0	0	0	25	0	15	40	228
17:45	0	86	21	107	0	65	17	82	0	0	0	0	17	0	9	26	215
Total	0	324	122	446	0	202	69	271	0	0	0	0	72	0	36	108	825
Grand Total	3	952	585	1540	0	787	153	940	0	0	0	0	291	0	141	432	2912
Apprch %	0.2	61.8	38		0	83.7	16.3		0	0	0		67.4	0	32.6		
Total %	0.1	32.7	20.1	52.9	0	27	5.3	32.3	0	0	0	0	10	0	4.8	14.8	
Unshifted	3	924	563	1490	0	772	133	905	0	0	0	0	275	0	108	383	2778
% Unshifted	100	97.1	96.2	96.8	0	98.1	86.9	96.3	0	0	0	0	94.5	0	76.6	88.7	95.4
Trucks	0	28	22	50	0	15	17	32	0	0	0	0	16	0	33	49	131
% Trucks	0	2.9	3.8	3.2	0	1.9	11.1	3.4	0	0	0	0	5.5	0	23.4	11.3	4.5
Buses	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	3
% Buses	0	0	0	0	0	0	2	0.3	0	0	0	0	0	0	0	0	0.1

Gossett Road at I-85 Sbd Off-Ramp TMC

File Name : gossett at i-85 sb off ramp20130428
Site Code : 00009999
Start Date : 4/24/2013
Page No : 2

	Gossett Road Northbound				Gossett Road Southbound				On-Ramp to I-85 Southbound Eastbound				I-85 Southbound Off-Ramp Westbound				
Start Time	U-turn	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30																	
07:30	0	41	58	99	0	54	10	64	0	0	0	0	20	0	13	33	196
07:45	1	39	98	138	0	88	4	92	0	0	0	0	32	0	9	41	271
08:00	0	84	71	155	0	54	4	58	0	0	0	0	41	0	10	51	264
08:15	1	60	38	99	0	42	5	47	0	0	0	0	24	0	5	29	175
Total Volume	2	224	265	491	0	238	23	261	0	0	0	0	117	0	37	154	906
% App. Total	0.4	45.6	54		0	91.2	8.8		0	0	0		76	0	24		
PHF	.500	.667	.676	.792	.000	.676	.575	.709	.000	.000	.000	.000	.713	.000	.712	.755	.836
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 17:00																	
17:00	0	91	16	107	0	42	8	50	0	0	0	0	14	0	4	18	175
17:15	0	55	54	109	0	47	27	74	0	0	0	0	16	0	8	24	207
17:30	0	92	31	123	0	48	17	65	0	0	0	0	25	0	15	40	228
17:45	0	86	21	107	0	65	17	82	0	0	0	0	17	0	9	26	215
Total Volume	0	324	122	446	0	202	69	271	0	0	0	0	72	0	36	108	825
% App. Total	0	72.6	27.4		0	74.5	25.5		0	0	0		66.7	0	33.3		
PHF	.000	.880	.565	.907	.000	.777	.639	.826	.000	.000	.000	.000	.720	.000	.600	.675	.905

Gossett Road at I-85 NB Off-ramp TMC

File Name : gossett rd at i-85 nb rampsrev20130425
Site Code : TMC
Start Date : 3/28/2013
Page No : 1

Groups Printed- Unshifted - Trucks - Buses

	Gossett Rd Northbound				Gossett Rd Southbound				I-85 off Ramp onto Gossett Rd Eastbound				I-85 on Ramp Westbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	0	79	16	0	15	50	0	0	9	0	34	0	0	0	0	0	203
07:15	0	90	16	0	14	61	0	0	10	0	49	0	0	0	0	0	240
07:30	0	109	24	0	18	100	0	0	28	0	38	0	0	0	0	0	317
07:45	0	104	13	0	15	81	0	0	51	0	55	0	0	0	0	0	319
Total	0	382	69	0	62	292	0	0	98	0	176	0	0	0	0	0	1079
08:00	0	55	20	0	6	59	0	0	43	0	26	0	0	0	0	0	209
08:15	0	52	14	0	5	73	0	0	17	0	36	0	0	0	0	0	197
08:30	0	42	13	0	2	49	0	0	6	0	18	0	0	0	0	0	130
08:45	0	41	8	0	5	38	0	0	6	0	25	0	0	0	0	0	123
Total	0	190	55	0	18	219	0	0	72	0	105	0	0	0	0	0	659
*** BREAK ***																	
16:00	0	89	7	0	3	51	0	0	7	0	47	0	0	0	0	0	204
16:15	0	68	7	0	6	39	0	0	16	0	32	0	0	0	0	0	168
16:30	0	91	18	0	8	60	0	0	9	0	39	0	0	0	0	0	225
16:45	0	100	15	0	9	48	0	0	8	0	48	0	0	0	0	0	228
Total	0	348	47	0	26	198	0	0	40	0	166	0	0	0	0	0	825
17:00	0	101	17	0	8	54	0	0	9	0	37	0	0	0	0	0	226
17:15	0	109	15	0	7	66	0	0	14	0	52	0	0	0	0	0	263
17:30	0	101	14	0	9	72	0	0	6	0	54	0	0	0	0	0	256
17:45	0	95	15	0	6	63	0	0	5	0	54	0	0	0	0	0	238
Total	0	406	61	0	30	255	0	0	34	0	197	0	0	0	0	0	983
Grand Total	0	1326	232	0	136	964	0	0	244	0	644	0	0	0	0	0	3546
Apprch %	0	85.1	14.9	0	12.4	87.6	0	0	27.5	0	72.5	0	0	0	0	0	
Total %	0	37.4	6.5	0	3.8	27.2	0	0	6.9	0	18.2	0	0	0	0	0	
Unshifted	0	1286	215	0	129	938	0	0	229	0	607	0	0	0	0	0	3404
% Unshifted	0	97	92.7	0	94.9	97.3	0	0	93.9	0	94.3	0	0	0	0	0	96
Trucks	0	36	16	0	6	22	0	0	15	0	34	0	0	0	0	0	129
% Trucks	0	2.7	6.9	0	4.4	2.3	0	0	6.1	0	5.3	0	0	0	0	0	3.6
Buses	0	4	1	0	1	4	0	0	0	0	3	0	0	0	0	0	13
% Buses	0	0.3	0.4	0	0.7	0.4	0	0	0	0	0.5	0	0	0	0	0	0.4

Gossett Road at I-85 NB Off-ramp TMC

File Name : gossett rd at i-85 nb rampsrev20130425
Site Code : TMC
Start Date : 3/28/2013
Page No : 2

	Gossett Rd Northbound					Gossett Rd Southbound					I-85 off Ramp onto Gossett Rd Eastbound					I-85 on Ramp Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15																					
07:15	0	90	16	0	106	14	61	0	0	75	10	0	49	0	59	0	0	0	0	0	240
07:30	0	109	24	0	133	18	100	0	0	118	28	0	38	0	66	0	0	0	0	0	317
07:45	0	104	13	0	117	15	81	0	0	96	51	0	55	0	106	0	0	0	0	0	319
08:00	0	55	20	0	75	6	59	0	0	65	43	0	26	0	69	0	0	0	0	0	209
Total Volume	0	358	73	0	431	53	301	0	0	354	132	0	168	0	300	0	0	0	0	0	1085
% App. Total	0	83.1	16.9	0		15	85	0	0		44	0	56	0		0	0	0	0		
PHF	.000	.821	.760	.000	.810	.736	.753	.000	.000	.750	.647	.000	.764	.000	.708	.000	.000	.000	.000	.000	.850
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	101	17	0	118	8	54	0	0	62	9	0	37	0	46	0	0	0	0	0	226
17:15	0	109	15	0	124	7	66	0	0	73	14	0	52	0	66	0	0	0	0	0	263
17:30	0	101	14	0	115	9	72	0	0	81	6	0	54	0	60	0	0	0	0	0	256
17:45	0	95	15	0	110	6	63	0	0	69	5	0	54	0	59	0	0	0	0	0	238
Total Volume	0	406	61	0	467	30	255	0	0	285	34	0	197	0	231	0	0	0	0	0	983
% App. Total	0	86.9	13.1	0		10.5	89.5	0	0		14.7	0	85.3	0		0	0	0	0		
PHF	.000	.931	.897	.000	.942	.833	.885	.000	.000	.880	.607	.000	.912	.000	.875	.000	.000	.000	.000	.000	.934

Gossett Road at Abbott Lane and Conway Black TMC

File Name : Gossett at abbott and conway black 20130428
Site Code : 00571111
Start Date : 4/9/2013
Page No : 1

Groups Printed- Unshifted - Trucks - Buses

	Gossett Road Northbound				Gossett Road Southbound				Abbott Lane Eastbound				Conway Black Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
07:00	0	117	1	118	4	100	4	108	4	1	0	5	1	0	4	5	236
07:15	1	122	0	123	6	103	2	111	4	0	1	5	1	0	5	6	245
07:30	1	161	0	162	1	131	5	137	11	0	1	12	1	0	3	4	315
07:45	1	129	1	131	3	114	6	123	6	0	2	8	0	1	3	4	266
Total	3	529	2	534	14	448	17	479	25	1	4	30	3	1	15	19	1062
08:00	1	71	0	72	4	77	5	86	5	0	0	5	0	0	2	2	165
08:15	1	42	0	43	3	83	4	90	4	0	0	4	1	0	0	1	138
08:30	0	54	1	55	2	59	3	64	3	0	2	5	1	1	1	3	127
08:45	1	47	2	50	6	52	2	60	9	1	1	11	1	1	0	2	123
Total	3	214	3	220	15	271	14	300	21	1	3	25	3	2	3	8	553
*** BREAK ***																	
16:00	1	104	1	106	2	80	4	86	13	0	7	20	2	0	1	3	215
16:15	4	113	0	117	5	76	10	91	3	0	3	6	0	2	3	5	219
16:30	0	89	0	89	3	96	5	104	3	0	4	7	1	2	2	5	205
16:45	2	93	10	105	3	106	11	120	5	0	4	9	1	0	3	4	238
Total	7	399	11	417	13	358	30	401	24	0	18	42	4	4	9	17	877
17:00	0	50	0	50	2	55	4	61	1	2	1	4	2	3	5	10	125
17:15	1	107	1	109	3	121	11	135	12	0	0	12	0	0	0	0	256
17:30	1	100	1	102	1	85	4	90	9	1	3	13	0	0	4	4	209
17:45	1	95	0	96	2	94	10	106	5	0	3	8	0	0	2	2	212
Total	3	352	2	357	8	355	29	392	27	3	7	37	2	3	11	16	802
Grand Total	16	1494	18	1528	50	1432	90	1572	97	5	32	134	12	10	38	60	3294
Apprch %	1	97.8	1.2		3.2	91.1	5.7		72.4	3.7	23.9		20	16.7	63.3		
Total %	0.5	45.4	0.5	46.4	1.5	43.5	2.7	47.7	2.9	0.2	1	4.1	0.4	0.3	1.2	1.8	
Unshifted	14	1440	16	1470	47	1372	65	1484	74	4	30	108	10	10	34	54	3116
% Unshifted	87.5	96.4	88.9	96.2	94	95.8	72.2	94.4	76.3	80	93.8	80.6	83.3	100	89.5	90	94.6
Trucks	2	49	1	52	3	54	25	82	23	1	2	26	2	0	4	6	166
% Trucks	12.5	3.3	5.6	3.4	6	3.8	27.8	5.2	23.7	20	6.2	19.4	16.7	0	10.5	10	5
Buses	0	5	1	6	0	6	0	6	0	0	0	0	0	0	0	0	12
% Buses	0	0.3	5.6	0.4	0	0.4	0	0.4	0	0	0	0	0	0	0	0	0.4

Gossett Road at Abbott Lane and Conway Black TMC

File Name : Gossett at abbott and conway black 20130428
Site Code : 00571111
Start Date : 4/9/2013

	Gossett Road Northbound				Gossett Road Southbound				Abbott Lane Eastbound				Conway Black Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00																	
07:00	0	117	1	118	4	100	4	108	4	1	0	5	1	0	4	5	236
07:15	1	122	0	123	6	103	2	111	4	0	1	5	1	0	5	6	245
07:30	1	161	0	162	1	131	5	137	11	0	1	12	1	0	3	4	315
07:45	1	129	1	131	3	114	6	123	6	0	2	8	0	1	3	4	266
Total Volume	3	529	2	534	14	448	17	479	25	1	4	30	3	1	15	19	1062
% App. Total	0.6	99.1	0.4		2.9	93.5	3.5		83.3	3.3	13.3		15.8	5.3	78.9		
PHF	.750	.821	.500	.824	.583	.855	.708	.874	.568	.250	.500	.625	.750	.250	.750	.792	.843
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 16:00																	
16:00	1	104	1	106	2	80	4	86	13	0	7	20	2	0	1	3	215
16:15	4	113	0	117	5	76	10	91	3	0	3	6	0	2	3	5	219
16:30	0	89	0	89	3	96	5	104	3	0	4	7	1	2	2	5	205
16:45	2	93	10	105	3	106	11	120	5	0	4	9	1	0	3	4	238
Total Volume	7	399	11	417	13	358	30	401	24	0	18	42	4	4	9	17	877
% App. Total	1.7	95.7	2.6		3.2	89.3	7.5		57.1	0	42.9		23.5	23.5	52.9		
PHF	.438	.883	.275	.891	.650	.844	.682	.835	.462	.000	.643	.525	.500	.500	.750	.850	.921

Exit 82

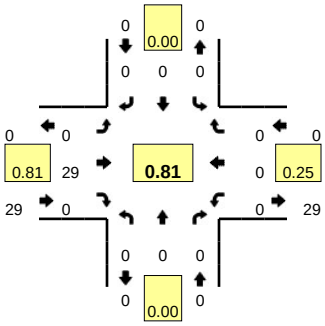
Type of peak hour being reported: Intersection Peak

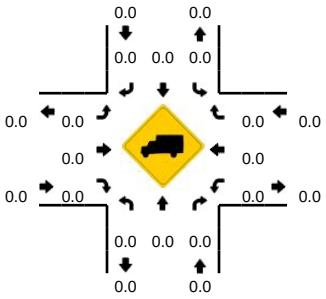
Method for determining peak hour: Total Entering Volume

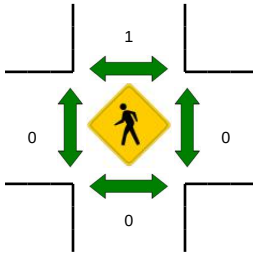
LOCATION: I-85 NB Off-Ramp -- Buds Dr
CITY/STATE: Cowpens, SC

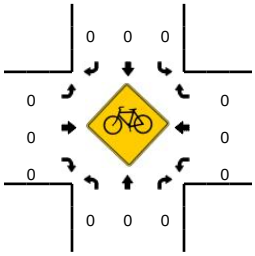
QC JOB #: 12896501
DATE: Thu, Sep 25 2014

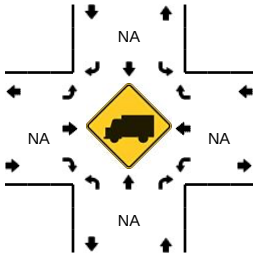
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

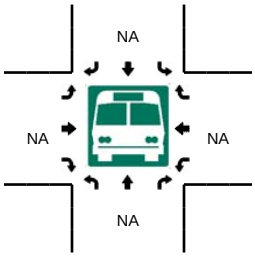












15-Min Count Period Beginning At	I-85 NB Off-Ramp (Northbound)				I-85 NB Off-Ramp (Southbound)				Buds Dr (Eastbound)				Buds Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	
7:15 AM	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	
7:30 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	
7:45 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	29
8:00 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	6	27
8:15 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	22
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
8:45 AM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	10

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	36	0	0	0	0	0	0	36
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

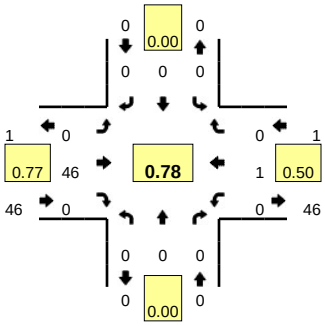
Type of peak hour being reported: Intersection Peak

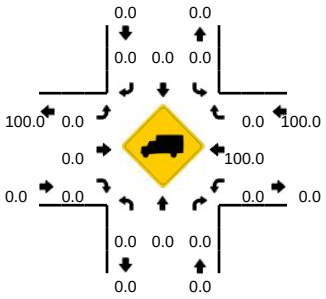
Method for determining peak hour: Total Entering Volume

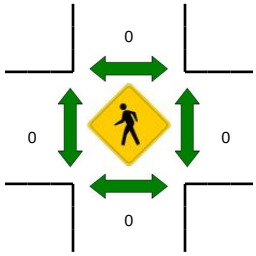
LOCATION: I-85 NB Off-Ramp -- Buds Dr
CITY/STATE: Cowpens, SC

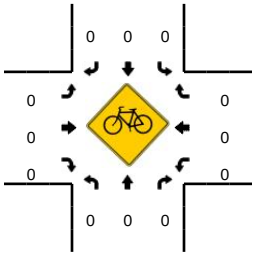
QC JOB #: 12896502
DATE: Thu, Sep 25 2014

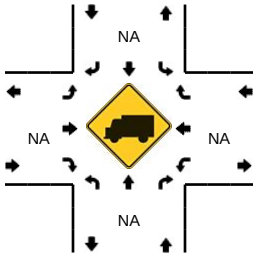
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

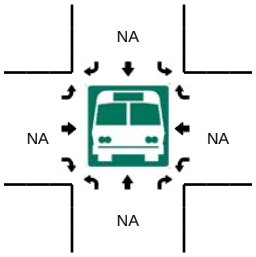












15-Min Count Period Beginning At	I-85 NB Off-Ramp (Northbound)				I-85 NB Off-Ramp (Southbound)				Buds Dr (Eastbound)				Buds Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	9	0	0	0	1	0	0	10	
4:15 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	5	
4:30 PM	0	0	0	0	0	0	0	0	0	10	0	0	0	0	0	0	10	
4:45 PM	0	0	0	0	0	0	0	0	0	14	0	0	0	1	0	0	15	40
5:00 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	7	37
5:15 PM	0	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	15	47
5:30 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	4	41
5:45 PM	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	35

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	56	0	0	0	4	0	0	60
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	4	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Bud Arthur Bridge Rd -- Buds Dr

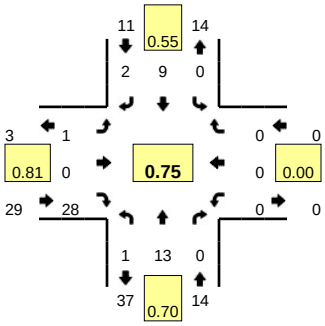
CITY/STATE: Cowpens, SC

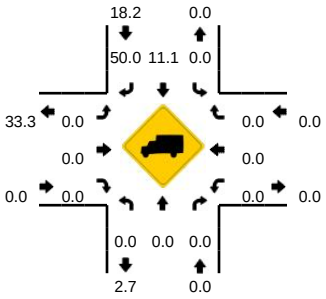
QC JOB #: 12896503

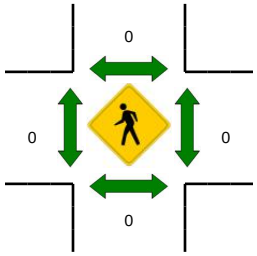
DATE: Thu, Sep 25 2014

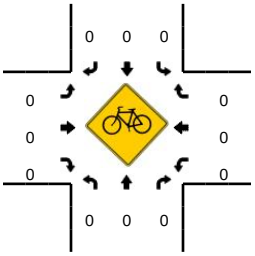
Peak-Hour: 7:00 AM -- 8:00 AM

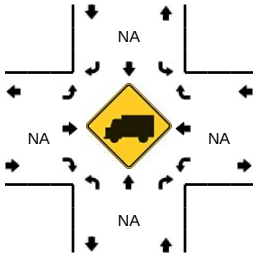
Peak 15-Min: 7:30 AM -- 7:45 AM

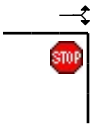


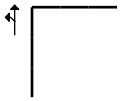


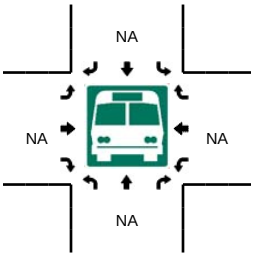












15-Min Count Period Beginning At	Bud Arthur Bridge Rd (Northbound)				Bud Arthur Bridge Rd (Southbound)				Buds Dr (Eastbound)				Buds Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	1	0	0	0	4	1	0	0	0	7	0	0	0	0	0	14	
7:15 AM	0	2	0	0	0	0	1	0	1	0	7	0	0	0	0	0	11	
7:30 AM	0	5	0	0	0	4	0	0	0	0	9	0	0	0	0	0	18	
7:45 AM	0	5	0	0	0	1	0	0	0	0	5	0	0	0	0	0	11	54
8:00 AM	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	0	5	45
8:15 AM	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2	36
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	9

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	20	0	0	0	16	0	0	0	0	36	0	0	0	0	0	72
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Bud Arthur Bridge Rd -- Buds Dr

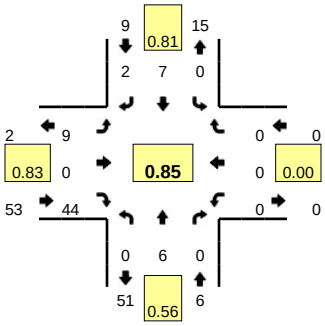
CITY/STATE: Cowpens, SC

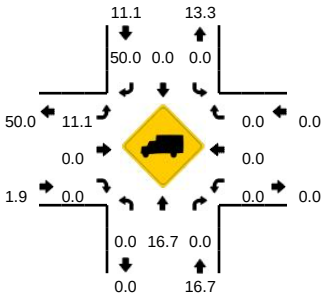
QC JOB #: 12896504

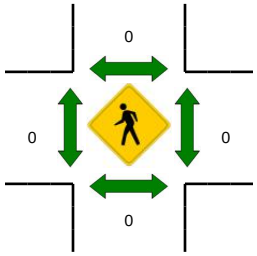
DATE: Thu, Sep 25 2014

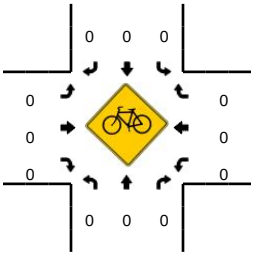
Peak-Hour: 4:30 PM -- 5:30 PM

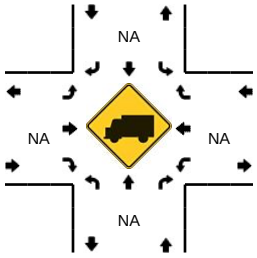
Peak 15-Min: 4:45 PM -- 5:00 PM

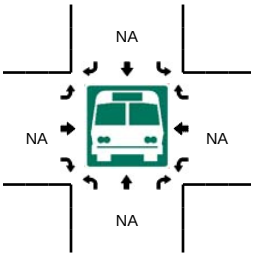












15-Min Count Period Beginning At	Bud Arthur Bridge Rd (Northbound)				Bud Arthur Bridge Rd (Southbound)				Buds Dr (Eastbound)				Buds Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	3	0	0	0	3	1	0	3	0	6	0	0	0	0	0	16	
4:15 PM	0	2	0	0	0	2	1	0	1	0	5	0	0	0	0	0	11	
4:30 PM	0	1	0	0	0	1	1	0	4	0	9	0	0	0	0	0	16	
4:45 PM	0	1	0	0	0	3	1	0	2	0	13	0	0	0	0	0	20	63
5:00 PM	0	4	0	0	0	2	0	0	1	0	8	0	0	0	0	0	15	62
5:15 PM	0	0	0	0	0	1	0	0	2	0	14	0	0	0	0	0	17	68
5:30 PM	0	3	0	0	0	3	0	0	0	0	4	0	0	0	0	0	10	62
5:45 PM	0	2	0	0	0	2	0	0	1	0	8	0	0	0	0	0	13	55

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	4	0	0	0	12	4	0	8	0	52	0	0	0	0	0	80
Heavy Trucks	0	0	0		0	0	4		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Exit 83

SC110 at Dewberry Road TMC

File Name : Battleground Rd at Dewberry
Site Code : TMC
Start Date : 4/2/2013
Page No : 1

Groups Printed- Unshifted - Bank 1 - Bank 2

	Battleground Rd Northbound				Battleground Rd Southbound				Dewberry Rd Eastbound				Phillips Dr Westbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
07:00	8	35	35	0	0	14	2	0	0	0	4	0	3	0	0	0	101
07:15	7	24	42	0	1	25	4	0	3	2	2	0	10	0	0	0	120
07:30	8	25	38	0	0	21	3	0	3	1	6	0	8	0	0	0	113
07:45	6	29	32	0	1	40	4	0	1	0	1	0	12	1	1	0	128
Total	29	113	147	0	2	100	13	0	7	3	13	0	33	1	1	0	462
08:00	8	25	28	0	0	20	2	0	1	1	2	0	6	1	0	0	94
08:15	4	27	25	0	0	18	2	0	0	0	4	0	8	1	1	0	90
08:30	3	14	18	0	1	19	2	0	0	2	0	0	5	2	0	0	66
08:45	3	7	7	0	1	9	0	0	0	0	4	0	6	1	0	0	38
Total	18	73	78	0	2	66	6	0	1	3	10	0	25	5	1	0	288
*** BREAK ***																	
16:00	2	42	25	0	0	24	1	0	5	12	10	0	4	0	0	0	125
16:15	5	38	24	0	0	15	3	0	3	0	4	0	20	1	0	0	113
16:30	6	42	24	0	0	20	3	0	5	1	3	0	14	0	1	0	119
16:45	2	62	28	0	0	31	2	0	6	3	3	0	14	0	0	0	151
Total	15	184	101	0	0	90	9	0	19	16	20	0	52	1	1	0	508
17:00	2	49	32	0	0	21	0	0	3	0	6	0	17	3	0	0	133
17:15	3	70	43	0	0	36	2	0	7	5	13	0	12	1	1	0	193
17:30	2	83	23	0	0	17	0	0	5	3	7	0	16	0	0	0	156
17:45	4	60	30	0	0	48	2	0	2	2	10	0	18	5	0	0	181
Total	11	262	128	0	0	122	4	0	17	10	36	0	63	9	1	0	663
Grand Total	73	632	454	0	4	378	32	0	44	32	79	0	173	16	4	0	1921
Apprch %	6.3	54.5	39.2	0	1	91.3	7.7	0	28.4	20.6	51	0	89.6	8.3	2.1	0	
Total %	3.8	32.9	23.6	0	0.2	19.7	1.7	0	2.3	1.7	4.1	0	9	0.8	0.2	0	
Unshifted	61	623	418	0	4	374	32	0	44	31	73	0	150	13	4	0	1827
% Unshifted	83.6	98.6	92.1	0	100	98.9	100	0	100	96.9	92.4	0	86.7	81.2	100	0	95.1
Bank 1	12	9	33	0	0	4	0	0	0	1	6	0	23	3	0	0	91
% Bank 1	16.4	1.4	7.3	0	0	1.1	0	0	0	3.1	7.6	0	13.3	18.8	0	0	4.7
Bank 2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
% Bank 2	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2

SC110 at Dewberry Road TMC

File Name : Battleground Rd at Dewberry
Site Code : TMC
Start Date : 4/2/2013
Page No : 2

	Battleground Rd Northbound					Battleground Rd Southbound					Dewberry Rd Eastbound					Phillips Dr Westbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00																					
07:00	8	35	35	0	78	0	14	2	0	16	0	0	4	0	4	3	0	0	0	3	101
07:15	7	24	42	0	73	1	25	4	0	30	3	2	2	0	7	10	0	0	0	10	120
07:30	8	25	38	0	71	0	21	3	0	24	3	1	6	0	10	8	0	0	0	8	113
07:45	6	29	32	0	67	1	40	4	0	45	1	0	1	0	2	12	1	1	0	14	128
Total Volume	29	113	147	0	289	2	100	13	0	115	7	3	13	0	23	33	1	1	0	35	462
% App. Total	10	39.1	50.9	0		1.7	87	11.3	0		30.4	13	56.5	0		94.3	2.9	2.9	0		
PHF	.906	.807	.875	.000	.926	.500	.625	.813	.000	.639	.583	.375	.542	.000	.575	.688	.250	.250	.000	.625	.902
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	2	49	32	0	83	0	21	0	0	21	3	0	6	0	9	17	3	0	0	20	133
17:15	3	70	43	0	116	0	36	2	0	38	7	5	13	0	25	12	1	1	0	14	193
17:30	2	83	23	0	108	0	17	0	0	17	5	3	7	0	15	16	0	0	0	16	156
17:45	4	60	30	0	94	0	48	2	0	50	2	2	10	0	14	18	5	0	0	23	181
Total Volume	11	262	128	0	401	0	122	4	0	126	17	10	36	0	63	63	9	1	0	73	663
% App. Total	2.7	65.3	31.9	0		0	96.8	3.2	0		27	15.9	57.1	0		86.3	12.3	1.4	0		
PHF	.688	.789	.744	.000	.864	.000	.635	.500	.000	.630	.607	.500	.692	.000	.630	.875	.450	.250	.000	.793	.859

Truck Stop Road at Horry Road and Access to I-85 Southbound On-Ramp

File Name : count made april 3 horry road a truckstop road josh
Site Code : 55555555
Start Date : 4/3/2013
Page No : 1

Groups Printed- Unshifted - Trucks - Buses

	Ramp onto I-85 Southbound Northbound				Truck Stop Road Southbound			Horry Road Eastbound			
Start Time	Left	Thru	Right	App. Total	Thru	Right	App. Total	Left	Right	App. Total	Int. Total
07:00	0	0	0	0	3	11	14	4	28	32	46
07:15	0	0	0	0	4	12	16	1	27	28	44
07:30	0	0	0	0	15	12	27	1	91	92	119
07:45	0	0	0	0	5	13	18	3	43	46	64
Total	0	0	0	0	27	48	75	9	189	198	273
08:00	0	0	0	0	7	19	26	4	42	46	72
08:15	0	0	0	0	4	13	17	3	38	41	58
08:30	0	0	0	0	1	10	11	2	39	41	52
08:45	0	0	0	0	7	9	16	1	37	38	54
Total	0	0	0	0	19	51	70	10	156	166	236
*** BREAK ***											
16:00	0	0	0	0	4	16	20	0	53	53	73
16:15	0	0	0	0	7	21	28	1	46	47	75
16:30	0	0	0	0	5	22	27	5	47	52	79
16:45	0	0	0	0	4	14	18	3	27	30	48
Total	0	0	0	0	20	73	93	9	173	182	275
17:00	0	0	0	0	6	27	33	4	58	62	95
17:15	0	0	0	0	10	12	22	4	36	40	62
17:30	0	0	0	0	6	22	28	5	33	38	66
17:45	0	0	0	0	4	26	30	2	23	25	55
Total	0	0	0	0	26	87	113	15	150	165	278
Grand Total	0	0	0	0	92	259	351	43	668	711	1062
Apprch %	0	0	0		26.2	73.8		6	94		
Total %	0	0	0	0	8.7	24.4	33.1	4	62.9	66.9	
Unshifted	0	0	0	0	75	247	322	41	639	680	1002
% Unshifted	0	0	0	0	81.5	95.4	91.7	95.3	95.7	95.6	94.4
Trucks	0	0	0	0	17	12	29	2	27	29	58
% Trucks	0	0	0	0	18.5	4.6	8.3	4.7	4	4.1	5.5
Buses	0	0	0	0	0	0	0	0	2	2	2
% Buses	0	0	0	0	0	0	0	0	0.3	0.3	0.2

Truck Stop Road at Horry Road and Access to I-85 Southbound On-Ramp

File Name : count made april 3 horry road a truckstop road josh
Site Code : 55555555
Start Date : 4/3/2013

	Ramp onto I-85 Southbound Northbound				Truck Stop Road Southbound			Horry Road Eastbound			
Start Time	Left	Thru	Right	App. Total	Thru	Right	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:30											
07:30	0	0	0	0	15	12	27	1	91	92	119
07:45	0	0	0	0	5	13	18	3	43	46	64
08:00	0	0	0	0	7	19	26	4	42	46	72
08:15	0	0	0	0	4	13	17	3	38	41	58
Total Volume	0	0	0	0	31	57	88	11	214	225	313
% App. Total	0	0	0		35.2	64.8		4.9	95.1		
PHF	.000	.000	.000	.000	.517	.750	.815	.688	.588	.611	.658
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 16:15											
16:15	0	0	0	0	7	21	28	1	46	47	75
16:30	0	0	0	0	5	22	27	5	47	52	79
16:45	0	0	0	0	4	14	18	3	27	30	48
17:00	0	0	0	0	6	27	33	4	58	62	95
Total Volume	0	0	0	0	22	84	106	13	178	191	297
% App. Total	0	0	0		20.8	79.2		6.8	93.2		
PHF	.000	.000	.000	.000	.786	.778	.803	.650	.767	.770	.782

I-85 NB Off-ramp at I-85 Frontage Road(Bud Arthur Bridge Road) TMC

File Name : Frontage Rd at I-85 NB off Ram20130428
Site Code : TMC
Start Date : 4/3/2013
Page No : 1

Groups Printed- Unshifted - Trucks - Buses

	I-85 Frontage Rd(Bud Arthur Bridge Rd) Northbound	I-85 Frontage Rd(Bud Arthur Bridge Road) Southbound	From I-85 Northbund Exit Eastbound		
Start Time	Thru	Thru	Left	Right	Int. Total
07:00	2	1	23	0	26
07:15	5	5	24	0	34
07:30	3	1	29	0	33
07:45	0	1	45	0	46
Total	10	8	121	0	139
08:00	1	0	23	0	24
08:15	1	3	33	1	38
08:30	1	6	36	0	43
08:45	2	0	36	0	38
Total	5	9	128	1	143

*** BREAK ***

16:00	1	3	55	1	60
16:15	4	1	70	2	77
16:30	7	7	43	0	57
16:45	6	2	38	0	46
Total	18	13	206	3	240
17:00	5	2	74	1	82
17:15	2	4	65	2	73
17:30	7	0	77	0	84
17:45	7	3	52	1	63
Total	21	9	268	4	302
Grand Total	54	39	723	8	824
Apprch %	100	100	98.9	1.1	
Total %	6.6	4.7	87.7	1	
Unshifted	54	39	678	8	779
% Unshifted	100	100	93.8	100	94.5
Trucks	0	0	45	0	45
% Trucks	0	0	6.2	0	5.5
Buses	0	0	0	0	0
% Buses	0	0	0	0	0

I-85 NB Off-ramp at I-85 Frontage Road(Bud Arthur Bridge Road) TMC

File Name : Frontage Rd at I-85 NB off Ram20130428
Site Code : TMC
Start Date : 4/3/2013
Page No : 2

	I-85 Frontage Rd(Bud Arthur Bridge Rd) Northbound		I-85 Frontage Rd(Bud Arthur Bridge Road) Southbound		From I-85 Northbund Exit Eastbound			
Start Time	Thru	App. Total	Thru	App. Total	Left	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 11:45 - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 07:45								
07:45	0	0	1	1	45	0	45	46
08:00	1	1	0	0	23	0	23	24
08:15	1	1	3	3	33	1	34	38
08:30	1	1	6	6	36	0	36	43
Total Volume	3	3	10	10	137	1	138	151
% App. Total	100		100		99.3	0.7		
PHF	.750	.750	.417	.417	.761	.250	.767	.821
Peak Hour Analysis From 12:00 to 17:45 - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 17:00								
17:00	5	5	2	2	74	1	75	82
17:15	2	2	4	4	65	2	67	73
17:30	7	7	0	0	77	0	77	84
17:45	7	7	3	3	52	1	53	63
Total Volume	21	21	9	9	268	4	272	302
% App. Total	100		100		98.5	1.5		
PHF	.750	.750	.563	.563	.870	.500	.883	.899

Type of peak hour being reported: Intersection Peak

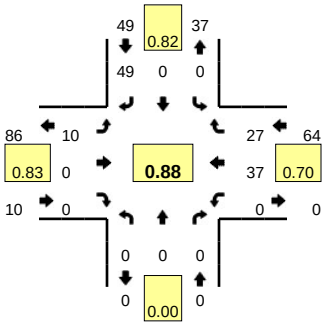
Method for determining peak hour: Total Entering Volume

LOCATION: Truck Plaza Dwy -- I-85 SB Off-Ramp

QC JOB #: 12896507

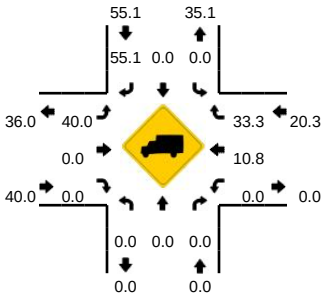
CITY/STATE: Cowpens, SC

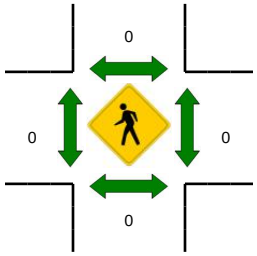
DATE: Thu, Sep 25 2014

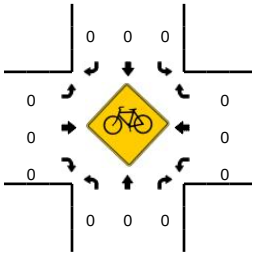


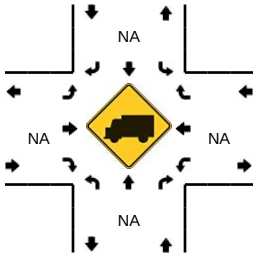
Peak-Hour: 8:00 AM -- 9:00 AM

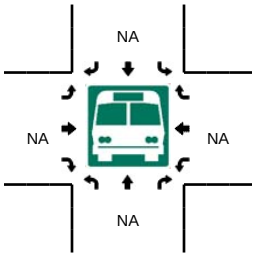
Peak 15-Min: 8:15 AM -- 8:30 AM











15-Min Count Period Beginning At	Truck Plaza Dwy (Northbound)				Truck Plaza Dwy (Southbound)				I-85 SB Off-Ramp (Eastbound)				I-85 SB Off-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	6	0	2	0	0	0	0	8	4	0	20	
7:15 AM	0	0	0	0	0	0	8	0	1	0	0	0	0	13	5	0	27	
7:30 AM	0	0	0	0	0	0	6	0	2	0	0	0	0	18	6	0	32	
7:45 AM	0	0	0	0	0	0	12	0	1	0	0	0	0	5	6	0	24	103
8:00 AM	0	0	0	0	0	0	13	0	3	0	0	0	0	9	1	0	26	109
8:15 AM	0	0	0	0	0	0	9	0	1	0	0	0	0	13	12	0	35	117
8:30 AM	0	0	0	0	0	0	15	0	3	0	0	0	0	9	5	0	32	117
8:45 AM	0	0	0	0	0	0	12	0	3	0	0	0	0	6	9	0	30	123

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	36	0	4	0	0	0	0	52	48	0	140
Heavy Trucks	0	0	0		0	0	20		4	0	0		0	4	12		40
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Try to get best coverage of ramp and driveway/intersection traffic in case driveway volumes along Truck Stop Road are needed.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

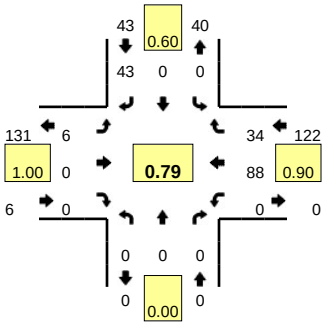
Method for determining peak hour: Total Entering Volume

LOCATION: Truck Plaza Dwy -- I-85 SB Off-Ramp

QC JOB #: 12896508

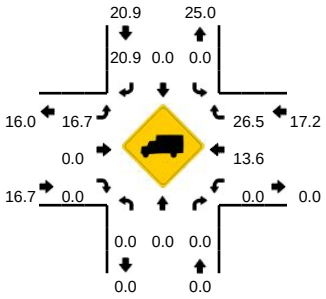
CITY/STATE: Cowpens, SC

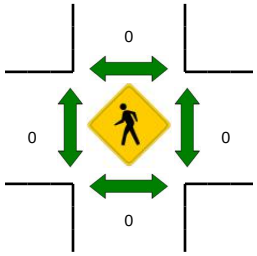
DATE: Thu, Sep 25 2014

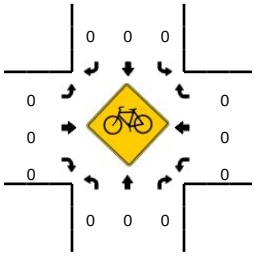


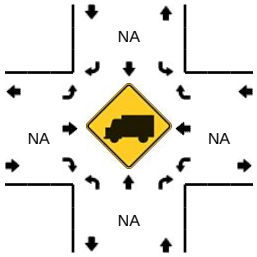
Peak-Hour: 4:00 PM -- 5:00 PM

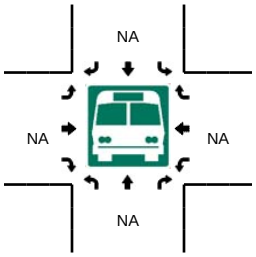
Peak 15-Min: 4:15 PM -- 4:30 PM











15-Min Count Period Beginning At	Truck Plaza Dwy (Northbound)				Truck Plaza Dwy (Southbound)				I-85 SB Off-Ramp (Eastbound)				I-85 SB Off-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	11	0	2	0	0	0	0	22	12	0	47	
4:15 PM	0	0	0	0	0	0	18	0	2	0	0	0	0	24	10	0	54	
4:30 PM	0	0	0	0	0	0	7	0	0	0	0	0	0	17	3	0	27	
4:45 PM	0	0	0	0	0	0	7	0	2	0	0	0	0	25	9	0	43	171
5:00 PM	0	0	0	0	0	0	4	0	2	0	0	0	0	19	5	0	30	154
5:15 PM	0	0	0	0	0	0	9	0	2	0	0	0	0	15	9	0	35	135
5:30 PM	0	0	0	0	0	0	10	0	2	0	0	0	0	14	7	0	33	141
5:45 PM	0	0	0	0	0	0	5	0	2	0	0	0	0	12	9	0	28	126

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	72	0	8	0	0	0	0	96	40	0	216
Heavy Trucks	0	0	0		0	0	24		0	0	0		0	4	8		36
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Try to get best coverage of ramp and driveway/intersection traffic in case driveway volumes along Truck Stop Road are needed.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

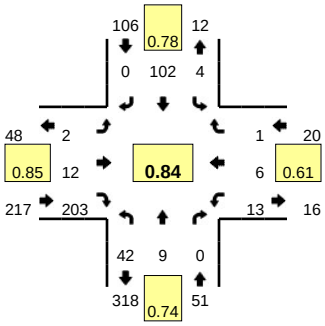
Method for determining peak hour: Total Entering Volume

LOCATION: Phillips Dr -- Horry Rd

CITY/STATE: Gaffney, SC

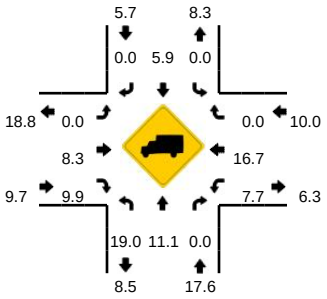
QC JOB #: 12896513

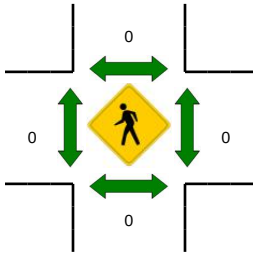
DATE: Thu, Sep 25 2014

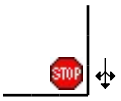


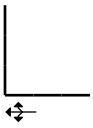
Peak-Hour: 7:00 AM -- 8:00 AM

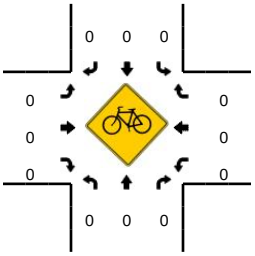
Peak 15-Min: 7:30 AM -- 7:45 AM

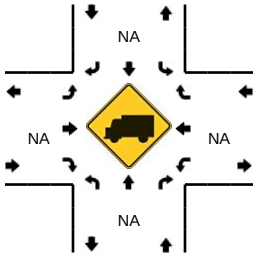


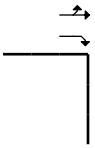


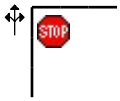


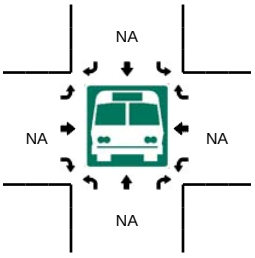












15-Min Count Period Beginning At	Phillips Dr (Northbound)				Phillips Dr (Southbound)				Horry Rd (Eastbound)				Horry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	2	0	0	1	18	0	0	0	1	45	0	2	2	1	0	80	
7:15 AM	9	5	0	0	0	22	0	0	1	5	55	0	5	4	0	0	106	
7:30 AM	16	2	0	0	0	31	0	0	0	4	60	0	4	0	0	0	117	
7:45 AM	9	0	0	0	3	31	0	0	1	2	43	0	2	0	0	0	91	394
8:00 AM	10	2	0	0	2	12	0	0	1	0	43	0	2	3	2	0	77	391
8:15 AM	7	7	0	0	0	13	0	0	1	0	30	0	0	0	0	0	58	343
8:30 AM	9	4	0	0	2	6	0	0	0	0	35	0	2	2	0	0	60	286
8:45 AM	9	1	1	0	1	11	0	0	1	1	19	0	5	0	0	0	49	244

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	8	0	0	0	124	0	0	0	16	240	0	16	0	0	0	468
Heavy Trucks	8	0	0		0	4	0		0	0	24		0	0	0		36
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Make sure to film NBR.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

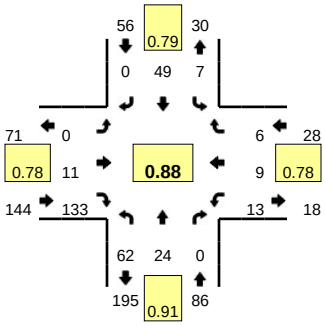
Method for determining peak hour: Total Entering Volume

LOCATION: Phillips Dr -- Horry Rd

CITY/STATE: Gaffney, SC

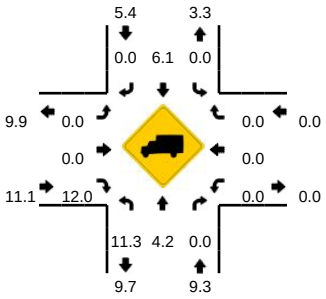
QC JOB #: 12896514

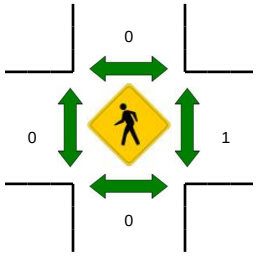
DATE: Thu, Sep 25 2014

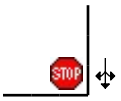


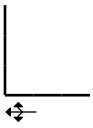
Peak-Hour: 4:15 PM -- 5:15 PM

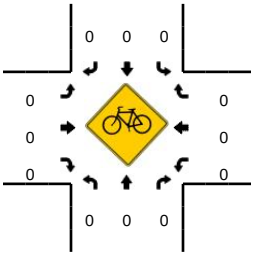
Peak 15-Min: 5:00 PM -- 5:15 PM

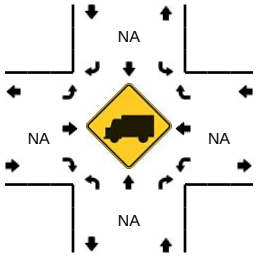


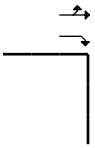


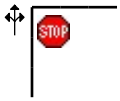


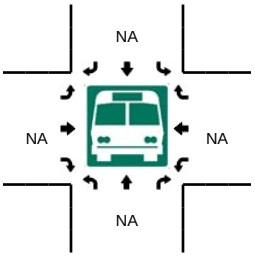












15-Min Count Period Beginning At	Phillips Dr (Northbound)				Phillips Dr (Southbound)				Horry Rd (Eastbound)				Horry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	15	5	2	0	0	5	0	0	0	4	43	0	1	2	1	0	78	
4:15 PM	15	9	0	0	2	8	0	0	0	2	34	0	4	2	3	0	79	
4:30 PM	15	4	0	0	1	15	0	0	0	4	25	0	3	2	0	0	69	
4:45 PM	13	9	0	0	3	9	0	0	0	2	33	0	3	3	2	0	77	303
5:00 PM	19	2	0	0	1	17	0	0	0	3	41	0	3	2	1	0	89	314
5:15 PM	13	5	0	0	0	11	0	0	0	5	29	0	1	2	1	0	67	302
5:30 PM	9	4	0	0	0	11	0	0	1	3	25	0	0	0	2	0	55	288
5:45 PM	10	3	0	0	2	9	0	0	0	3	20	0	0	3	2	0	52	263

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	76	8	0	0	4	68	0	0	0	12	164	0	12	8	4	0	356
Heavy Trucks	8	0	0		0	4	0		0	0	20		0	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Make sure to film NBR.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

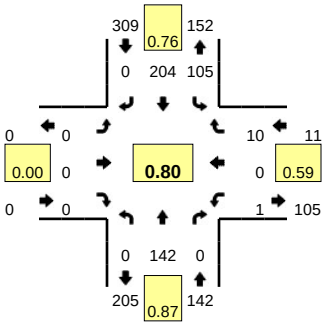
Type of peak hour being reported: Intersection Peak

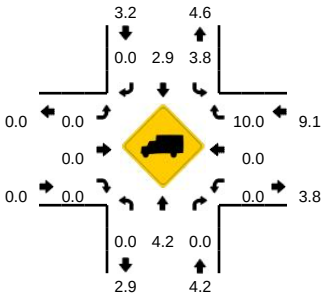
Method for determining peak hour: Total Entering Volume

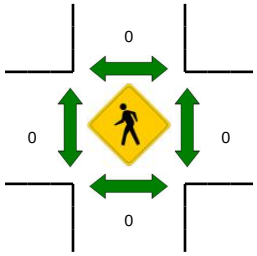
LOCATION: SC 110 -- Horry Rd
CITY/STATE: Cowpens, SC

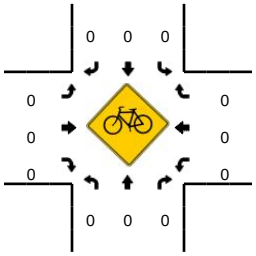
QC JOB #: 12896511
DATE: Thu, Sep 25 2014

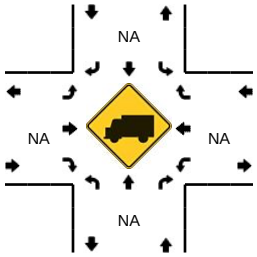
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

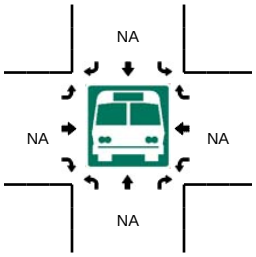












15-Min Count Period Beginning At	SC 110 (Northbound)				SC 110 (Southbound)				Horry Rd (Eastbound)				Horry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	31	0	0	20	39	0	0	0	0	0	0	0	0	3	0	93	
7:15 AM	0	34	0	0	20	52	0	0	0	0	0	0	0	0	4	0	110	
7:30 AM	0	41	0	0	36	65	0	0	0	0	0	0	1	0	2	0	145	
7:45 AM	0	36	0	0	29	48	0	0	0	0	0	0	0	0	1	0	114	462
8:00 AM	0	27	0	0	16	35	0	0	0	0	0	0	0	0	5	0	83	452
8:15 AM	0	22	0	0	12	17	0	0	0	0	0	0	0	0	8	0	59	401
8:30 AM	0	23	0	0	9	24	0	0	0	0	0	0	0	0	4	0	60	316
8:45 AM	0	25	0	0	11	28	0	0	0	0	0	0	0	0	2	0	66	268

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	164	0	0	144	260	0	0	0	0	0	0	4	0	8	0	580
Heavy Trucks	0	4	0		4	4	0		0	0	0		0	0	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

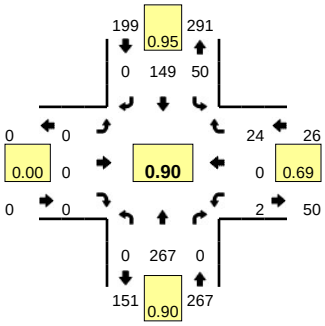
Type of peak hour being reported: Intersection Peak

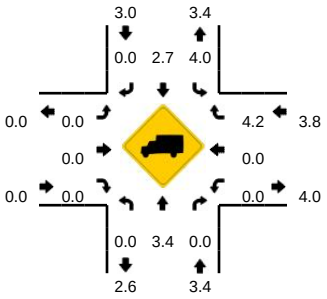
Method for determining peak hour: Total Entering Volume

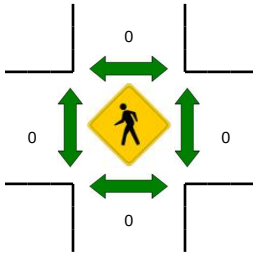
LOCATION: SC 110 -- Horry Rd
CITY/STATE: Cowpens, SC

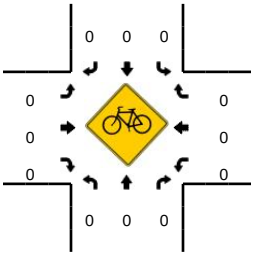
QC JOB #: 12896512
DATE: Thu, Sep 25 2014

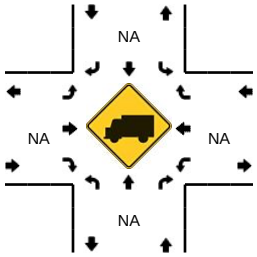
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

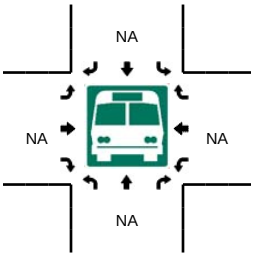












15-Min Count Period Beginning At	SC 110 (Northbound)				SC 110 (Southbound)				Horry Rd (Eastbound)				Horry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	44	0	0	4	46	0	0	0	0	0	0	1	0	6	0	101	
4:15 PM	0	53	0	0	7	47	0	0	0	0	0	0	1	0	12	0	120	
4:30 PM	0	54	0	0	18	36	0	0	0	0	0	0	0	0	5	0	113	
4:45 PM	0	48	0	0	12	36	0	0	0	0	0	0	0	0	11	0	107	441
5:00 PM	0	78	0	0	16	40	0	0	0	0	0	0	0	0	3	0	137	477
5:15 PM	0	75	0	0	9	39	0	0	0	0	0	0	0	0	5	0	128	485
5:30 PM	0	66	0	0	13	34	0	0	0	0	0	0	2	0	5	0	120	492
5:45 PM	0	62	0	0	9	31	0	0	0	0	0	0	0	0	5	0	107	492

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	312	0	0	64	160	0	0	0	0	0	0	0	0	12	0	548
Heavy Trucks	0	4	0		0	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

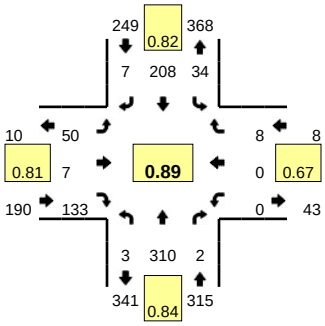
Type of peak hour being reported: Intersection Peak

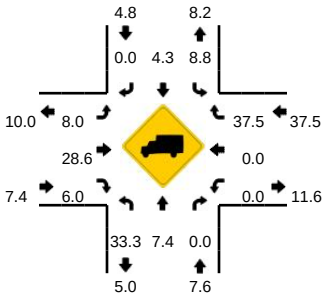
Method for determining peak hour: Total Entering Volume

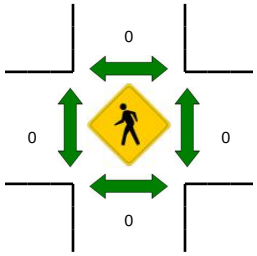
LOCATION: SC 110 -- Frontage Rd N
CITY/STATE: Cowpens, SC

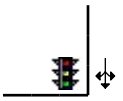
QC JOB #: 12896509
DATE: Thu, Sep 25 2014

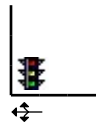
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

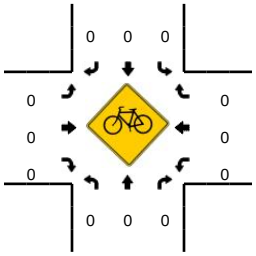


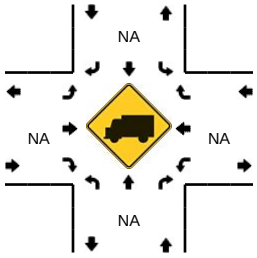


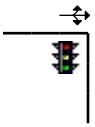


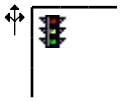


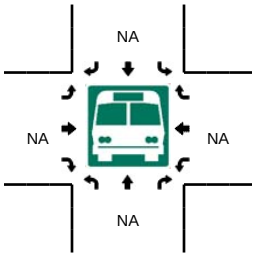












15-Min Count Period Beginning At	SC 110 (Northbound)				SC 110 (Southbound)				Frontage Rd N (Eastbound)				Frontage Rd N (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	65	0	0	7	37	2	0	7	1	29	0	0	0	2	0	153	
7:15 AM	0	84	0	0	7	60	0	0	13	1	37	0	0	0	1	0	203	
7:30 AM	0	94	0	0	11	62	3	0	12	3	25	0	0	0	3	0	213	
7:45 AM	0	67	2	0	9	49	2	0	18	2	42	0	0	0	2	0	193	762
8:00 AM	0	54	0	0	7	31	1	0	11	0	36	0	0	0	1	0	141	750
8:15 AM	0	41	0	0	4	25	0	0	16	1	17	0	0	0	1	0	105	652
8:30 AM	0	46	0	0	4	21	1	0	9	0	19	0	0	0	3	0	103	542
8:45 AM	0	33	0	0	7	29	1	0	8	1	16	0	0	0	0	0	95	444

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	376	0	0	44	248	12	0	48	12	100	0	0	0	12	0	852
Heavy Trucks	0	12	0		4	8	0		4	0	12		0	0	4		44
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

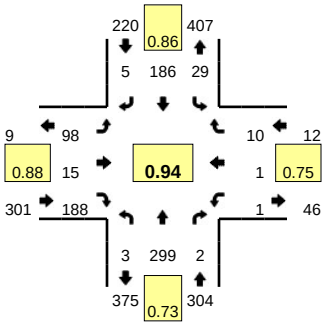
Method for determining peak hour: Total Entering Volume

LOCATION: SC 110 -- Frontage Rd N

CITY/STATE: Cowpens, SC

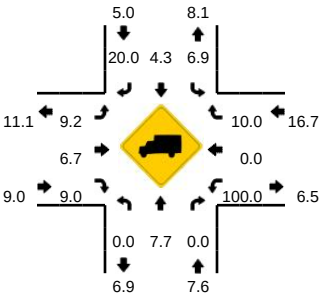
QC JOB #: 12896510

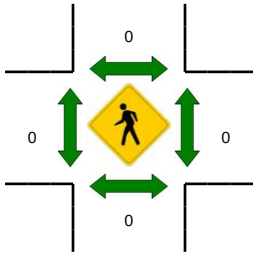
DATE: Thu, Sep 25 2014

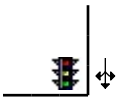


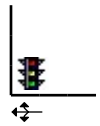
Peak-Hour: 4:45 PM -- 5:45 PM

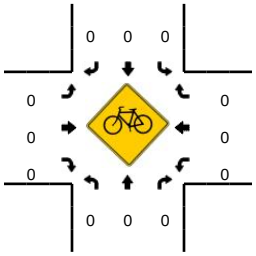
Peak 15-Min: 5:00 PM -- 5:15 PM

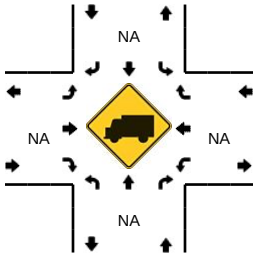


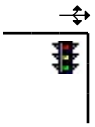


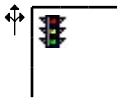


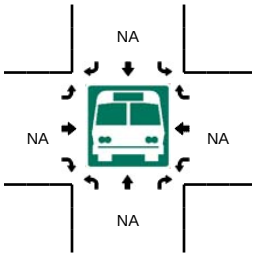












15-Min Count Period Beginning At	SC 110 (Northbound)				SC 110 (Southbound)				Frontage Rd N (Eastbound)				Frontage Rd N (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	51	1	0	7	62	4	0	21	5	38	0	0	0	0	0	190	
4:15 PM	0	71	1	0	8	53	3	0	17	0	31	0	0	0	3	0	187	
4:30 PM	0	61	1	0	10	51	1	0	22	3	38	0	1	0	2	0	190	
4:45 PM	0	63	1	0	5	44	2	0	20	7	57	0	0	1	3	0	203	770
5:00 PM	2	101	1	0	11	52	1	0	24	2	26	0	1	0	1	0	222	802
5:15 PM	0	68	0	0	5	47	1	0	26	4	54	0	0	0	3	0	208	823
5:30 PM	1	67	0	0	8	43	1	0	28	2	51	0	0	0	3	0	204	837
5:45 PM	2	45	0	0	7	38	3	0	31	3	52	0	0	0	0	0	181	815

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	404	4	0	44	208	4	0	96	8	104	0	4	0	4	0	888
Heavy Trucks	0	20	0		8	0	0		4	4	16		4	0	0		56
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

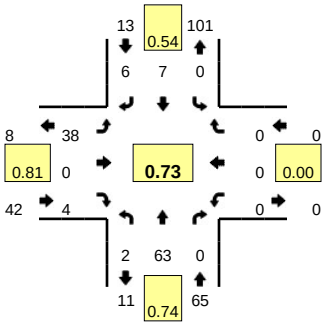
Type of peak hour being reported: Intersection Peak

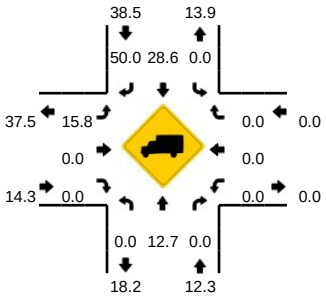
Method for determining peak hour: Total Entering Volume

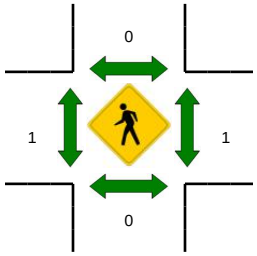
LOCATION: Edgefield Rd -- Frontage Rd
CITY/STATE: Cowpens, SC

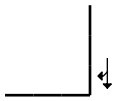
QC JOB #: 12896553
DATE: Thu, Sep 25 2014

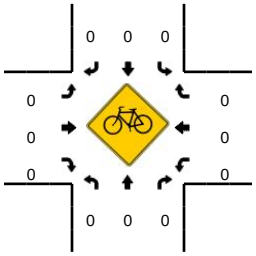
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

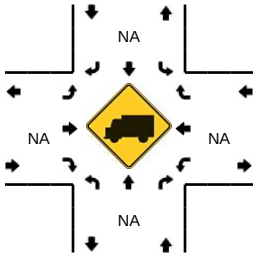


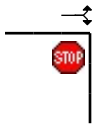


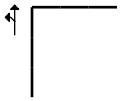


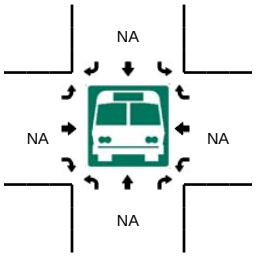












15-Min Count Period Beginning At	Edgefield Rd (Northbound)				Edgefield Rd (Southbound)				Frontage Rd (Eastbound)				Frontage Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	11	0	0	0	1	1	0	8	0	0	0	0	0	0	0	22	
7:15 AM	0	19	0	0	0	2	1	0	6	0	2	0	0	0	0	0	30	
7:30 AM	1	21	0	0	0	4	2	0	13	0	0	0	0	0	0	0	41	
7:45 AM	0	12	0	0	0	0	2	0	11	0	2	0	0	0	0	0	27	120
8:00 AM	0	11	0	0	0	0	1	0	8	0	0	0	0	0	0	0	20	118
8:15 AM	0	10	0	0	0	0	1	0	4	0	1	0	0	0	0	0	16	104
8:30 AM	2	7	0	0	0	0	1	0	4	0	0	0	0	0	0	0	14	77
8:45 AM	0	11	0	0	0	1	0	0	7	0	1	0	0	0	0	0	20	70

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	84	0	0	0	16	8	0	52	0	0	0	0	0	0	0	164
Heavy Trucks	0	16	0		0	8	4		4	0	0		0	0	0		32
Pedestrians		0				0				4				4			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

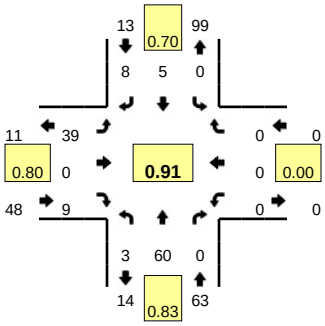
Type of peak hour being reported: Intersection Peak

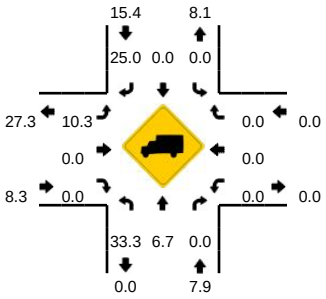
Method for determining peak hour: Total Entering Volume

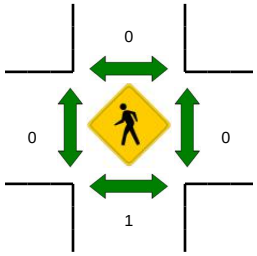
LOCATION: Edgefield Rd -- Frontage Rd
CITY/STATE: Cowpens, SC

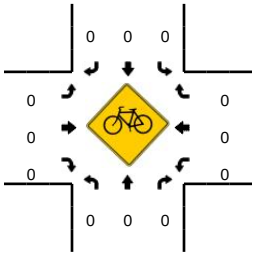
QC JOB #: 12896554
DATE: Thu, Sep 25 2014

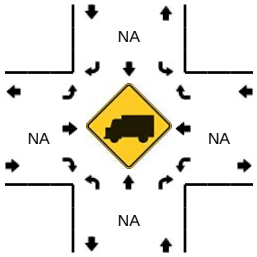
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

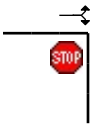


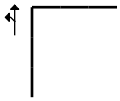


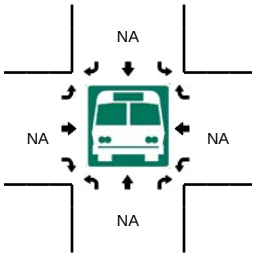












15-Min Count Period Beginning At	Edgefield Rd (Northbound)				Edgefield Rd (Southbound)				Frontage Rd (Eastbound)				Frontage Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	14	0	0	0	2	0	0	12	0	1	0	0	0	0	0	29	
4:15 PM	1	15	0	0	0	1	2	0	8	0	1	0	0	0	0	0	28	
4:30 PM	0	12	0	0	0	1	2	0	11	0	3	0	0	0	0	0	29	
4:45 PM	1	18	0	0	0	3	2	0	7	0	3	0	0	0	0	0	34	120
5:00 PM	1	15	0	0	0	0	2	0	13	0	2	0	0	0	0	0	33	124
5:15 PM	1	12	0	0	0	2	2	0	9	0	0	0	0	0	0	0	26	122
5:30 PM	1	12	0	0	0	1	2	0	10	0	0	0	0	0	0	0	26	119
5:45 PM	0	17	0	0	0	2	0	0	8	0	1	0	0	0	0	0	28	113

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	72	0	0	0	12	8	0	28	0	12	0	0	0	0	0	136
Heavy Trucks	4	4	0		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

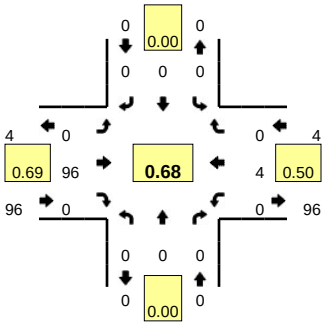
Method for determining peak hour: Total Entering Volume

LOCATION: Livestock Nutrition Dwy -- I-85 NB On-Ramp

CITY/STATE: Cowpens, SC

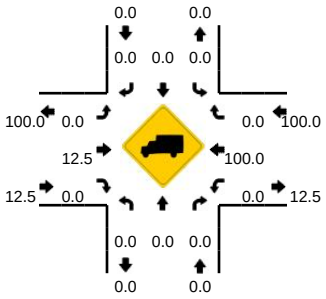
QC JOB #: 12896505

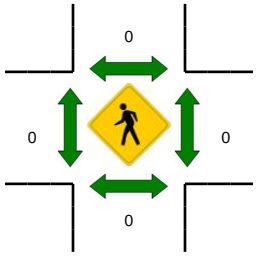
DATE: Thu, Sep 25 2014

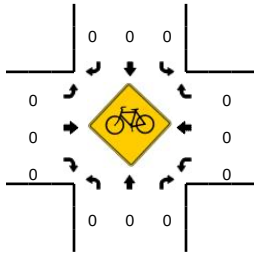


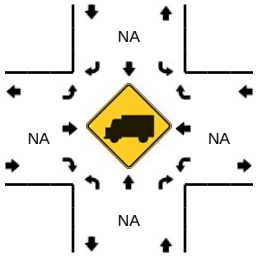
Peak-Hour: 7:00 AM -- 8:00 AM

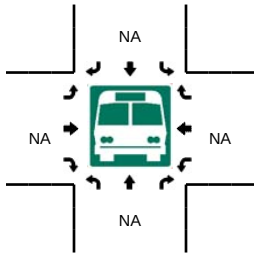
Peak 15-Min: 7:30 AM -- 7:45 AM











15-Min Count Period Beginning At	Livestock Nutrition Dwy (Northbound)				Livestock Nutrition Dwy (Southbound)				I-85 NB On-Ramp (Eastbound)				I-85 NB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	19	0	0	0	1	0	0	20	
7:15 AM	0	0	0	0	0	0	0	0	0	22	0	0	0	1	0	0	23	
7:30 AM	0	0	0	0	0	0	0	0	0	35	0	0	0	2	0	0	37	
7:45 AM	0	0	0	0	0	0	0	0	0	20	0	0	0	0	0	0	20	100
8:00 AM	0	0	0	0	0	0	0	0	0	18	0	0	0	1	0	0	19	99
8:15 AM	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	16	92
8:30 AM	0	0	0	0	0	0	0	0	0	9	0	0	0	0	0	0	9	64
8:45 AM	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	19	63

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	140	0	0	0	8	0	0	148
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	8	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad Stopped Buses																	

Comments: Try to get best coverage of ramp and driveway traffic in case driveway volumes and Smith Road/Edgefield Road intersection volumes are needed

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

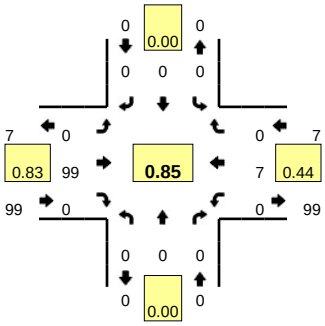
Method for determining peak hour: Total Entering Volume

LOCATION: Livestock Nutrition Dwy -- I-85 NB On-Ramp

CITY/STATE: Cowpens, SC

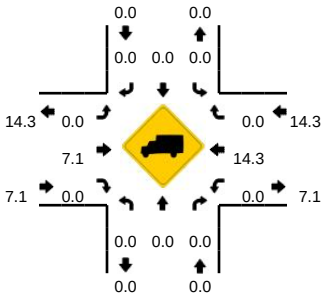
QC JOB #: 12896506

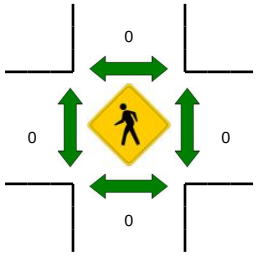
DATE: Thu, Sep 25 2014

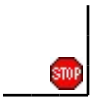


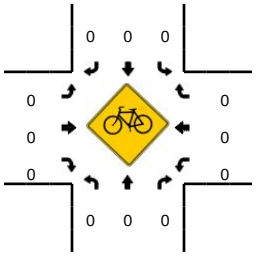
Peak-Hour: 4:15 PM -- 5:15 PM

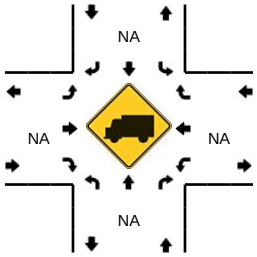
Peak 15-Min: 5:00 PM -- 5:15 PM

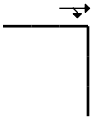


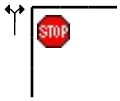


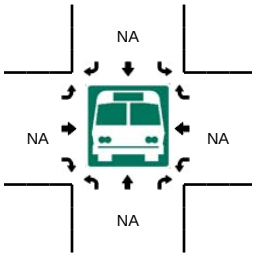












15-Min Count Period Beginning At	Livestock Nutrition Dwy (Northbound)				Livestock Nutrition Dwy (Southbound)				I-85 NB On-Ramp (Eastbound)				I-85 NB On-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	24	
4:15 PM	0	0	0	0	0	0	0	0	0	22	0	0	0	4	0	0	26	
4:30 PM	0	0	0	0	0	0	0	0	0	22	0	0	0	2	0	0	24	
4:45 PM	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	25	99
5:00 PM	0	0	0	0	0	0	0	0	0	30	0	0	0	1	0	0	31	106
5:15 PM	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	16	96
5:30 PM	0	0	0	0	0	0	0	0	0	21	0	0	0	2	0	0	23	95
5:45 PM	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	0	19	89

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	120	0	0	0	4	0	0	124
Heavy Trucks	0	0	0		0	0	0		0	16	0		0	4	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Try to get best coverage of ramp and driveway traffic in case driveway volumes and Smith Road/Edgefield Road intersection volumes are needed

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Exit 87

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/24/2013

Major Rt: S-39 Minor Rt: S-665

Day of Week: Wednesday Weather: Partly Cloudy Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 5090 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

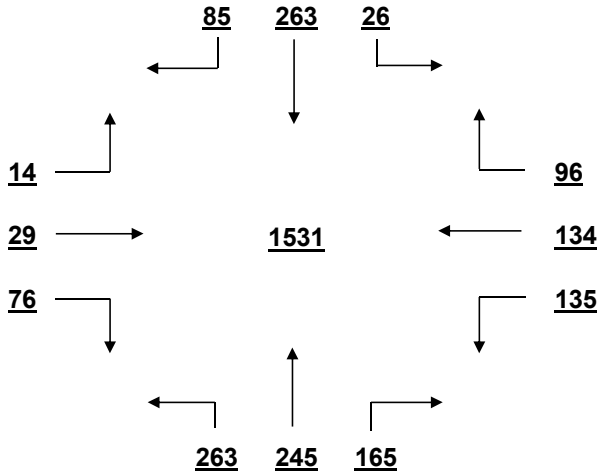
INTERSECTION VOLUME SUMMARY

	From N S-39				From S S-39				From E S-665				From W S-665				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	1	16	7	24	16	7	11	34	7	6	2	15	2	1	3	6	79	0
7:15 - 7:30	1	23	12	36	21	14	4	39	9	12	4	25	2	2	7	11	111	0
7:30 - 7:45	0	44	11	55	29	31	8	68	9	13	8	30	0	1	3	4	157	0
7:45 - 8:00	1	36	18	55	18	36	6	60	6	9	6	21	1	2	8	11	147	0
8:00 - 8:15	1	27	7	35	20	9	6	35	6	10	3	19	0	2	3	5	94	0
8:15 - 8:30	0	5	3	8	14	2	5	21	10	5	1	16	0	2	4	6	51	0
8:30 - 8:45	0	6	5	11	10	6	4	20	5	8	2	15	0	0	1	1	47	0
8:45 - 9:00	5	9	1	15	9	3	6	18	3	6	2	11	1	3	5	9	53	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	1	18	5	24	13	15	10	38	8	8	9	25	0	2	9	11	98	0
16:15 - 16:30	2	8	3	13	13	13	12	38	5	8	7	20	1	3	6	10	81	0
16:30 - 16:45	2	12	0	14	18	12	12	42	11	7	4	22	0	2	3	5	83	0
16:45 - 17:00	3	8	2	13	10	17	19	46	8	12	13	33	0	3	8	11	103	0
17:00 - 17:15	1	12	3	16	19	18	12	49	15	5	9	29	1	2	5	8	102	0
17:15 - 17:30	4	4	1	9	18	23	13	54	12	6	6	24	2	2	7	11	98	0
17:30 - 17:45	2	19	3	24	19	23	15	57	9	9	9	27	3	0	1	4	112	0
17:45 - 18:00	2	16	4	22	16	16	22	54	12	10	11	33	1	2	3	6	115	0
TOTAL	26	263	85	374	263	245	165	673	135	134	96	365	14	29	76	119	1531	0
Trucks	0	1	0	1	10	1	0	11	2	3	0	5	0	0	3	3	20	1.3%
School Buses	0	3	0	3	0	1	0	1	0	0	0	0	0	0	0	0	4	0.3%

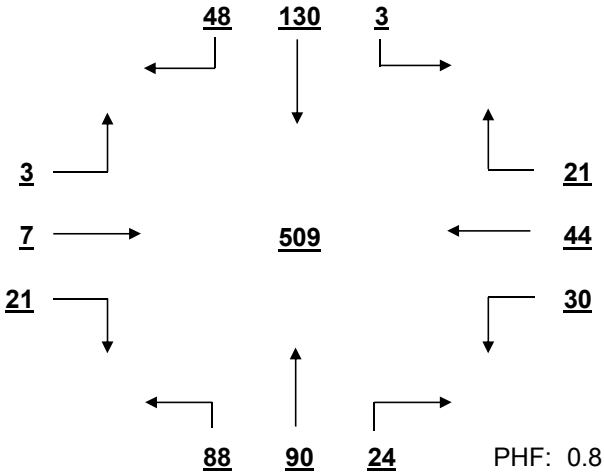
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

S-39 AT S-665 Date: 4/24/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

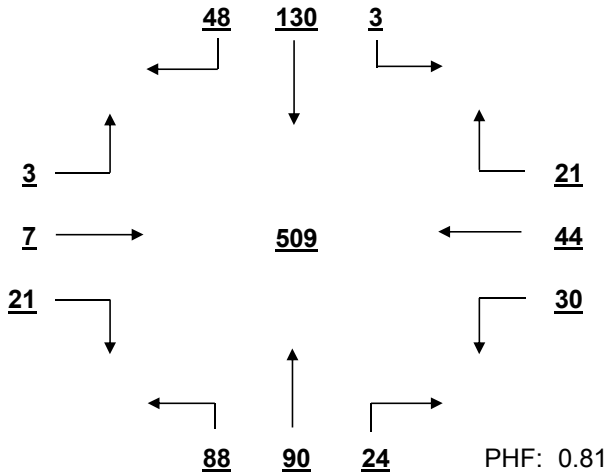


OVERALL PEAK HOUR VOLUME
FROM 7:15 TO 8:15



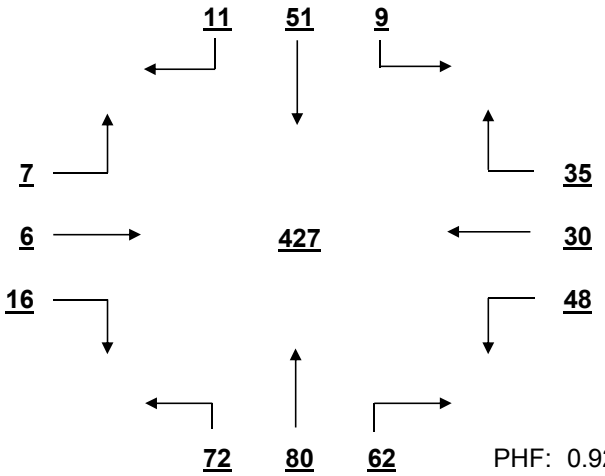
PHF: 0.811

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



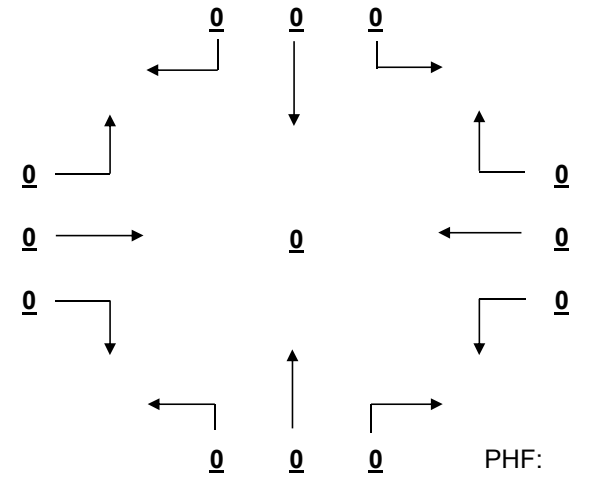
PHF: 0.811

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



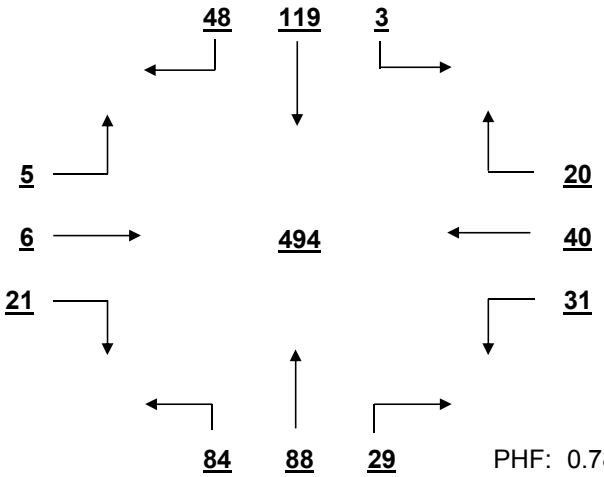
PHF: 0.928

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.787

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/25/2013

Major Rt: I-85 SB Minor Rt: S-665E

Day of Week: Thursday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: N-S Intersection ADT - 1880 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

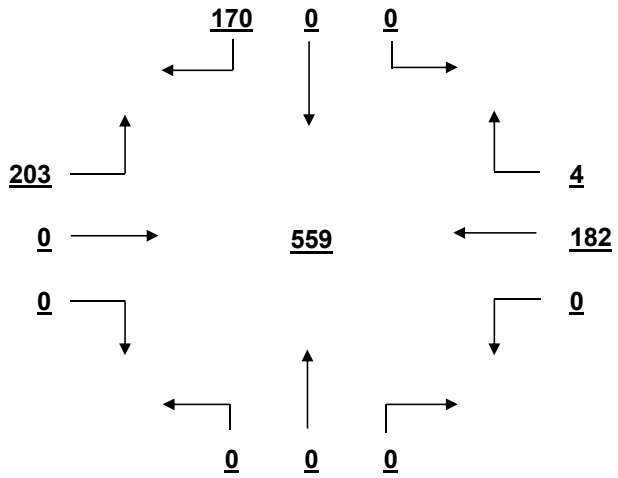
INTERSECTION VOLUME SUMMARY

	From N S-665E				From S S-665E				From E I-85 SB				From W I-85 SB				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	0	12	12	0	0	0	0	0	7	0	7	7	0	0	7	26	0
7:15 - 7:30	0	0	9	9	0	0	0	0	0	9	0	9	12	0	0	12	30	0
7:30 - 7:45	0	0	17	17	0	0	0	0	0	10	0	10	8	0	0	8	35	0
7:45 - 8:00	0	0	9	9	0	0	0	0	0	14	0	14	7	0	0	7	30	0
8:00 - 8:15	0	0	7	7	0	0	0	0	0	6	0	6	6	0	0	6	19	0
8:15 - 8:30	0	0	6	6	0	0	0	0	0	10	0	10	8	0	0	8	24	0
8:30 - 8:45	0	0	5	5	0	0	0	0	0	7	0	7	8	0	0	8	20	0
8:45 - 9:00	0	0	7	7	0	0	0	0	0	5	0	5	4	0	0	4	16	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	0	14	14	0	0	0	0	0	12	0	12	15	0	0	15	41	0
16:15 - 16:30	0	0	10	10	0	0	0	0	0	12	1	13	15	0	0	15	38	0
16:30 - 16:45	0	0	8	8	0	0	0	0	0	19	0	19	21	0	0	21	48	0
16:45 - 17:00	0	0	15	15	0	0	0	0	0	17	0	17	19	0	0	19	51	0
17:00 - 17:15	0	0	7	7	0	0	0	0	0	8	0	8	18	0	0	18	33	0
17:15 - 17:30	0	0	16	16	0	0	0	0	0	21	1	22	18	0	0	18	56	0
17:30 - 17:45	0	0	16	16	0	0	0	0	0	10	1	11	16	0	0	16	43	0
17:45 - 18:00	0	0	12	12	0	0	0	0	0	15	1	16	21	0	0	21	49	0
TOTAL	0	0	170	170	0	0	0	0	0	182	4	186	203	0	0	203	559	0
Trucks	0	0	1	1	0	0	0	0	0	6	0	6	2	0	0	2	9	1.6%
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%

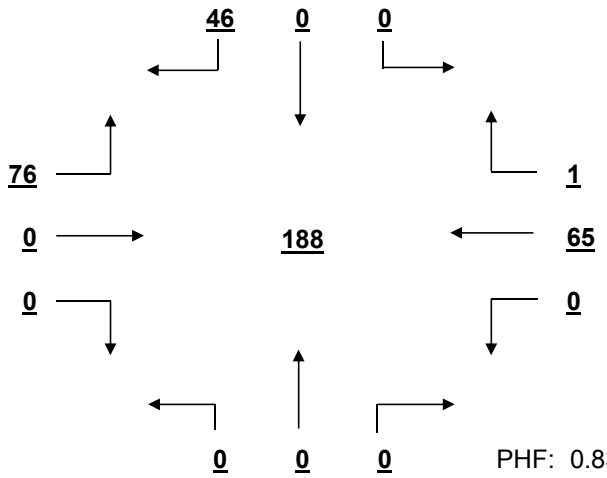
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I-85 SB AT S-665E Date: 4/25/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

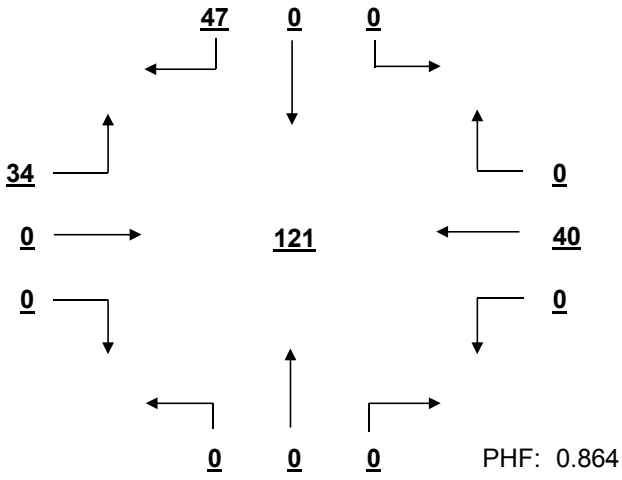


OVERALL PEAK HOUR VOLUME
FROM 16:30 TO 17:30



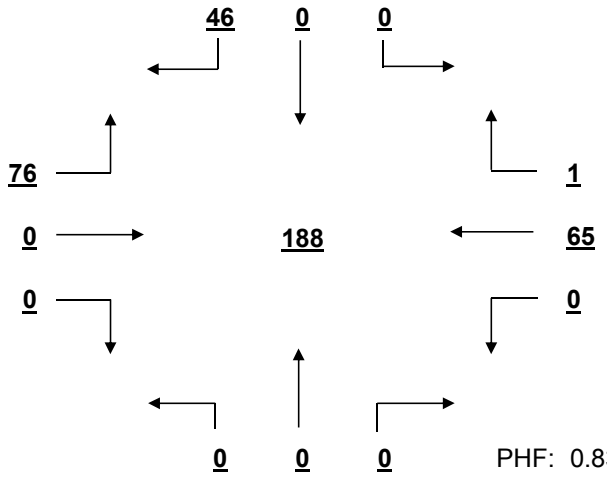
PHF: 0.839

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:00 TO 8:00



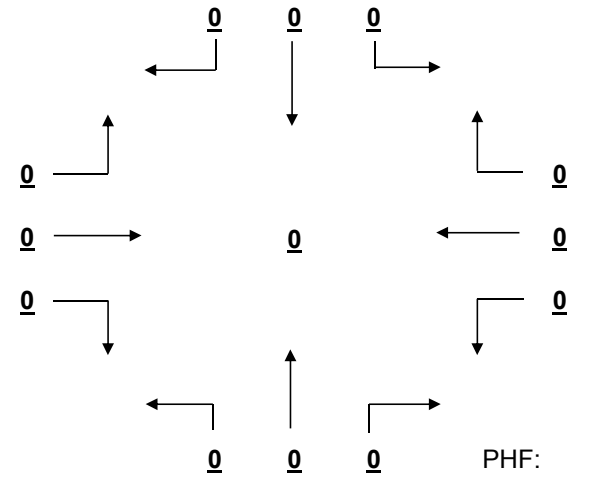
PHF: 0.864

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:30 TO 17:30



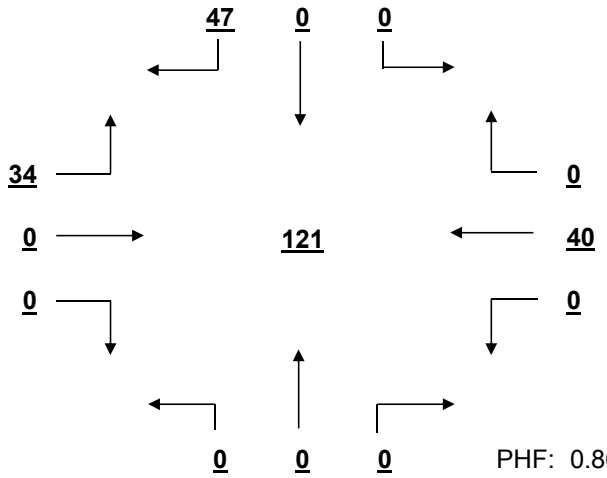
PHF: 0.839

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.864

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/24/2013

Major Rt: I-85 SB Minor Rt: S-665W

Day of Week: Wednesday Weather: Partly Cloudy Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: N-S Intersection ADT - 2120 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

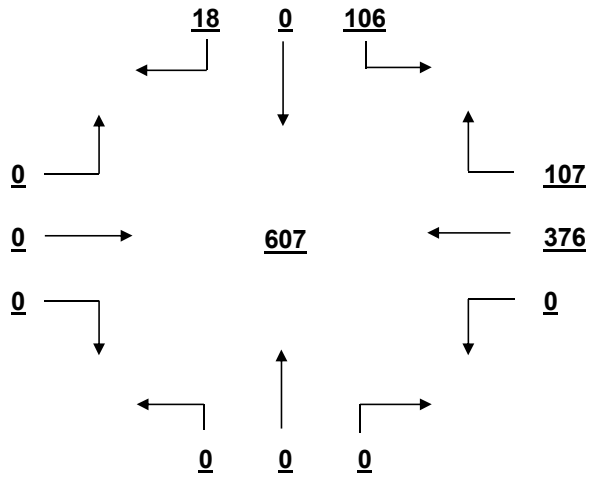
INTERSECTION VOLUME SUMMARY

	From N S-665W				From S S-665W				From E I-85 SB				From W I-85 SB				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	5	0	0	5	0	0	0	0	0	25	5	30	0	0	0	0	35	0
7:15 - 7:30	10	0	1	11	0	0	0	0	0	38	8	46	0	0	0	0	57	0
7:30 - 7:45	3	0	4	7	0	0	0	0	0	50	5	55	0	0	0	0	62	0
7:45 - 8:00	8	0	1	9	0	0	0	0	0	39	6	45	0	0	0	0	54	0
8:00 - 8:15	6	0	1	7	0	0	0	0	0	28	4	32	0	0	0	0	39	0
8:15 - 8:30	6	0	2	8	0	0	0	0	0	18	6	24	0	0	0	0	32	0
8:30 - 8:45	3	0	0	3	0	0	0	0	0	18	5	23	0	0	0	0	26	0
8:45 - 9:00	6	0	0	6	0	0	0	0	0	10	6	16	0	0	0	0	22	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	9	0	3	12	0	0	0	0	0	16	9	25	0	0	0	0	37	0
16:15 - 16:30	10	0	0	10	0	0	0	0	0	15	8	23	0	0	0	0	33	0
16:30 - 16:45	4	0	2	6	0	0	0	0	0	18	9	27	0	0	0	0	33	0
16:45 - 17:00	10	0	3	13	0	0	0	0	0	14	9	23	0	0	0	0	36	0
17:00 - 17:15	7	0	0	7	0	0	0	0	0	22	8	30	0	0	0	0	37	0
17:15 - 17:30	9	0	0	9	0	0	0	0	0	23	5	28	0	0	0	0	37	0
17:30 - 17:45	4	0	1	5	0	0	0	0	0	23	7	30	0	0	0	0	35	0
17:45 - 18:00	6	0	0	6	0	0	0	0	0	19	7	26	0	0	0	0	32	0
TOTAL	106	0	18	124	0	0	0	0	0	376	107	483	0	0	0	0	607	0
Trucks	0	0	9	9	0	0	0	0	0	6	7	13	0	0	0	0	22	3.6%
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%

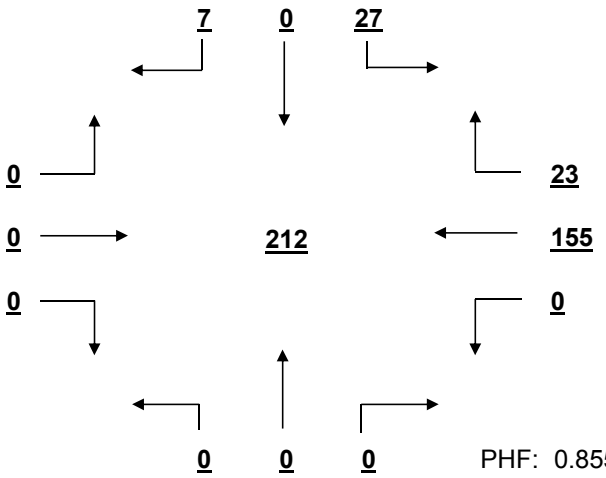
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I-85 SB AT S-665W Date: 4/24/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

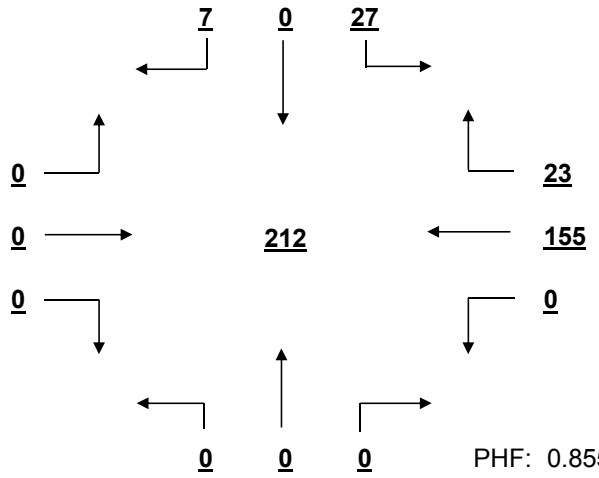


OVERALL PEAK HOUR VOLUME
FROM 7:15 TO 8:15



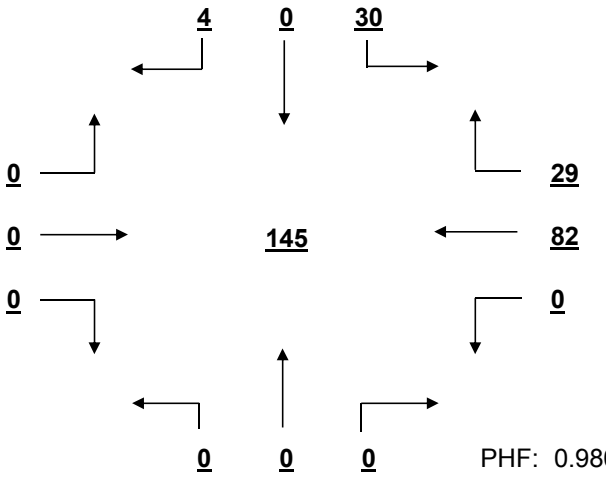
PHF: 0.855

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



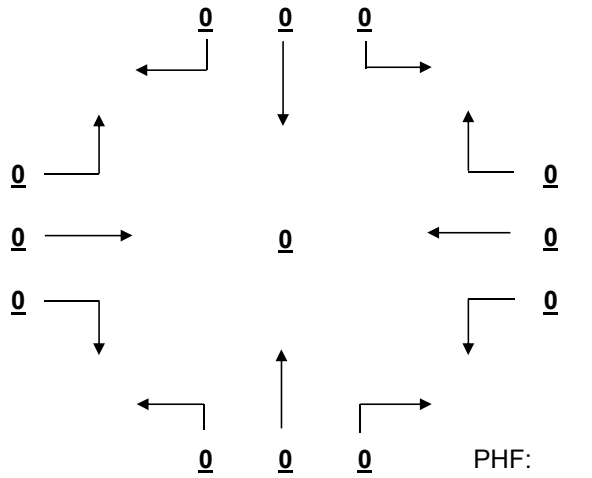
PHF: 0.855

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:45 TO 17:45



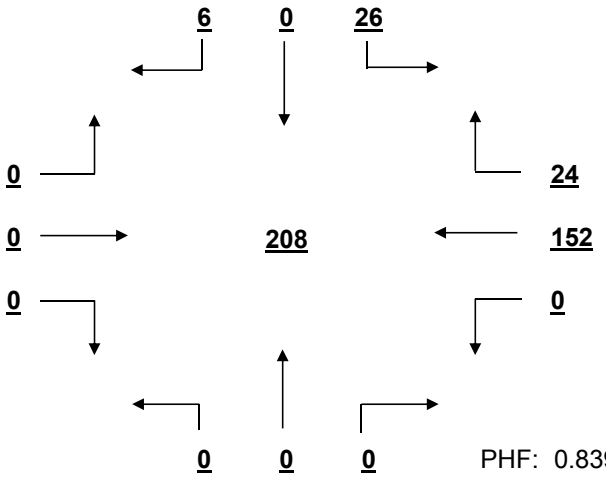
PHF: 0.980

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.839

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/24/2013

Major Rt: I-85 NB Ramp Minor Rt: S-234

Day of Week: Wednesday Weather: Partly Cloudy Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 2570 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

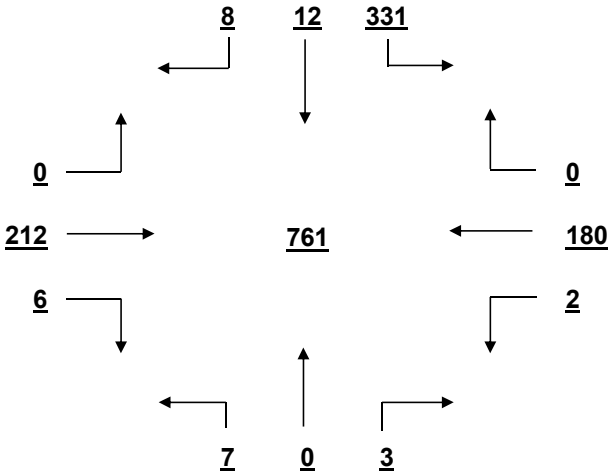
INTERSECTION VOLUME SUMMARY

	From N I-85 NB Ramp				From S I-85 NB Ramp				From E S-234				From W S-234				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	17	0	1	18	0	0	1	1	0	12	0	12	0	9	0	9	40	0
7:15 - 7:30	22	0	0	22	1	0	0	1	0	10	0	10	0	8	0	8	41	0
7:30 - 7:45	23	0	0	23	0	0	0	0	0	12	0	12	0	19	1	20	55	0
7:45 - 8:00	13	0	0	13	1	0	0	1	0	8	0	8	0	25	0	25	47	0
8:00 - 8:15	17	0	0	17	0	0	0	0	0	11	0	11	0	8	0	8	36	0
8:15 - 8:30	8	0	0	8	1	0	0	1	0	6	0	6	0	6	0	6	21	0
8:30 - 8:45	13	0	1	14	1	0	0	1	0	6	0	6	0	7	0	7	28	0
8:45 - 9:00	5	0	1	6	0	0	0	0	0	10	0	10	0	10	0	10	26	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	15	0	0	15	0	0	0	0	0	16	0	16	0	19	1	20	51	0
16:15 - 16:30	28	2	0	30	1	0	0	1	0	11	0	11	0	11	2	13	55	0
16:30 - 16:45	24	2	1	27	0	0	0	0	0	12	0	12	0	12	0	12	51	0
16:45 - 17:00	18	0	0	18	0	0	2	2	0	13	0	13	0	20	0	20	53	0
17:00 - 17:15	26	1	1	28	1	0	0	1	1	11	0	12	0	10	0	10	51	0
17:15 - 17:30	33	1	2	36	1	0	0	1	1	12	0	13	0	16	1	17	67	0
17:30 - 17:45	39	3	0	42	0	0	0	0	0	12	0	12	0	15	0	15	69	0
17:45 - 18:00	30	3	1	34	0	0	0	0	0	18	0	18	0	17	1	18	70	0
TOTAL	331	12	8	351	7	0	3	10	2	180	0	182	0	212	6	218	761	0
Trucks	10	0	0	10	0	0	0	0	0	0	0	0	0	2	0	2	12	1.6%
School Buses	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0.1%

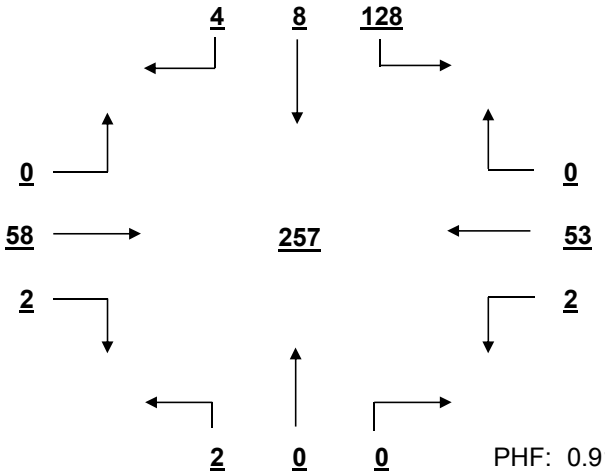
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I-85 NB Ramp AT S-234 Date: 4/24/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

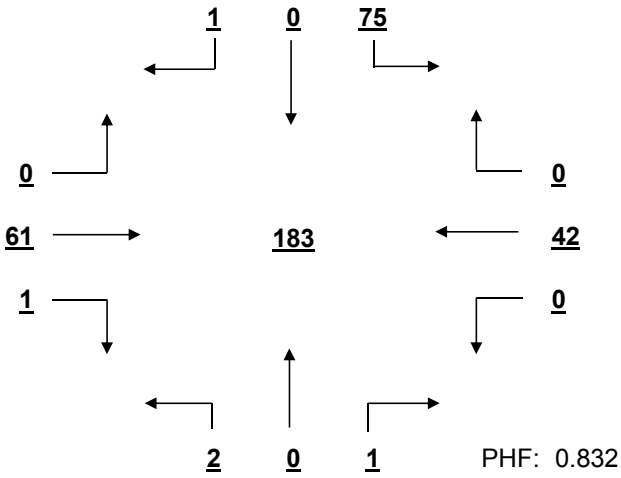


OVERALL PEAK HOUR VOLUME
FROM 17:00 TO 18:00



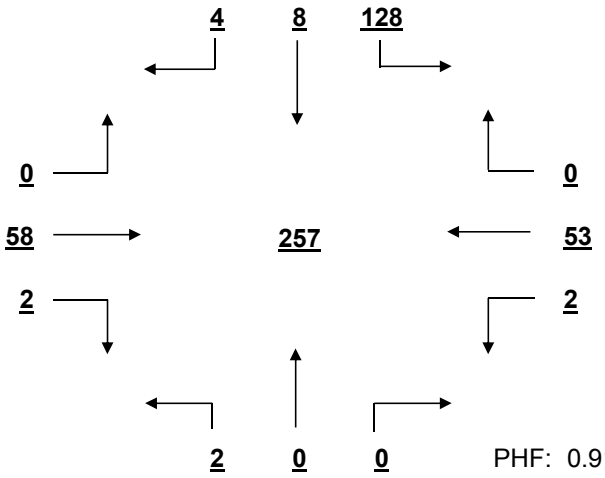
PHF: 0.918

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:00 TO 8:00



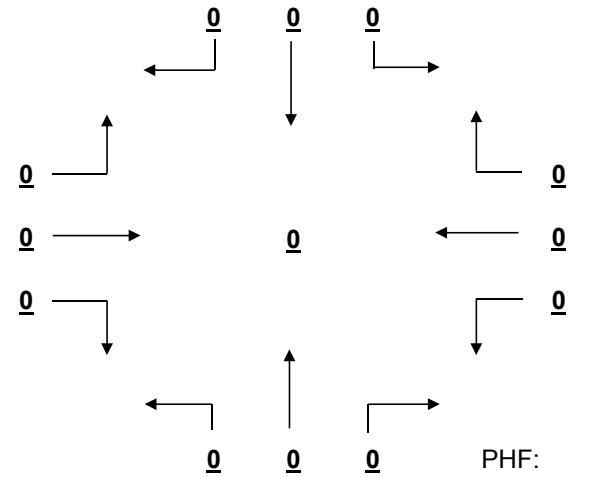
PHF: 0.832

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



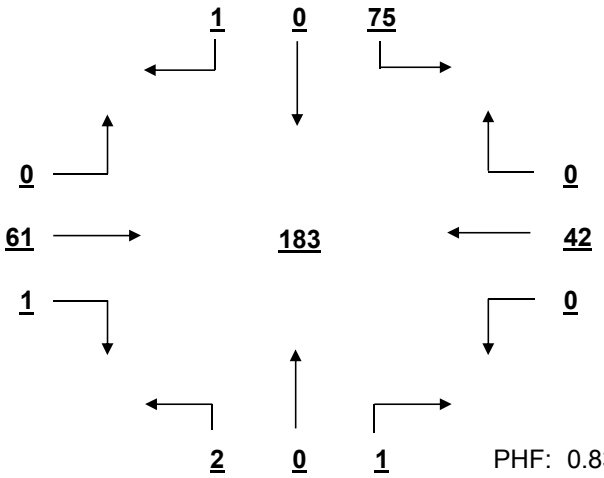
PHF: 0.918

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.832

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/25/2013

Major Rt: I-85 NB Minor Rt: S-83

Day of Week: Thursday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: N-S Intersection ADT - 3110 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

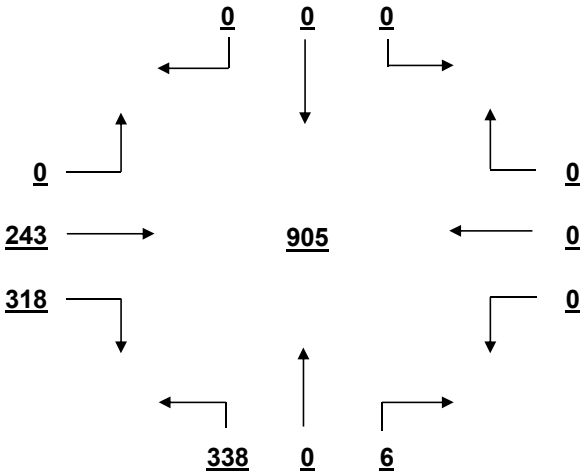
INTERSECTION VOLUME SUMMARY

	From N S-83				From S S-83				From E I-85 NB				From W I-85 NB				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	0	0	0	15	0	0	15	0	0	0	0	0	15	13	28	43	0
7:15 - 7:30	0	0	0	0	21	0	0	21	0	0	0	0	0	22	37	59	80	0
7:30 - 7:45	0	0	0	0	23	0	1	24	0	0	0	0	0	17	40	57	81	0
7:45 - 8:00	0	0	0	0	28	0	1	29	0	0	0	0	0	22	31	53	82	0
8:00 - 8:15	0	0	0	0	22	0	0	22	0	0	0	0	0	20	26	46	68	0
8:15 - 8:30	0	0	0	0	14	0	0	14	0	0	0	0	0	8	14	22	36	0
8:30 - 8:45	0	0	0	0	9	0	0	9	0	0	0	0	0	14	5	19	28	0
8:45 - 9:00	0	0	0	0	9	0	0	9	0	0	0	0	0	10	8	18	27	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	0	0	0	25	0	0	25	0	0	0	0	0	13	24	37	62	0
16:15 - 16:30	0	0	0	0	27	0	0	27	0	0	0	0	0	12	14	26	53	0
16:30 - 16:45	0	0	0	0	17	0	1	18	0	0	0	0	0	13	15	28	46	0
16:45 - 17:00	0	0	0	0	19	0	0	19	0	0	0	0	0	15	17	32	51	0
17:00 - 17:15	0	0	0	0	27	0	0	27	0	0	0	0	0	15	16	31	58	0
17:15 - 17:30	0	0	0	0	34	0	1	35	0	0	0	0	0	17	18	35	70	0
17:30 - 17:45	0	0	0	0	25	0	1	26	0	0	0	0	0	13	28	41	67	0
17:45 - 18:00	0	0	0	0	23	0	1	24	0	0	0	0	0	17	12	29	53	0
TOTAL	0	0	0	0	338	0	6	344	0	0	0	0	0	243	318	561	905	0
Trucks	0	0	0	0	2	0	0	2	0	0	0	0	0	5	4	9	11	1.2%
School Buses	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	2	3	0.3%

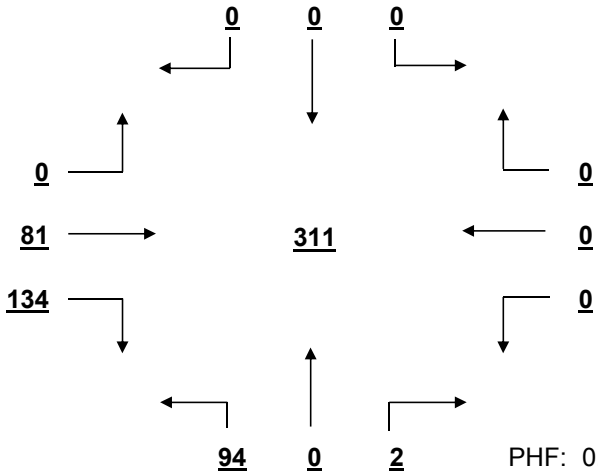
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I-85 NB AT S-83 Date: 4/25/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

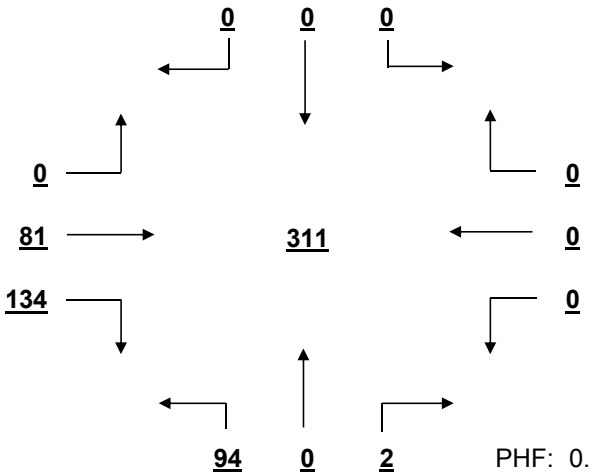


OVERALL PEAK HOUR VOLUME
FROM 7:15 TO 8:15



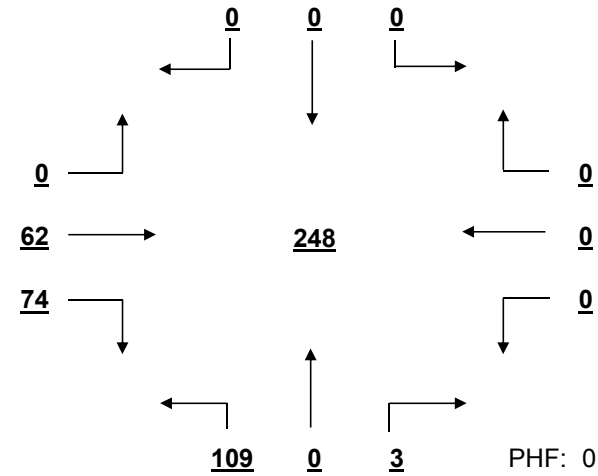
PHF: 0.948

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



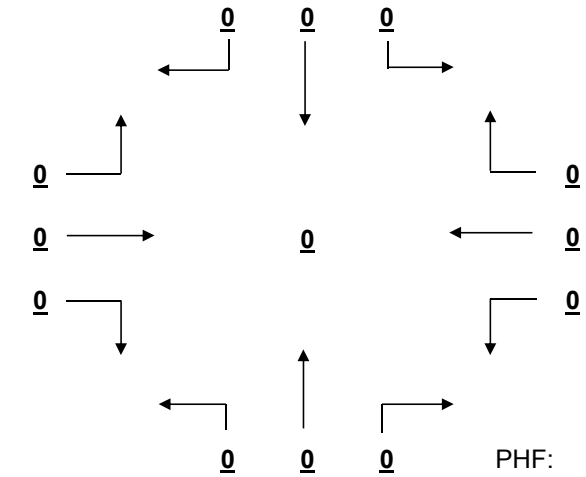
PHF: 0.948

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



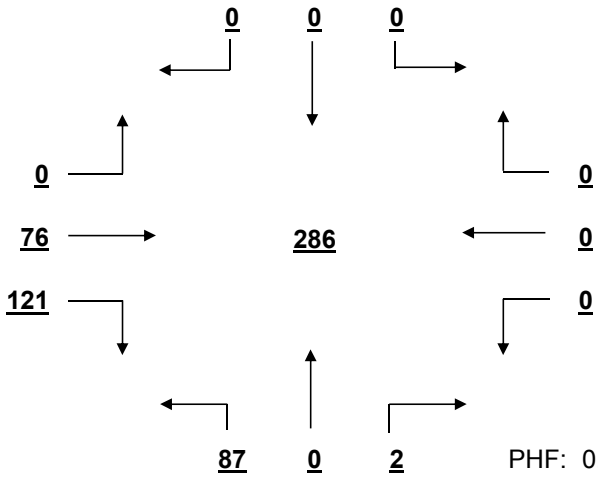
PHF: 0.886

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.872

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/24/2013

Major Rt: S-39 Minor Rt: S-234/31

Day of Week: Wednesday Weather: Partly Cloudy Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 5010 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

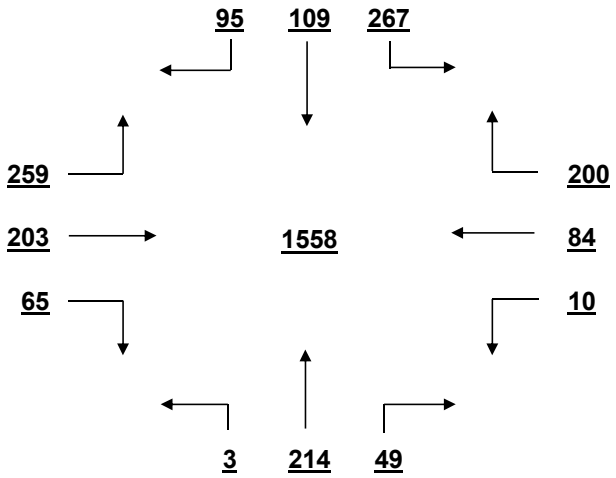
INTERSECTION VOLUME SUMMARY

	From N S-39				From S S-39				From E S-234/31				From W S-234/31				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	10	4	7	21	0	19	5	24	0	5	4	9	13	11	3	27	81	0
7:15 - 7:30	31	8	8	47	0	21	2	23	0	3	11	14	9	15	6	30	114	0
7:30 - 7:45	40	9	7	56	0	43	3	46	0	6	19	25	19	19	4	42	169	0
7:45 - 8:00	34	6	6	46	0	21	3	24	0	4	16	20	14	21	2	37	127	0
8:00 - 8:15	23	5	6	34	1	6	3	10	0	7	17	24	13	10	0	23	91	0
8:15 - 8:30	5	5	5	15	0	10	2	12	1	1	4	6	5	8	1	14	47	0
8:30 - 8:45	8	6	2	16	0	8	2	10	0	4	7	11	6	12	2	20	57	0
8:45 - 9:00	9	4	3	16	0	9	4	13	0	7	2	9	6	8	1	15	53	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	17	6	11	34	1	5	5	11	3	4	15	22	12	15	7	34	101	0
16:15 - 16:30	13	3	7	23	0	6	2	8	0	6	19	25	19	16	4	39	95	0
16:30 - 16:45	13	6	3	22	0	13	3	16	2	6	12	20	21	10	3	34	92	0
16:45 - 17:00	15	6	6	27	0	11	3	14	1	4	15	20	17	11	6	34	95	0
17:00 - 17:15	14	11	7	32	0	12	3	15	0	3	15	18	21	11	1	33	98	0
17:15 - 17:30	7	11	6	24	1	16	4	21	0	10	24	34	29	11	8	48	127	0
17:30 - 17:45	14	11	4	29	0	7	4	11	2	9	13	24	28	16	10	54	118	0
17:45 - 18:00	14	8	7	29	0	7	1	8	1	5	7	13	27	9	7	43	93	0
TOTAL	267	109	95	471	3	214	49	266	10	84	200	294	259	203	65	527	1558	0
Trucks	2	6	0	8	0	5	2	7	0	0	3	3	3	5	1	9	27	1.7%
School Buses	3	0	1	4	0	1	0	1	1	0	0	1	0	0	0	0	6	0.4%

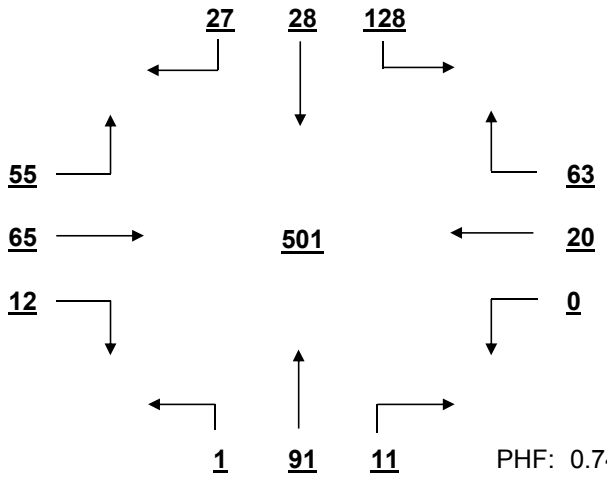
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

S-39 AT S-234/31 Date: 4/24/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

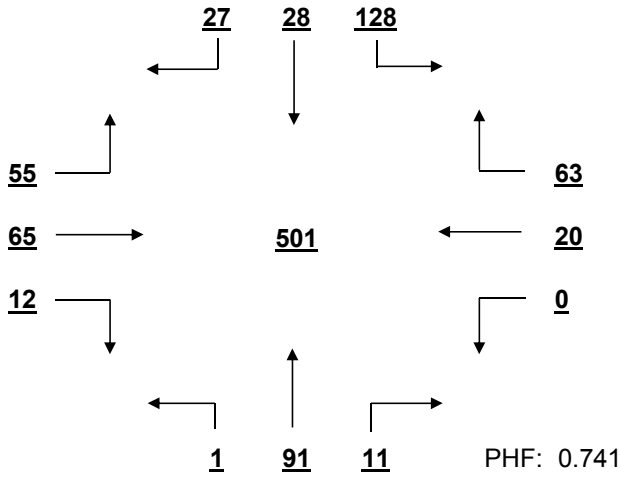


OVERALL PEAK HOUR VOLUME
FROM 7:15 TO 8:15



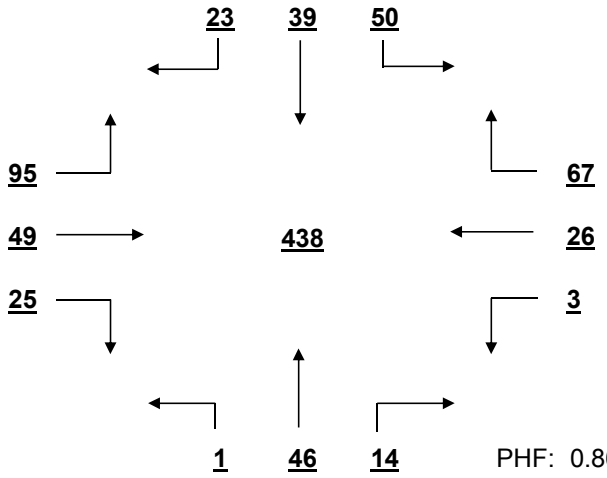
PHF: 0.741

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



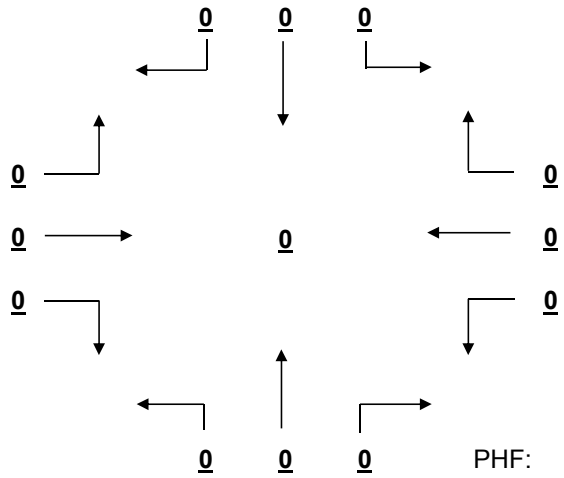
PHF: 0.741

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:45 TO 17:45



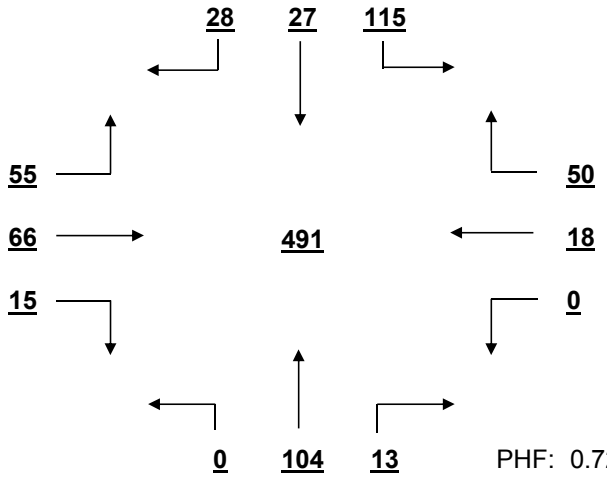
PHF: 0.862

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.726

Type of peak hour being reported: Intersection Peak

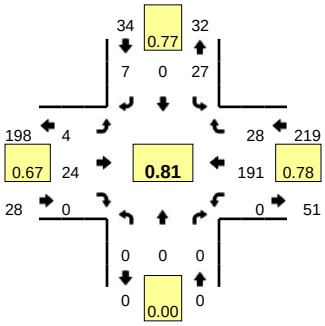
Method for determining peak hour: Total Entering Volume

LOCATION: Lemmons Farm Entrance -- Webber Rd

CITY/STATE: Gaffney, SC

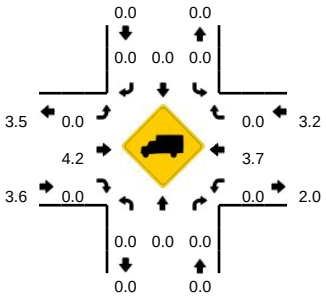
QC JOB #: 12896551

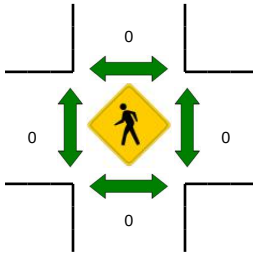
DATE: Thu, Sep 25 2014

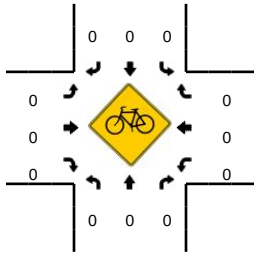


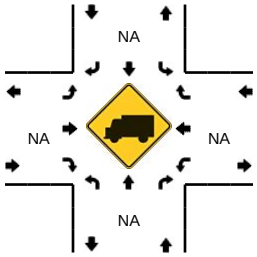
Peak-Hour: 7:15 AM -- 8:15 AM

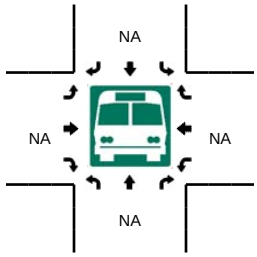
Peak 15-Min: 7:45 AM -- 8:00 AM











15-Min Count Period Beginning At	Lemmons Farm Entrance (Northbound)				Lemmons Farm Entrance (Southbound)				Webber Rd (Eastbound)				Webber Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	2	0	0	0	0	8	0	0	0	28	5	0	43	
7:15 AM	0	0	0	0	5	0	1	0	1	5	0	0	0	38	5	0	55	
7:30 AM	0	0	0	0	4	0	4	0	2	10	0	0	0	54	6	0	80	
7:45 AM	0	0	0	0	11	0	0	0	1	5	0	0	0	60	10	0	87	265
8:00 AM	0	0	0	0	7	0	2	0	0	4	0	0	0	39	7	0	59	281
8:15 AM	0	0	0	0	3	0	0	0	0	1	0	0	0	26	4	0	34	260
8:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	21	2	0	27	207
8:45 AM	0	0	0	0	1	0	0	0	0	9	0	0	0	20	2	0	32	152

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	44	0	0	0	4	20	0	0	0	240	40	0	348
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	16	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

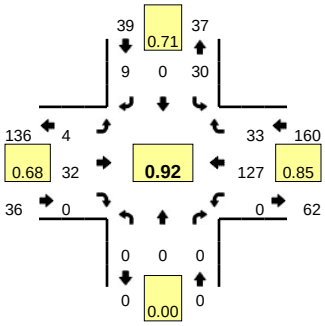
Method for determining peak hour: Total Entering Volume

LOCATION: Lemmons Farm Entrance -- Webber Rd

QC JOB #: 12896552

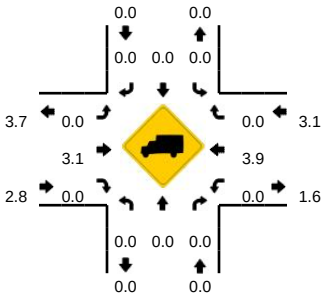
CITY/STATE: Gaffney, SC

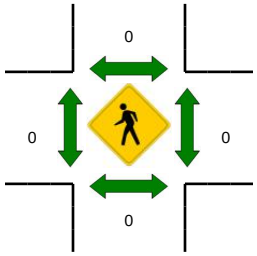
DATE: Thu, Sep 25 2014

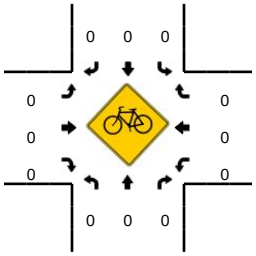


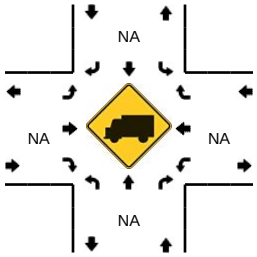
Peak-Hour: 4:45 PM -- 5:45 PM

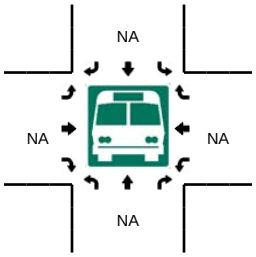
Peak 15-Min: 5:15 PM -- 5:30 PM











15-Min Count Period Beginning At	Lemmons Farm Entrance (Northbound)				Lemmons Farm Entrance (Southbound)				Webber Rd (Eastbound)				Webber Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	7	0	0	0	0	11	0	0	0	33	4	0	55	
4:15 PM	0	0	0	0	2	0	4	0	1	9	0	0	0	29	4	0	49	
4:30 PM	0	0	0	0	3	0	1	0	0	9	0	0	0	32	3	0	48	
4:45 PM	0	0	0	0	4	0	3	0	2	5	0	0	0	36	4	0	54	206
5:00 PM	0	0	0	0	9	0	2	0	1	14	0	0	0	26	10	0	62	213
5:15 PM	0	0	0	0	6	0	1	0	0	10	0	0	0	37	10	0	64	228
5:30 PM	0	0	0	0	11	0	3	0	1	3	0	0	0	28	9	0	55	235
5:45 PM	0	0	0	0	7	0	1	0	0	8	0	0	0	29	3	0	48	229

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	24	0	4	0	0	40	0	0	0	148	40	0	256
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	8	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896515 - Webber Rd -- I-85 SB On-Ramp
Site Code : 12896515
Start Date : 9/25/2014
Page No : 1

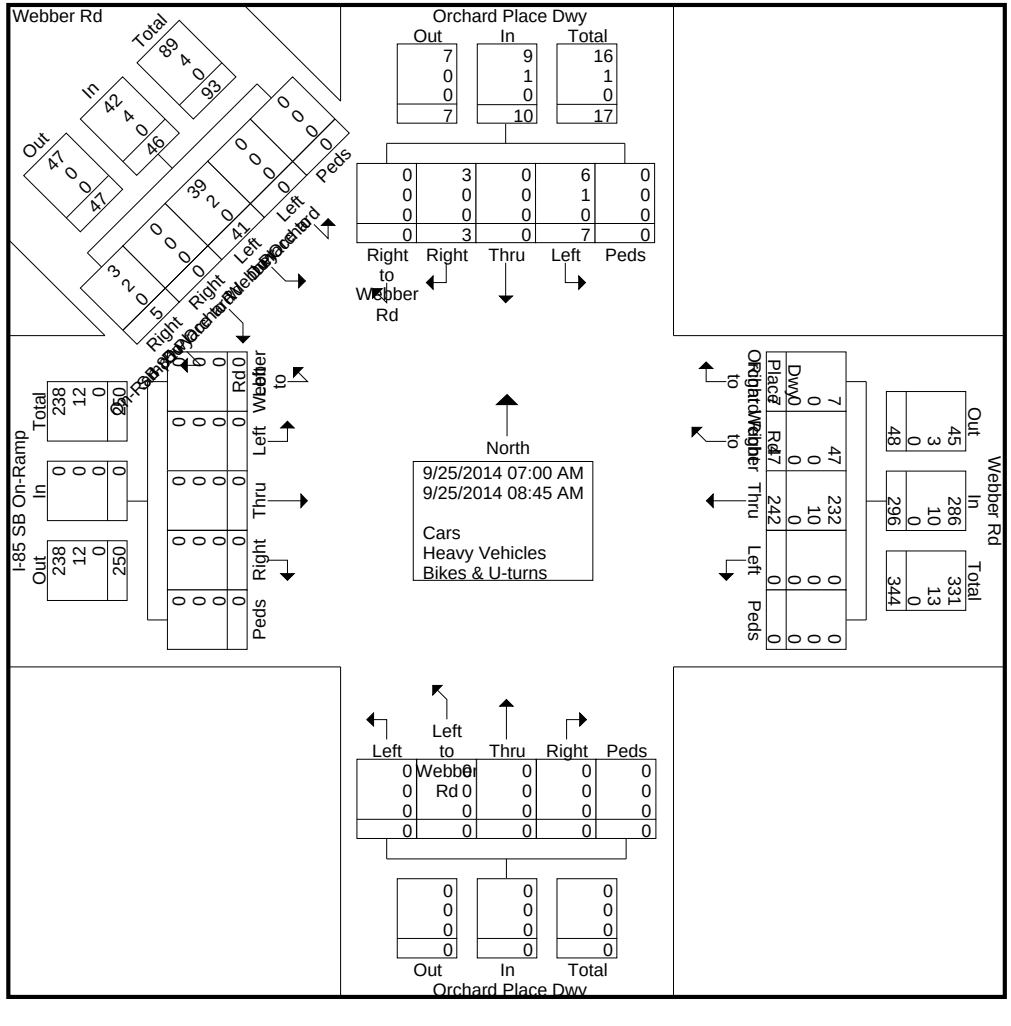
Groups Printed- Cars - Heavy Vehicles - turns

	Orchard Place Dwy Southbound						Webber Rd Westbound						Orchard Place Dwy Northbound						I-85 SB On-Ramp Eastbound						Webber Rd						
Start Time	Right to Webber Rd	Right	Thru	Left	Peds	App. Total	Right to Orchard Place Dwy	Right to Webber Rd	Thru	Left	Peds	App. Total	Right	Thru	Left to Webber Rd	Left	Peds	App. Total	Right	Thru	Left	Left to Webber Rd	Peds	App. Total	Right to I-85 SB On-Ramp	Right to Orchard Place Dwy	Left to Webber Rd	Left to Orchard Place Dwy	Peds	App. Total	Int. Total
07:00 AM	0	0	0	1	0	1	0	1	32	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	40
07:15 AM	0	0	0	1	0	1	1	10	29	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	2	0	6	0	0	8	49
07:30 AM	0	0	0	1	0	1	0	5	51	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	0	0	11	68
07:45 AM	0	1	0	0	0	1	2	15	43	0	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	67
Total	0	1	0	3	0	4	3	31	155	0	0	189	0	0	0	0	0	0	0	0	0	0	0	0	3	0	28	0	0	31	224
08:00 AM	0	1	0	3	0	4	1	4	36	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	46
08:15 AM	0	1	0	1	0	2	3	6	17	0	0	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
08:30 AM	0	0	0	0	0	0	0	3	18	0	0	21	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	5	26
08:45 AM	0	0	0	0	0	0	0	3	16	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	28
Total	0	2	0	4	0	6	4	16	87	0	0	107	0	0	0	0	0	0	0	0	0	0	0	0	2	0	13	0	0	15	128
Grand Total	0	3	0	7	0	10	7	47	242	0	0	296	0	0	0	0	0	0	0	0	0	0	0	0	5	0	41	0	0	46	352
Apprch %	0	30	0	70	0		2.4	15.9	81.8	0	0		0	0	0	0	0		0	0	0	0	0		10.9	0	89.1	0	0		
Total %	0	0.9	0	2	0	2.8	2	13.4	68.8	0	0	84.1	0	0	0	0	0	0	0	0	0	0	0	0	1.4	0	11.6	0	0	13.1	
Cars	0	3	0	6	0	9	7	47	232	0	0	286	0	0	0	0	0	0	0	0	0	0	0	0	3	0	39	0	0	42	337
% Cars	0	100	0	85.7	0	90	100	100	95.9	0	0	96.6	0	0	0	0	0	0	0	0	0	0	0	0	60	0	95.1	0	0	91.3	95.7
Heavy Vehicles																															
% Heavy Vehicles	0	0	0	14.3	0	10	0	0	4.1	0	0	3.4	0	0	0	0	0	0	0	0	0	0	0	0	40	0	4.9	0	0	8.7	4.3
Bikes & U-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896515 - Webber Rd -- I-85 SB On-Ramp
Site Code : 12896515
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

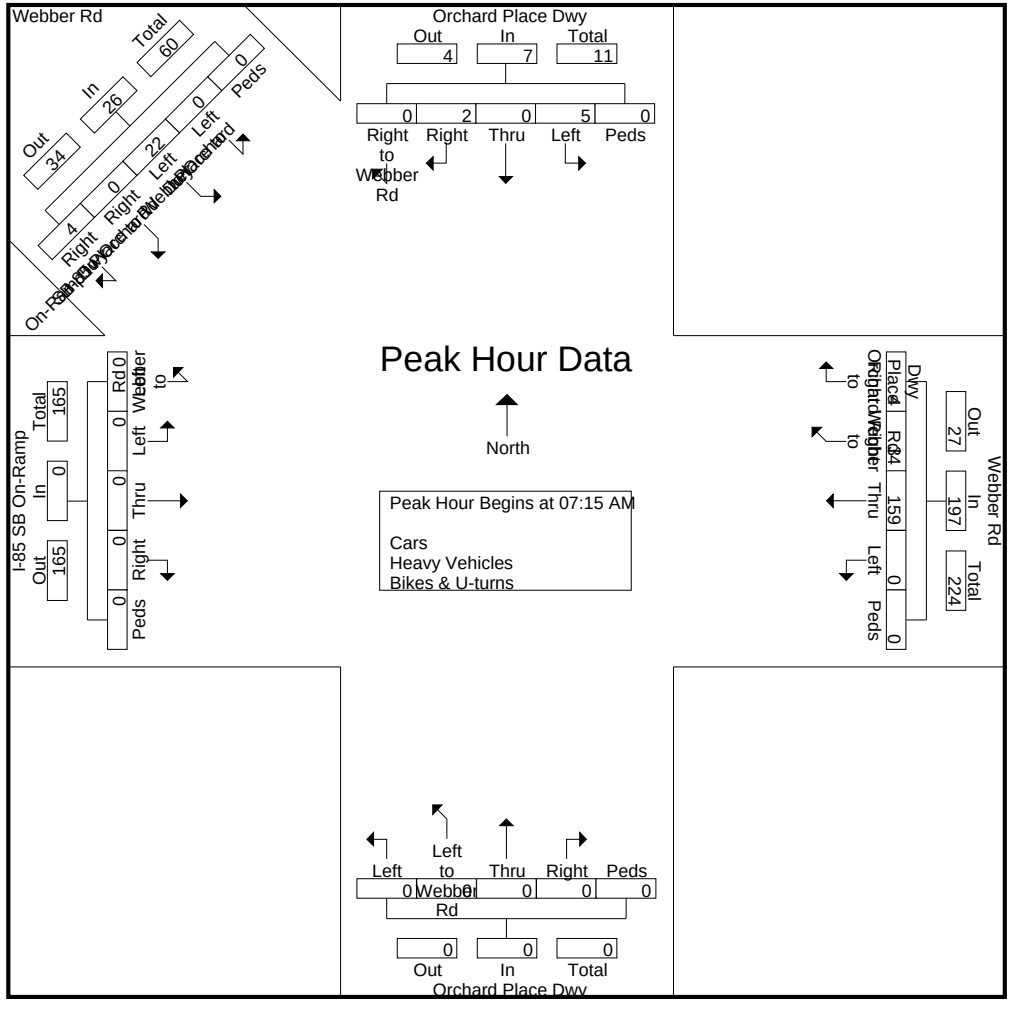
File Name : 12896515 - Webber Rd -- I-85 SB On-Ramp
Site Code : 12896515
Start Date : 9/25/2014
Page No : 3

	Orchard Place Dwy Southbound						Webber Rd Westbound						Orchard Place Dwy Northbound						I-85 SB On-Ramp Eastbound						Webber Rd						
Start Time	Right to Webber Rd	Right	Thru	Left	Peds	App. Total	Right to Orchard Place Dwy	Right to Webber Rd	Thru	Left	Peds	App. Total	Right	Thru	Left to Webber Rd	Left	Peds	App. Total	Right	Thru	Left	Left to Webber Rd	Peds	App. Total	Right to I-85 SB On-Ramp	Right to Orchard Place Dwy	Left to Webber Rd	Left to Orchard Place Dwy	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:15 AM																															
07:15 AM	0	0	0	1	0	1	1	10	29	0	0	40	0	0	0	0	0	0	0	0	0	0	0	0	2						
07:30 AM	0	0	0	1	0	1	0	5	51	0	0	56	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	0	0	11	**68**
07:45 AM	0	**1**	0	0	0	1	**2**	**15**	43	0	0	**60**	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	67
08:00 AM	0	1	0	**3**	0	**4**	1	4	36	0	0	41	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	46
Total Volume	0	2	0	5	0	7	4	34	159	0	0	197	0	0	0	0	0	0	0	0	0	0	0	0	4	0	22	0	0	26	230
% App. Total	0	28.6	0	71.4	0		2	17.3	80.7	0	0		0	0	0	0	0		0	0	0	0	0		15.4	0	84.6	0	0		
PHF	.000	.500	.000	.417	.000	.438	.500	.567	.779	.000	.000	.821	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.500	.000	.550	.000	.000	.591	.846

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896515 - Webber Rd -- I-85 SB On-Ramp
Site Code : 12896515
Start Date : 9/25/2014
Page No : 4



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896516 - Webber Rd -- I-85 SB On-Ramp
Site Code : 12896516
Start Date : 9/25/2014
Page No : 1

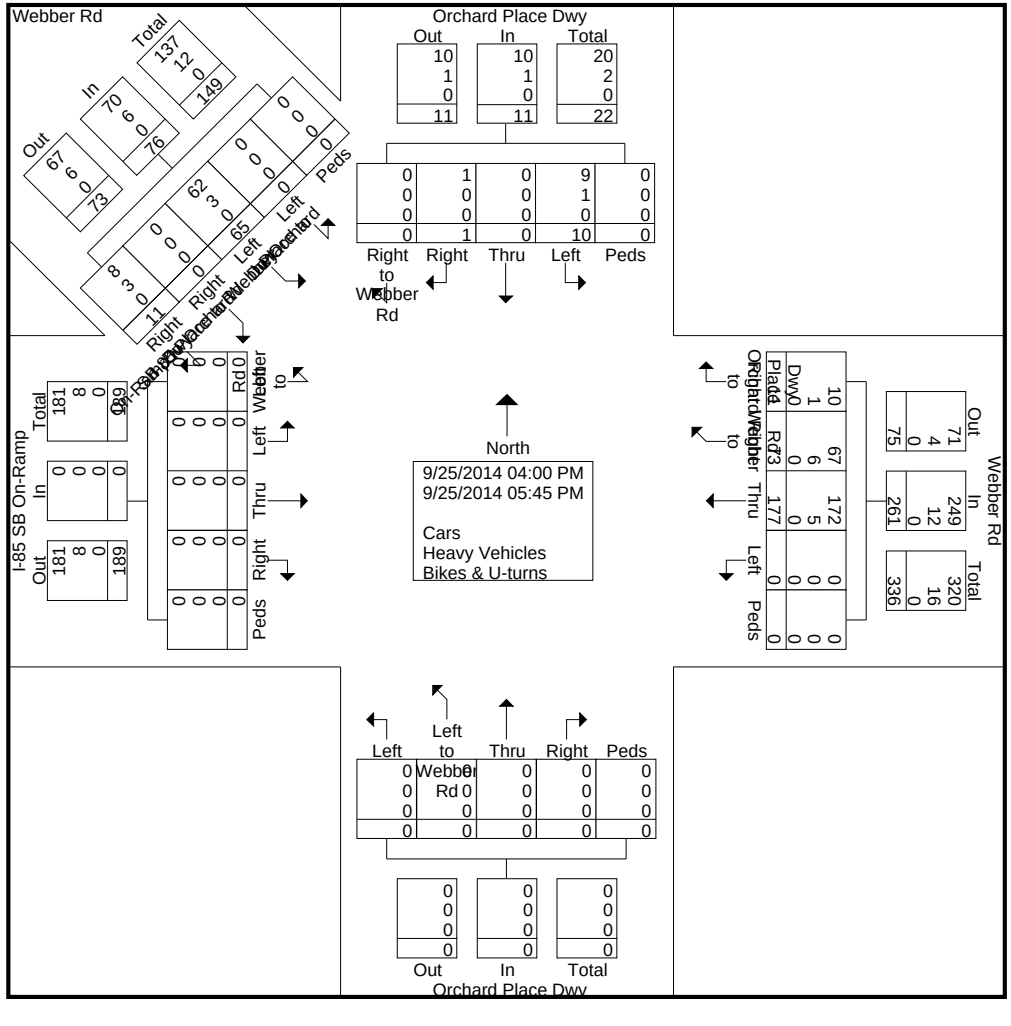
Groups Printed- Cars - Heavy Vehicles - turns

	Orchard Place Dwy Southbound						Webber Rd Westbound						Orchard Place Dwy Northbound						I-85 SB On-Ramp Eastbound						Webber Rd						
Start Time	Right to Webber Rd	Right	Thru	Left	Peds	App. Total	Right to Orchard Place Dwy	Right to Webber Rd	Thru	Left	Peds	App. Total	Right	Thru	Left to Webber Rd	Left	Peds	App. Total	Right	Thru	Left	Left to Webber Rd	Peds	App. Total	Right to I-85 SB On-Ramp	Right to Orchard Place Dwy	Left to Webber Rd	Left to Orchard Place Dwy	Peds	App. Total	Int. Total
04:00 PM	0	0	0	1	0	1	0	7	25	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0	2	0	10	0	0	12	45
04:15 PM	0	0	0	1	0	1	2	10	22	0	0	34	0	0	0	0	0	0	0	0	0	0	0	0	1	0	9	0	0	10	45
04:30 PM	0	0	0	0	0	0	2	10	21	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	3	0	9	0	0	12	45
04:45 PM	0	0	0	2	0	2	2	10	25	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	6	45
Total	0	0	0	4	0	4	6	37	93	0	0	136	0	0	0	0	0	0	0	0	0	0	0	0	7	0	33	0	0	40	180
05:00 PM	0	1	0	4	0	5	3	10	15	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	3	0	11	0	0	14	47
05:15 PM	0	0	0	1	0	1	0	11	26	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	0	0	11	49
05:30 PM	0	0	0	0	0	0	0	7	24	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	35
05:45 PM	0	0	0	1	0	1	2	8	19	0	0	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7	37
Total	0	1	0	6	0	7	5	36	84	0	0	125	0	0	0	0	0	0	0	0	0	0	0	0	4	0	32	0	0	36	168
Grand Total	0	1	0	10	0	11	11	73	177	0	0	261	0	0	0	0	0	0	0	0	0	0	0	0	11	0	65	0	0	76	348
Apprch %	0	9.1	0	90.9	0		4.2	28	67.8	0	0		0	0	0	0	0		0	0	0	0	0		14.5	0	85.5	0	0		
Total %	0	0.3	0	2.9	0	3.2	3.2	21	50.9	0	0	75	0	0	0	0	0	0	0	0	0	0	0	0	3.2	0	18.7	0	0	21.8	
Cars	0	1	0	9	0	10	10	67	172	0	0	249	0	0	0	0	0	0	0	0	0	0	0	0	8	0	62	0	0	70	329
% Cars	0	100	0	90	0	90.9	90.9	91.8	97.2	0	0	95.4	0	0	0	0	0	0	0	0	0	0	0	0	72.7	0	95.4	0	0	92.1	94.5
Heavy Vehicles																															
% Heavy Vehicles	0	0	0	10	0	9.1	9.1	8.2	2.8	0	0	4.6	0	0	0	0	0	0	0	0	0	0	0	0	27.3	0	4.6	0	0	7.9	5.5
Bikes & U-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896516 - Webber Rd -- I-85 SB On-Ramp
Site Code : 12896516
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

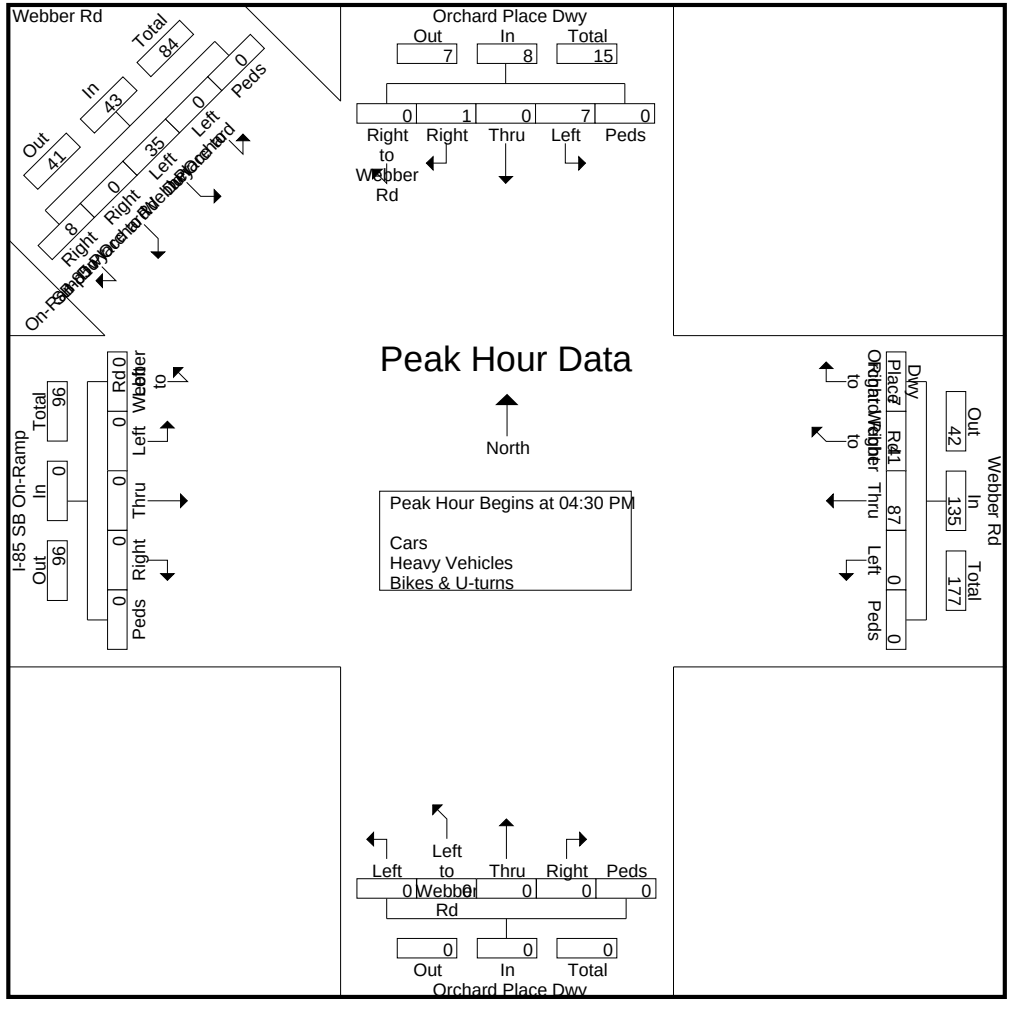
File Name : 12896516 - Webber Rd -- I-85 SB On-Ramp
Site Code : 12896516
Start Date : 9/25/2014
Page No : 3

	Orchard Place Dwy Southbound						Webber Rd Westbound						Orchard Place Dwy Northbound						I-85 SB On-Ramp Eastbound						Webber Rd						
Start Time	Right to Webber Rd	Right	Thru	Left	Peds	App. Total	Right to Orchard Place Dwy	Right to Webber Rd	Thru	Left	Peds	App. Total	Right	Thru	Left to Webber Rd	Left	Peds	App. Total	Right	Thru	Left	Left to Webber Rd	Peds	App. Total	Right to I-85 SB On-Ramp	Right to Orchard Place Dwy	Left to Webber Rd	Left to Orchard Place Dwy	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:30 PM																															
04:30 PM	0	0	0	0	0	0	2	10	21	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	3						
04:45 PM	0	0	0	2	0	2	2	10	25	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	1	0	5	0	0	6	45
05:00 PM	0	1	0	4	0	**5**	**3**	10	15	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	3	0	**11**	0	0	**14**	47
05:15 PM	0	0	0	1	0	1	0	**11**	**26**	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	1	0	10	0	0	11	**49**
Total Volume	0	1	0	7	0	8	7	41	87	0	0	135	0	0	0	0	0	0	0	0	0	0	0	0	8	0	35	0	0	43	186
% App. Total	0	12.5	0	87.5	0		5.2	30.4	64.4	0	0		0	0	0	0	0		0	0	0	0	0		18.6	0	81.4	0	0		
PHF	.000	.250	.000	.438	.000	.400	.583	.932	.837	.000	.000	.912	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.667	.000	.795	.000	.000	.768	.949

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896516 - Webber Rd -- I-85 SB On-Ramp
Site Code : 12896516
Start Date : 9/25/2014
Page No : 4



Type of peak hour being reported: Intersection Peak

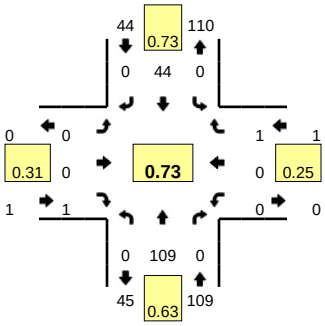
Method for determining peak hour: Total Entering Volume

LOCATION: South Green River Rd -- Lindley Rd

QC JOB #: 12896517

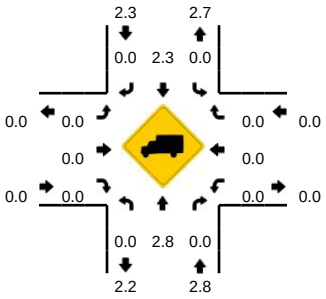
CITY/STATE: Cowpens, SC

DATE: Thu, Sep 25 2014

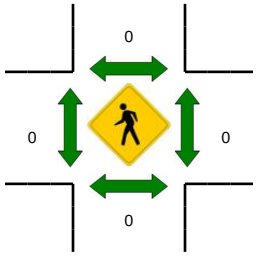


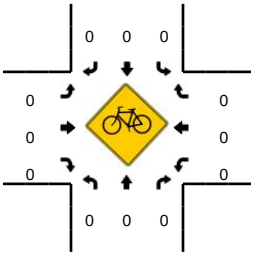
Peak-Hour: 7:15 AM -- 8:15 AM

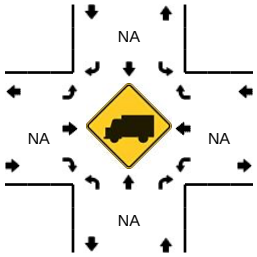
Peak 15-Min: 7:30 AM -- 7:45 AM

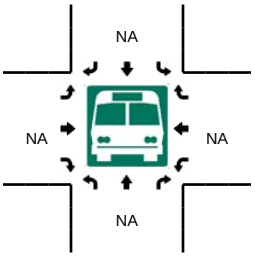


Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES









15-Min Count Period Beginning At	South Green River Rd (Northbound)				South Green River Rd (Southbound)				Lindley Rd (Eastbound)				Lindley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	17	0	0	0	4	0	0	0	0	1	0	0	0	0	0	22	
7:15 AM	0	23	0	0	0	10	0	0	0	0	0	0	0	0	0	0	33	
7:30 AM	0	43	0	0	0	10	0	0	0	0	0	0	0	0	0	0	53	
7:45 AM	0	26	0	0	0	15	0	0	0	0	1	0	0	0	1	0	43	151
8:00 AM	0	17	0	0	0	9	0	0	0	0	0	0	0	0	0	0	26	155
8:15 AM	0	12	0	0	0	4	0	0	0	0	0	0	0	0	0	0	16	138
8:30 AM	0	12	0	0	0	9	0	0	0	0	4	0	0	0	0	0	25	110
8:45 AM	1	8	0	0	0	11	0	0	0	0	0	0	0	0	0	0	20	87

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	172	0	0	0	40	0	0	0	0	0	0	0	0	0	0	212
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

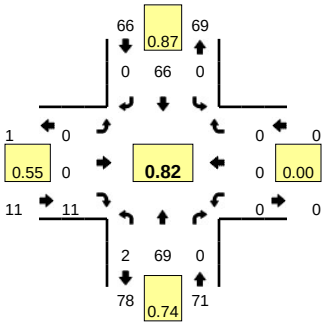
Method for determining peak hour: Total Entering Volume

LOCATION: South Green River Rd -- Lindley Rd

QC JOB #: 12896518

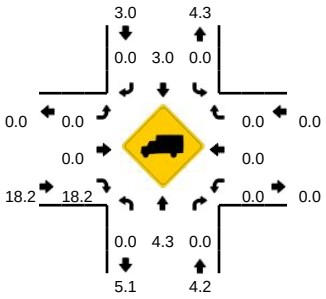
CITY/STATE: Cowpens, SC

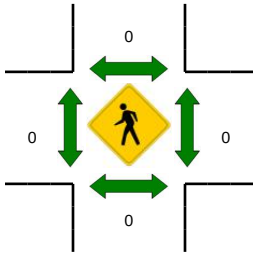
DATE: Thu, Sep 25 2014

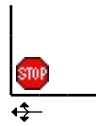


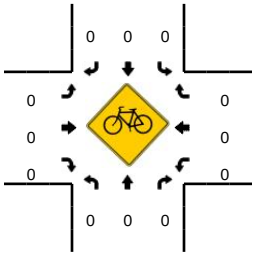
Peak-Hour: 5:00 PM -- 6:00 PM

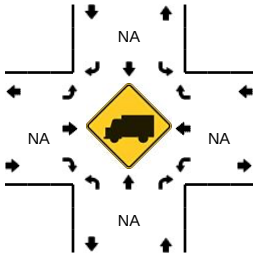
Peak 15-Min: 5:15 PM -- 5:30 PM

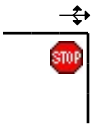


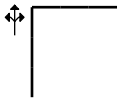


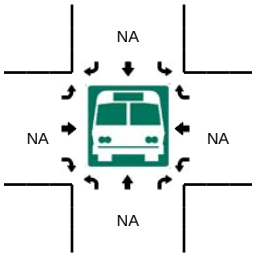












15-Min Count Period Beginning At	South Green River Rd (Northbound)				South Green River Rd (Southbound)				Lindley Rd (Eastbound)				Lindley Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	13	0	0	0	19	0	0	0	0	2	0	0	0	0	0	35	
4:15 PM	0	10	0	0	0	15	0	0	0	0	1	0	0	0	0	0	26	
4:30 PM	0	11	0	1	0	15	0	0	0	0	1	0	0	0	0	0	28	
4:45 PM	0	15	0	0	0	13	1	0	1	0	1	0	0	0	0	0	31	120
5:00 PM	0	12	0	0	0	16	0	0	0	0	3	0	0	0	0	0	31	116
5:15 PM	1	22	0	1	0	19	0	0	0	0	2	0	0	0	0	0	45	135
5:30 PM	0	20	0	0	0	14	0	0	0	0	1	0	0	0	0	0	35	142
5:45 PM	0	15	0	0	0	17	0	0	0	0	5	0	0	0	0	0	37	148

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	88	0	4	0	76	0	0	0	0	8	0	0	0	0	0	180
Heavy Trucks	0	4	0		0	4	0		0	0	8		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

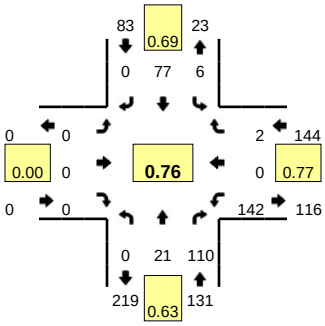
Method for determining peak hour: Total Entering Volume

LOCATION: Macedonia Rd -- Green River Rd

CITY/STATE: Gaffney, SC

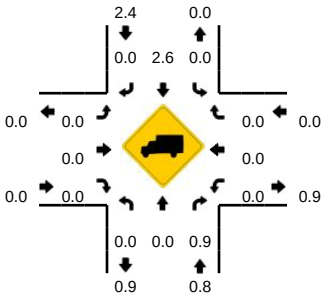
QC JOB #: 13215601

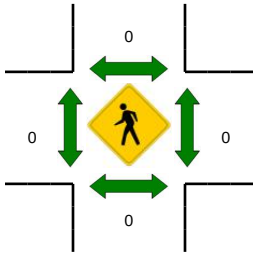
DATE: Thu, Mar 05 2015

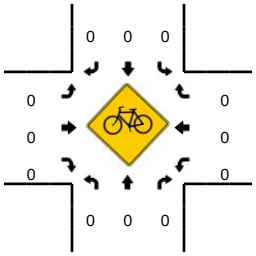


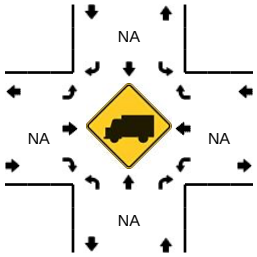
Peak-Hour: 7:15 AM -- 8:15 AM

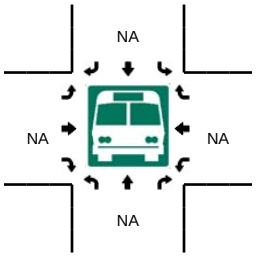
Peak 15-Min: 7:30 AM -- 7:45 AM











15-Min Count Period Beginning At	Macedonia Rd (Northbound)				Macedonia Rd (Southbound)				Green River Rd (Eastbound)				Green River Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	4	12	0	0	10	0	0	0	0	0	0	13	0	0	0	39	
7:15 AM	0	6	19	0	0	20	0	0	0	0	0	0	27	0	0	0	72	
7:30 AM	0	5	47	0	2	18	0	0	0	0	0	0	46	0	0	0	118	
7:45 AM	0	6	33	0	2	28	0	0	0	0	0	0	46	0	1	0	116	345
8:00 AM	0	4	11	0	2	11	0	0	0	0	0	0	23	0	1	0	52	358
8:15 AM	0	5	6	0	0	9	0	0	0	0	0	0	7	0	0	0	27	313
8:30 AM	0	4	4	0	0	11	0	0	0	0	0	0	8	0	0	0	27	222
8:45 AM	0	5	1	0	0	12	0	0	0	0	0	0	1	0	0	0	19	125

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	20	188	0	8	72	0	0	0	0	0	0	184	0	0	0	472
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/10/2015 7:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

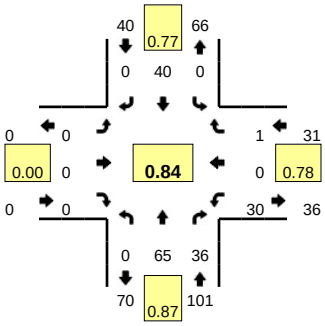
Method for determining peak hour: Total Entering Volume

LOCATION: Macedonia Rd -- Green River Rd

CITY/STATE: Gaffney, SC

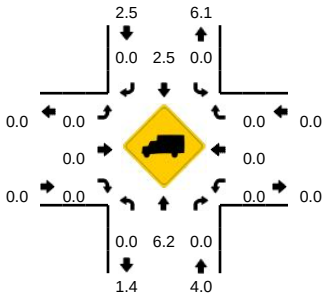
QC JOB #: 13215602

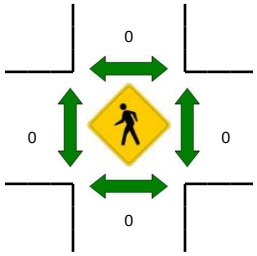
DATE: Thu, Mar 05 2015

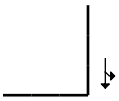


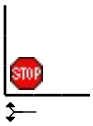
Peak-Hour: 4:00 PM -- 5:00 PM

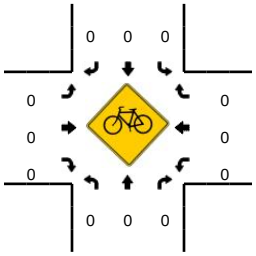
Peak 15-Min: 4:15 PM -- 4:30 PM

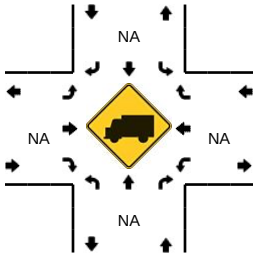


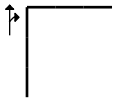


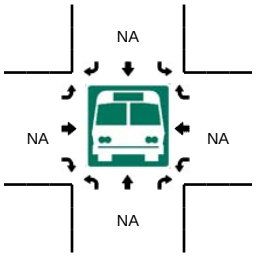












15-Min Count Period Beginning At	Macedonia Rd (Northbound)				Macedonia Rd (Southbound)				Green River Rd (Eastbound)				Green River Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	16	12	0	0	8	0	0	0	0	0	0	10	0	0	0	46	
4:15 PM	0	16	13	0	0	13	0	0	0	0	0	0	9	0	0	0	51	
4:30 PM	0	20	6	0	0	10	0	0	0	0	0	0	5	0	1	0	42	
4:45 PM	0	13	5	0	0	9	0	0	0	0	0	0	6	0	0	0	33	172
5:00 PM	0	10	6	0	0	5	0	0	0	0	0	0	4	0	0	0	25	151
5:15 PM	0	20	10	0	0	15	0	0	0	0	0	0	6	0	0	0	51	151
5:30 PM	0	16	11	0	0	8	0	0	0	0	0	0	5	0	0	0	40	149
5:45 PM	0	20	7	0	0	10	0	0	0	0	0	0	7	0	0	0	44	160

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	64	52	0	0	52	0	0	0	0	0	0	36	0	0	0	204
Heavy Trucks	0	4	0		0	4	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/10/2015 7:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

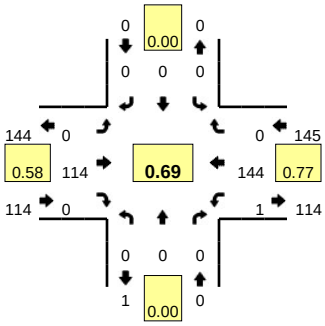
Method for determining peak hour: Total Entering Volume

LOCATION: Malone Rd -- Green River Rd

CITY/STATE: Gaffney, SC

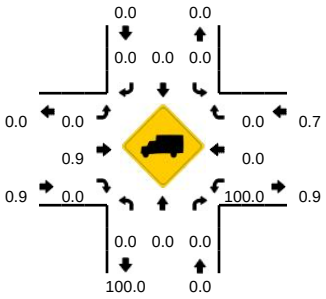
QC JOB #: 13215603

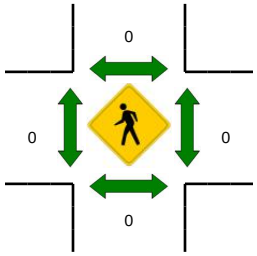
DATE: Thu, Mar 05 2015

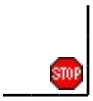


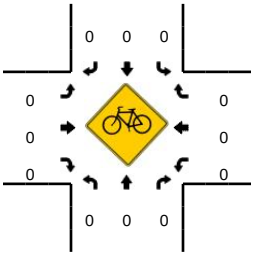
Peak-Hour: 7:15 AM -- 8:15 AM

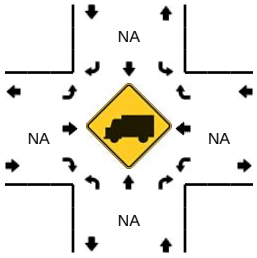
Peak 15-Min: 7:30 AM -- 7:45 AM

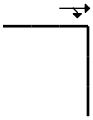


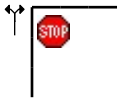


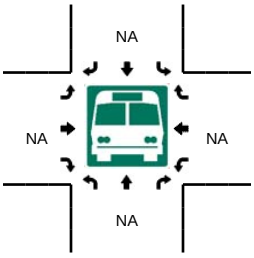












15-Min Count Period Beginning At	Malone Rd (Northbound)				Malone Rd (Southbound)				Green River Rd (Eastbound)				Green River Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	12	0	0	0	11	0	0	23	
7:15 AM	0	0	0	0	0	0	0	0	0	18	0	0	0	30	0	0	48	
7:30 AM	0	0	0	0	0	0	0	0	0	49	0	0	1	44	0	0	94	
7:45 AM	0	0	0	0	0	0	0	0	0	34	0	0	0	47	0	0	81	246
8:00 AM	0	0	0	0	0	0	0	0	0	13	0	0	0	23	0	0	36	259
8:15 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	7	0	0	13	224
8:30 AM	0	0	0	0	0	0	0	0	0	4	0	0	0	8	0	0	12	142
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2	63

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	196	0	0	4	176	0	0	376
Heavy Trucks	0	0	0		0	0	0		0	0	0		4	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/10/2015 7:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

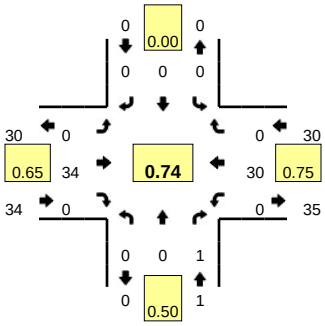
Type of peak hour being reported: Intersection Peak

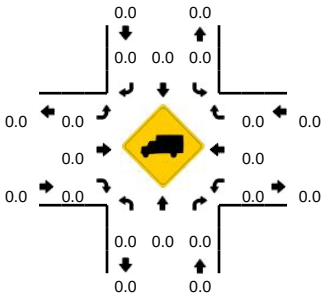
Method for determining peak hour: Total Entering Volume

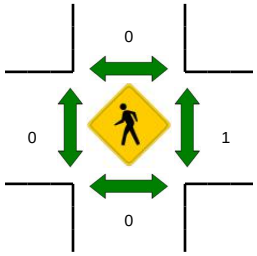
LOCATION: Malone Rd -- Green River Rd
CITY/STATE: Gaffney, SC

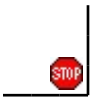
QC JOB #: 13215604
DATE: Thu, Mar 05 2015

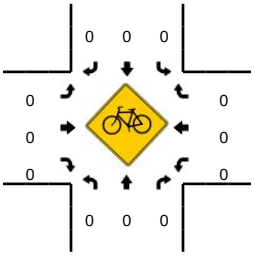
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:15 PM -- 4:30 PM

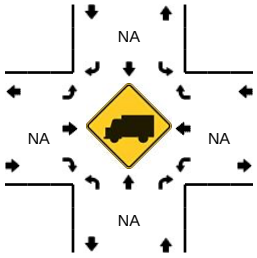


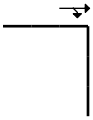


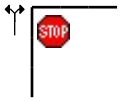


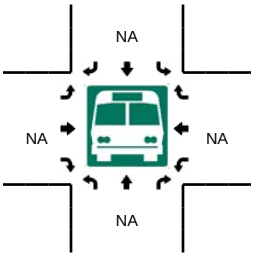












15-Min Count Period Beginning At	Malone Rd (Northbound)				Malone Rd (Southbound)				Green River Rd (Eastbound)				Green River Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	11	0	0	0	10	0	0	21	
4:15 PM	0	0	0	0	0	0	0	0	0	13	0	0	0	9	0	0	22	
4:30 PM	0	0	1	0	0	0	0	0	0	5	0	0	0	5	0	0	11	
4:45 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	6	0	0	11	65
5:00 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	0	9	53
5:15 PM	1	0	0	0	0	0	0	0	0	11	0	0	0	4	0	0	16	47
5:30 PM	0	0	0	0	0	0	0	0	0	10	0	0	0	5	0	0	15	51
5:45 PM	0	0	1	0	0	0	0	0	0	7	0	0	0	7	0	0	15	55

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	52	0	0	0	36	0	0	88
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/10/2015 7:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Exit 90

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/9/2013

Major Rt: SC 105 Minor Rt: S-440

Day of Week: Tuesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 13540 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

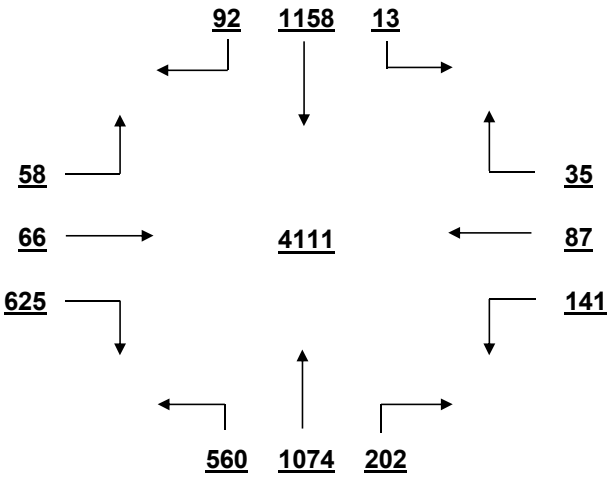
INTERSECTION VOLUME SUMMARY

	From N SC 105				From S SC 105				From E S-440				From W S-440				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	70	1	71	13	33	4	50	6	4	2	12	2	0	11	13	146	0
7:15 - 7:30	1	98	0	99	11	60	5	76	3	1	1	5	0	0	18	18	198	0
7:30 - 7:45	0	131	3	134	17	61	7	85	6	1	2	9	1	1	16	18	246	0
7:45 - 8:00	3	158	5	166	20	58	21	99	7	0	5	12	1	0	37	38	315	0
8:00 - 8:15	0	122	2	124	19	76	9	104	9	1	2	12	1	1	23	25	265	0
8:15 - 8:30	0	51	1	52	8	43	17	68	9	0	2	11	2	3	17	22	153	0
8:30 - 8:45	0	32	3	35	17	25	7	49	8	1	0	9	0	2	9	11	104	1
8:45 - 9:00	0	43	5	48	18	30	4	52	10	2	2	14	3	1	13	17	131	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	1	42	5	48	60	78	20	158	10	6	2	18	6	6	58	70	294	1
16:15 - 16:30	3	48	9	60	48	81	18	147	11	10	2	23	3	7	62	72	302	0
16:30 - 16:45	2	54	10	66	54	98	15	167	5	8	1	14	5	3	54	62	309	0
16:45 - 17:00	0	61	11	72	67	96	16	179	13	9	2	24	8	4	65	77	352	1
17:00 - 17:15	2	68	9	79	51	89	13	153	13	12	3	28	4	8	64	76	336	0
17:15 - 17:30	0	72	9	81	50	101	14	165	6	12	4	22	7	11	68	86	354	0
17:30 - 17:45	1	53	7	61	54	73	17	144	13	10	2	25	11	11	60	82	312	0
17:45 - 18:00	0	55	12	67	53	72	15	140	12	10	3	25	4	8	50	62	294	0
TOTAL	13	1158	92	1263	560	1074	202	1836	141	87	35	263	58	66	625	749	4111	3
Trucks	0	15	0	15	3	11	1	15	0	0	0	0	1	0	4	5	35	0.9%
School Buses	0	3	0	3	0	2	1	3	2	0	0	2	0	0	0	0	8	0.2%

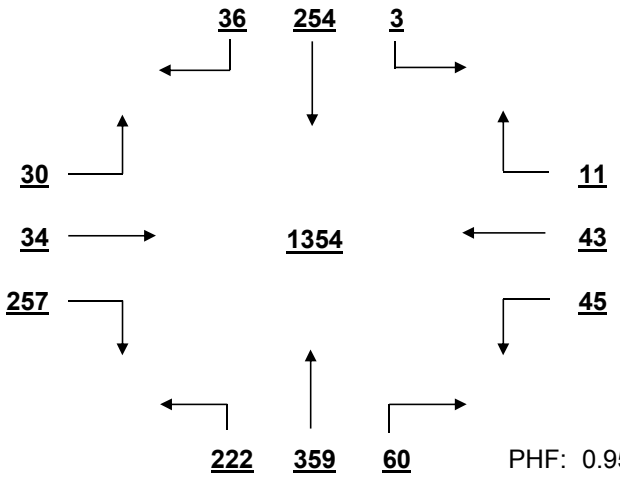
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 105 AT S-440 Date: 4/9/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

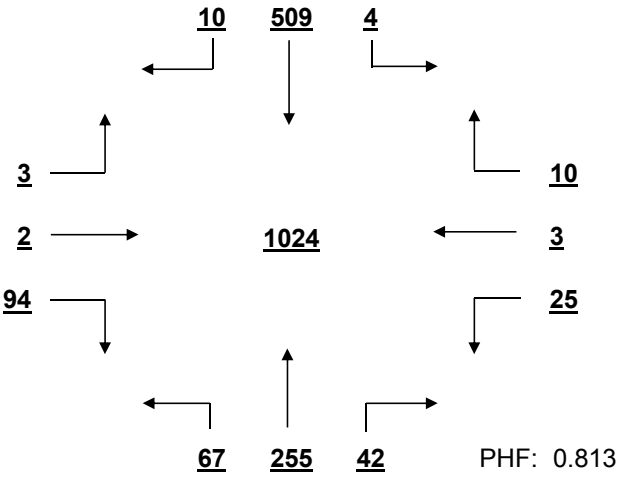


OVERALL PEAK HOUR VOLUME
FROM 16:45 TO 17:45



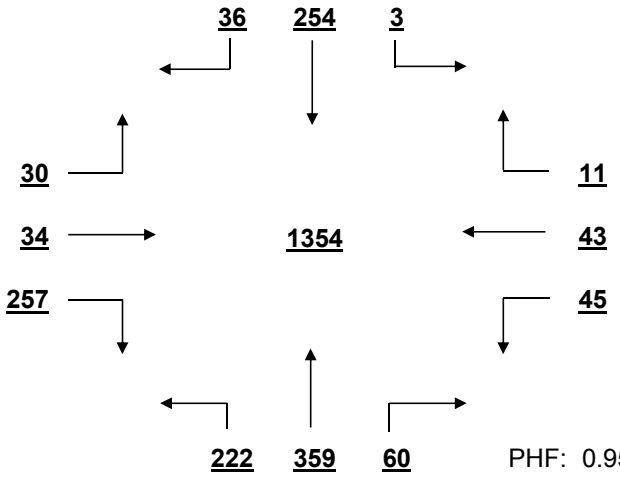
PHF: 0.956

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



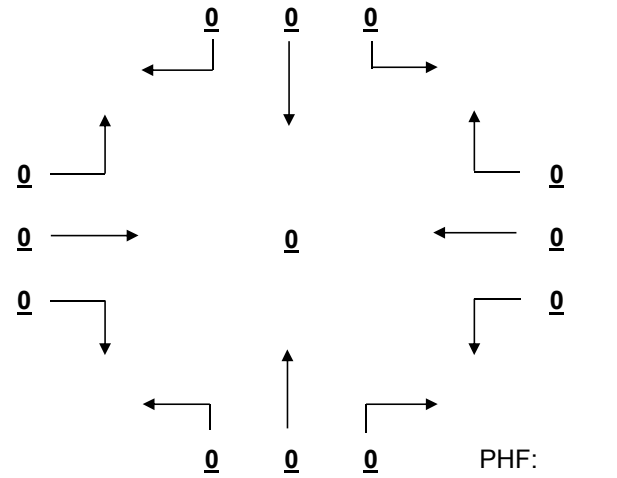
PHF: 0.813

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:45 TO 17:45



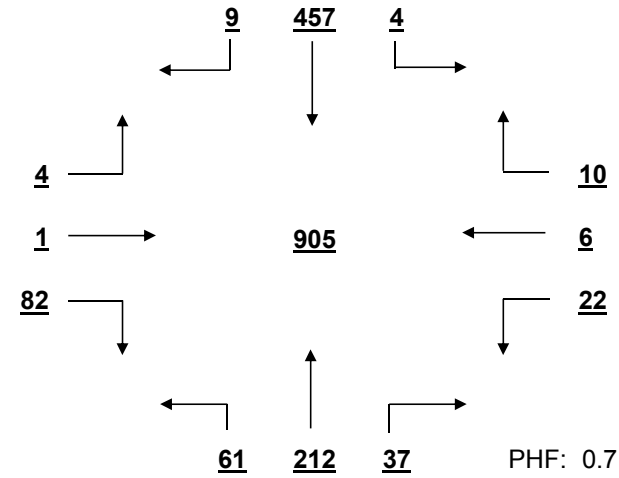
PHF: 0.956

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.718

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/9/2013

Major Rt: SC 105 Minor Rt: I-85 NB Ramp

Day of Week: Tuesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 19800 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

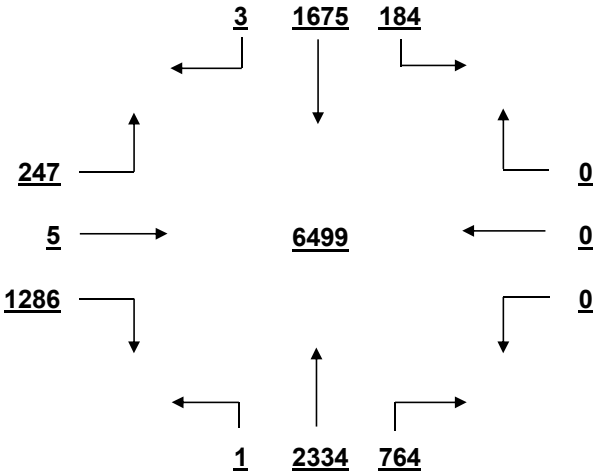
INTERSECTION VOLUME SUMMARY

	From N SC 105				From S SC 105				From E I-85 NB Ramp				From W I-85 NB Ramp				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	3	89	0	92	0	107	39	146	0	0	0	0	2	0	44	46	284	0
7:15 - 7:30	2	107	0	109	0	118	48	166	0	0	0	0	3	0	72	75	350	0
7:30 - 7:45	3	144	0	147	0	151	43	194	0	0	0	0	5	0	104	109	450	0
7:45 - 8:00	4	202	0	206	0	139	38	177	0	0	0	0	10	0	93	103	486	0
8:00 - 8:15	6	149	0	155	0	147	32	179	0	0	0	0	6	0	76	82	416	0
8:15 - 8:30	0	81	0	81	0	107	50	157	0	0	0	0	8	0	78	86	324	0
8:30 - 8:45	4	53	0	57	0	77	33	110	0	0	0	0	2	0	74	76	243	0
8:45 - 9:00	1	60	0	61	0	85	45	130	0	0	0	0	7	0	66	73	264	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	28	86	0	114	0	171	52	223	0	0	0	0	14	1	70	85	422	0
16:15 - 16:30	24	89	3	116	0	160	47	207	0	0	0	0	21	0	67	88	411	0
16:30 - 16:45	19	87	0	106	0	228	73	301	0	0	0	0	22	1	75	98	505	0
16:45 - 17:00	20	108	0	128	0	192	65	257	0	0	0	0	22	0	86	108	493	0
17:00 - 17:15	12	127	0	139	0	172	50	222	0	0	0	0	28	0	77	105	466	0
17:15 - 17:30	29	120	0	149	0	176	46	222	0	0	0	0	39	0	106	145	516	0
17:30 - 17:45	14	85	0	99	0	173	60	233	0	0	0	0	27	2	108	137	469	0
17:45 - 18:00	15	88	0	103	1	131	43	175	0	0	0	0	31	1	90	122	400	0
TOTAL	184	1675	3	1862	1	2334	764	3099	0	0	0	0	247	5	1286	1538	6499	0
Trucks	2	78	0	80	0	86	129	215	0	0	0	0	2	0	120	122	417	6.4%
School Buses	0	5	0	5	0	3	1	4	0	0	0	0	0	0	3	3	12	0.2%

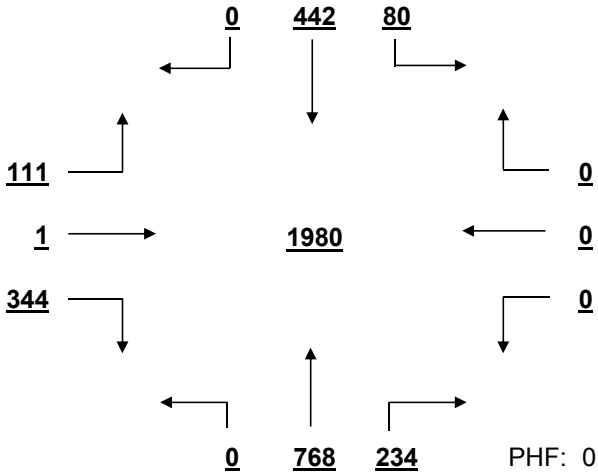
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 105 AT I-85 NB Ramp Date: 4/9/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

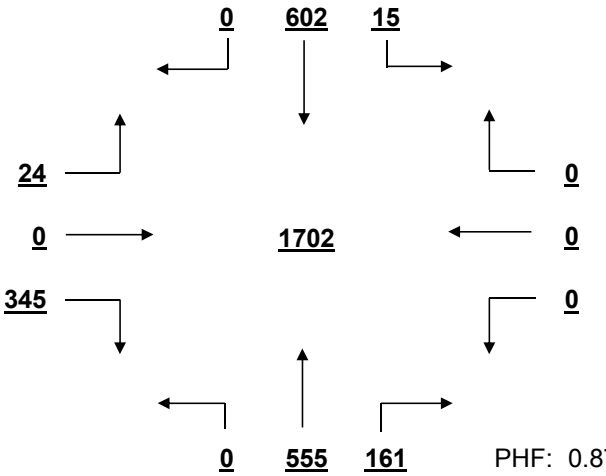


OVERALL PEAK HOUR VOLUME
FROM 16:30 TO 17:30



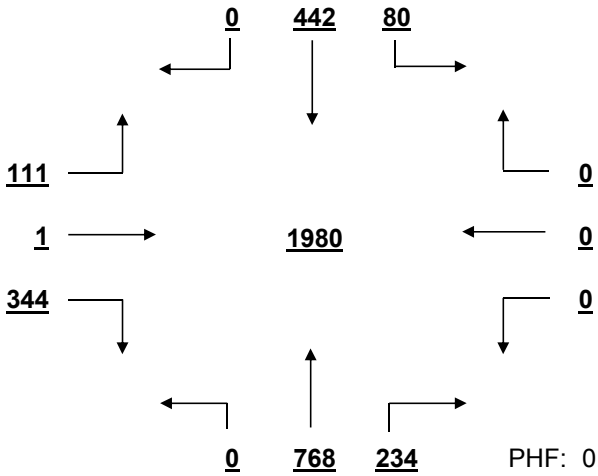
PHF: 0.959

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



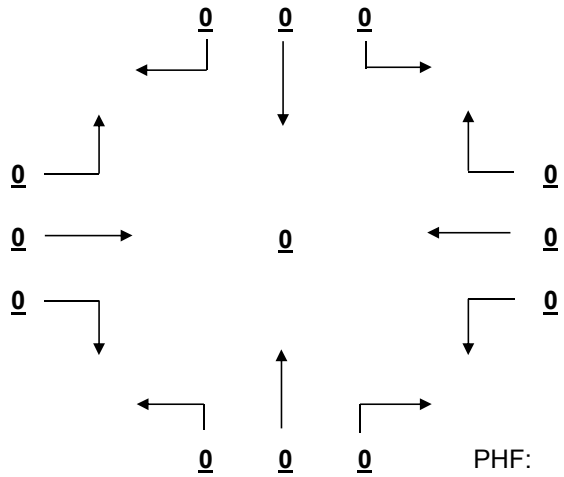
PHF: 0.876

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:30 TO 17:30



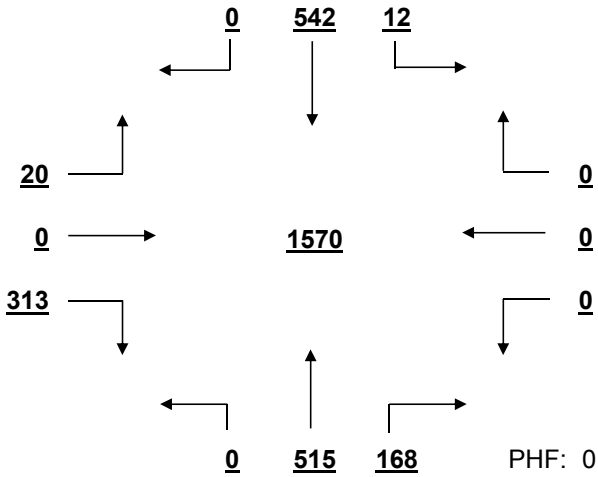
PHF: 0.959

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.808

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/10/2013

Major Rt: SC 105 Minor Rt: I-85 SB Ramp

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 15250 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

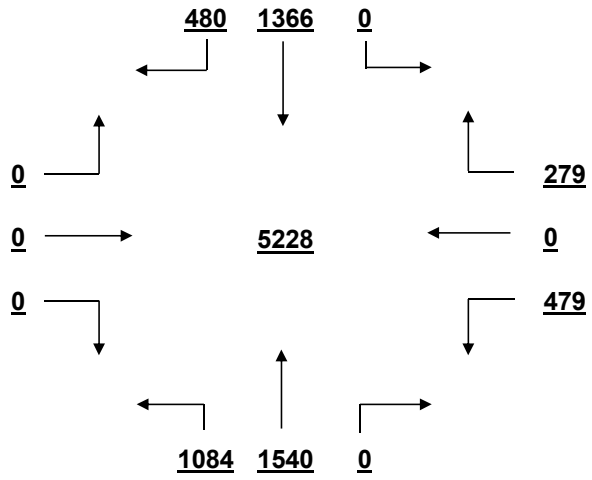
INTERSECTION VOLUME SUMMARY

	From N SC 105				From S SC 105				From E I-85 SB Ramp				From W I-85 SB Ramp				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	52	26	78	54	46	0	100	23	0	7	30	0	0	0	0	208	0
7:15 - 7:30	0	82	30	112	71	82	0	153	26	0	11	37	0	0	0	0	302	0
7:30 - 7:45	0	117	34	151	90	59	0	149	26	0	4	30	0	0	0	0	330	1
7:45 - 8:00	0	169	23	192	59	98	0	157	40	0	10	50	0	0	0	0	399	0
8:00 - 8:15	0	113	34	147	60	89	0	149	42	0	14	56	0	0	0	0	352	0
8:15 - 8:30	0	68	18	86	67	64	0	131	32	0	7	39	0	0	0	0	256	0
8:30 - 8:45	0	37	23	60	62	30	0	92	26	0	15	41	0	0	0	0	193	0
8:45 - 9:00	0	38	22	60	50	48	0	98	26	0	20	46	0	0	0	0	204	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	85	37	122	74	118	0	192	25	0	22	47	0	0	0	0	361	0
16:15 - 16:30	0	82	37	119	69	117	0	186	36	0	31	67	0	0	0	0	372	0
16:30 - 16:45	0	84	30	114	65	130	0	195	39	0	23	62	0	0	0	0	371	0
16:45 - 17:00	0	68	39	107	77	130	0	207	33	0	27	60	0	0	0	0	374	0
17:00 - 17:15	0	98	30	128	66	121	0	187	27	0	23	50	0	0	0	0	365	0
17:15 - 17:30	0	98	30	128	94	121	0	215	23	0	27	50	0	0	0	0	393	0
17:30 - 17:45	0	82	41	123	79	141	0	220	28	0	22	50	0	0	0	0	393	1
17:45 - 18:00	0	93	26	119	47	146	0	193	27	0	16	43	0	0	0	0	355	0
TOTAL	0	1366	480	1846	1084	1540	0	2624	479	0	279	758	0	0	0	0	5228	2
Trucks	0	10	11	21	91	19	0	110	101	0	6	107	0	0	0	0	238	4.6%
School Buses	0	5	0	5	0	2	0	2	0	0	0	0	0	0	0	0	7	0.1%

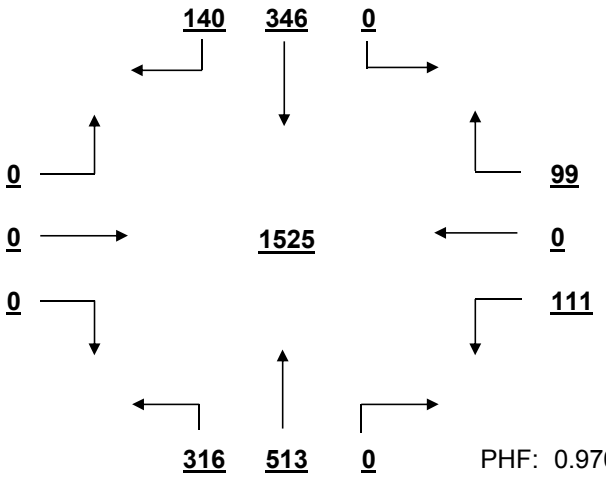
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 105 AT I-85 SB Ramp Date: 4/10/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

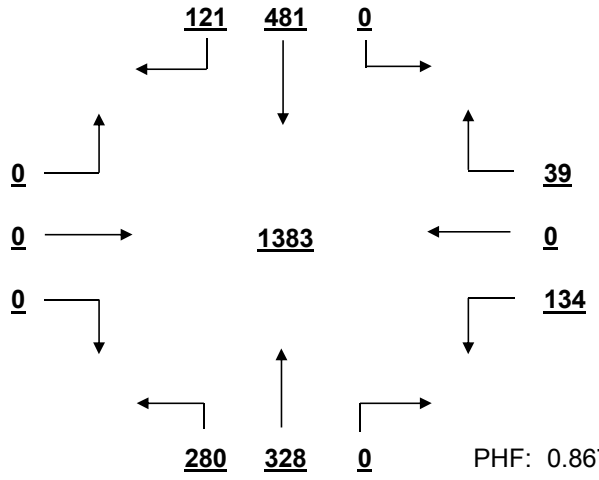


OVERALL PEAK HOUR VOLUME
FROM 16:45 TO 17:45



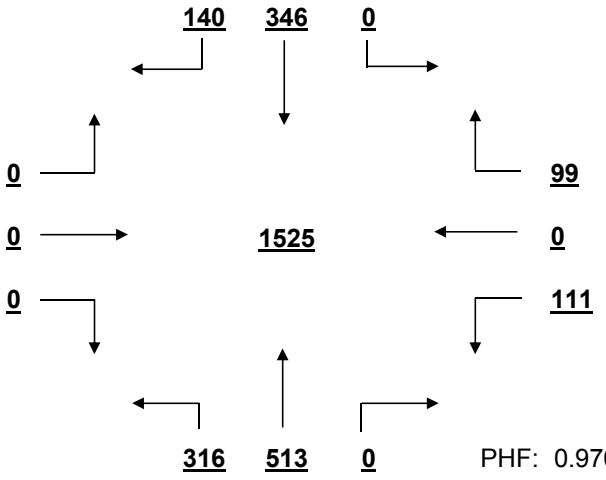
PHF: 0.970

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



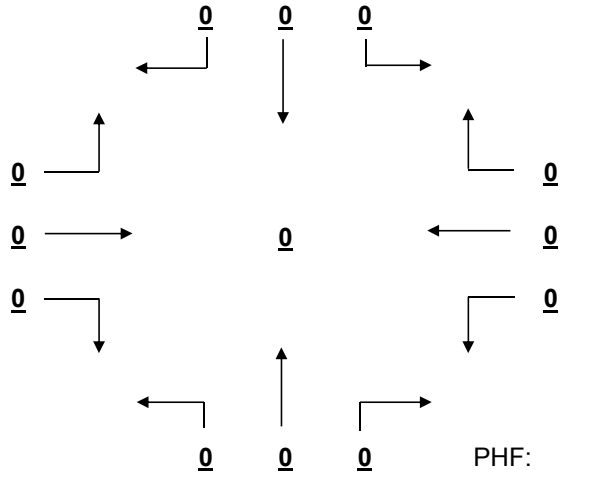
PHF: 0.867

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:45 TO 17:45



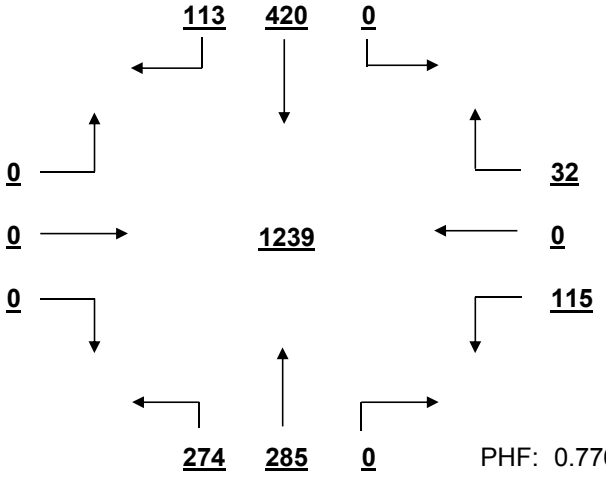
PHF: 0.970

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.776

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/9/2013

Major Rt: SC 105 Minor Rt: S-659

Day of Week: Tuesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 20000 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

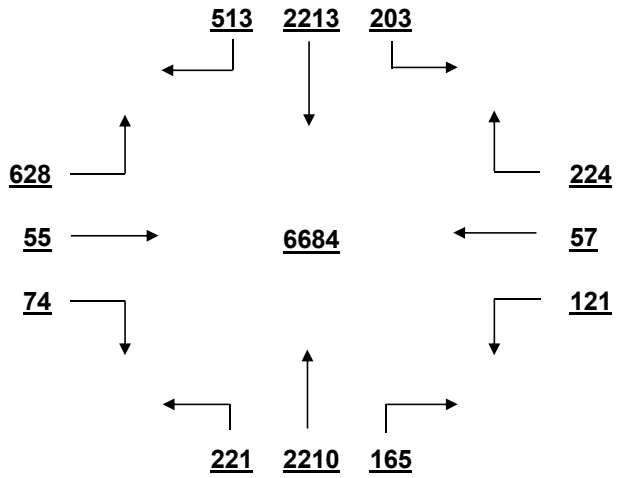
INTERSECTION VOLUME SUMMARY

	From N SC 105				From S SC 105				From E S-659				From W S-659				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	102	28	130	11	102	4	117	5	2	4	11	40	0	3	43	301	0
7:15 - 7:30	6	135	31	172	17	120	5	142	1	1	10	12	32	1	4	37	363	0
7:30 - 7:45	9	196	35	240	17	133	12	162	10	5	14	29	42	5	7	54	485	0
7:45 - 8:00	3	260	38	301	15	127	9	151	7	5	10	22	37	5	6	48	522	0
8:00 - 8:15	8	187	31	226	22	137	7	166	9	2	12	23	29	3	5	37	452	1
8:15 - 8:30	7	117	35	159	13	98	5	116	2	1	6	9	49	2	4	55	339	0
8:30 - 8:45	2	76	41	119	6	74	8	88	5	7	9	21	31	0	8	39	267	0
8:45 - 9:00	9	83	29	121	6	78	7	91	0	4	6	10	43	4	4	51	273	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	15	107	42	164	17	159	18	194	13	1	18	32	42	4	5	51	441	0
16:15 - 16:30	23	101	34	158	19	147	9	175	10	4	11	25	43	5	5	53	411	0
16:30 - 16:45	21	122	27	170	18	232	14	264	8	7	26	41	43	3	5	51	526	0
16:45 - 17:00	12	149	31	192	14	197	13	224	11	3	15	29	46	2	6	54	499	0
17:00 - 17:15	26	144	31	201	12	171	11	194	17	7	25	49	38	6	2	46	490	0
17:15 - 17:30	29	162	34	225	11	170	15	196	7	2	14	23	28	7	6	41	485	0
17:30 - 17:45	16	139	26	181	11	156	19	186	12	2	23	37	42	4	3	49	453	0
17:45 - 18:00	17	133	20	170	12	109	9	130	4	4	21	29	43	4	1	48	377	0
TOTAL	203	2213	513	2929	221	2210	165	2596	121	57	224	402	628	55	74	757	6684	1
Trucks	3	156	36	195	3	167	1	171	0	0	7	7	40	0	2	42	415	6.2%
School Buses	0	9	0	9	0	3	0	3	2	0	1	3	1	0	0	1	16	0.2%

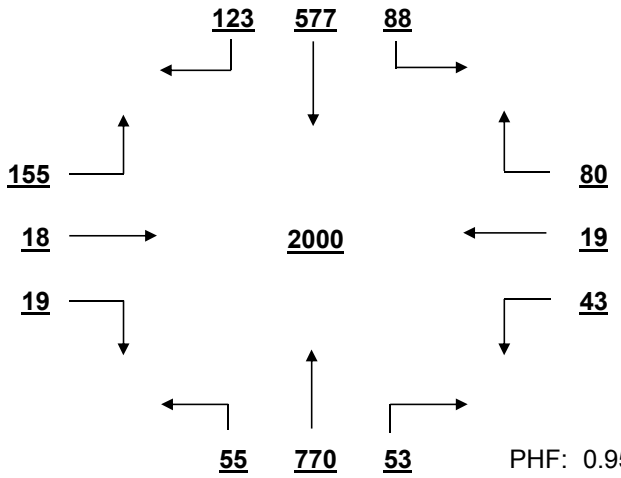
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 105 AT S-659 Date: 4/9/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

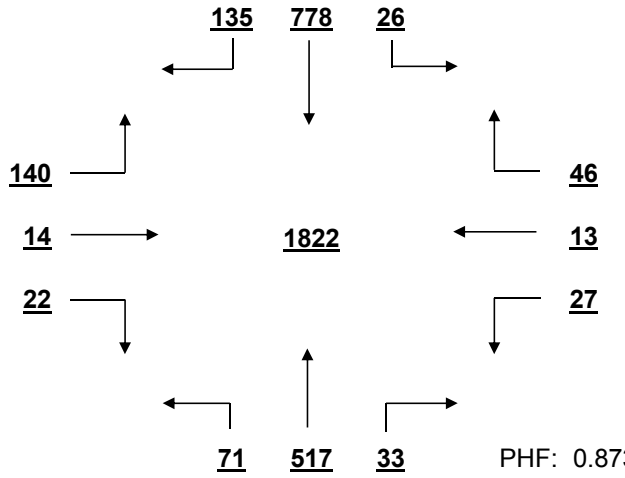


OVERALL PEAK HOUR VOLUME
FROM 16:30 TO 17:30



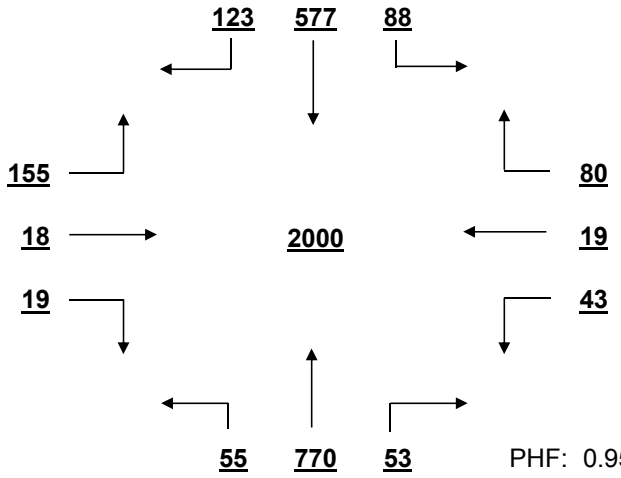
PHF: 0.951

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



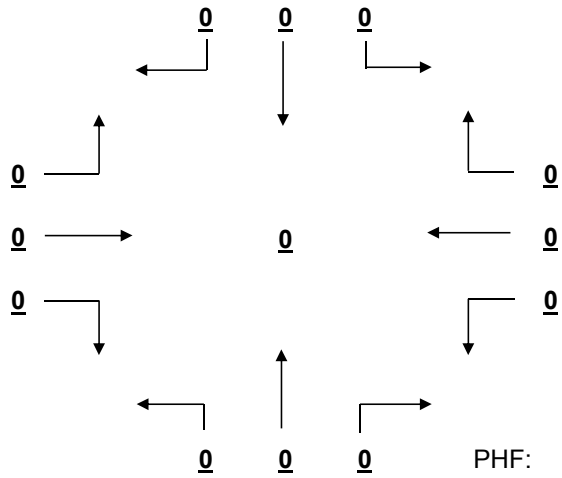
PHF: 0.873

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:30 TO 17:30



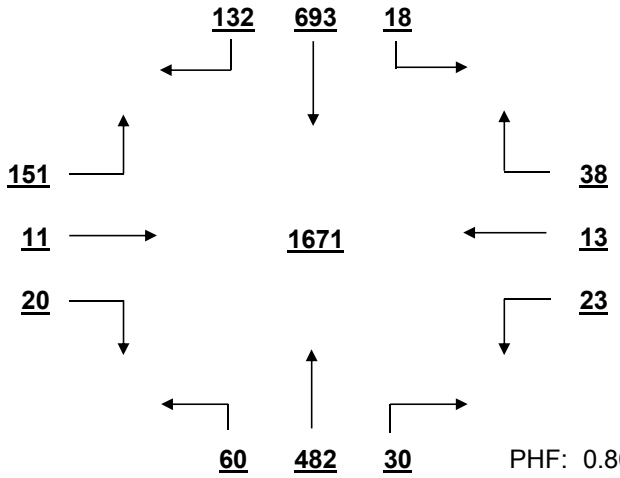
PHF: 0.951

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.800

Exit 92

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 3/26/2013

Major Rt: SC 11 Minor Rt: S-668

Day of Week: Tuesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 14370 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

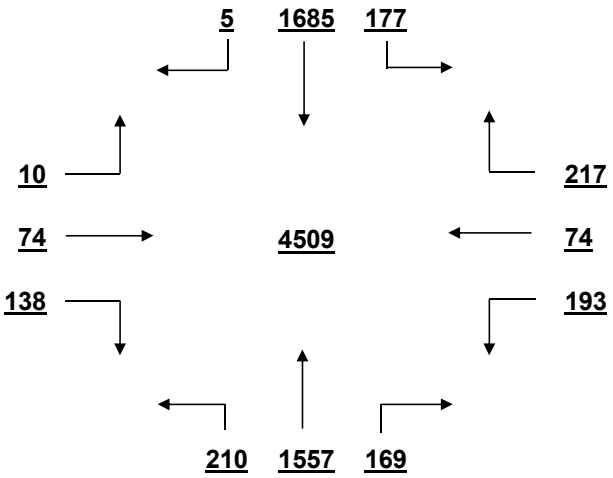
INTERSECTION VOLUME SUMMARY

	From N SC 11				From S SC 11				From E S-668				From W S-668				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	12	80	0	92	2	36	7	45	13	3	8	24	0	0	5	5	166	0
7:15 - 7:30	12	113	1	126	7	37	13	57	10	1	9	20	2	2	1	5	208	0
7:30 - 7:45	18	152	0	170	6	52	16	74	10	3	13	26	0	2	1	3	273	0
7:45 - 8:00	20	148	0	168	11	67	11	89	17	4	9	30	0	0	4	4	291	0
8:00 - 8:15	12	106	0	118	3	68	14	85	11	3	8	22	0	2	1	3	228	0
8:15 - 8:30	15	92	0	107	2	69	9	80	6	2	5	13	1	4	3	8	208	0
8:30 - 8:45	8	88	0	96	6	59	7	72	3	4	8	15	0	3	5	8	191	0
8:45 - 9:00	7	95	0	102	12	76	4	92	7	5	12	24	0	1	9	10	228	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	8	76	0	84	22	140	11	173	12	6	22	40	2	13	14	29	326	0
16:15 - 16:30	7	82	0	89	20	117	11	148	22	5	17	44	1	4	12	17	298	0
16:30 - 16:45	12	102	0	114	15	124	9	148	16	5	18	39	1	9	19	29	330	1
16:45 - 17:00	10	95	2	107	20	144	10	174	11	5	14	30	0	6	8	14	325	0
17:00 - 17:15	7	100	1	108	22	151	11	184	10	7	21	38	0	8	14	22	352	0
17:15 - 17:30	9	118	0	127	18	164	16	198	16	8	20	44	0	8	18	26	395	0
17:30 - 17:45	10	108	1	119	30	133	10	173	15	7	19	41	3	7	8	18	351	0
17:45 - 18:00	10	130	0	140	14	120	10	144	14	6	14	34	0	5	16	21	339	0
TOTAL	177	1685	5	1867	210	1557	169	1936	193	74	217	484	10	74	138	222	4509	1
Trucks	5	14	0	19	5	30	13	48	11	0	0	11	1	1	5	7	85	1.9%
School Buses	2	8	0	10	0	2	1	3	2	1	1	4	2	0	0	2	19	0.4%

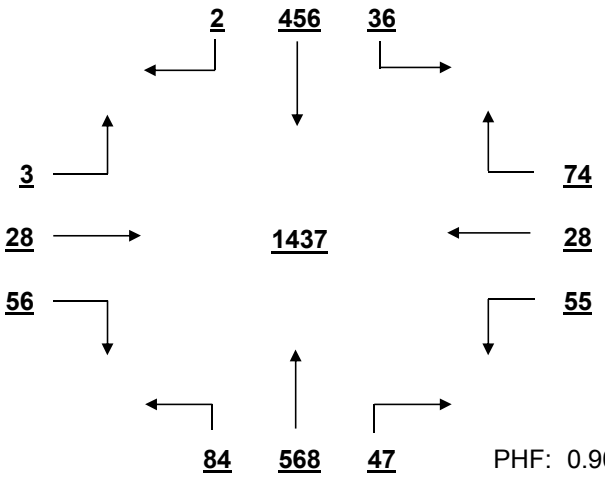
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 11 AT S-668 Date: 3/26/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

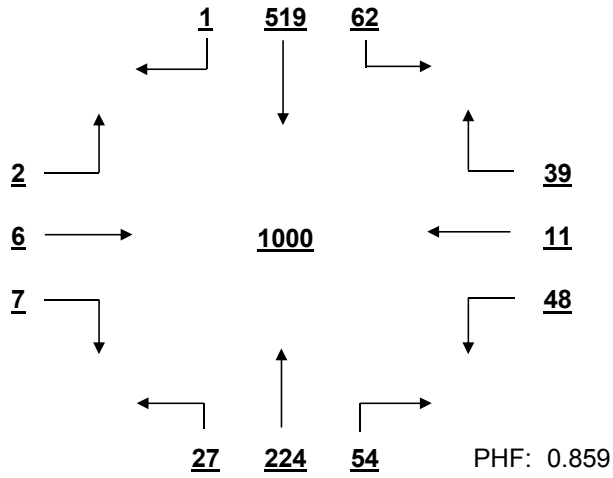


OVERALL PEAK HOUR VOLUME
FROM 17:00 TO 18:00



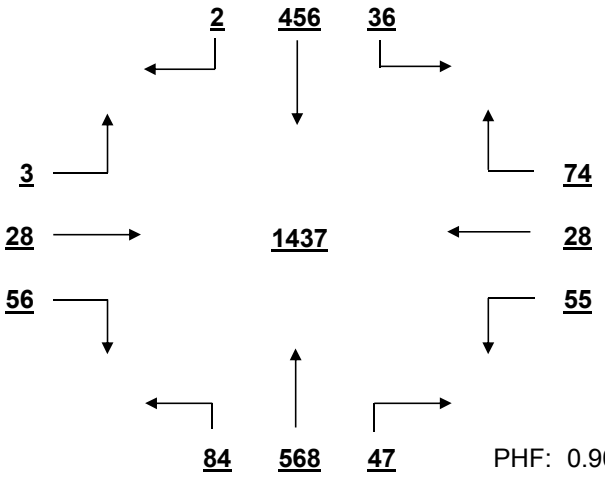
PHF: 0.909

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



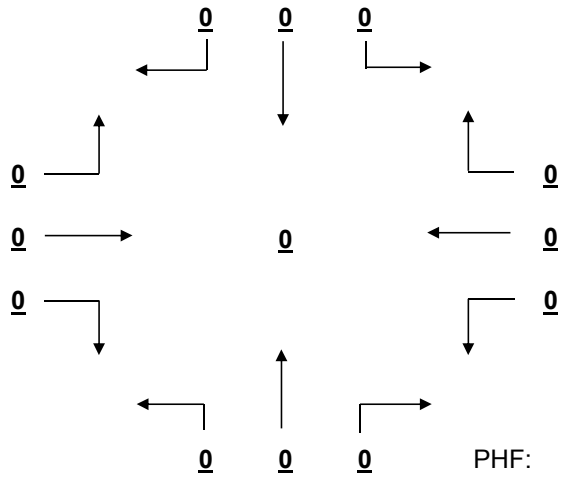
PHF: 0.859

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



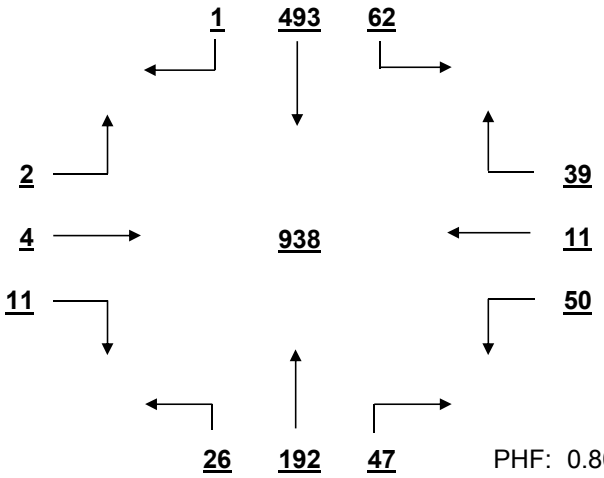
PHF: 0.909

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.806

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 3/27/2013

Major Rt: SC 11 Minor Rt: I-85 SB Ramp

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 16530 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

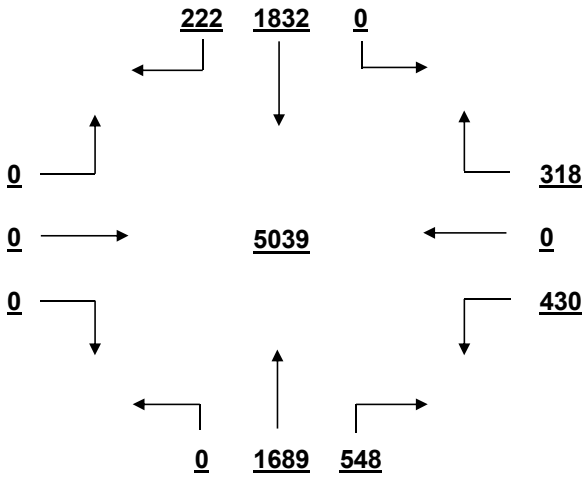
INTERSECTION VOLUME SUMMARY

	From N SC 11				From S SC 11				From E I-85 SB Ramp				From W I-85 SB Ramp				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	80	12	92	0	28	21	49	12	0	15	27	0	0	0	0	168	0
7:15 - 7:30	0	127	13	140	0	41	26	67	13	0	8	21	0	0	0	0	228	0
7:30 - 7:45	0	136	15	151	0	53	29	82	26	0	17	43	0	0	0	0	276	0
7:45 - 8:00	0	154	10	164	0	87	29	116	29	0	25	54	0	0	0	0	334	0
8:00 - 8:15	0	104	10	114	0	68	17	85	18	0	11	29	0	0	0	0	228	0
8:15 - 8:30	0	83	13	96	0	73	24	97	28	0	20	48	0	0	0	0	241	0
8:30 - 8:45	0	96	10	106	0	62	25	87	20	0	10	30	0	0	0	0	223	0
8:45 - 9:00	0	84	10	94	0	72	24	96	27	0	23	50	0	0	0	0	240	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	96	19	115	0	140	47	187	36	0	16	52	0	0	0	0	354	0
16:15 - 16:30	0	121	12	133	0	127	38	165	36	0	20	56	0	0	0	0	354	0
16:30 - 16:45	0	121	24	145	0	146	35	181	34	0	22	56	0	0	0	0	382	0
16:45 - 17:00	0	123	14	137	0	132	42	174	27	0	20	47	0	0	0	0	358	0
17:00 - 17:15	0	130	23	153	0	179	56	235	32	0	23	55	0	0	0	0	443	0
17:15 - 17:30	0	106	8	114	0	174	43	217	30	0	34	64	0	0	0	0	395	0
17:30 - 17:45	0	123	18	141	0	150	46	196	30	0	26	56	0	0	0	0	393	0
17:45 - 18:00	0	148	11	159	0	157	46	203	32	0	28	60	0	0	0	0	422	0
TOTAL	0	1832	222	2054	0	1689	548	2237	430	0	318	748	0	0	0	0	5039	0
Trucks	0	27	11	38	0	18	7	25	10	0	24	34	0	0	0	0	97	1.9%
School Buses	0	7	0	7	0	2	0	2	0	0	1	1	0	0	0	0	10	0.2%

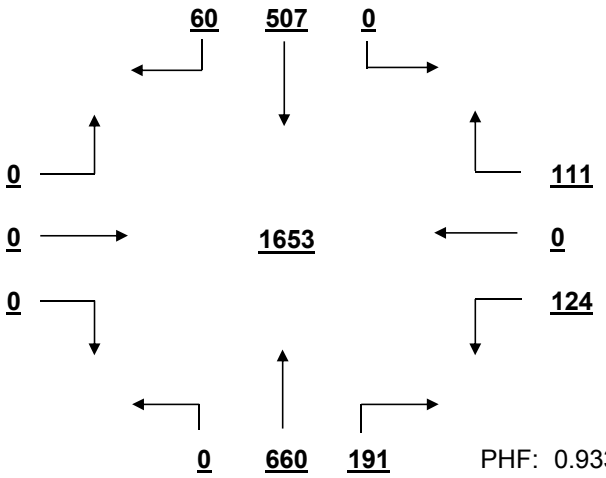
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 11 AT I-85 SB Ramp Date: 3/27/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

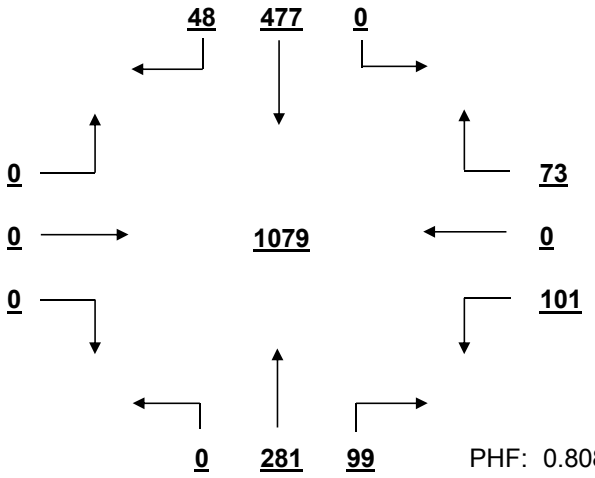


OVERALL PEAK HOUR VOLUME
FROM 17:00 TO 18:00



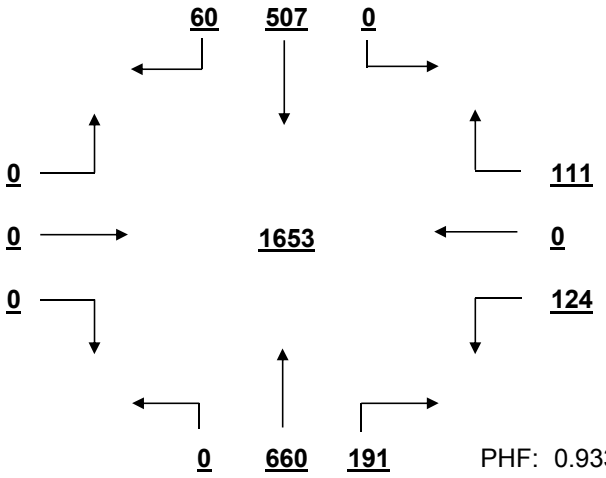
PHF: 0.933

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:30 TO 8:30



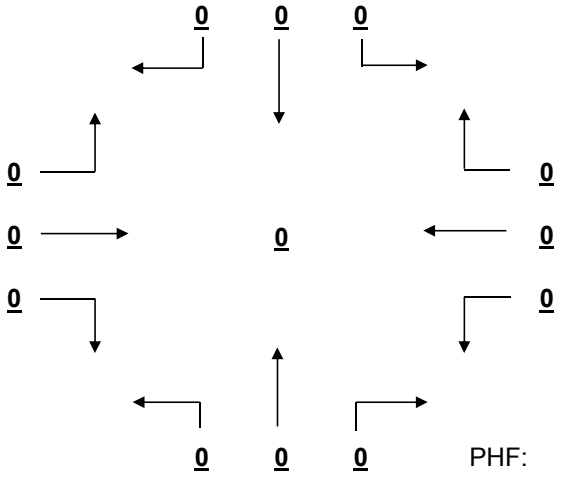
PHF: 0.808

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



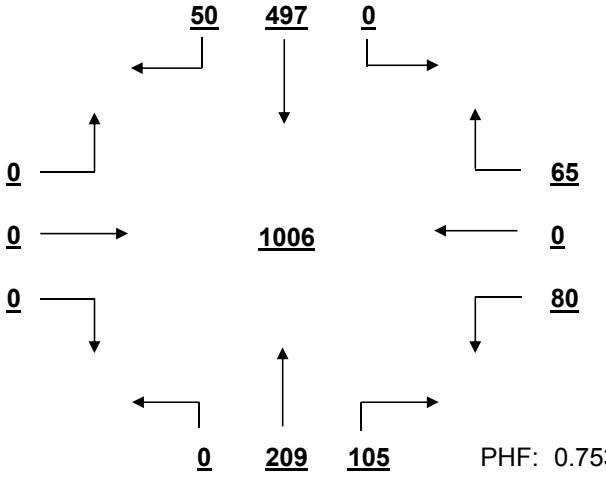
PHF: 0.933

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.753

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 3/28/2013

Major Rt: SC 11 Minor Rt: I-85 NB Ramp

Day of Week: Thursday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 19820 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

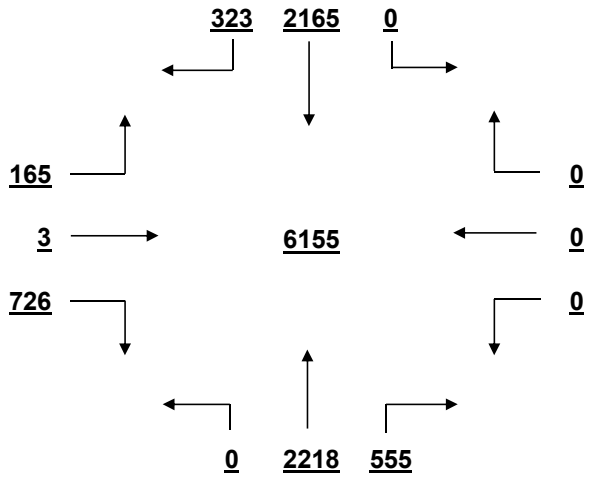
INTERSECTION VOLUME SUMMARY

	From N SC 11				From S SC 11				From E I-85 NB Ramp				From W I-85 NB Ramp				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	72	18	90	0	62	27	89	0	0	0	0	6	0	18	24	203	0
7:15 - 7:30	0	99	27	126	0	76	28	104	0	0	0	0	14	0	38	52	282	0
7:30 - 7:45	0	148	39	187	0	82	22	104	0	0	0	0	13	0	41	54	345	0
7:45 - 8:00	0	159	26	185	0	92	32	124	0	0	0	0	9	0	51	60	369	0
8:00 - 8:15	0	123	14	137	0	85	25	110	0	0	0	0	7	0	38	45	292	0
8:15 - 8:30	0	102	24	126	0	100	19	119	0	0	0	0	5	1	42	48	293	0
8:30 - 8:45	0	112	20	132	0	96	25	121	0	0	0	0	2	0	37	39	292	0
8:45 - 9:00	0	107	14	121	0	90	23	113	0	0	0	0	4	1	43	48	282	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	143	14	157	0	165	35	200	0	0	0	0	12	0	54	66	423	0
16:15 - 16:30	0	161	16	177	0	206	58	264	0	0	0	0	9	0	50	59	500	0
16:30 - 16:45	0	139	12	151	0	181	41	222	0	0	0	0	10	0	48	58	431	0
16:45 - 17:00	0	167	20	187	0	189	51	240	0	0	0	0	10	1	59	70	497	0
17:00 - 17:15	0	162	12	174	0	197	26	223	0	0	0	0	10	0	54	64	461	0
17:15 - 17:30	0	169	19	188	0	235	48	283	0	0	0	0	15	0	45	60	531	0
17:30 - 17:45	0	149	22	171	0	191	56	247	0	0	0	0	21	0	54	75	493	0
17:45 - 18:00	0	153	26	179	0	171	39	210	0	0	0	0	18	0	54	72	461	0
TOTAL	0	2165	323	2488	0	2218	555	2773	0	0	0	0	165	3	726	894	6155	0
Trucks	0	24	40	64	0	22	12	34	0	0	0	0	18	2	15	35	133	2.2%
School Buses	0	7	0	7	0	3	0	3	0	0	0	0	0	0	1	1	11	0.2%

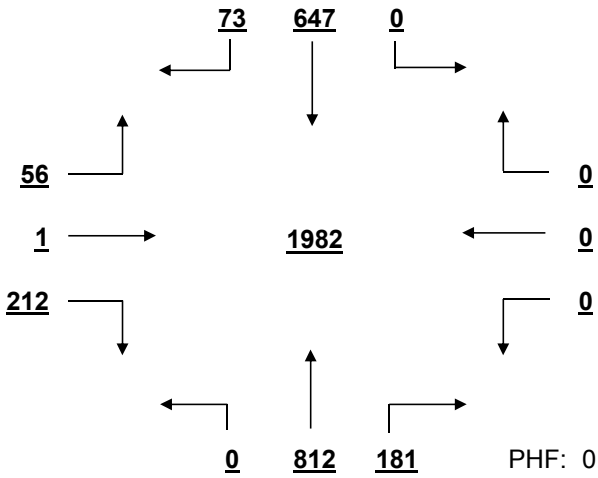
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 11 AT I-85 NB Ramp Date: 3/28/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

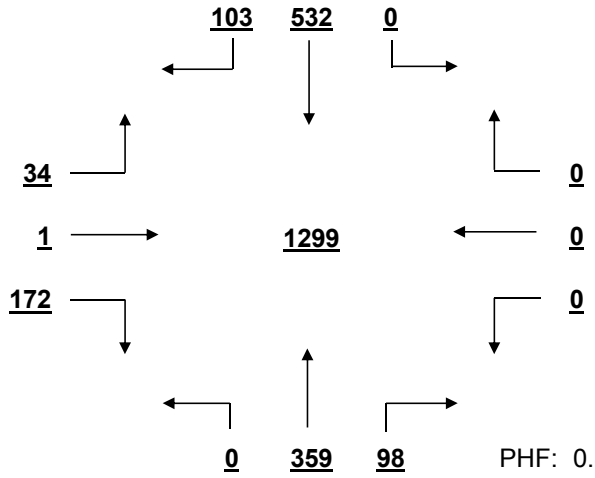


OVERALL PEAK HOUR VOLUME
FROM 16:45 TO 17:45



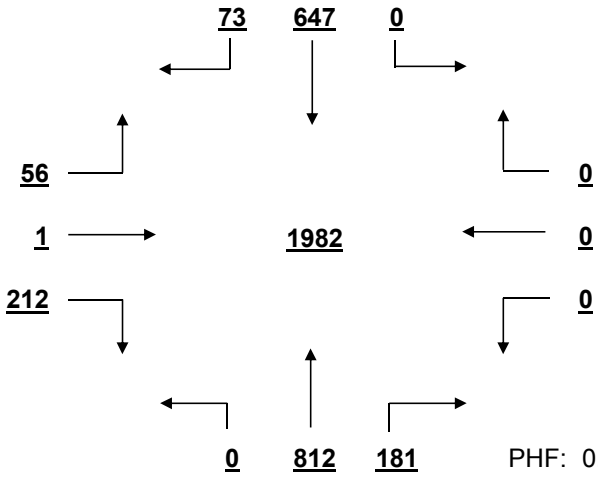
PHF: 0.933

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:30 TO 8:30



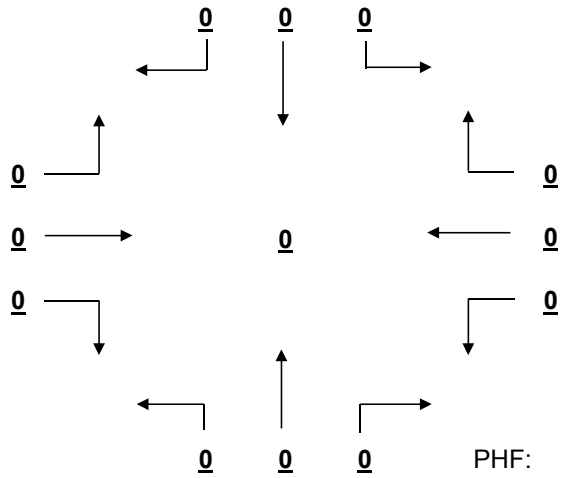
PHF: 0.880

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:45 TO 17:45



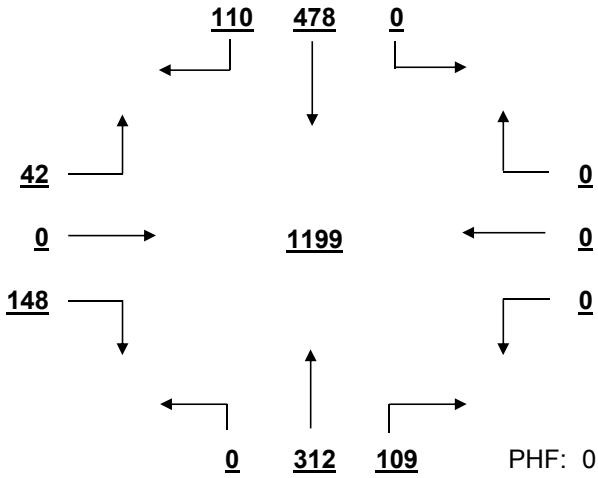
PHF: 0.933

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.812

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 3/28/2013

Major Rt: SC 11 Minor Rt: Peachtree Market Place
* Not on State System

Day of Week: Thursday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 21510 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1
* Each Direction

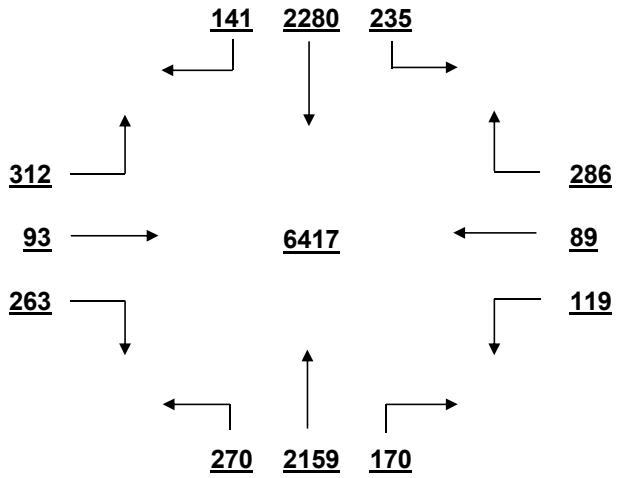
INTERSECTION VOLUME SUMMARY

	From N SC 11				From S SC 11				From E Peachtree Market P				From W Peachtree Market P				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	13	44	4	61	8	67	6	81	5	0	12	17	5	1	2	8	167	2
7:15 - 7:30	13	92	2	107	2	64	11	77	5	1	17	23	2	2	2	6	213	0
7:30 - 7:45	17	136	2	155	9	78	6	93	13	4	14	31	7	1	2	10	289	0
7:45 - 8:00	13	170	3	186	13	98	5	116	8	2	17	27	7	1	10	18	347	0
8:00 - 8:15	15	118	10	143	13	111	11	135	8	1	14	23	5	4	6	15	316	0
8:15 - 8:30	18	125	5	148	12	99	7	118	9	3	13	25	6	4	5	15	306	0
8:30 - 8:45	14	100	9	123	7	85	13	105	10	3	9	22	14	2	9	25	275	1
8:45 - 9:00	17	122	5	144	6	87	10	103	8	4	16	28	10	3	19	32	307	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	12	152	19	183	28	160	13	201	8	10	23	41	30	13	35	78	503	0
16:15 - 16:30	16	155	12	183	26	193	13	232	8	7	23	38	35	18	21	74	527	0
16:30 - 16:45	18	179	15	212	25	168	15	208	5	9	17	31	33	7	31	71	522	0
16:45 - 17:00	15	177	13	205	26	187	10	223	6	7	23	36	29	8	26	63	527	1
17:00 - 17:15	17	183	11	211	24	179	10	213	7	11	26	44	27	11	26	64	532	1
17:15 - 17:30	17	184	8	209	27	220	12	259	10	10	16	36	37	8	21	66	570	0
17:30 - 17:45	10	157	12	179	17	197	17	231	5	5	21	31	34	6	29	69	510	0
17:45 - 18:00	10	186	11	207	27	166	11	204	4	12	25	41	31	4	19	54	506	0
TOTAL	235	2280	141	2656	270	2159	170	2599	119	89	286	494	312	93	263	668	6417	5
Trucks	1	28	3	32	0	26	0	26	0	0	2	2	6	0	0	6	66	1.0%
School Buses	0	4	1	5	0	3	0	3	0	0	0	0	4	0	1	5	13	0.2%

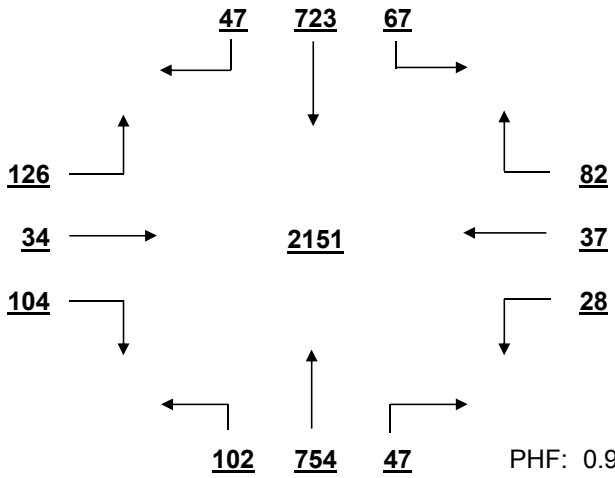
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 11 AT Peachtree Market Place Date: 3/28/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

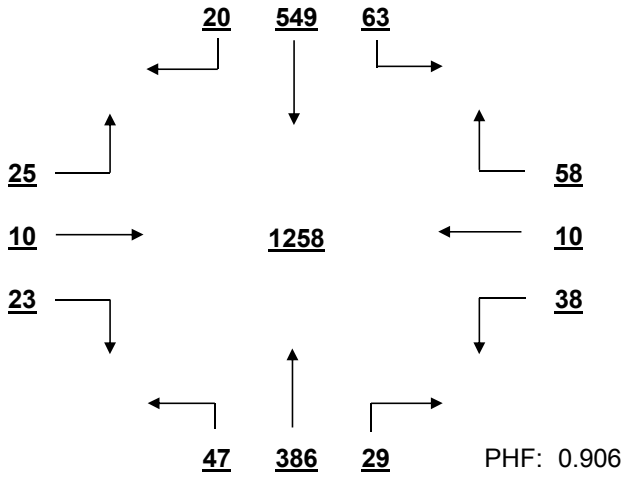


OVERALL PEAK HOUR VOLUME
FROM 16:30 TO 17:30



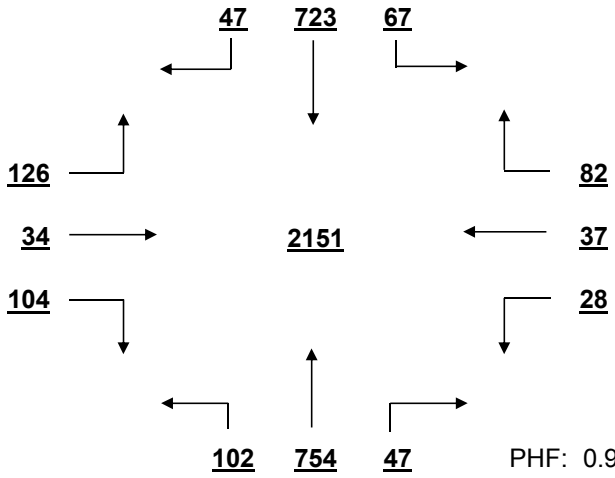
PHF: 0.943

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:30 TO 8:30



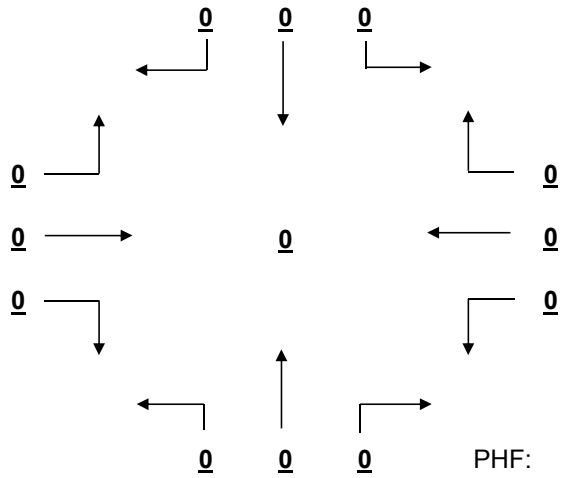
PHF: 0.906

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:30 TO 17:30



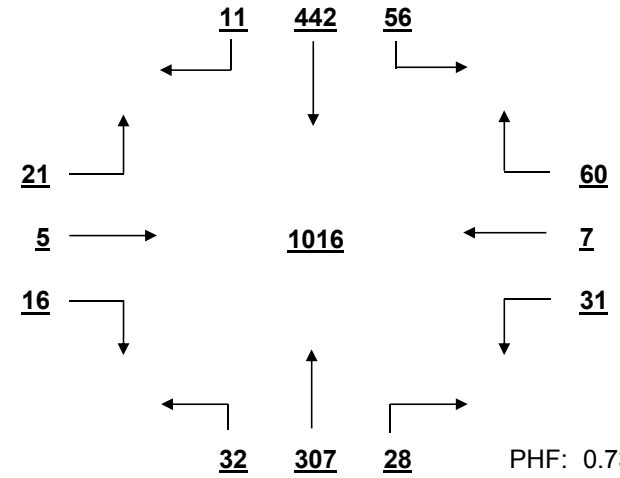
PHF: 0.943

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.732

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 3/28/2013

Major Rt: SC 11 Minor Rt: Walton Drive
* Not on State System

Day of Week: Thursday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 26180 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1
* Each Direction

INTERSECTION VOLUME SUMMARY

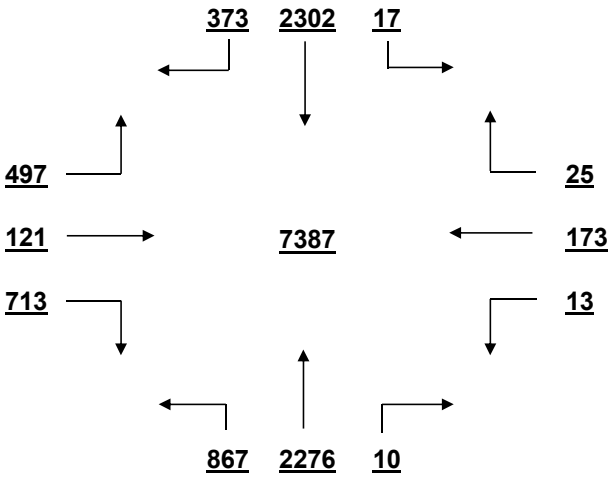
	From N SC 11				From S SC 11				From E Walton Drive				From W Walton Drive				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	1	44	9	54	17	62	0	79	0	2	1	3	15	1	16	32	168	1
7:15 - 7:30	1	93	8	102	16	70	0	86	0	2	2	4	13	2	14	29	221	1
7:30 - 7:45	0	124	19	143	17	83	0	100	0	2	2	4	3	0	13	16	263	0
7:45 - 8:00	0	159	19	178	26	115	0	141	1	11	0	12	14	3	11	28	359	0
8:00 - 8:15	0	120	16	136	40	127	0	167	3	8	3	14	15	2	16	33	350	0
8:15 - 8:30	2	137	9	148	34	114	0	148	0	6	1	7	17	1	19	37	340	0
8:30 - 8:45	1	117	11	129	33	98	0	131	0	11	0	11	10	4	22	36	307	0
8:45 - 9:00	1	132	14	147	29	82	0	111	1	9	1	11	17	3	24	44	313	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	177	27	204	87	168	2	257	1	20	1	22	56	19	78	153	636	0
16:15 - 16:30	3	157	25	185	87	193	3	283	0	16	2	18	50	15	62	127	613	0
16:30 - 16:45	1	189	33	223	73	177	1	251	1	14	2	17	49	14	67	130	621	0
16:45 - 17:00	2	188	34	224	84	214	2	300	0	12	0	12	50	9	90	149	685	0
17:00 - 17:15	0	176	37	213	80	202	1	283	1	14	3	18	38	10	79	127	641	1
17:15 - 17:30	1	193	35	229	79	208	0	287	3	9	6	18	53	12	69	134	668	0
17:30 - 17:45	1	149	39	189	81	199	1	281	1	17	0	18	50	12	74	136	624	0
17:45 - 18:00	3	147	38	188	84	164	0	248	1	20	1	22	47	14	59	120	578	0
TOTAL	17	2302	373	2692	867	2276	10	3153	13	173	25	211	497	121	713	1331	7387	3
Trucks	0	18	6	24	1	17	0	18	0	0	0	0	8	0	2	10	52	0.7%
School Buses	0	5	0	5	0	3	0	3	0	0	0	0	0	0	0	0	8	0.1%

TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 11 AT Walton Drive Date: 3/28/2013

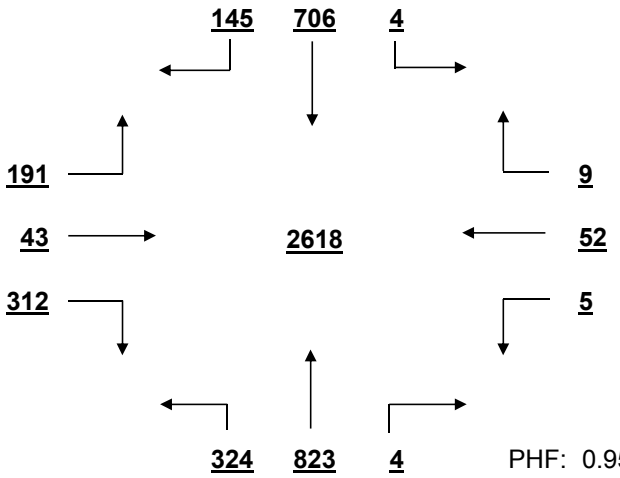
8.0 HOUR TOTAL VOLUME

FROM 7:00 TO 18:00



OVERALL PEAK HOUR VOLUME

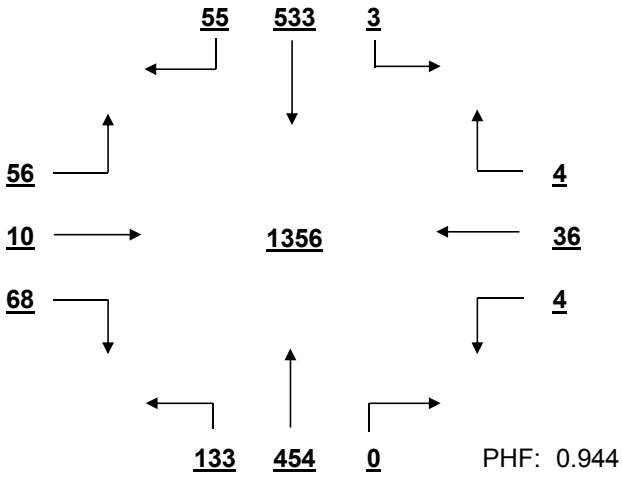
FROM 16:45 TO 17:45



PHF: 0.955

AM PEAK HOUR VOLUME (0:00-10:45)

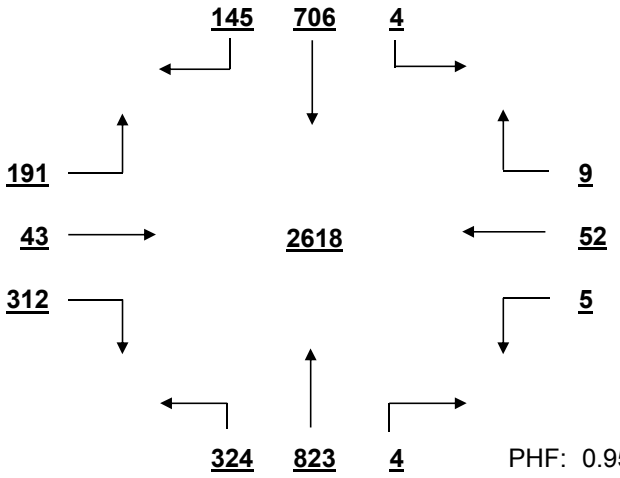
FROM 7:45 TO 8:45



PHF: 0.944

PM PEAK HOUR VOLUME (14:15-23:45)

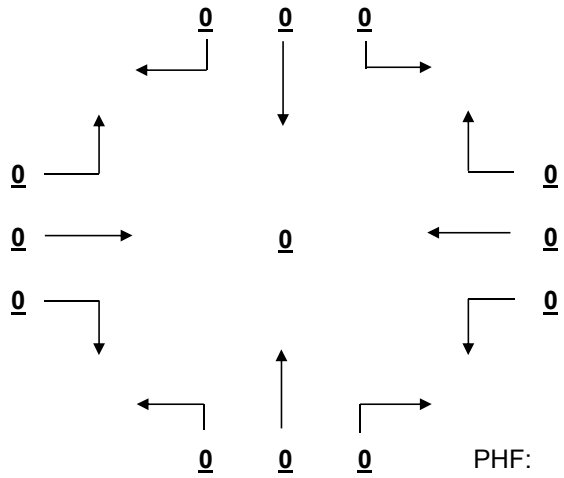
FROM 16:45 TO 17:45



PHF: 0.955

MID-DAY PEAK HOUR VOLUME (11:00-14:00)

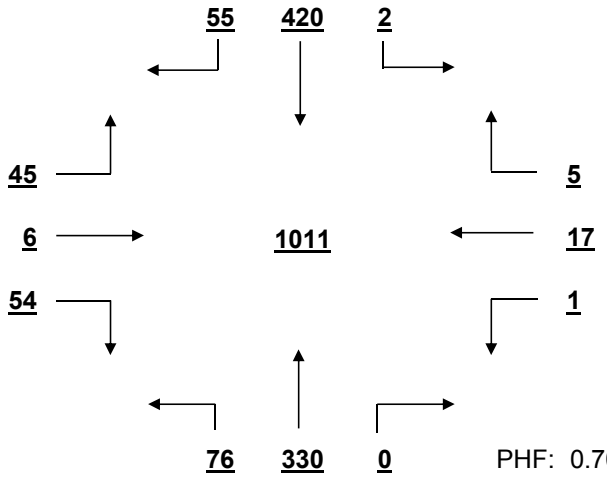
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME

FROM 7:00 TO 8:00



PHF: 0.704

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 3/27/2013

Major Rt: SC 11 Minor Rt: S-566

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 22550 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

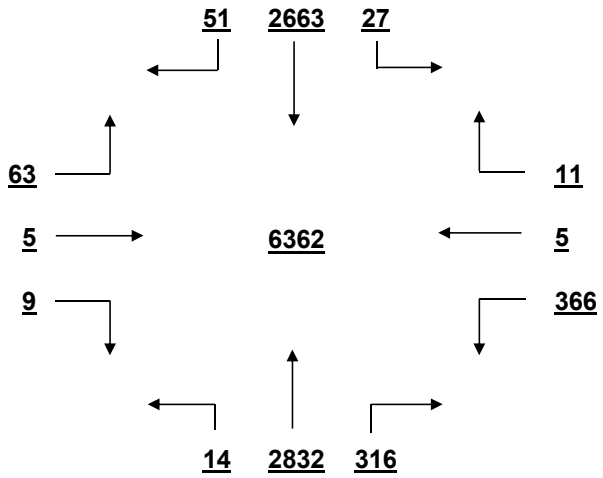
INTERSECTION VOLUME SUMMARY

	From N SC 11				From S SC 11				From E S-566				From W S-566				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	58	0	58	0	60	6	66	7	0	0	7	0	0	0	0	131	0
7:15 - 7:30	1	100	1	102	0	70	3	73	11	0	2	13	0	0	0	0	188	1
7:30 - 7:45	0	139	0	139	0	98	16	114	17	0	0	17	1	0	0	1	271	1
7:45 - 8:00	1	143	2	146	0	137	22	159	34	0	0	34	0	0	0	0	339	1
8:00 - 8:15	1	127	5	133	0	127	14	141	26	0	0	26	0	0	0	0	300	0
8:15 - 8:30	1	144	0	145	0	124	14	138	12	0	0	12	0	0	0	0	295	1
8:30 - 8:45	0	121	2	123	0	100	10	110	10	1	0	11	7	0	0	7	251	0
8:45 - 9:00	2	128	3	133	0	122	13	135	14	0	0	14	0	0	0	0	282	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	3	212	7	222	1	237	21	259	31	1	1	33	5	0	1	6	520	0
16:15 - 16:30	0	208	8	216	1	225	28	254	32	1	1	34	7	0	0	7	511	2
16:30 - 16:45	4	237	3	244	3	254	31	288	24	0	2	26	4	2	2	8	566	0
16:45 - 17:00	0	225	5	230	3	259	26	288	29	1	2	32	6	1	0	7	557	4
17:00 - 17:15	7	201	3	211	2	289	36	327	39	0	1	40	10	0	1	11	589	1
17:15 - 17:30	2	210	6	218	2	262	28	292	23	0	1	24	6	0	3	9	543	3
17:30 - 17:45	3	188	2	193	1	226	21	248	27	0	0	27	7	1	1	9	477	2
17:45 - 18:00	2	222	4	228	1	242	27	270	30	1	1	32	10	1	1	12	542	0
TOTAL	27	2663	51	2741	14	2832	316	3162	366	5	11	382	63	5	9	77	6362	16
Trucks	1	17	0	18	0	13	0	13	0	0	0	0	0	0	0	0	31	0.5%
School Buses	0	5	0	5	0	3	1	4	1	0	0	1	0	0	0	0	10	0.2%

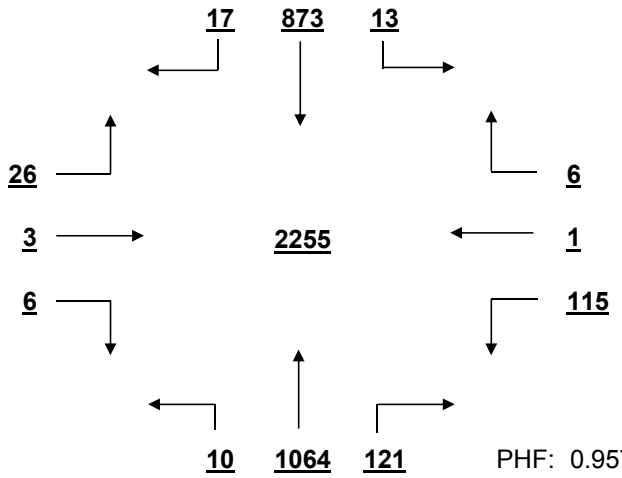
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 11 AT S-566 Date: 3/27/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

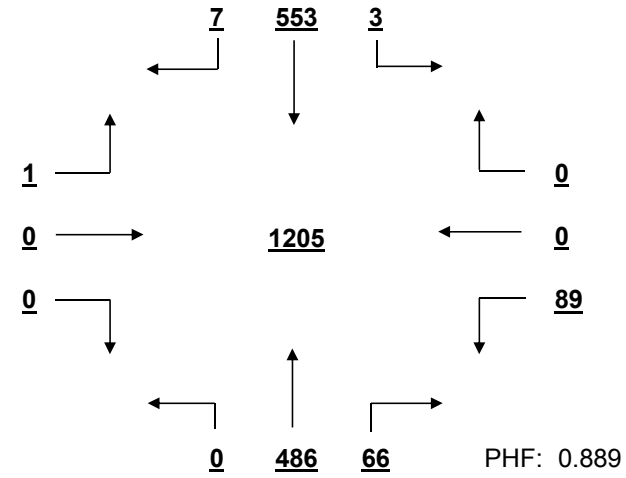


OVERALL PEAK HOUR VOLUME
FROM 16:30 TO 17:30



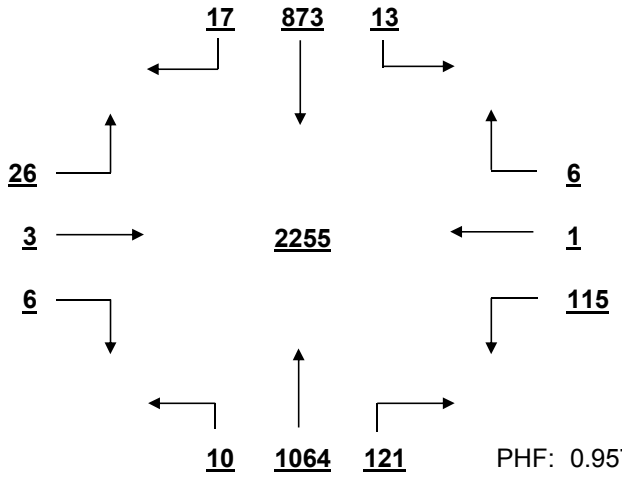
PHF: 0.957

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:30 TO 8:30



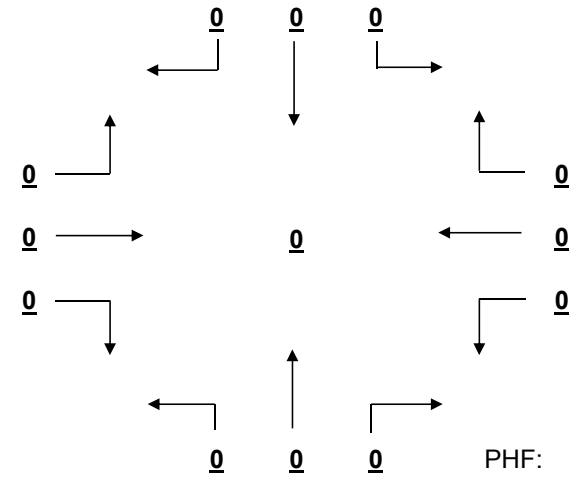
PHF: 0.889

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:30 TO 17:30



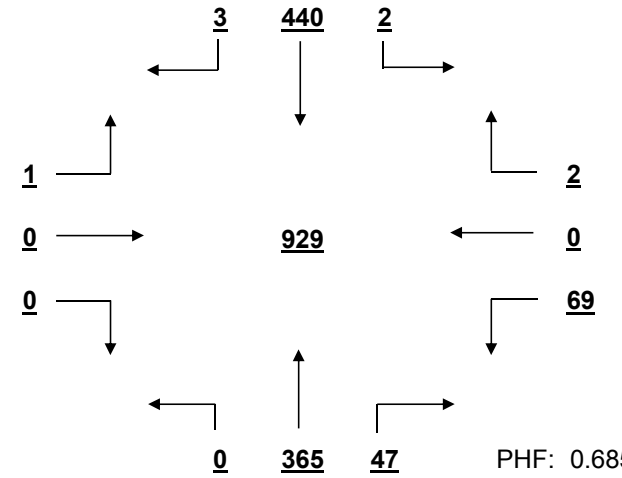
PHF: 0.957

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.685

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 3/27/2013

Major Rt: SC 11 Minor Rt: S-437

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Signal Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 23720 (Calc)

Number of Lanes (major st)* 2 Number of Lanes (minor st)* 1

* Each Direction

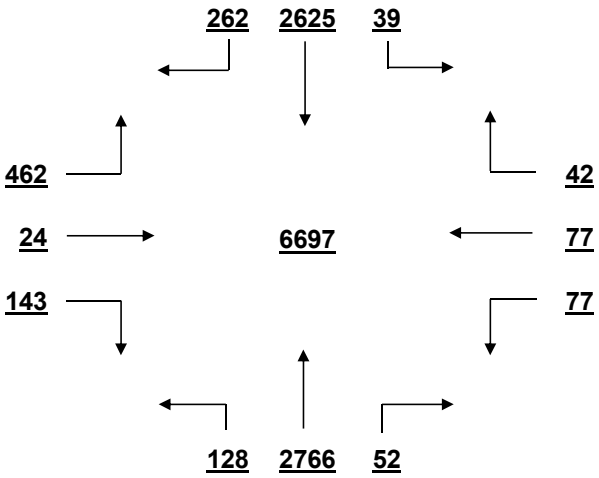
INTERSECTION VOLUME SUMMARY

	From N SC 11				From S SC 11				From E S-437				From W S-437				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	57	8	65	0	59	0	59	1	0	0	1	2	0	1	3	128	1
7:15 - 7:30	0	103	5	108	1	65	1	67	0	2	0	2	3	0	0	3	180	0
7:30 - 7:45	0	144	17	161	2	110	1	113	1	4	0	5	9	0	2	11	290	1
7:45 - 8:00	0	159	20	179	2	149	1	152	3	8	0	11	29	0	1	30	372	0
8:00 - 8:15	1	121	27	149	4	135	0	139	2	2	0	4	23	1	2	26	318	0
8:15 - 8:30	1	135	14	150	4	124	2	130	2	4	0	6	13	0	6	19	305	0
8:30 - 8:45	1	122	6	129	2	104	3	109	1	4	0	5	15	1	1	17	260	0
8:45 - 9:00	1	132	10	143	2	124	3	129	8	1	0	9	9	1	7	17	298	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	4	209	27	240	13	229	6	248	9	6	4	19	38	1	18	57	564	2
16:15 - 16:30	6	195	21	222	11	222	5	238	7	4	5	16	41	1	16	58	534	2
16:30 - 16:45	3	216	23	242	16	233	7	256	8	5	5	18	53	2	23	78	594	0
16:45 - 17:00	3	226	18	247	17	238	5	260	7	12	5	24	47	5	18	70	601	2
17:00 - 17:15	2	219	15	236	18	277	4	299	9	8	7	24	56	1	12	69	628	1
17:15 - 17:30	4	195	16	215	10	230	5	245	5	4	7	16	59	3	11	73	549	3
17:30 - 17:45	5	184	15	204	16	225	7	248	7	7	3	17	31	2	13	46	515	2
17:45 - 18:00	8	208	20	236	10	242	2	254	7	6	6	19	34	6	12	52	561	0
TOTAL	39	2625	262	2926	128	2766	52	2946	77	77	42	196	462	24	143	629	6697	14
Trucks	0	16	0	16	0	14	0	14	0	0	0	0	0	0	0	0	30	0.4%
School Buses	0	5	0	5	1	7	0	8	0	1	0	1	1	0	0	1	15	0.2%

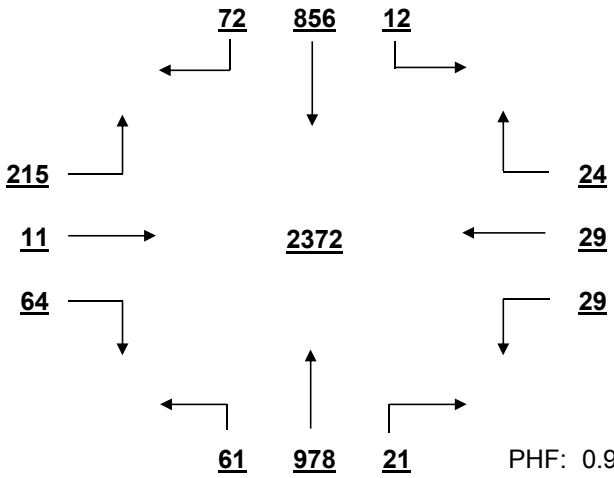
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 11 AT S-437 Date: 3/27/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

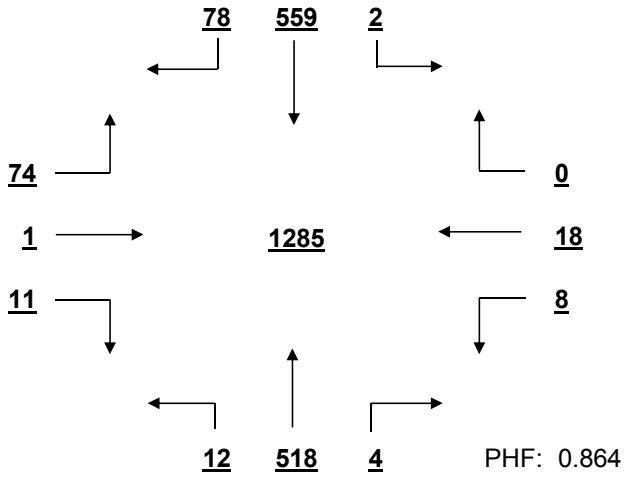


OVERALL PEAK HOUR VOLUME
FROM 16:30 TO 17:30



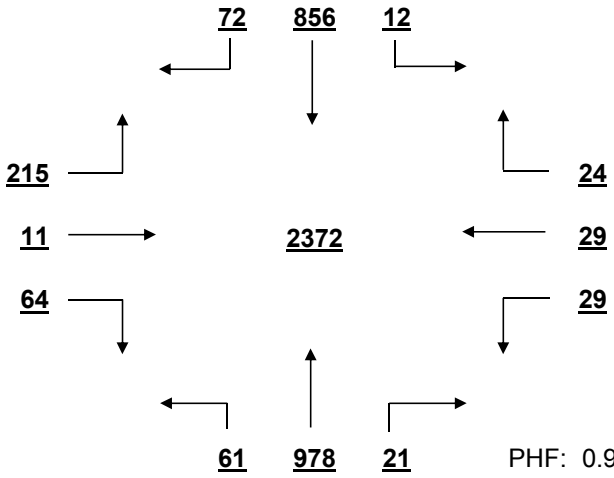
PHF: 0.944

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:30 TO 8:30



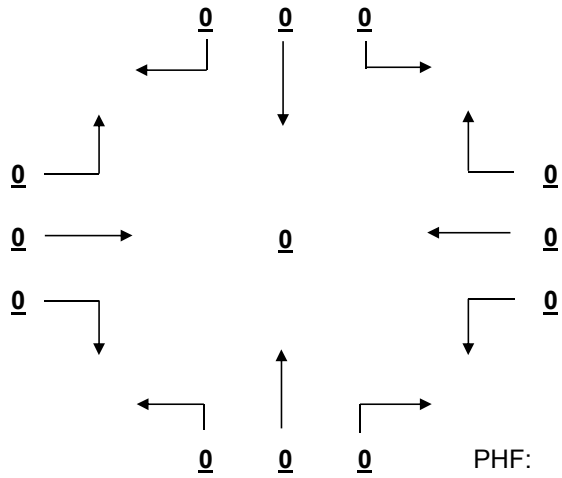
PHF: 0.864

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:30 TO 17:30



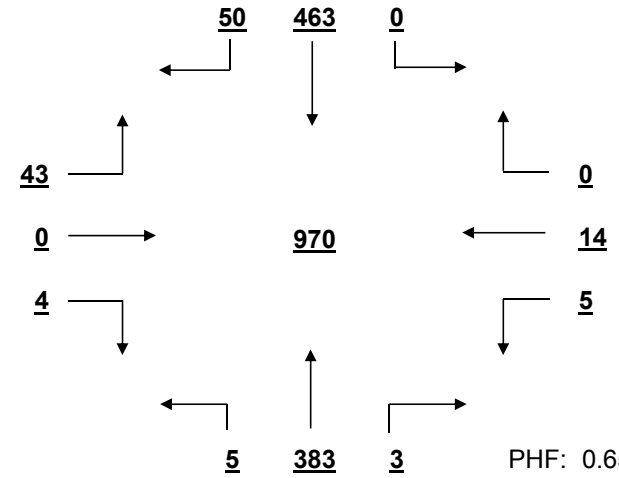
PHF: 0.944

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.652

Exit 95

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/10/2013

Major Rt: S-82 Minor Rt: S-668

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 3050 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

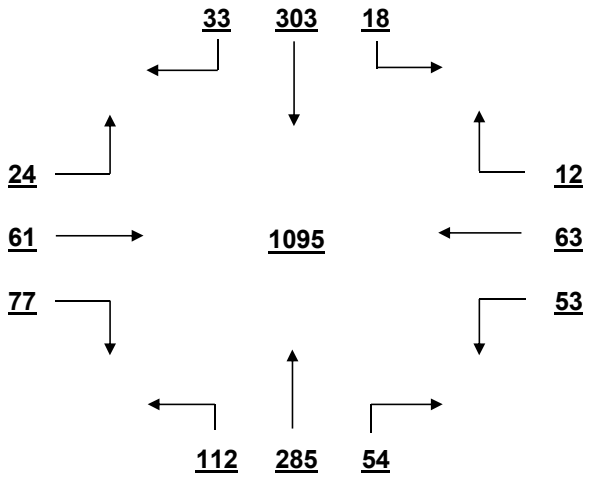
INTERSECTION VOLUME SUMMARY

	From N S-82				From S S-82				From E S-668				From W S-668				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	2	13	3	18	2	13	0	15	4	3	1	8	3	6	4	13	54	0
7:15 - 7:30	1	26	4	31	7	15	2	24	3	1	1	5	1	3	6	10	70	0
7:30 - 7:45	6	25	4	35	9	13	7	29	2	2	0	4	0	4	10	14	82	0
7:45 - 8:00	2	23	1	26	9	13	1	23	3	2	0	5	2	2	8	12	66	0
8:00 - 8:15	1	17	2	20	6	17	3	26	4	4	0	8	0	2	1	3	57	0
8:15 - 8:30	1	16	1	18	10	23	4	37	1	2	0	3	1	5	3	9	67	0
8:30 - 8:45	0	10	4	14	5	11	4	20	2	1	0	3	1	2	2	5	42	0
8:45 - 9:00	1	19	3	23	1	6	6	13	8	6	1	15	2	1	4	7	58	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	2	20	0	22	13	17	7	37	4	5	0	9	3	5	8	16	84	0
16:15 - 16:30	0	22	1	23	11	21	6	38	4	4	0	8	1	4	3	8	77	0
16:30 - 16:45	1	24	3	28	4	16	2	22	4	11	0	15	2	10	6	18	83	0
16:45 - 17:00	0	11	1	12	6	20	4	30	3	4	3	10	2	3	4	9	61	0
17:00 - 17:15	1	17	2	20	8	21	2	31	4	5	3	12	1	1	3	5	68	0
17:15 - 17:30	0	16	2	18	12	28	5	45	4	6	0	10	1	2	7	10	83	0
17:30 - 17:45	0	22	1	23	4	29	1	34	2	4	1	7	2	2	4	8	72	0
17:45 - 18:00	0	22	1	23	5	22	0	27	1	3	2	6	2	9	4	15	71	0
TOTAL	18	303	33	354	112	285	54	451	53	63	12	128	24	61	77	162	1095	0
Trucks	0	59	0	59	8	49	2	59	7	6	2	15	0	2	2	4	137	12.5%
School Buses	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6	0.5%

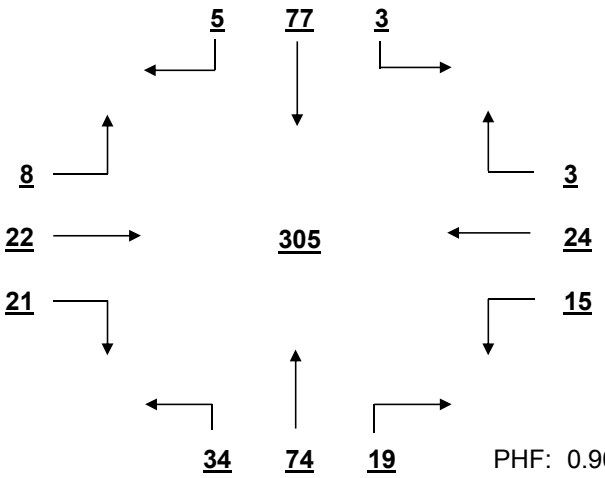
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

S-82 AT S-668 Date: 4/10/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

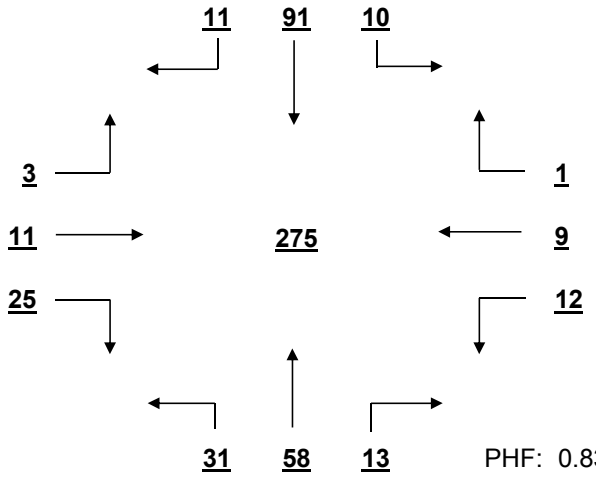


OVERALL PEAK HOUR VOLUME
FROM 16:00 TO 17:00



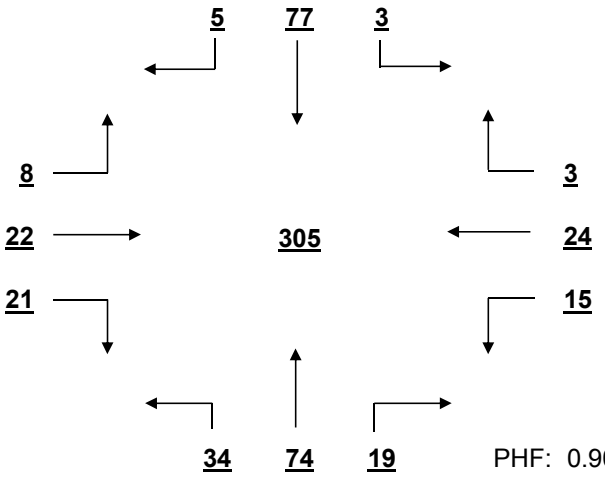
PHF: 0.908

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



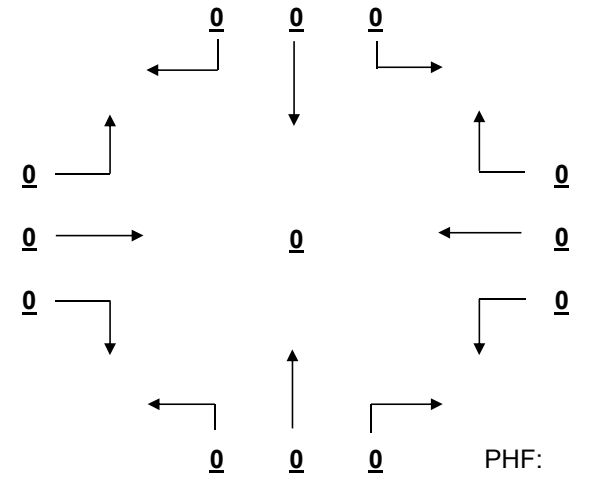
PHF: 0.838

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:00 TO 17:00



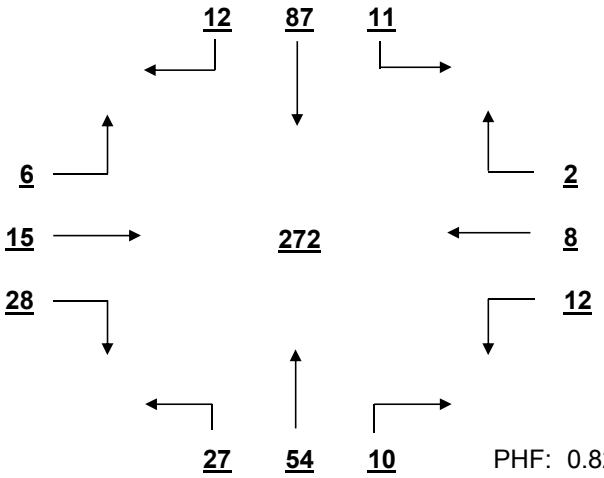
PHF: 0.908

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.829

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/10/2013

Major Rt: S-82 Minor Rt: I-85 SB Ramp

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 3770 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

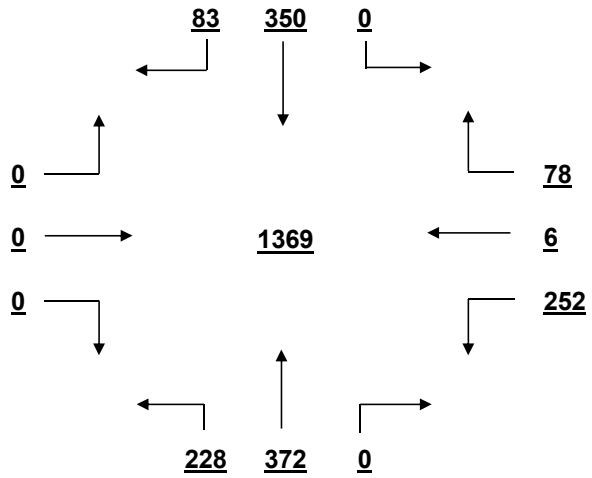
INTERSECTION VOLUME SUMMARY

	From N S-82				From S S-82				From E I-85 SB Ramp				From W I-85 SB Ramp				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	14	7	21	7	12	0	19	7	0	3	10	0	0	0	0	50	0
7:15 - 7:30	0	26	9	35	20	19	0	39	23	0	5	28	0	0	0	0	102	0
7:30 - 7:45	0	32	5	37	19	22	0	41	23	0	7	30	0	0	0	0	108	0
7:45 - 8:00	0	32	2	34	16	20	0	36	25	0	3	28	0	0	0	0	98	0
8:00 - 8:15	0	19	3	22	8	22	0	30	13	0	4	17	0	0	0	0	69	0
8:15 - 8:30	0	18	2	20	13	23	0	36	25	1	13	39	0	0	0	0	95	0
8:30 - 8:45	0	10	4	14	9	17	0	26	24	1	3	28	0	0	0	0	68	0
8:45 - 9:00	0	23	8	31	5	12	0	17	7	0	1	8	0	0	0	0	56	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	25	7	32	17	33	0	50	19	0	4	23	0	0	0	0	105	0
16:15 - 16:30	0	20	9	29	11	34	0	45	11	0	4	15	0	0	0	0	89	0
16:30 - 16:45	0	29	5	34	18	18	0	36	10	0	4	14	0	0	0	0	84	0
16:45 - 17:00	0	16	2	18	13	26	0	39	9	0	4	13	0	0	0	0	70	0
17:00 - 17:15	0	20	4	24	22	24	0	46	12	0	7	19	0	0	0	0	89	0
17:15 - 17:30	0	25	2	27	25	37	0	62	18	0	8	26	0	0	0	0	115	0
17:30 - 17:45	0	19	9	28	16	30	0	46	11	0	4	15	0	0	0	0	89	0
17:45 - 18:00	0	22	5	27	9	23	0	32	15	4	4	23	0	0	0	0	82	0
TOTAL	0	350	83	433	228	372	0	600	252	6	78	336	0	0	0	0	1369	0
Trucks	0	30	38	68	7	28	0	35	9	1	31	41	0	0	0	0	144	10.5%
School Buses	0	6	0	6	0	0	0	0	0	0	0	0	0	0	0	0	6	0.4%

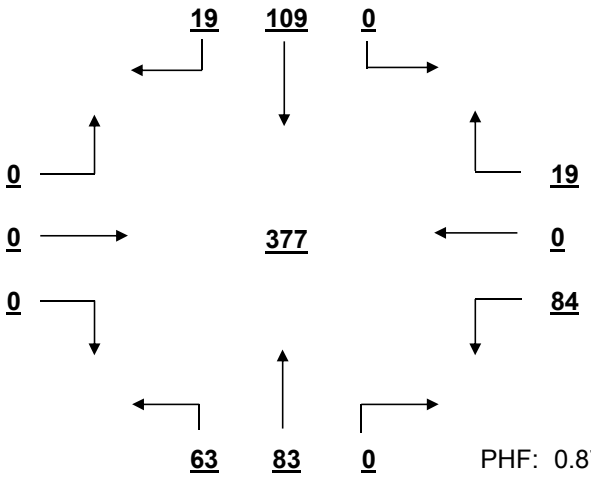
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

S-82 AT I-85 SB Ramp Date: 4/10/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

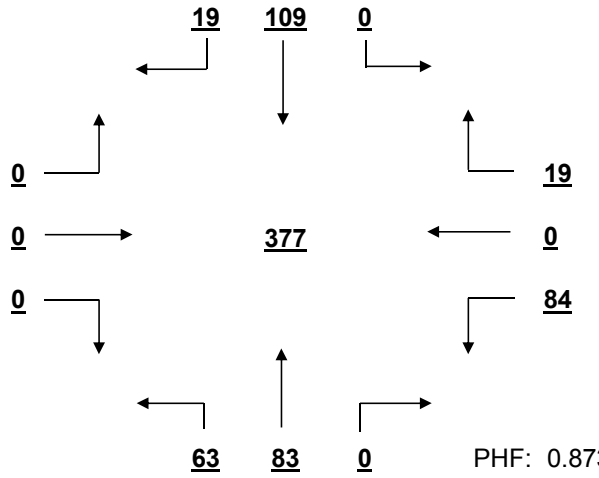


OVERALL PEAK HOUR VOLUME
FROM 7:15 TO 8:15



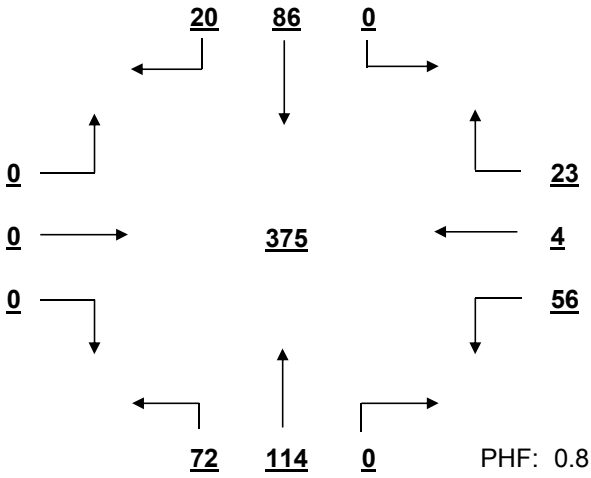
PHF: 0.873

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



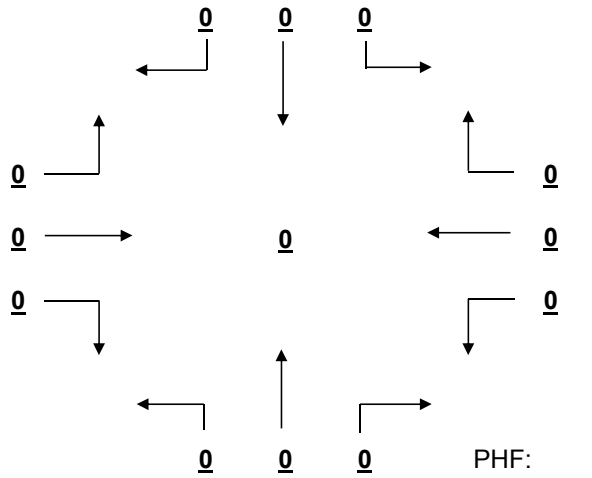
PHF: 0.873

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



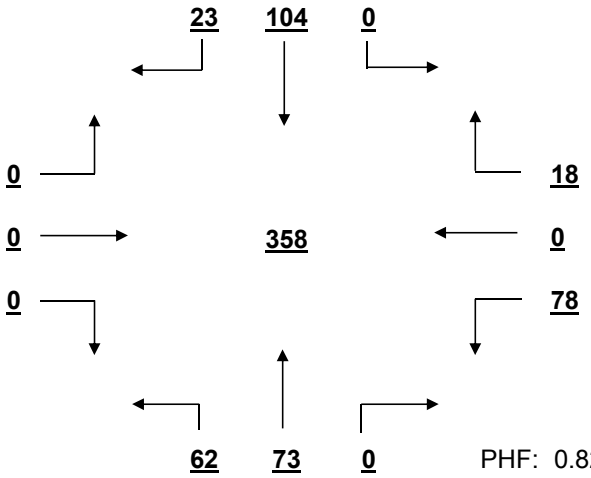
PHF: 0.815

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.829

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/10/2013

Major Rt: I-85 NB Ramp Minor Rt: S-661

Day of Week: Wednesday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 2260 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

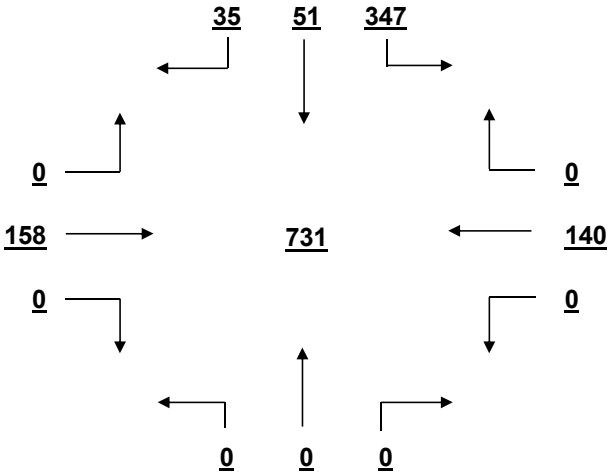
INTERSECTION VOLUME SUMMARY

	From N I-85 NB Ramp				From S I-85 NB Ramp				From E S-661				From W S-661				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	10	0	1	11	0	0	0	0	0	3	0	3	0	1	0	1	15	0
7:15 - 7:30	11	1	4	16	0	0	0	0	0	15	0	15	0	8	0	8	39	0
7:30 - 7:45	27	3	8	38	0	0	0	0	0	11	0	11	0	6	0	6	55	0
7:45 - 8:00	38	1	10	49	0	0	0	0	0	11	0	11	0	6	0	6	66	0
8:00 - 8:15	22	6	2	30	0	0	0	0	0	9	0	9	0	10	0	10	49	0
8:15 - 8:30	32	3	2	37	0	0	0	0	0	7	0	7	0	12	0	12	56	0
8:30 - 8:45	22	6	2	30	0	0	0	0	0	4	0	4	0	3	0	3	37	0
8:45 - 9:00	9	4	0	13	0	0	0	0	0	5	0	5	0	4	0	4	22	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	25	4	2	31	0	0	0	0	0	10	0	10	0	18	0	18	59	0
16:15 - 16:30	20	2	1	23	0	0	0	0	0	11	0	11	0	6	0	6	40	0
16:30 - 16:45	30	3	0	33	0	0	0	0	0	8	0	8	0	15	0	15	56	0
16:45 - 17:00	19	3	0	22	0	0	0	0	0	9	0	9	0	11	0	11	42	0
17:00 - 17:15	19	4	0	23	0	0	0	0	0	12	0	12	0	12	0	12	47	0
17:15 - 17:30	17	2	0	19	0	0	0	0	0	6	0	6	0	12	0	12	37	0
17:30 - 17:45	28	9	2	39	0	0	0	0	0	7	0	7	0	12	0	12	58	0
17:45 - 18:00	18	0	1	19	0	0	0	0	0	12	0	12	0	22	0	22	53	0
TOTAL	347	51	35	433	0	0	0	0	0	140	0	140	0	158	0	158	731	0
Trucks	35	3	0	38	0	0	0	0	0	0	0	0	0	1	0	1	39	5.3%
School Buses	0	0	0	0	0	0	0	0	0	2	0	2	0	2	0	2	4	0.5%

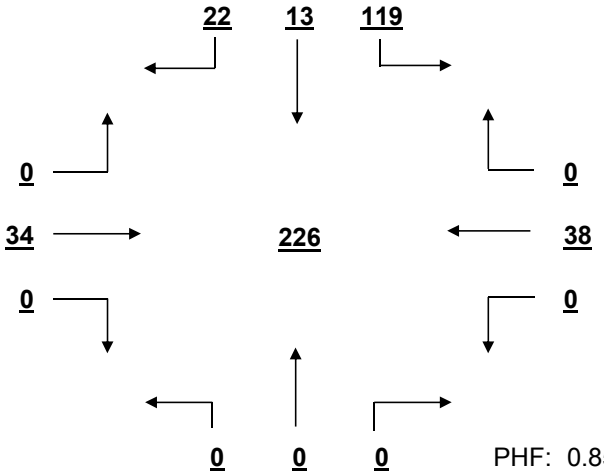
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I-85 NB Ramp AT S-661 Date: 4/10/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

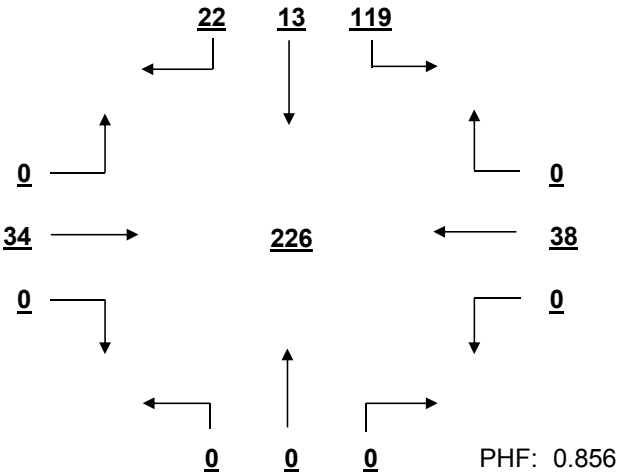


OVERALL PEAK HOUR VOLUME
FROM 7:30 TO 8:30



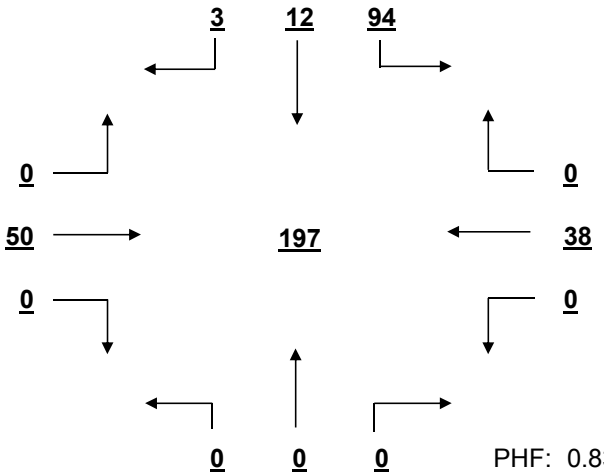
PHF: 0.856

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:30 TO 8:30



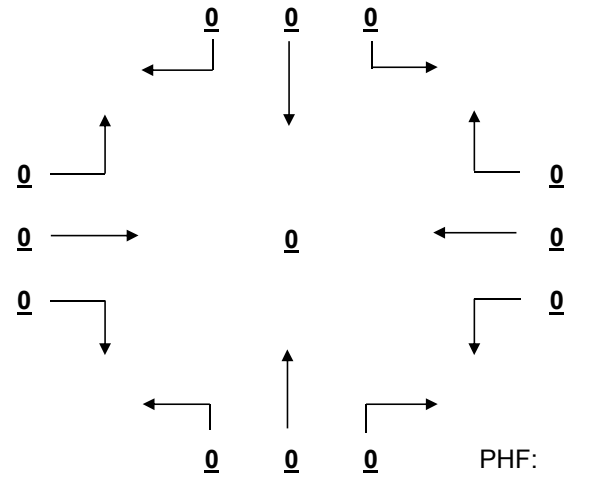
PHF: 0.856

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:00 TO 17:00



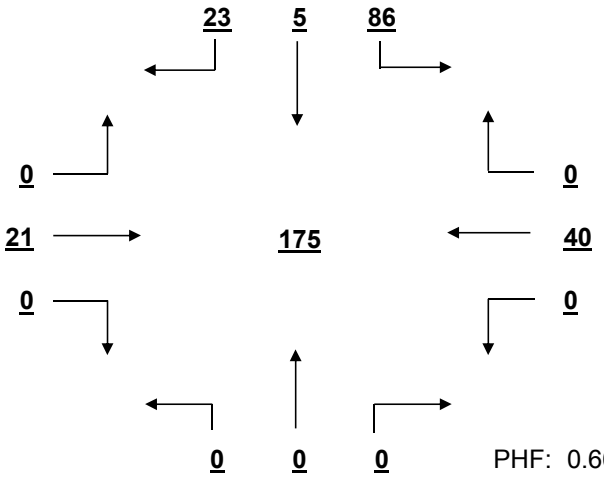
PHF: 0.835

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.663

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896529 - Pleasant School Rd --UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896529
Start Date : 9/25/2014
Page No : 1

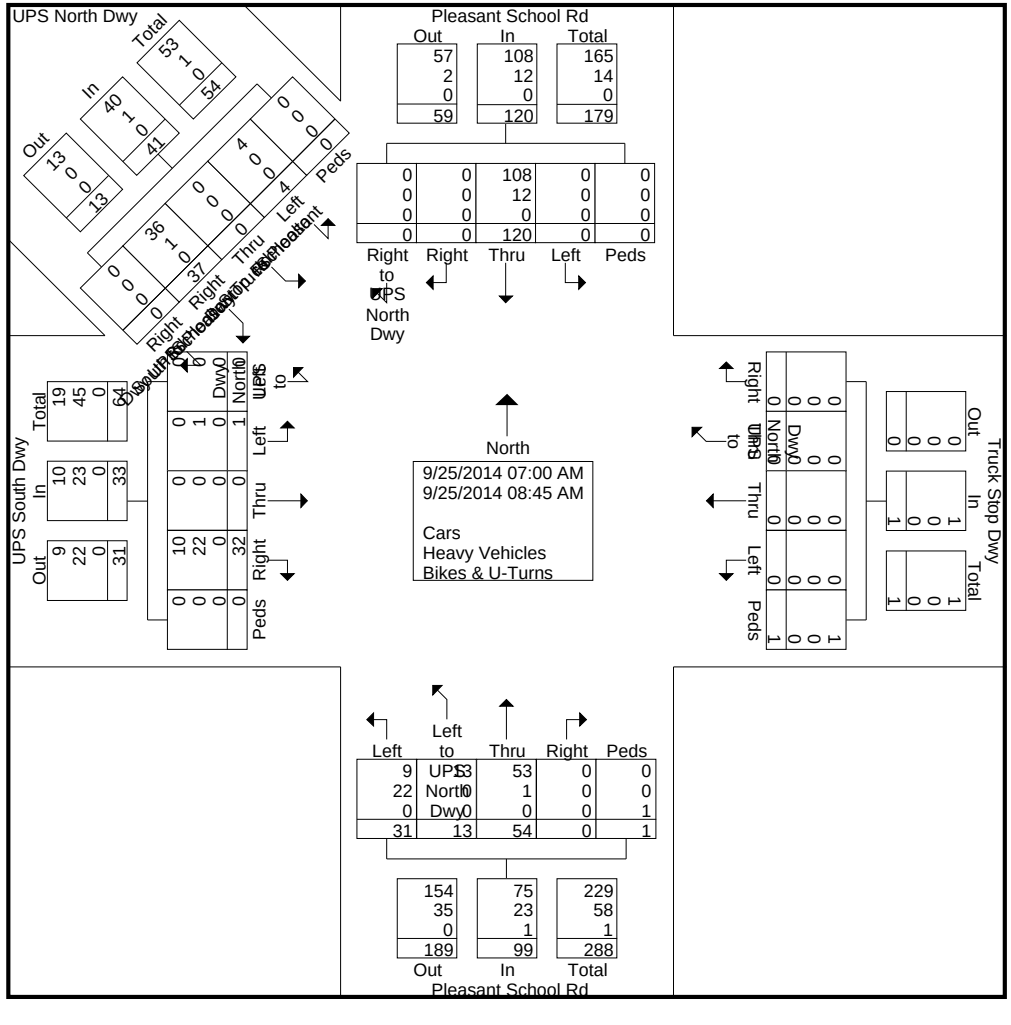
Groups Printed- Cars - Heavy Vehicles - Turns

	Pleasant School Rd Southbound						Truck Stop Dwy Westbound						Pleasant School Rd Northbound						UPS South Dwy Eastbound						UPS North Dwy						
Start Time	Right to UPS North Dwy	Right	Thru	Left	Peds	App. Total	Right	Thru to UPS North Dwy	Thru	Left	Peds	App. Total	Right	Thru	Left to UPS North Dwy	Left	Peds	App. Total	Right	Thru	Left	Left to UPS North Dwy	Peds	App. Total	Right to UPS South Dwy	Right to Pleasant School Rd	Thru to Truck Stop Dwy	Left to Pleasant School Rd	Peds	App. Total	Int. Total
07:00 AM	0	0	13	0	0	13	0	0	0	0	1	1	0	6	1	4	0	11	2	0	0	0	0	2	0	14	0	2	0	16	43
07:15 AM	0	0	21	0	0	21	0	0	0	0	0	0	0	4	0	4	1	9	3	0	0	0	0	3	0	2	0	0	0	2	35
07:30 AM	0	0	19	0	0	19	0	0	0	0	0	0	0	9	3	4	0	16	7	0	0	0	0	7	0	10	0	2	0	12	54
07:45 AM	0	0	17	0	0	17	0	0	0	0	0	0	0	6	4	6	0	16	3	0	0	0	0	3	0	5	0	0	0	5	41
Total	0	0	70	0	0	70	0	0	0	0	1	1	0	25	8	18	1	52	15	0	0	0	0	15	0	31	0	4	0	35	173
08:00 AM	0	0	16	0	0	16	0	0	0	0	0	0	0	9	0	6	0	15	3	0	0	0	0	3	0	2	0	0	0	2	36
08:15 AM	0	0	14	0	0	14	0	0	0	0	0	0	0	10	1	1	0	12	6	0	0	0	0	6	0	1	0	0	0	1	33
08:30 AM	0	0	8	0	0	8	0	0	0	0	0	0	0	6	3	2	0	11	3	0	0	0	0	3	0	1	0	0	0	1	23
08:45 AM	0	0	12	0	0	12	0	0	0	0	0	0	0	4	1	4	0	9	5	0	1	0	0	6	0	2	0	0	0	2	29
Total	0	0	50	0	0	50	0	0	0	0	0	0	0	29	5	13	0	47	17	0	1	0	0	18	0	6	0	0	0	6	121
Grand Total	0	0	120	0	0	120	0	0	0	0	1	1	0	54	13	31	1	99	32	0	1	0	0	33	0	37	0	4	0	41	294
Apprch %	0	0	100	0	0		0	0	0	0	100		0	54.5	13.1	31.3	1		97	0	3	0	0		0	90.2	0	9.8	0		
Total %	0	0	40.8	0	0	40.8	0	0	0	0	0.3	0.3	0	18.4	4.4	10.5	0.3	33.7	10.9	0	0.3	0	0	11.2	0	12.6	0	1.4	0	13.9	
Cars	0	0	108	0	0	108	0	0	0	0	1	1	0	53	13	9	0	75	10	0	0	0	0	10	0	36	0	4	0	40	234
% Cars	0	0	90	0	0	90	0	0	0	0	100	100	0	98.1	100	29	0	75.8	31.2	0	0	0	0	30.3	0	97.3	0	100	0	97.6	79.6
Heavy Vehicles																															
% Heavy Vehicles	0	0	10	0	0	10	0	0	0	0	0	0	0	1.9	0	71	0	23.2	68.8	0	100	0	0	69.7	0	2.7	0	0	0	2.4	20.1
Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	1	0	0	0	0	0	0	0	0	0	0	0	0	0.3

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896529 - Pleasant School Rd --UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896529
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

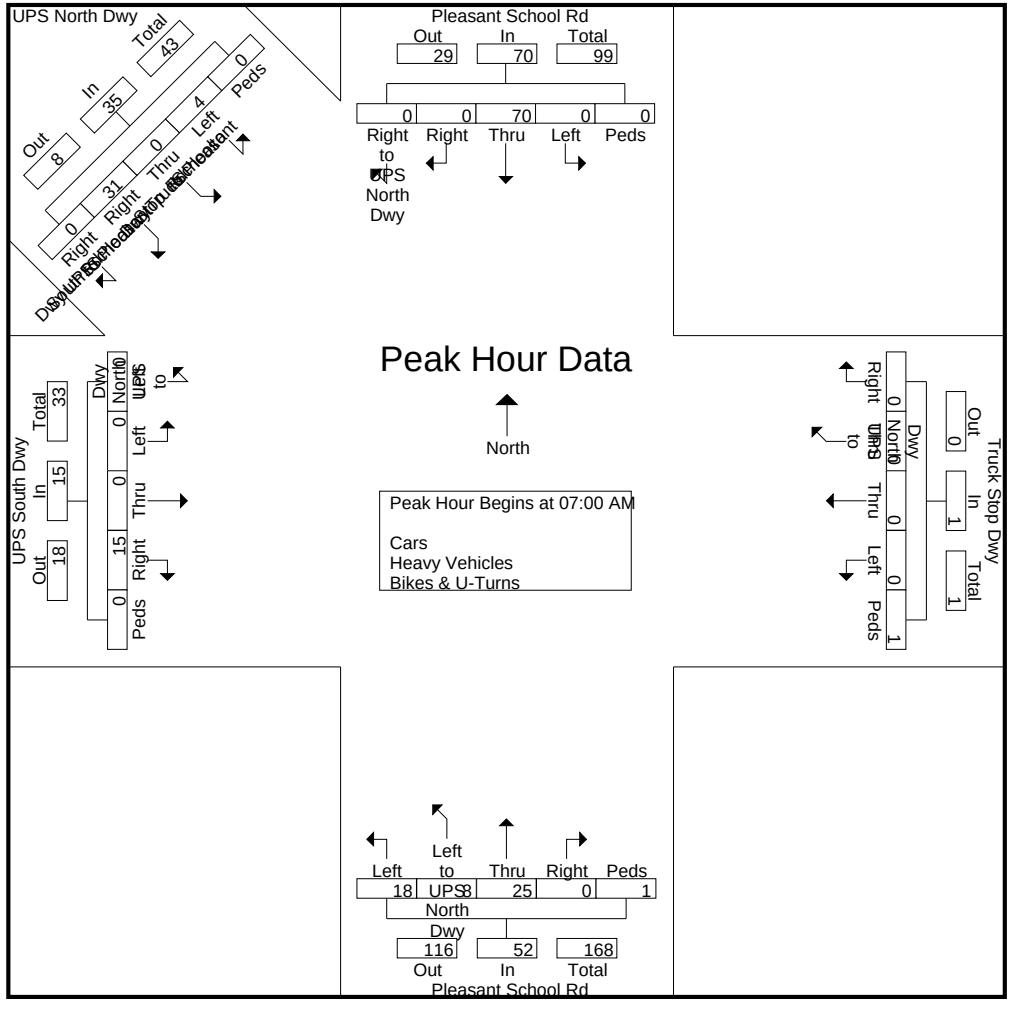
File Name : 12896529 - Pleasant School Rd --UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896529
Start Date : 9/25/2014
Page No : 3

	Pleasant School Rd Southbound						Truck Stop Dwy Westbound						Pleasant School Rd Northbound						UPS South Dwy Eastbound						UPS North Dwy						
Start Time	Right to UPS North Dwy	Right	Thru	Left	Peds	App. Total	Right	Thru to UPS North Dwy	Thru	Left	Peds	App. Total	Right	Thru	Left to UPS North Dwy	Left	Peds	App. Total	Right	Thru	Left	Left to UPS North Dwy	Peds	App. Total	Right to UPS South Dwy	Right to Pleasant School Rd	Thru to Truck Stop Dwy	Left to Pleasant School Rd	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:00 AM																															
07:00 AM	0	0	13	0	0	13	0	0	0	0	1	1														14		2		**16**	
07:15 AM	0	0	**21**	0	0	**21**	0	0	0	0	0	0	0	4	0	4	**1**	9	3	0	0	0	0	3	0	2	0	0	0	2	35
07:30 AM	0	0	19	0	0	19	0	0	0	0	0	0	0	**9**	3	4	0	**16**	**7**	0	0	0	0	**7**	0	10	0	2	0	12	**54**
07:45 AM	0	0	17	0	0	17	0	0	0	0	0	0	0	6	**4**	**6**	0	16	3	0	0	0	0	3	0	5	0	0	0	5	41
Total Volume	0	0	70	0	0	70	0	0	0	0	1	1	0	25	8	18	1	52	15	0	0	0	0	15	0	31	0	4	0	35	173
% App. Total	0	0	100	0	0		0	0	0	0	100		0	48.1	15.4	34.6	1.9		100	0	0	0	0		0	88.6	0	11.4	0		
PHF	.000	.000	.833	.000	.000	.833	.000	.000	.000	.000	.250	.250	.000	.694	.500	.750	.250	.813	.536	.000	.000	.000	.000	.536	.000	.554	.000	.500	.000	.547	.801

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896529 - Pleasant School Rd --UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896529
Start Date : 9/25/2014
Page No : 4



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896530 -Pleasant School Rd -- UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896530
Start Date : 9/25/2014
Page No : 1

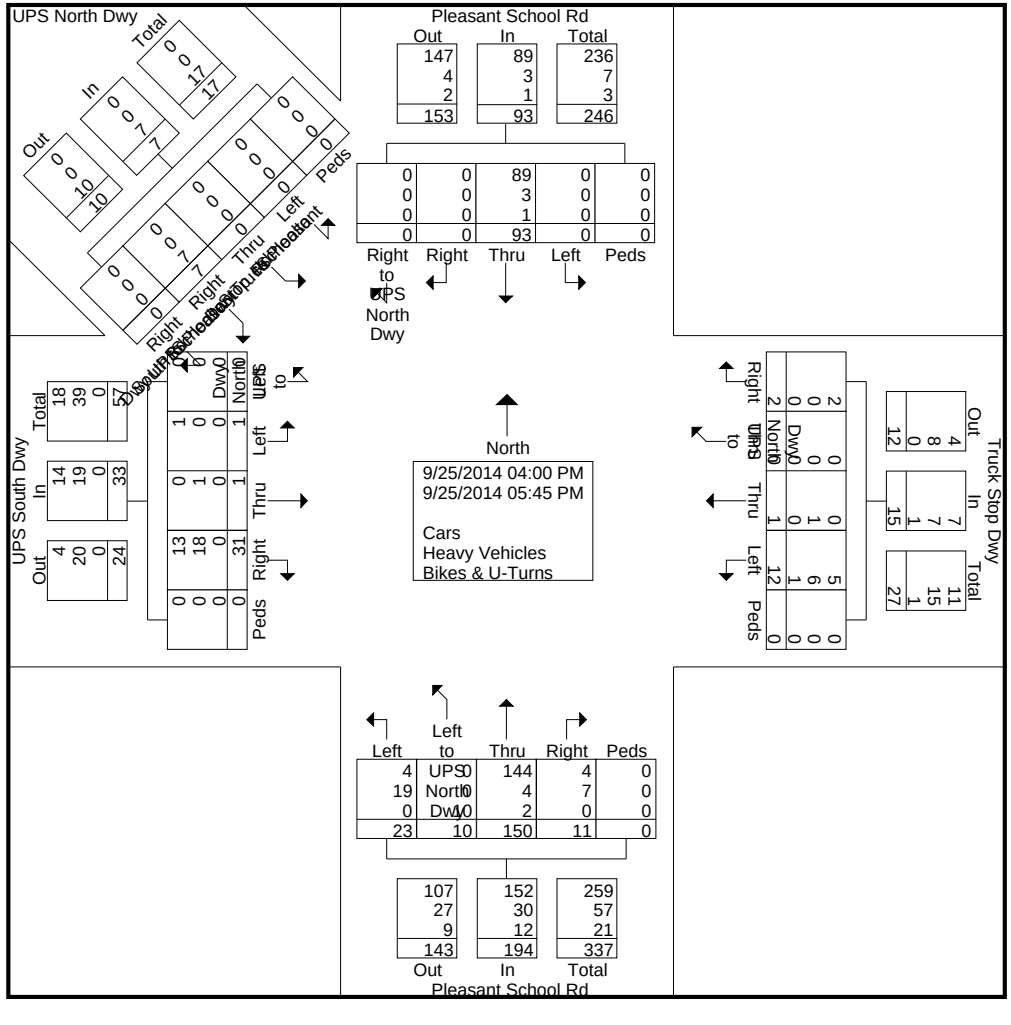
Groups Printed- Cars - Heavy Vehicles - Turns

	Pleasant School Rd Southbound						Truck Stop Dwy Westbound						Pleasant School Rd Northbound						UPS South Dwy Eastbound						UPS North Dwy						
Start Time	Right to UPS North Dwy	Right	Thru	Left	Peds	App. Total	Right	Thru to UPS North Dwy	Thru	Left	Peds	App. Total	Right	Thru	Left to UPS North Dwy	Left	Peds	App. Total	Right	Thru	Left	Left to UPS North Dwy	Peds	App. Total	Right to UPS South Dwy	Right to Pleasant School Rd	Thru to Truck Stop Dwy	Left to Pleasant School Rd	Peds	App. Total	Int. Total
04:00 PM	0	0	14	0	0	14	0	0	0	1	0	1	1	19	0	2	0	22	3	0	0	0	0	3	0	0	0	0	0	0	40
04:15 PM	0	0	8	0	0	8	0	0	0	3	0	3	2	22	0	2	0	26	4	0	0	0	0	4	0	0	0	0	0	0	41
04:30 PM	0	0	18	0	0	18	0	0	0	3	0	3	0	22	1	3	0	26	5	0	0	0	0	5	0	1	0	0	0	1	53
04:45 PM	0	0	11	0	0	11	0	0	1	1	0	2	0	22	1	2	0	25	1	0	0	0	0	1	0	1	0	0	0	1	40
Total	0	0	51	0	0	51	0	0	1	8	0	9	3	85	2	9	0	99	13	0	0	0	0	13	0	2	0	0	0	2	174
05:00 PM	0	0	7	0	0	7	0	0	0	2	0	2	1	22	1	1	0	25	5	0	0	0	0	5	0	0	0	0	0	0	39
05:15 PM	0	0	12	0	0	12	0	0	0	1	0	1	3	22	2	8	0	35	6	1	1	0	0	8	0	1	0	0	0	1	57
05:30 PM	0	0	8	0	0	8	1	0	0	1	0	2	1	8	1	4	0	14	3	0	0	0	0	3	0	4	0	0	0	4	31
05:45 PM	0	0	15	0	0	15	1	0	0	0	0	1	3	13	4	1	0	21	4	0	0	0	0	4	0	0	0	0	0	0	41
Total	0	0	42	0	0	42	2	0	0	4	0	6	8	65	8	14	0	95	18	1	1	0	0	20	0	5	0	0	0	5	168
Grand Total	0	0	93	0	0	93	2	0	1	12	0	15	11	150	10	23	0	194	31	1	1	0	0	33	0	7	0	0	0	7	342
Apprch %	0	0	100	0	0		13.3	0	6.7	80	0		5.7	77.3	5.2	11.9	0		93.9	3	3	0	0		0	100	0	0	0		
Total %	0	0	27.2	0	0	27.2	0.6	0	0.3	3.5	0	4.4	3.2	43.9	2.9	6.7	0	56.7	9.1	0.3	0.3	0	0	9.6	0	2	0	0	0	2	
Cars	0	0	89	0	0	89	2	0	0	5	0	7	4	144	0	4	0	152	13	0	1	0	0	14	0	0	0	0	0	0	262
% Cars	0	0	95.7	0	0	95.7	100	0	0	41.7	0	46.7	36.4	96	0	17.4	0	78.4	41.9	0	100	0	0	42.4	0	0	0	0	0	0	76.6
Heavy Vehicles																															
% Heavy Vehicles	0	0	3.2	0	0	3.2	0	0	100	50	0	46.7	63.6	2.7	0	82.6	0	15.5	58.1	100	0	0	0	57.6	0	0	0	0	0	0	17.3
Bikes & U-Turns	0	0	1	0	0	1	0	0	0	1	0	1	0	2	10	0	0	12	0	0	0	0	0	0	0	7	0	0	0	7	21
% Bikes & U-Turns	0	0	1.1	0	0	1.1	0	0	0	8.3	0	6.7	0	1.3	100	0	0	6.2	0	0	0	0	0	0	0	100	0	0	0	100	6.1

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896530 -Pleasant School Rd -- UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896530
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

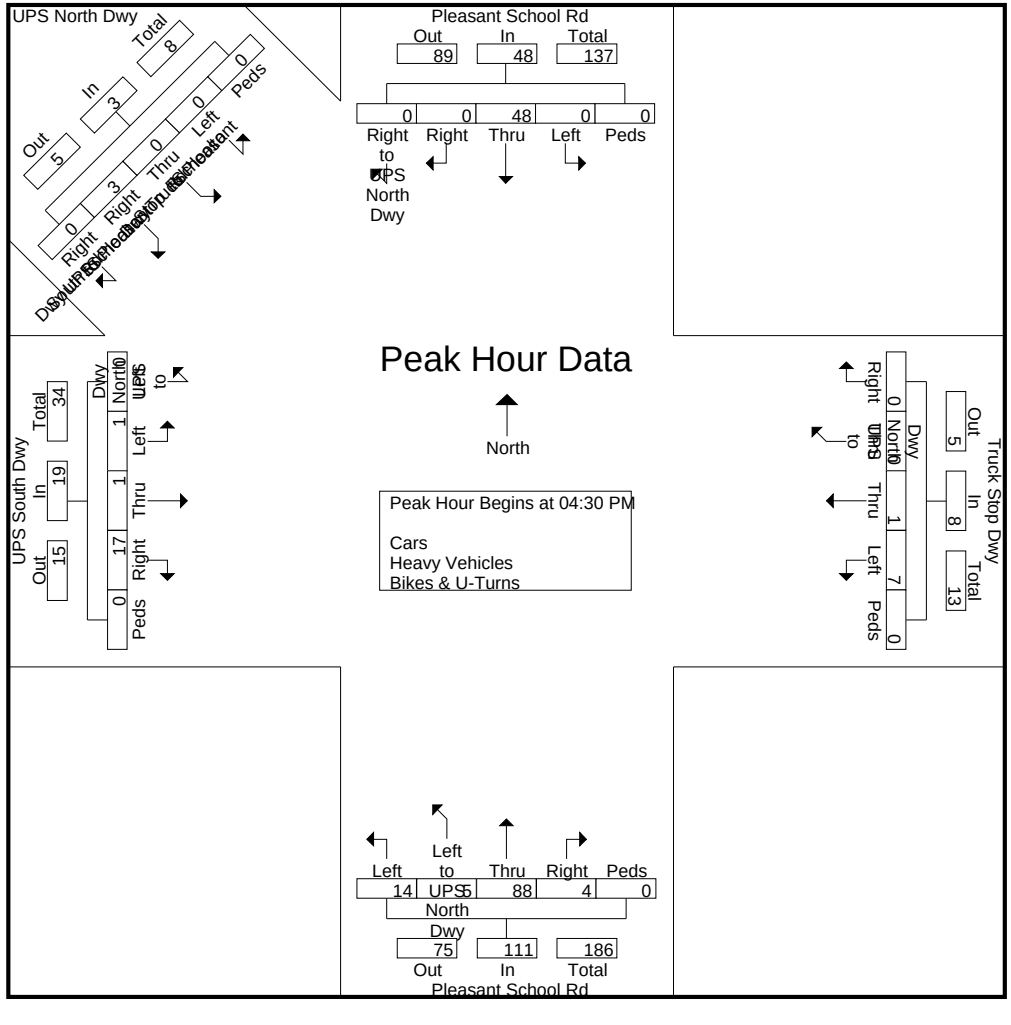
File Name : 12896530 -Pleasant School Rd -- UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896530
Start Date : 9/25/2014
Page No : 3

	Pleasant School Rd Southbound						Truck Stop Dwy Westbound						Pleasant School Rd Northbound						UPS South Dwy Eastbound						UPS North Dwy						
Start Time	Right to UPS North Dwy	Right	Thru	Left	Peds	App. Total	Right	Thru to UPS North Dwy	Thru	Left	Peds	App. Total	Right	Thru	Left to UPS North Dwy	Left	Peds	App. Total	Right	Thru	Left	Left to UPS North Dwy	Peds	App. Total	Right to UPS South Dwy	Right to Pleasant School Rd	Thru to Truck Stop Dwy	Left to Pleasant School Rd	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:30 PM																															
04:30 PM	0	0	18	0	0	18	0	0	0	3	0	3	0	**22**	1	3	0	26	5	0	0	0	0	5	0	**1**	0	0	0	**1**	53
04:45 PM	0	0	11	0	0	11	0	0	**1**	1	0	2	0	22	1	2	0	25	1	0	0	0	0	1	0	1	0	0	0	1	40
05:00 PM	0	0	7	0	0	7	0	0	0	2	0	2	1	22	1	1	0	25	5	0	0	0	0	5	0	0	0	0	0	0	39
05:15 PM	0	0	12	0	0	12	0	0	0	1	0	1	**3**	22	**2**	**8**	0	**35**	**6**	**1**	**1**	0	0	**8**	0	1	0	0	0	1	**57**
Total Volume	0	0	48	0	0	48	0	0	1	7	0	8	4	88	5	14	0	111	17	1	1	0	0	19	0	3	0	0	0	3	189
% App. Total	0	0	100	0	0		0	0	12.5	87.5	0		3.6	79.3	4.5	12.6	0		89.5	5.3	5.3	0	0		0	100	0	0	0		
PHF	.000	.000	.667	.000	.000	.667	.000	.000	.250	.583	.000	.667	.333	1.00	.625	.438	.000	.793	.708	.250	.250	.000	.000	.594	.000	.750	.000	.000	.000	.750	.829

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896530 -Pleasant School Rd -- UPS North Dwy-UPS South Dwy-Truck Stop Dwy
Site Code : 12896530
Start Date : 9/25/2014
Page No : 4



Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Hampshire Dr -- Suzanna Dr

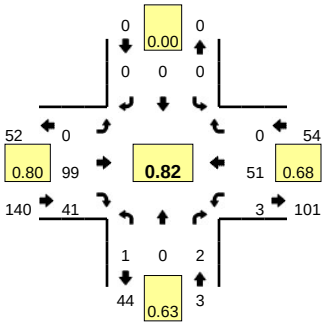
CITY/STATE: Gaffney, SC

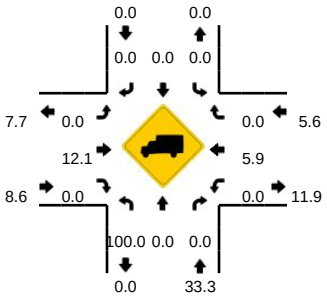
QC JOB #: 12896519

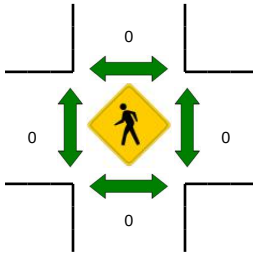
DATE: Thu, Sep 25 2014

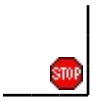
Peak-Hour: 7:15 AM -- 8:15 AM

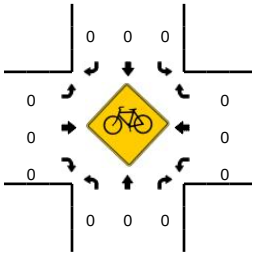
Peak 15-Min: 7:30 AM -- 7:45 AM

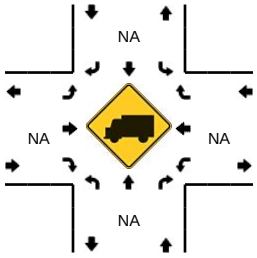


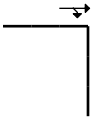


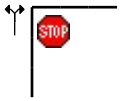


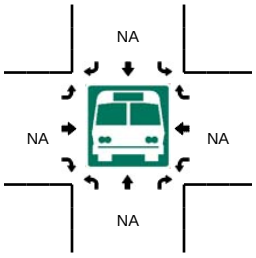












15-Min Count Period Beginning At	Hampshire Dr (Northbound)				Hampshire Dr (Southbound)				Suzanna Dr (Eastbound)				Suzanna Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	18	7	0	1	8	0	0	34	
7:15 AM	0	0	0	0	0	0	0	0	0	17	9	0	0	13	0	0	39	
7:30 AM	0	0	1	0	0	0	0	0	0	30	9	0	2	18	0	0	60	
7:45 AM	0	0	1	0	0	0	0	0	0	31	13	0	0	12	0	0	57	190
8:00 AM	1	0	0	0	0	0	0	0	0	21	10	0	1	8	0	0	41	197
8:15 AM	0	0	1	0	0	0	0	0	0	24	2	0	0	6	0	0	33	191
8:30 AM	0	0	1	0	0	0	0	0	0	19	3	0	1	11	0	0	35	166
8:45 AM	0	0	2	0	0	0	0	0	0	16	1	0	2	15	0	0	36	145

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	0	0	0	0	0	120	36	0	8	72	0	0	240
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	8	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

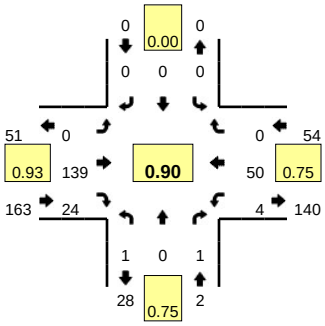
LOCATION: Hampshire Dr -- Suzanna Dr

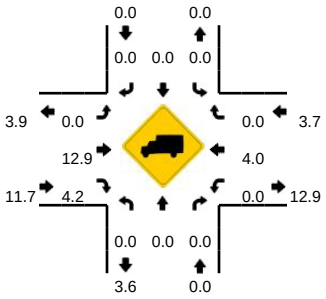
QC JOB #: 12896520

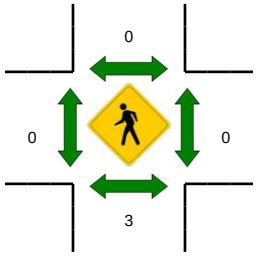
CITY/STATE: Gaffney, SC

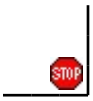
DATE: Thu, Sep 25 2014

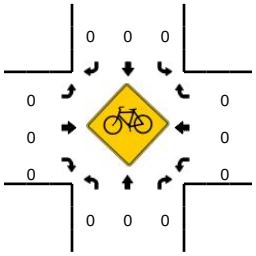
Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:30 PM -- 5:45 PM

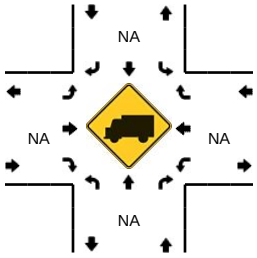


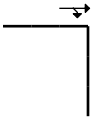


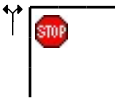


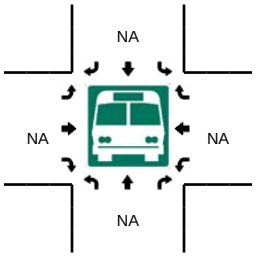












15-Min Count Period Beginning At	Hampshire Dr (Northbound)				Hampshire Dr (Southbound)				Suzanna Dr (Eastbound)				Suzanna Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	36	10	0	1	13	0	0	60	
4:15 PM	0	0	0	0	0	0	0	0	0	25	1	0	1	15	0	0	42	
4:30 PM	0	0	0	0	0	0	0	0	0	27	4	0	1	12	0	0	44	
4:45 PM	1	0	0	0	0	0	0	0	0	33	3	0	0	3	0	0	40	186
5:00 PM	0	0	0	0	0	0	0	0	0	35	9	0	0	9	0	0	53	179
5:15 PM	0	0	1	0	0	0	0	0	0	36	2	0	1	16	0	0	56	193
5:30 PM	1	0	0	0	0	0	0	0	0	34	8	0	3	15	0	0	61	210
5:45 PM	0	0	0	0	0	0	0	0	0	34	5	0	0	10	0	0	49	219

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	0	0	0	0	0	0	0	136	32	0	12	60	0	0	244
Heavy Trucks	0	0	0		0	0	0		0	24	0		0	0	0		24
Pedestrians		8				0				0				0			8
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

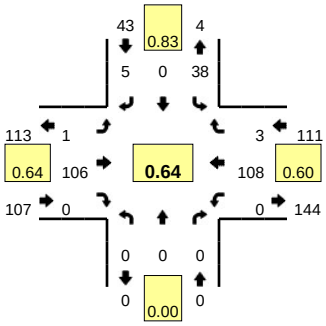
Method for determining peak hour: Total Entering Volume

LOCATION: Suzanna Dr -- Matthew Dr

CITY/STATE: Gaffney, SC

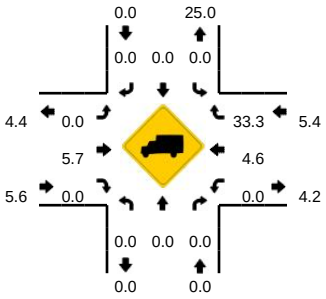
QC JOB #: 12896549

DATE: Thu, Sep 25 2014

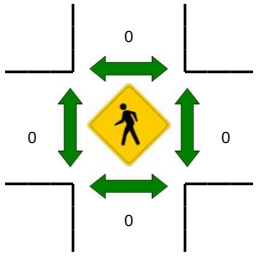


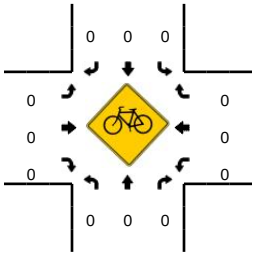
Peak-Hour: 7:15 AM -- 8:15 AM

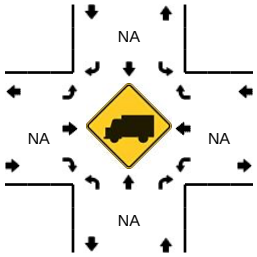
Peak 15-Min: 7:45 AM -- 8:00 AM

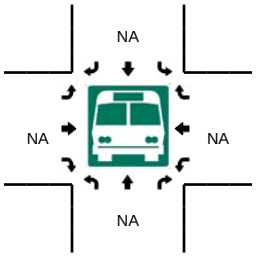


Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES









15-Min Count Period Beginning At	Suzanna Dr (Northbound)				Suzanna Dr (Southbound)				Matthew Dr (Eastbound)				Matthew Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	7	0	1	0	0	12	0	0	0	5	0	0	25	
7:15 AM	0	0	0	0	8	0	1	0	0	14	0	0	0	13	0	0	36	
7:30 AM	0	0	0	0	8	0	2	0	0	36	0	0	0	30	1	0	77	
7:45 AM	0	0	0	0	12	0	1	0	1	41	0	0	0	47	0	0	102	240
8:00 AM	0	0	0	0	10	0	1	0	0	15	0	0	0	18	2	0	46	261
8:15 AM	0	0	0	0	3	0	0	0	0	8	0	0	0	13	2	0	26	251
8:30 AM	0	0	0	0	2	0	1	0	1	12	0	1	0	6	0	0	23	197
8:45 AM	0	0	0	0	3	0	0	0	0	10	0	0	0	9	3	0	25	120

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	48	0	4	0	4	164	0	0	0	188	0	0	408
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	12	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

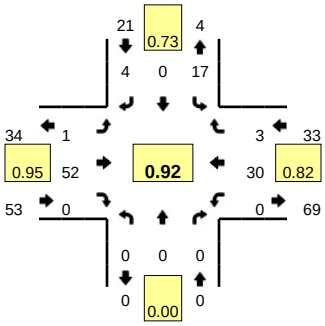
Method for determining peak hour: Total Entering Volume

LOCATION: Suzanna Dr -- Matthew Dr

CITY/STATE: Gaffney, SC

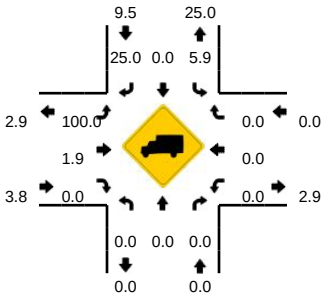
QC JOB #: 12896550

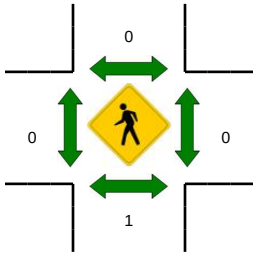
DATE: Thu, Sep 25 2014

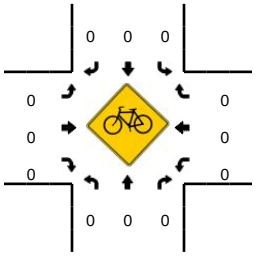


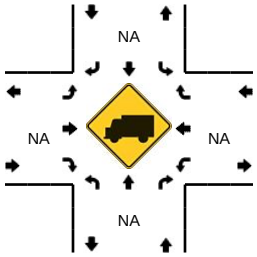
Peak-Hour: 4:15 PM -- 5:15 PM

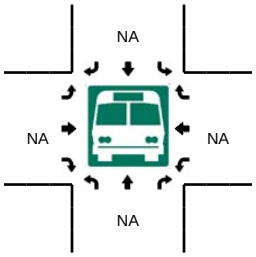
Peak 15-Min: 4:45 PM -- 5:00 PM











15-Min Count Period Beginning At	Suzanna Dr (Northbound)				Suzanna Dr (Southbound)				Matthew Dr (Eastbound)				Matthew Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	9	0	2	0	0	3	0	0	0	10	0	0	24	
4:15 PM	0	0	0	0	3	0	0	0	1	13	0	0	0	10	0	0	27	
4:30 PM	0	0	0	0	4	0	2	0	0	13	0	0	0	5	0	0	24	
4:45 PM	0	0	0	0	2	0	2	0	0	14	0	0	0	9	2	0	29	104
5:00 PM	0	0	0	0	8	0	0	0	0	12	0	0	0	6	1	0	27	107
5:15 PM	0	0	0	0	7	0	0	0	0	11	0	0	0	8	0	0	26	106
5:30 PM	0	0	0	0	9	0	2	0	1	8	0	0	0	5	0	0	25	107
5:45 PM	0	0	0	0	6	0	0	0	0	14	0	0	0	5	0	0	25	103

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	0	8	0	0	56	0	0	0	36	8	0	116
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

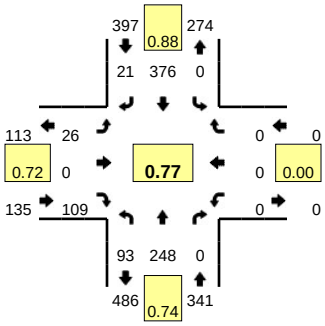
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

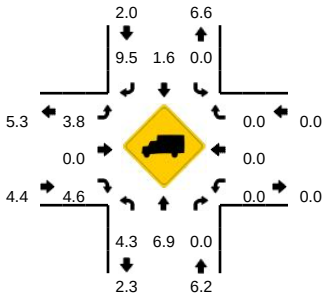
Method for determining peak hour: Total Entering Volume

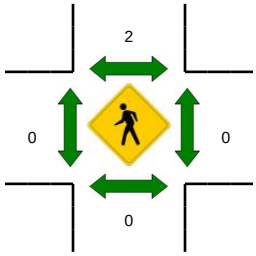
LOCATION: SC 18 -- Matthew Rd
CITY/STATE: Gaffney, SC

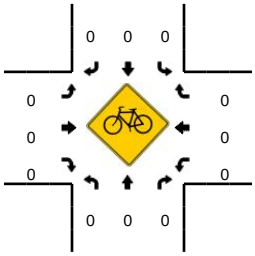
QC JOB #: 12896521
DATE: Thu, Sep 25 2014

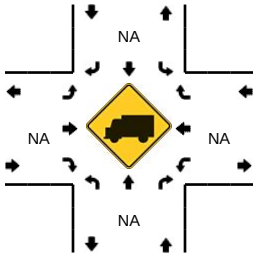


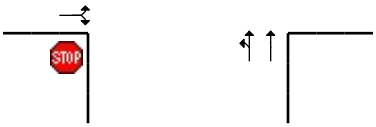
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

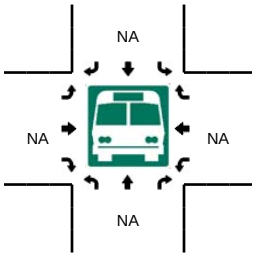












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Matthew Rd (Eastbound)				Matthew Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	40	0	0	0	80	2	0	5	0	13	0	0	0	0	0	143	
7:15 AM	13	61	0	0	0	79	1	0	5	0	18	0	0	0	0	0	177	
7:30 AM	24	61	0	0	0	83	7	0	13	0	30	0	0	0	0	0	218	
7:45 AM	41	77	0	0	0	106	7	0	8	0	43	0	0	0	0	0	282	820
8:00 AM	17	54	0	1	0	90	4	0	5	0	24	0	0	0	0	0	195	872
8:15 AM	10	56	0	0	0	97	3	0	0	0	12	0	0	0	0	0	178	873
8:30 AM	6	39	0	0	0	51	0	0	3	0	11	0	0	0	0	0	110	765
8:45 AM	11	38	0	0	0	64	2	1	4	0	8	0	0	0	0	0	128	611

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	164	308	0	0	0	424	28	0	32	0	172	0	0	0	0	0	1128
Heavy Trucks	8	16	0		0	4	4		0	0	0		0	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

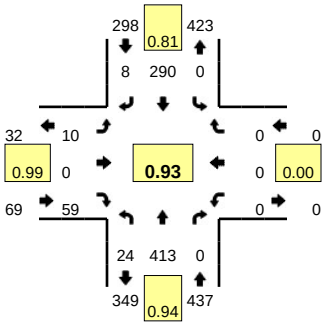
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

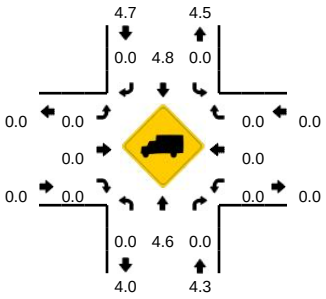
Method for determining peak hour: Total Entering Volume

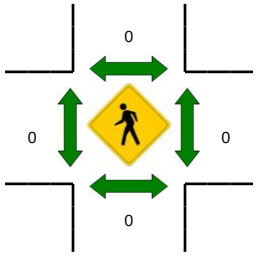
LOCATION: SC 18 -- Matthew Rd
CITY/STATE: Gaffney, SC

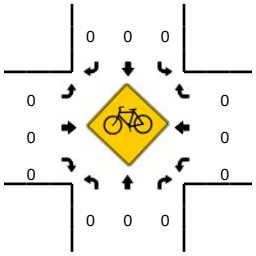
QC JOB #: 12896522
DATE: Thu, Sep 25 2014

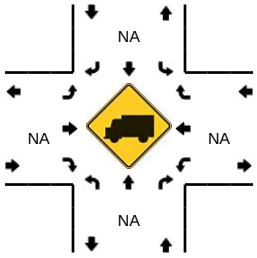


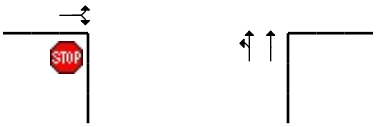
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

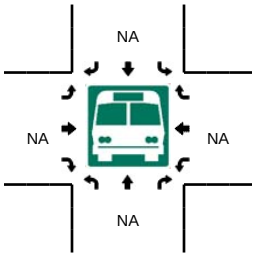












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Matthew Rd (Eastbound)				Matthew Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	109	0	0	0	82	1	0	2	0	10	0	0	0	0	0	212	
4:15 PM	6	88	0	0	0	95	4	0	3	0	13	0	0	0	0	0	209	
4:30 PM	4	108	0	0	0	65	1	0	2	0	13	0	0	0	0	0	193	
4:45 PM	8	88	0	0	0	71	3	0	2	0	14	0	0	0	0	0	186	800
5:00 PM	4	112	0	0	0	70	3	0	3	0	16	0	0	0	0	0	208	796
5:15 PM	8	105	0	0	0	84	1	0	3	0	16	0	0	0	0	0	217	804
5:30 PM	4	84	0	0	0	73	2	0	3	0	15	0	0	0	0	0	181	792
5:45 PM	3	71	0	0	0	62	1	0	4	0	15	0	0	0	0	0	156	762

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	32	420	0	0	0	336	4	0	12	0	64	0	0	0	0	0	868
Heavy Trucks	0	8	0		0	12	0		0	0	0		0	0	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

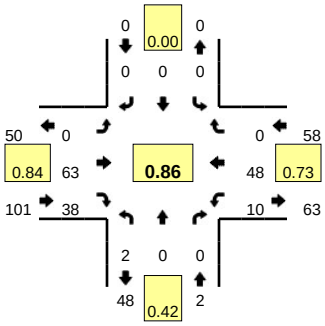
Method for determining peak hour: Total Entering Volume

LOCATION: Fatz Dr -- Hampshire Dr

QC JOB #: 12896523

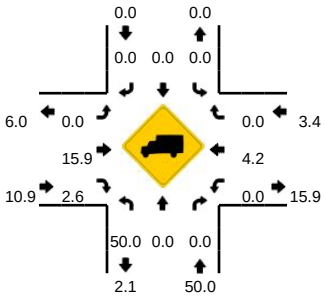
CITY/STATE: Gaffney, SC

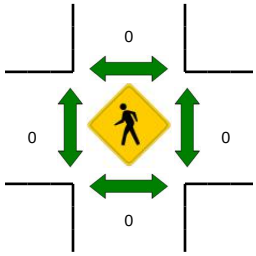
DATE: Thu, Sep 25 2014

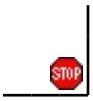


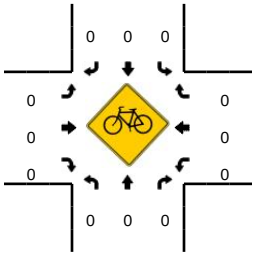
Peak-Hour: 7:15 AM -- 8:15 AM

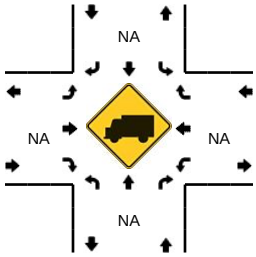
Peak 15-Min: 7:30 AM -- 7:45 AM

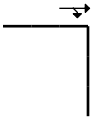


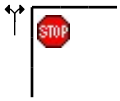


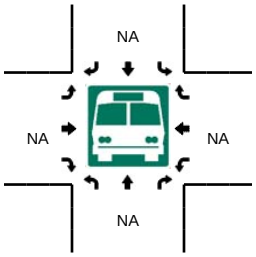












15-Min Count Period Beginning At	Fatz Dr (Northbound)				Fatz Dr (Southbound)				Hampshire Dr (Eastbound)				Hampshire Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	2	0	0	0	0	0	0	0	0	15	4	0	2	7	0	0	30	
7:15 AM	0	0	0	0	0	0	0	0	0	12	6	0	3	13	0	0	34	
7:30 AM	0	0	0	0	0	0	0	0	0	18	9	0	2	18	0	0	47	
7:45 AM	2	0	0	0	0	0	0	0	0	17	15	0	4	9	0	0	47	158
8:00 AM	0	0	0	0	0	0	0	0	0	16	8	0	1	8	0	0	33	161
8:15 AM	2	0	2	0	0	0	0	0	0	10	14	0	0	5	0	0	33	160
8:30 AM	0	0	0	0	0	0	0	0	0	13	8	0	0	12	0	0	33	146
8:45 AM	5	0	1	0	0	0	0	0	0	8	9	0	1	12	0	0	36	135

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	72	36	0	8	72	0	0	188
Heavy Trucks	0	0	0		0	0	0		0	8	4		0	8	0		20
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

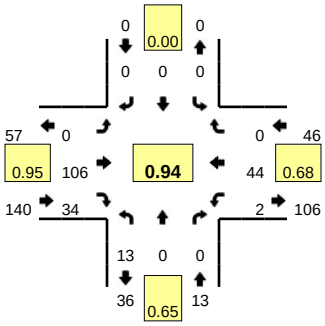
Method for determining peak hour: Total Entering Volume

LOCATION: Fatz Dr -- Hampshire Dr

QC JOB #: 12896524

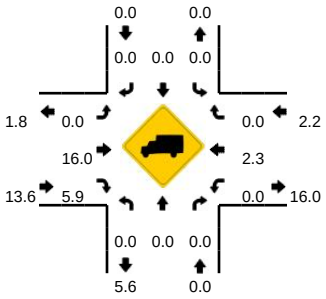
CITY/STATE: Gaffney, SC

DATE: Thu, Sep 25 2014

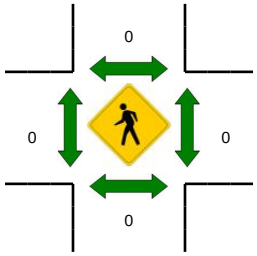


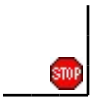
Peak-Hour: 5:00 PM -- 6:00 PM

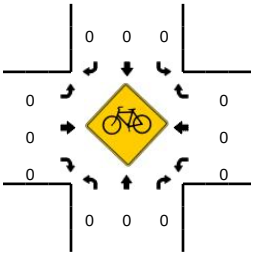
Peak 15-Min: 5:15 PM -- 5:30 PM

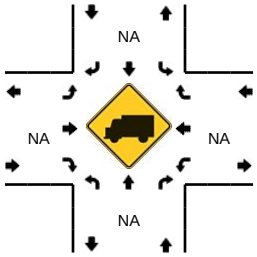


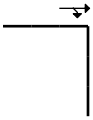
Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

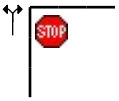


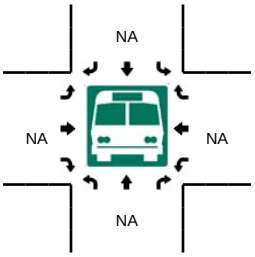












15-Min Count Period Beginning At	Fatz Dr (Northbound)				Fatz Dr (Southbound)				Hampshire Dr (Eastbound)				Hampshire Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	0	0	0	0	0	27	5	0	2	11	0	0	47	
4:15 PM	1	0	0	0	0	0	0	0	0	23	1	0	2	13	0	0	40	
4:30 PM	1	0	0	0	0	0	0	0	0	23	4	0	1	10	0	0	39	
4:45 PM	0	0	0	0	0	0	0	0	0	22	9	0	1	3	0	0	35	161
5:00 PM	3	0	0	0	0	0	0	0	0	26	8	0	0	7	0	0	44	158
5:15 PM	5	0	0	0	0	0	0	0	0	27	9	0	0	12	0	0	53	171
5:30 PM	3	0	0	0	0	0	0	0	0	27	6	0	0	17	0	0	53	185
5:45 PM	2	0	0	0	0	0	0	0	0	26	11	0	2	8	0	0	49	199

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	0	0	0	0	0	0	0	0	108	36	0	0	48	0	0	212
Heavy Trucks	0	0	0		0	0	0		0	24	0		0	0	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

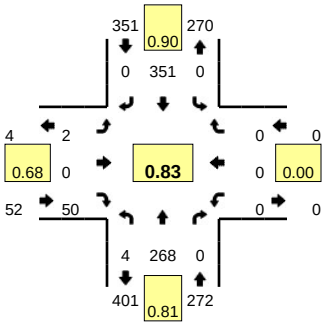
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

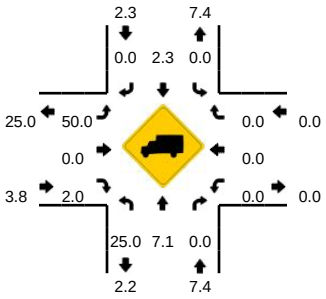
Method for determining peak hour: Total Entering Volume

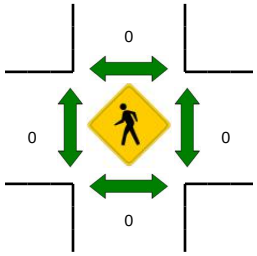
LOCATION: SC 18 -- Fatz Dr
CITY/STATE: Gaffney, SC

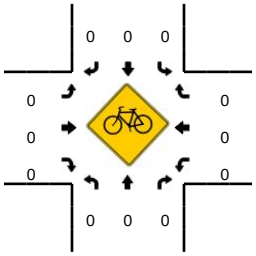
QC JOB #: 12896525
DATE: Thu, Sep 25 2014

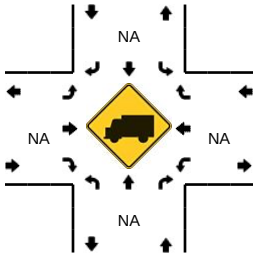


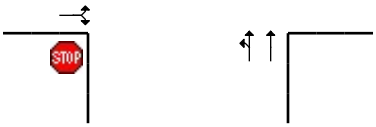
Peak-Hour: 7:30 AM -- 8:30 AM
Peak 15-Min: 7:45 AM -- 8:00 AM

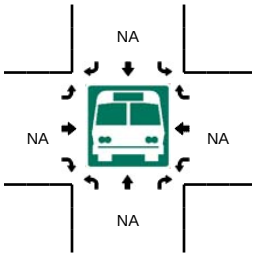












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Fatz Dr (Eastbound)				Fatz Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	1	41	0	0	0	74	1	0	0	0	6	0	0	0	0	0	123	
7:15 AM	0	64	0	0	0	70	0	0	0	0	8	0	0	0	0	0	142	
7:30 AM	0	72	0	0	0	80	0	0	0	0	12	0	0	0	0	0	164	
7:45 AM	2	85	0	0	0	98	0	0	0	0	19	0	0	0	0	0	204	633
8:00 AM	0	58	0	0	0	85	0	0	1	0	8	0	0	0	0	0	152	662
8:15 AM	2	53	0	0	0	88	0	0	1	0	11	0	0	0	0	0	155	675
8:30 AM	0	45	0	0	0	45	0	0	0	0	9	0	0	0	0	0	99	610
8:45 AM	6	37	0	0	0	59	0	0	0	0	8	0	0	0	0	0	110	516

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	340	0	0	0	392	0	0	0	0	76	0	0	0	0	0	816
Heavy Trucks	4	16	0		0	8	0		0	0	0		0	0	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

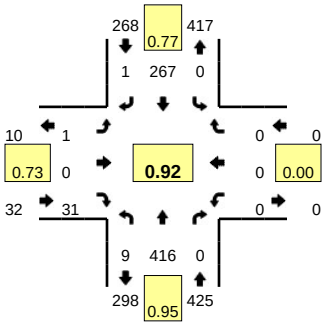
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

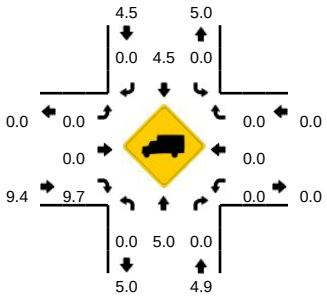
Method for determining peak hour: Total Entering Volume

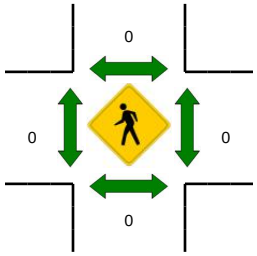
LOCATION: SC 18 -- Fatz Dr
CITY/STATE: Gaffney, SC

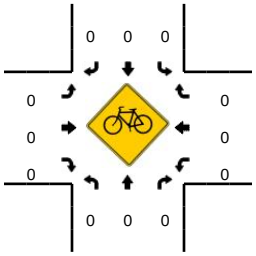
QC JOB #: 12896526
DATE: Thu, Sep 25 2014

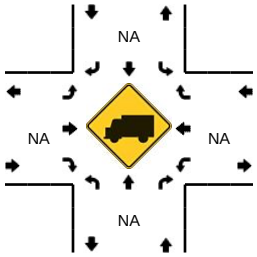


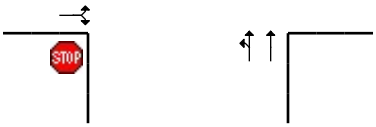
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

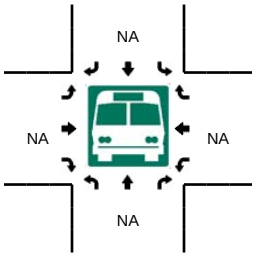












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Fatz Dr (Eastbound)				Fatz Dr (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	109	0	0	0	73	0	0	0	0	7	0	0	0	0	0	191	
4:15 PM	1	90	0	0	0	96	0	0	1	0	3	0	0	0	0	0	191	
4:30 PM	1	111	0	0	0	62	0	0	0	0	5	0	0	0	0	0	179	
4:45 PM	1	88	0	0	0	64	1	0	0	0	9	0	0	0	0	0	163	724
5:00 PM	5	107	0	0	0	65	0	0	0	0	9	0	0	0	0	0	186	719
5:15 PM	2	110	0	0	0	76	0	0	1	0	8	0	0	0	0	0	197	725
5:30 PM	4	82	0	0	0	65	0	0	1	0	6	0	0	0	0	0	158	704
5:45 PM	1	72	0	0	0	50	1	0	1	0	12	0	0	0	0	0	137	678

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	440	0	0	0	304	0	0	4	0	32	0	0	0	0	0	788
Heavy Trucks	0	12	0		0	12	0		0	0	0		0	0	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896527 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896527
Start Date : 9/25/2014
Page No : 1

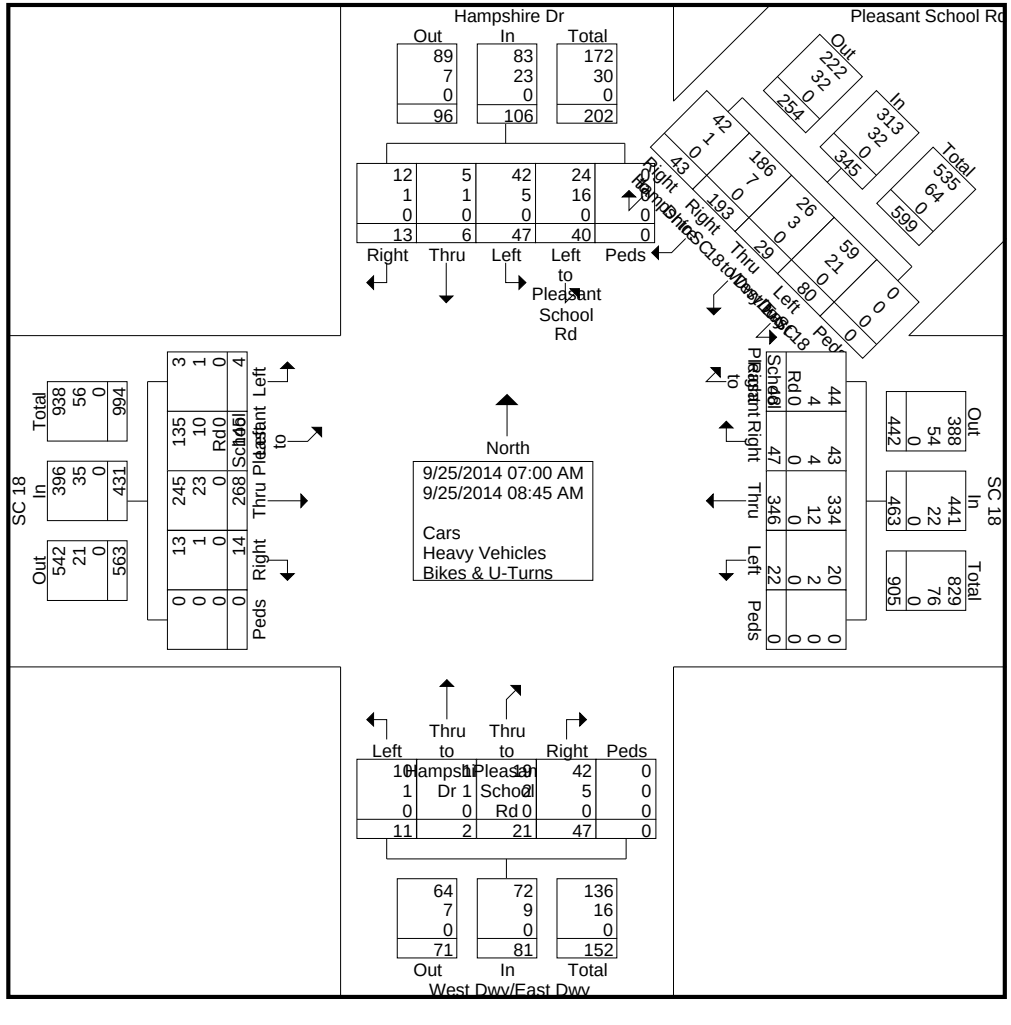
Groups Printed- Cars - Heavy Vehicles - Turns

	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	4	5	0	11	3	9	2	10	0	24	6	5	57	3	0	71	8	2	0	3	0	13	1	27	12	1	0	41	160
07:15 AM	1	1	6	6	0	14	8	24	5	16	0	53	5	8	44	4	0	61	5	1	0	0	0	6	1	42	19	1	0	63	197
07:30 AM	2	2	11	5	0	20	11	31	10	11	0	63	7	9	34	4	0	54	6	4	0	5	0	15	3	40	22	0	0	65	217
07:45 AM	2	0	11	6	0	19	7	27	1	16	0	51	6	4	61	1	0	72	4	3	1	1	0	9	3	50	28	0	0	81	232
Total	7	3	32	22	0	64	29	91	18	53	0	191	24	26	196	12	0	258	23	10	1	9	0	43	8	159	81	2	0	250	806
08:00 AM	1	1	5	8	0	15	4	31	1	6	0	42	7	4	52	0	0	63	3	3	0	1	0	7	1	30	17	0	0	48	175
08:15 AM	2	0	5	3	0	10	1	30	2	4	0	37	6	2	46	4	0	58	8	2	0	0	0	10	3	32	19	1	0	55	170
08:30 AM	1	1	3	6	0	11	2	18	6	8	0	34	4	10	20	5	0	39	8	4	1	1	0	14	2	26	16	1	0	45	143
08:45 AM	2	1	2	1	0	6	7	23	2	9	0	41	7	5	32	1	0	45	5	2	0	0	0	7	0	21	12	0	0	33	132
Total	6	3	15	18	0	42	14	102	11	27	0	154	24	21	150	10	0	205	24	11	1	2	0	38	6	109	64	2	0	181	620
Grand Total	13	6	47	40	0	106	43	193	29	80	0	345	48	47	346	22	0	463	47	21	2	11	0	81	14	268	145	4	0	431	1426
Apprch %	12.3	5.7	44.3	37.7	0		12.5	55.9	8.4	23.2	0		10.4	10.2	74.7	4.8	0		58	25.9	2.5	13.6	0		3.2	62.2	33.6	0.9	0		
Total %	0.9	0.4	3.3	2.8	0	7.4	3	13.5	2	5.6	0	24.2	3.4	3.3	24.3	1.5	0	32.5	3.3	1.5	0.1	0.8	0	5.7	1	18.8	10.2	0.3	0	30.2	
Cars	12	5	42	24	0	83	42	186	26	59	0	313	44	43	334	20	0	441	42	19	1	10	0	72	13	245	135	3	0	396	1305
% Cars	92.3	83.3	89.4	60	0	78.3	97.7	96.4	89.7	73.8	0	90.7	91.7	91.5	96.5	90.9	0	95.2	89.4	90.5	50	90.9	0	88.9	92.9	91.4	93.1	75	0	91.9	91.5
Heavy Vehicles																															
% Heavy Vehicles	7.7	16.7	10.6	40	0	21.7	2.3	3.6	10.3	26.2	0	9.3	8.3	8.5	3.5	9.1	0	4.8	10.6	9.5	50	9.1	0	11.1	7.1	8.6	6.9	25	0	8.1	8.5
Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896527 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896527
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896527 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896527
Start Date : 9/25/2014
Page No : 3

	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 07:15 AM																															
07:15 AM	1	1	6	6	0	14	8	24	5	16						4												1			
07:30 AM	2	**2**	**11**	5	0	**20**	**11**	**31**	**10**	11	0	**63**	**7**	**9**	34	4	0	54	**6**	**4**	0	**5**	0	**15**	**3**	40	22	0	0	65	217
07:45 AM	2	0	11	6	0	19	7	27	1	16	0	51	6	4	**61**	1	0	**72**	4	3	**1**	1	0	9	3	**50**	**28**	0	0	**81**	**232**
08:00 AM	1	1	5	**8**	0	15	4	31	1	6	0	42	7	4	52	0	0	63	3	3	0	1	0	7	1	30	17	0	0	48	175
Total Volume	6	4	33	25	0	68	30	113	17	49	0	209	25	25	191	9	0	250	18	11	1	7	0	37	8	162	86	1	0	257	821
% App. Total	8.8	5.9	48.5	36.8	0		14.4	54.1	8.1	23.4	0		10	10	76.4	3.6	0		48.6	29.7	2.7	18.9	0		3.1	63	33.5	0.4	0		
PHF	.750	.500	.750	.781	.000	.850	.682	.911	.425	.766	.000	.829	.893	.694	.783	.563	.000	.868	.750	.688	.250	.350	.000	.617	.667	.810	.768	.250	.000	.793	.885

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

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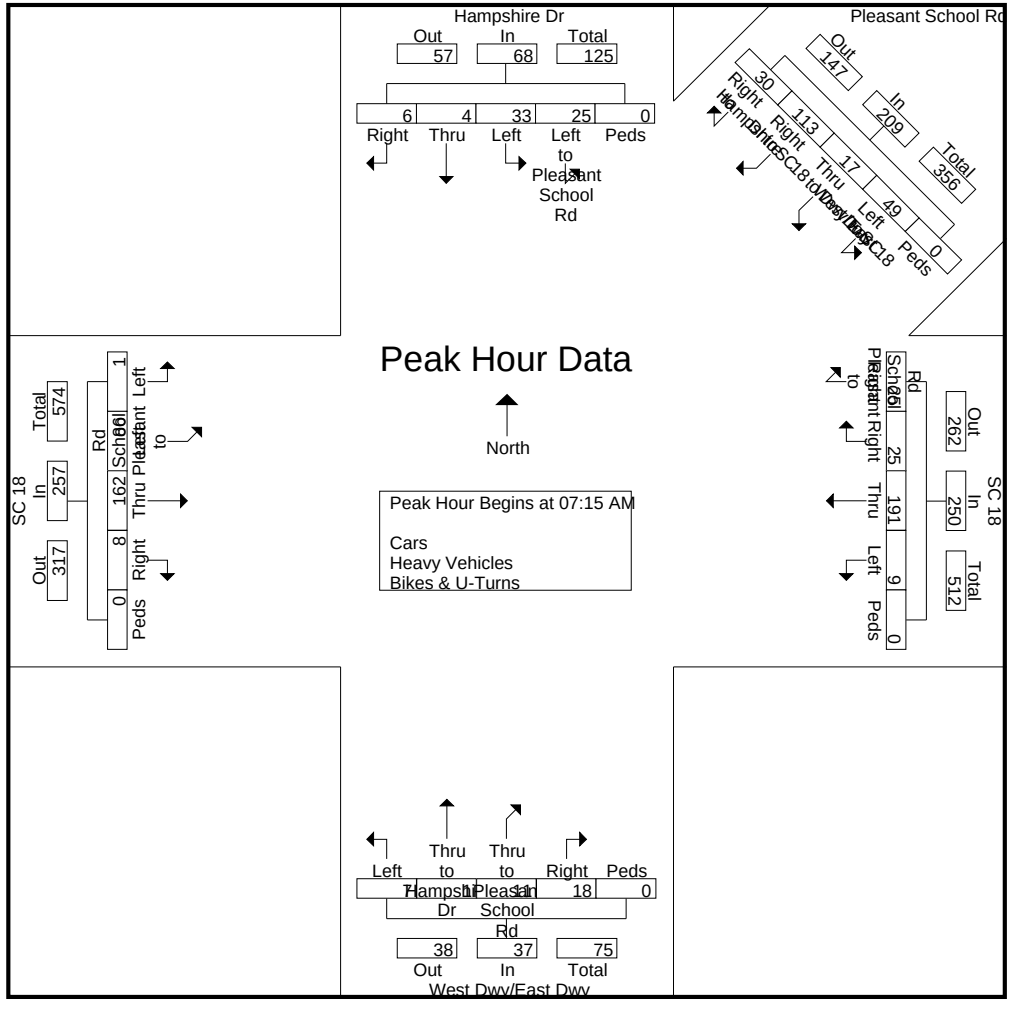
Start Date : 9/25/2014
Page No : 4



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896528 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896528
Start Date : 9/25/2014
Page No : 1

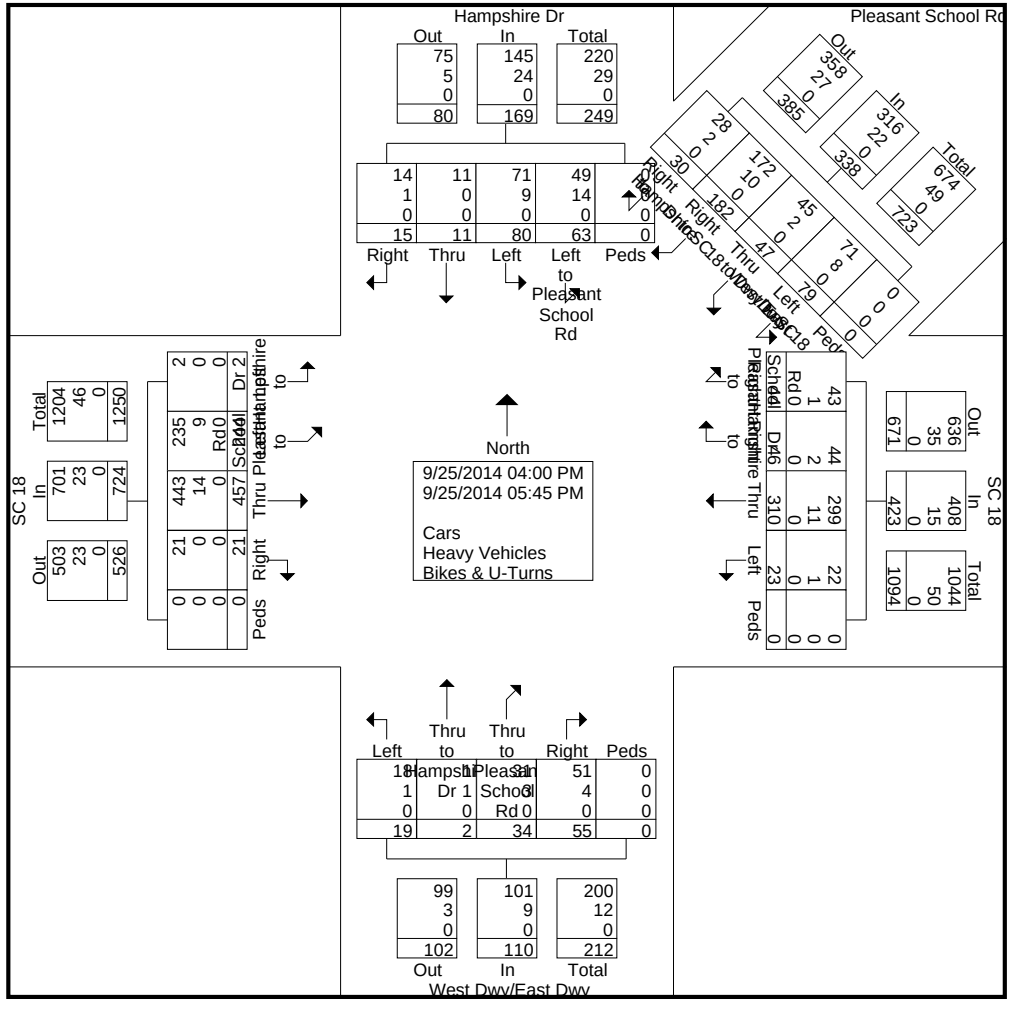
Groups Printed- Cars - Heavy Vehicles - Turns

	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right to Hamshire Dr	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left to Hampshire Dr	Peds	App. Total	Int. Total
04:00 PM	4	1	10	7	0	22	4	22	5	13	0	44	4	5	56	3	0	68	10	2	0	2	0	14	1	70	29	0	0	100	248
04:15 PM	6	1	6	9	0	22	5	24	7	13	0	49	3	6	56	1	0	66	7	6	1	4	0	18	1	53	31	2	0	87	242
04:30 PM	0	0	8	7	0	15	4	29	6	13	0	52	13	5	22	5	0	45	6	2	1	4	0	13	3	54	39	0	0	96	221
04:45 PM	0	0	1	6	0	7	2	20	11	11	0	44	5	1	33	2	0	41	6	4	0	4	0	14	8	53	29	0	0	90	196
Total	10	2	25	29	0	66	15	95	29	50	0	189	25	17	167	11	0	220	29	14	2	14	0	59	13	230	128	2	0	373	907
05:00 PM	1	0	12	10	0	23	2	28	11	10	0	51	5	4	31	3	0	43	7	6	0	2	0	15	1	61	35	0	0	97	229
05:15 PM	0	4	14	8	0	26	4	23	3	7	0	37	5	7	43	2	0	57	7	11	0	1	0	19	3	71	38	0	0	112	251
05:30 PM	0	3	15	10	0	28	7	24	1	6	0	38	3	10	39	4	0	56	8	0	0	1	0	9	3	48	23	0	0	74	205
05:45 PM	4	2	14	6	0	26	2	12	3	6	0	23	6	8	30	3	0	47	4	3	0	1	0	8	1	47	20	0	0	68	172
Total	5	9	55	34	0	103	15	87	18	29	0	149	19	29	143	12	0	203	26	20	0	5	0	51	8	227	116	0	0	351	857
Grand Total	15	11	80	63	0	169	30	182	47	79	0	338	44	46	310	23	0	423	55	34	2	19	0	110	21	457	244	2	0	724	1764
Apprch %	8.9	6.5	47.3	37.3	0		8.9	53.8	13.9	23.4	0		10.4	10.9	73.3	5.4	0		50	30.9	1.8	17.3	0		2.9	63.1	33.7	0.3	0		
Total %	0.9	0.6	4.5	3.6	0	9.6	1.7	10.3	2.7	4.5	0	19.2	2.5	2.6	17.6	1.3	0	24	3.1	1.9	0.1	1.1	0	6.2	1.2	25.9	13.8	0.1	0	41	
Cars	14	11	71	49	0	145	28	172	45	71	0	316	43	44	299	22	0	408	51	31	1	18	0	101	21	443	235	2	0	701	1671
% Cars	93.3	100	88.8	77.8	0	85.8	93.3	94.5	95.7	89.9	0	93.5	97.7	95.7	96.5	95.7	0	96.5	92.7	91.2	50	94.7	0	91.8	100	96.9	96.3	100	0	96.8	94.7
Heavy Vehicles																															
% Heavy Vehicles	6.7	0	11.2	22.2	0	14.2	6.7	5.5	4.3	10.1	0	6.5	2.3	4.3	3.5	4.3	0	3.5	7.3	8.8	50	5.3	0	8.2	0	3.1	3.7	0	0	3.2	5.3
Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-Turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896528 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896528
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

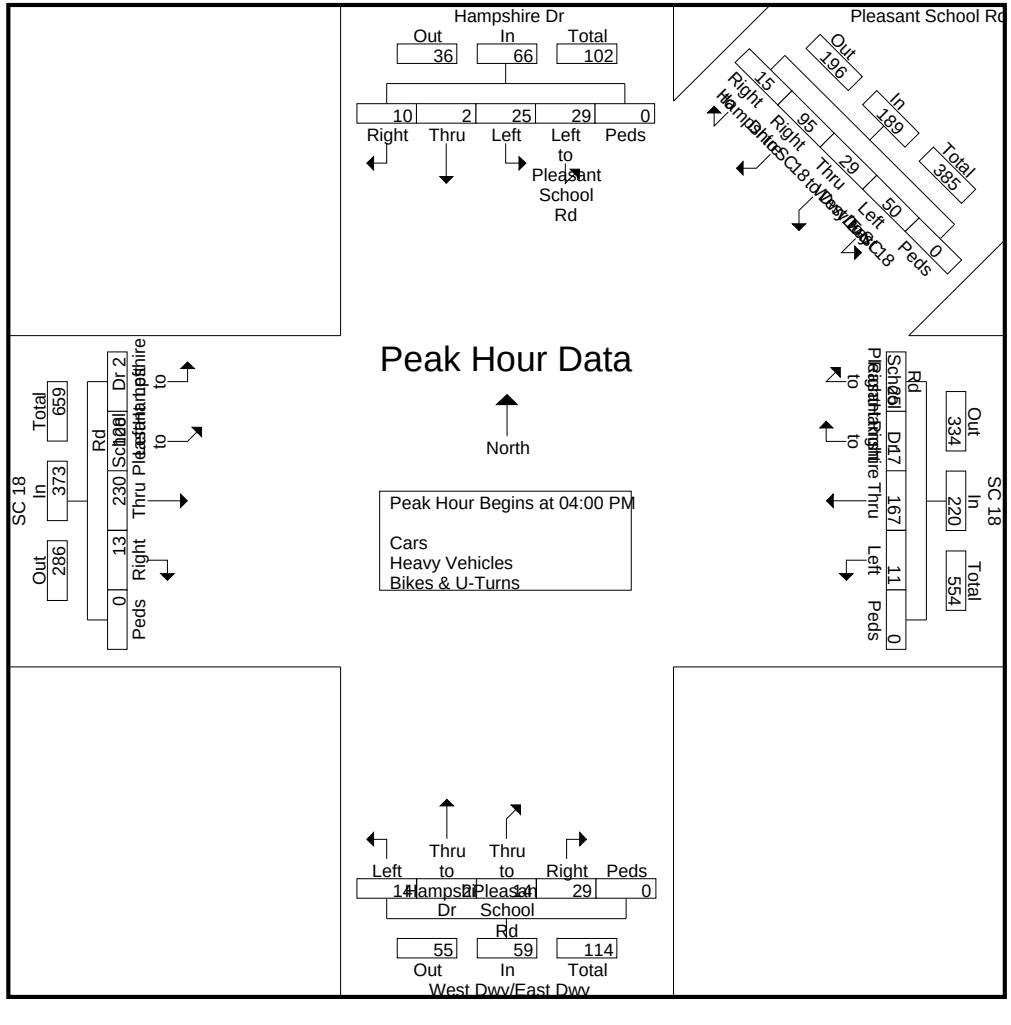
File Name : 12896528 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896528
Start Date : 9/25/2014
Page No : 3

	Hampshire Dr Southbound						Pleasant School Rd						SC 18 Westbound						West Dwy/East Dwy Northbound						SC 18 Eastbound						
Start Time	Right	Thru	Left	Left to Pleasant School Rd	Peds	App. Total	Right to Hampshire Dr	Right to SC 18	Thru to West Dwy/East Dwy	Left to SC 18	Peds	App. Total	Right to Pleasant School Rd	Right to Hamshire Dr	Thru	Left	Peds	App. Total	Right	Thru to Pleasant School Rd	Thru to Hampshire Dr	Left	Peds	App. Total	Right	Thru	Left to Pleasant School Rd	Left to Hampshire Dr	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:00 PM																															
04:00 PM	4	1	10	7	0	22	4	22	5	13	0	44	4	5	**56**	3	0	**68**	**10**	2	0	2	0	14	1	**70**	29	0	0	**100**	**248**
04:15 PM	**6**	1	6	**9**	0	22	**5**	24	7	13	0	49	3	**6**	56	1	0	66	7	**6**	**1**	**4**	0	**18**	1	53	31	**2**	0	87	242
04:30 PM	0	0	8	7	0	15	4	**29**	6	13	0	**52**	**13**	5	22	**5**	0	45	6	2	1	4	0	13	3	54	**39**	0	0	96	221
04:45 PM	0	0	1	6	0	7	2	20	**11**	11	0	44	5	1	33	2	0	41	6	4	0	4	0	14	**8**	53	29	0	0	90	196
Total Volume	10	2	25	29	0	66	15	95	29	50	0	189	25	17	167	11	0	220	29	14	2	14	0	59	13	230	128	2	0	373	907
% App. Total	15.2	3	37.9	43.9	0		7.9	50.3	15.3	26.5	0		11.4	7.7	75.9	5	0		49.2	23.7	3.4	23.7	0		3.5	61.7	34.3	0.5	0		
PHF	.417	.500	.625	.806	.000	.750	.750	.819	.659	.962	.000	.909	.481	.708	.746	.550	.000	.809	.725	.583	.500	.875	.000	.819	.406	.821	.821	.250	.000	.933	.914

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896528 - Pleasant School Rd-West Dwy-East Dwy -- SC 18
Site Code : 12896528
Start Date : 9/25/2014
Page No : 4



Exit 96

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/11/2013

Major Rt: SC 18 Minor Rt: I-85/S-668

Day of Week: Thursday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 7060 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

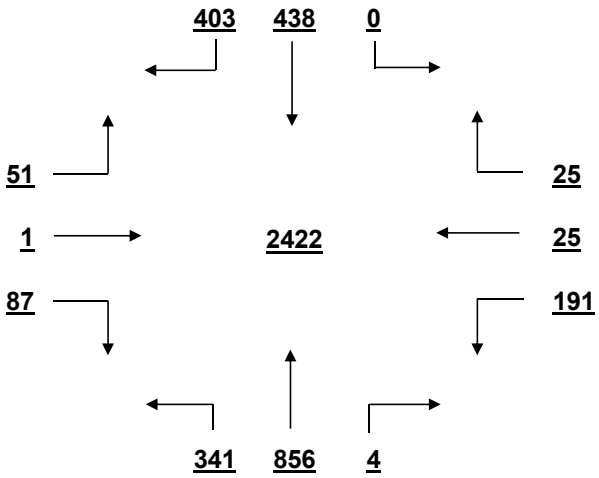
INTERSECTION VOLUME SUMMARY

	From N SC 18				From S SC 18				From E I-85/S-668				From W I-85/S-668				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	24	25	49	30	42	0	72	11	2	0	13	1	0	4	5	139	0
7:15 - 7:30	0	32	24	56	23	41	0	64	3	0	4	7	5	0	7	12	139	0
7:30 - 7:45	0	41	30	71	18	45	0	63	12	1	2	15	3	0	4	7	156	0
7:45 - 8:00	0	42	33	75	17	28	2	47	20	3	2	25	5	0	5	10	157	0
8:00 - 8:15	0	19	23	42	21	44	0	65	18	2	2	22	2	0	6	8	137	0
8:15 - 8:30	0	19	18	37	10	42	0	52	6	3	0	9	1	0	4	5	103	0
8:30 - 8:45	0	17	21	38	13	41	0	54	11	2	2	15	1	0	4	5	112	0
8:45 - 9:00	0	20	26	46	20	27	1	48	13	3	0	16	2	0	5	7	117	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	30	11	41	33	73	0	106	10	1	2	13	4	0	9	13	173	0
16:15 - 16:30	0	35	28	63	24	66	0	90	13	0	3	16	4	0	7	11	180	0
16:30 - 16:45	0	22	20	42	21	57	0	78	12	1	1	14	6	0	3	9	143	0
16:45 - 17:00	0	19	30	49	19	75	0	94	11	1	0	12	2	0	3	5	160	0
17:00 - 17:15	0	32	26	58	31	75	0	106	3	1	2	6	3	0	8	11	181	0
17:15 - 17:30	0	28	34	62	16	73	1	90	11	4	2	17	8	0	7	15	184	0
17:30 - 17:45	0	31	21	52	23	68	0	91	16	0	1	17	1	0	9	10	170	0
17:45 - 18:00	0	27	33	60	22	59	0	81	21	1	2	24	3	1	2	6	171	0
TOTAL	0	438	403	841	341	856	4	1201	191	25	25	241	51	1	87	139	2422	0
Trucks	0	9	33	42	41	39	1	81	22	2	1	25	2	0	10	12	160	6.6%
School Buses	0	2	1	3	0	1	0	1	0	0	0	0	0	0	1	1	5	0.2%

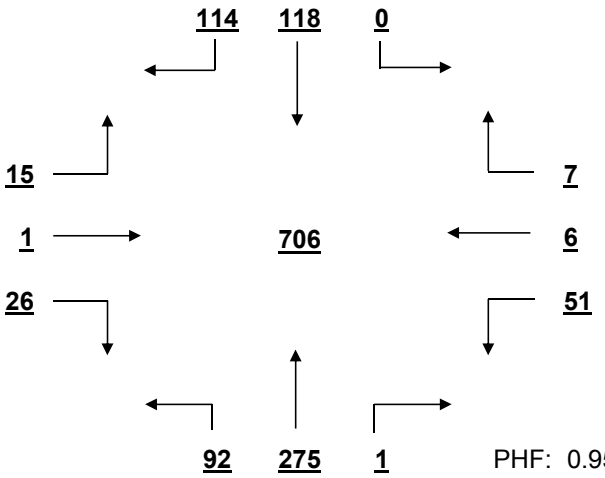
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 18 AT I-85/S-668 Date: 4/11/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

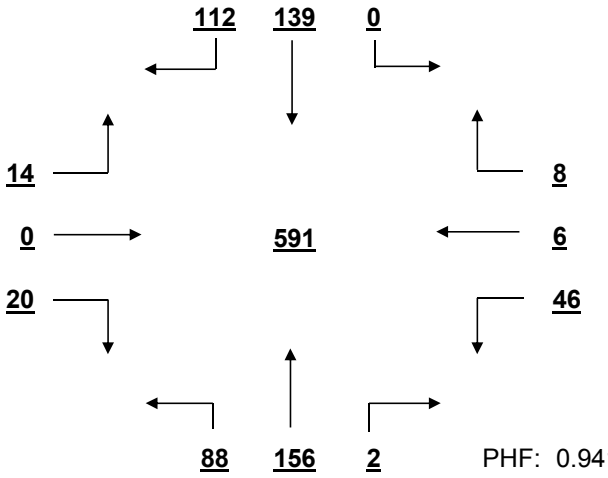


OVERALL PEAK HOUR VOLUME
FROM 17:00 TO 18:00



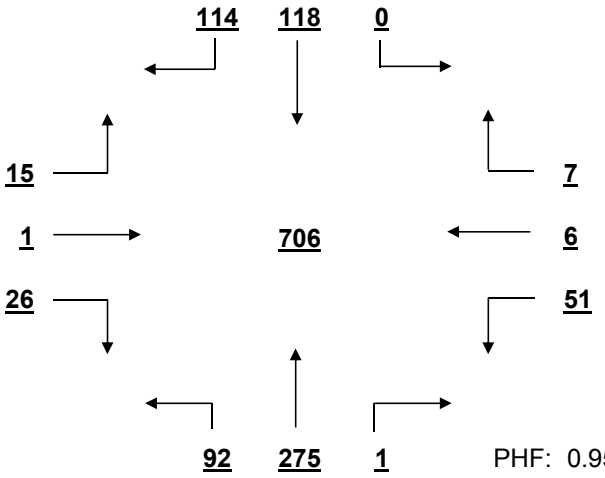
PHF: 0.959

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:00 TO 8:00



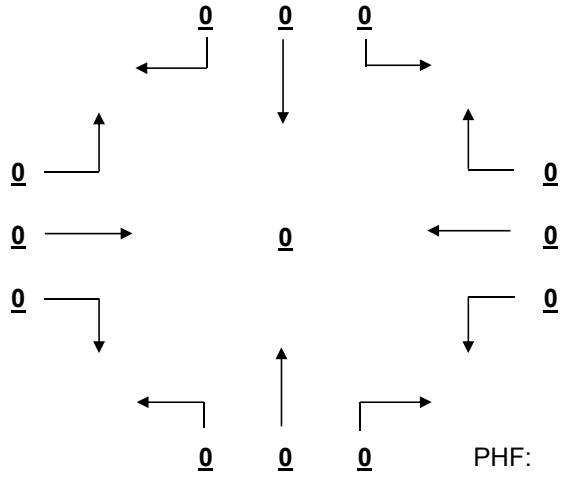
PHF: 0.941

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



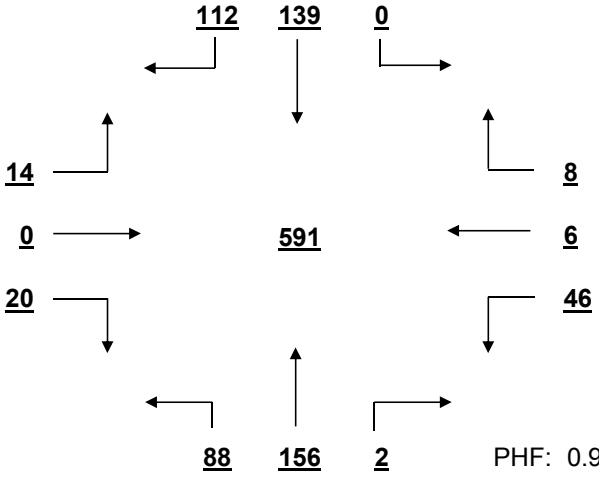
PHF: 0.959

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.941

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/11/2013

Major Rt: I 85 SB * Not on State System Minor Rt: S-668

Day of Week: Thursday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: N-S Intersection ADT - 2650 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1 * Each Direction

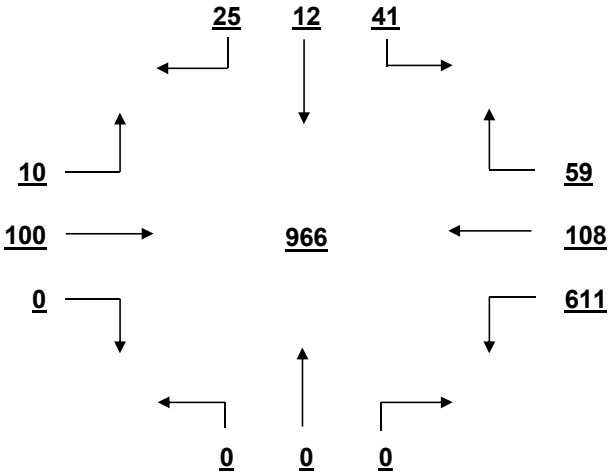
INTERSECTION VOLUME SUMMARY

	From N S-668				From S S-668				From E I 85 SB				From W I 85 SB				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	1	0	3	4	0	0	0	0	44	5	6	55	0	4	0	4	63	1
7:15 - 7:30	2	0	0	2	0	0	0	0	40	4	4	48	0	11	0	11	61	0
7:30 - 7:45	3	3	2	8	0	0	0	0	41	7	2	50	1	4	0	5	63	0
7:45 - 8:00	4	4	3	11	0	0	0	0	47	3	5	55	1	7	0	8	74	0
8:00 - 8:15	2	0	2	4	0	0	0	0	34	8	3	45	0	6	0	6	55	0
8:15 - 8:30	2	0	1	3	0	0	0	0	24	4	5	33	1	3	0	4	40	0
8:30 - 8:45	2	0	1	3	0	0	0	0	26	7	3	36	0	3	0	3	42	0
8:45 - 9:00	3	0	1	4	0	0	0	0	36	9	7	52	1	5	0	6	62	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	4	0	1	5	0	0	0	0	39	5	3	47	1	9	0	10	62	0
16:15 - 16:30	4	2	1	7	0	0	0	0	35	13	4	52	0	7	0	7	66	0
16:30 - 16:45	1	1	2	4	0	0	0	0	28	11	3	42	0	8	0	8	54	0
16:45 - 17:00	4	1	1	6	0	0	0	0	40	7	4	51	0	2	0	2	59	0
17:00 - 17:15	2	0	3	5	0	0	0	0	45	10	2	57	1	7	0	8	70	0
17:15 - 17:30	3	1	0	4	0	0	0	0	43	6	5	54	2	12	0	14	72	0
17:30 - 17:45	2	0	2	4	0	0	0	0	38	4	0	42	2	8	0	10	56	0
17:45 - 18:00	2	0	2	4	0	0	0	0	51	5	3	59	0	4	0	4	67	0
TOTAL	41	12	25	78	0	0	0	0	611	108	59	778	10	100	0	110	966	1
Trucks	5	3	3	11	0	0	0	0	58	11	8	77	2	7	0	9	97	10.0%
School Buses	1	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2	0.2%

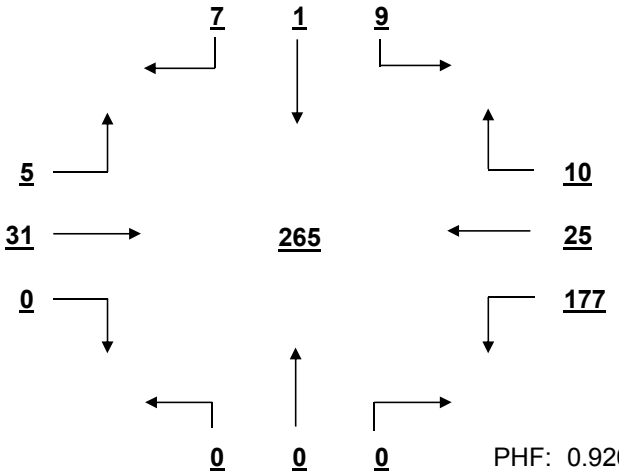
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I 85 SB AT S-668 Date: 4/11/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

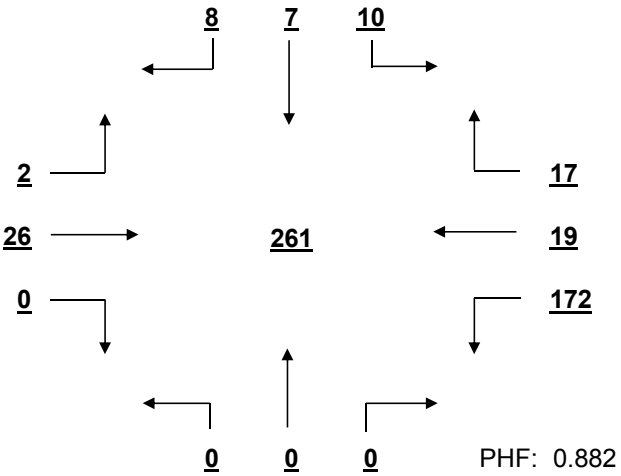


OVERALL PEAK HOUR VOLUME
FROM 17:00 TO 18:00



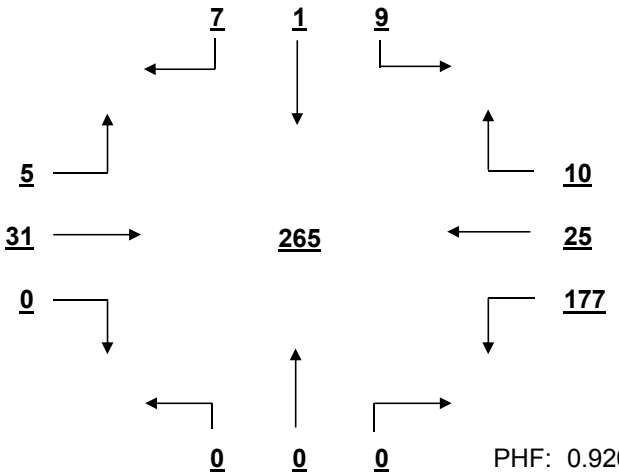
PHF: 0.920

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:00 TO 8:00



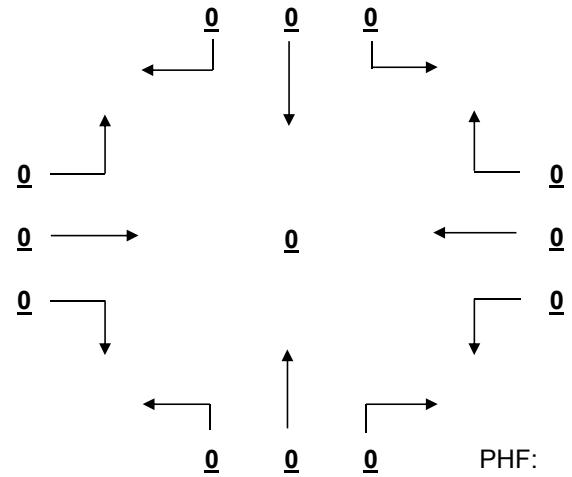
PHF: 0.882

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



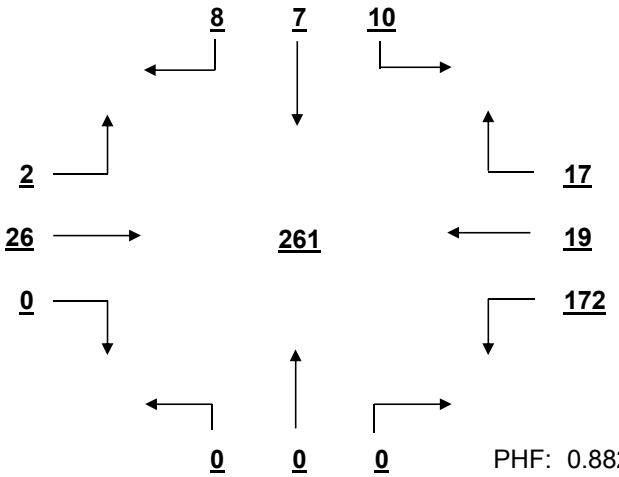
PHF: 0.920

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.882

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 4/11/2013

Major Rt: SC 18 Minor Rt: I-85 NB

Day of Week: Thursday Weather: Clear Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 7710 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

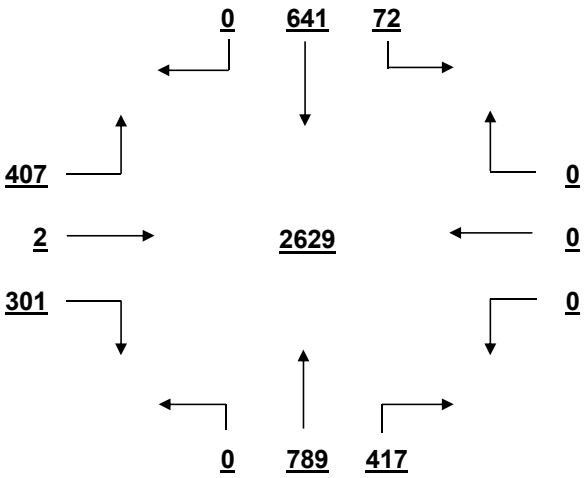
INTERSECTION VOLUME SUMMARY

	From N SC 18				From S SC 18				From E I-85 NB				From W I-85 NB				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	6	32	0	38	0	67	24	91	0	0	0	0	7	1	16	24	153	0
7:15 - 7:30	12	32	0	44	0	44	20	64	0	0	0	0	17	0	17	34	142	0
7:30 - 7:45	6	58	0	64	0	43	34	77	0	0	0	0	22	0	17	39	180	0
7:45 - 8:00	4	52	0	56	0	26	28	54	0	0	0	0	18	0	40	58	168	0
8:00 - 8:15	4	41	0	45	0	52	19	71	0	0	0	0	14	0	19	33	149	0
8:15 - 8:30	1	30	0	31	0	28	14	42	0	0	0	0	22	0	18	40	113	0
8:30 - 8:45	5	25	0	30	0	33	11	44	0	0	0	0	22	0	10	32	106	0
8:45 - 9:00	2	40	0	42	0	35	17	52	0	0	0	0	14	0	9	23	117	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	6	41	0	47	0	77	28	105	0	0	0	0	32	0	15	47	199	0
16:15 - 16:30	4	50	0	54	0	62	37	99	0	0	0	0	28	0	16	44	197	0
16:30 - 16:45	3	33	0	36	0	44	29	73	0	0	0	0	35	0	18	53	162	0
16:45 - 17:00	2	31	0	33	0	50	37	87	0	0	0	0	33	0	19	52	172	0
17:00 - 17:15	6	38	0	44	0	67	37	104	0	0	0	0	36	1	27	64	212	0
17:15 - 17:30	3	42	0	45	0	53	27	80	0	0	0	0	40	0	23	63	188	0
17:30 - 17:45	4	49	0	53	0	51	18	69	0	0	0	0	36	0	21	57	179	1
17:45 - 18:00	4	47	0	51	0	57	37	94	0	0	0	0	31	0	16	47	192	0
TOTAL	72	641	0	713	0	789	417	1206	0	0	0	0	407	2	301	710	2629	1
Trucks	2	38	0	40	0	42	58	100	0	0	0	0	40	0	42	82	222	8.4%
School Buses	0	3	0	3	0	1	0	1	0	0	0	0	0	0	0	0	4	0.2%

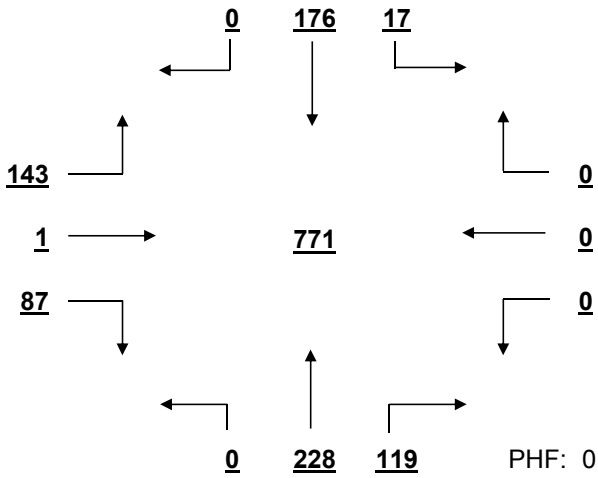
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC 18 AT I-85 NB Date: 4/11/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

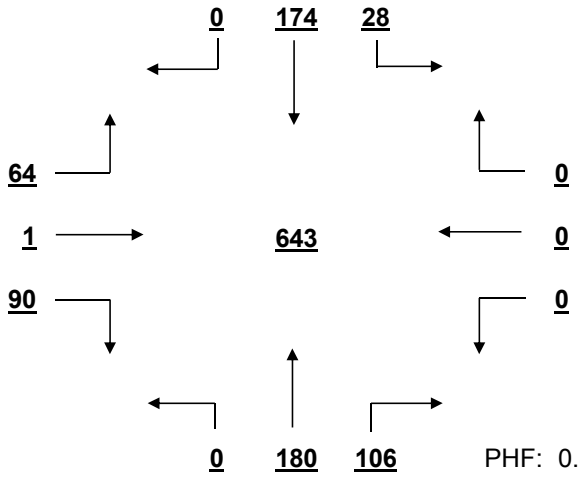


OVERALL PEAK HOUR VOLUME
FROM 17:00 TO 18:00



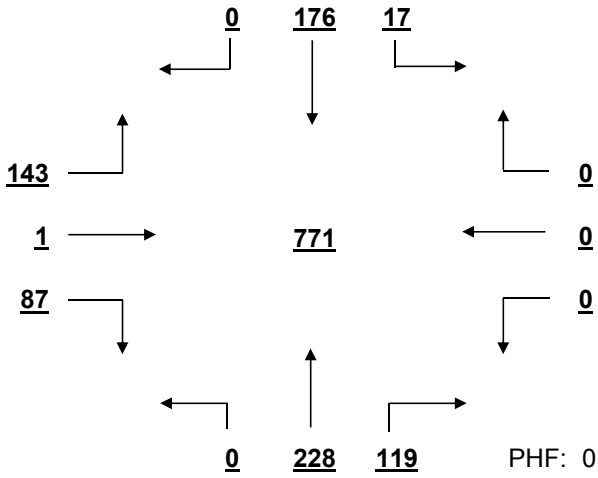
PHF: 0.909

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:00 TO 8:00



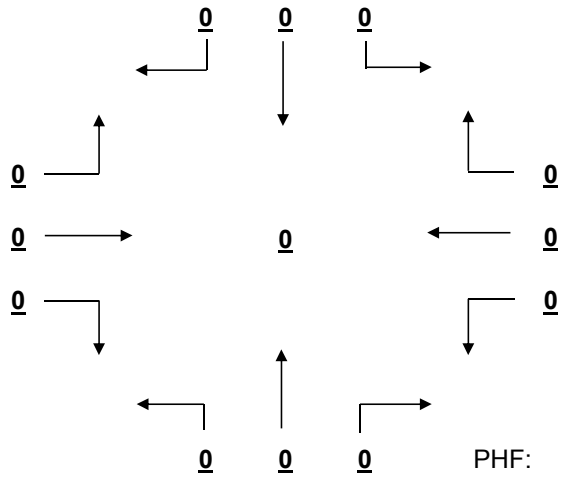
PHF: 0.893

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



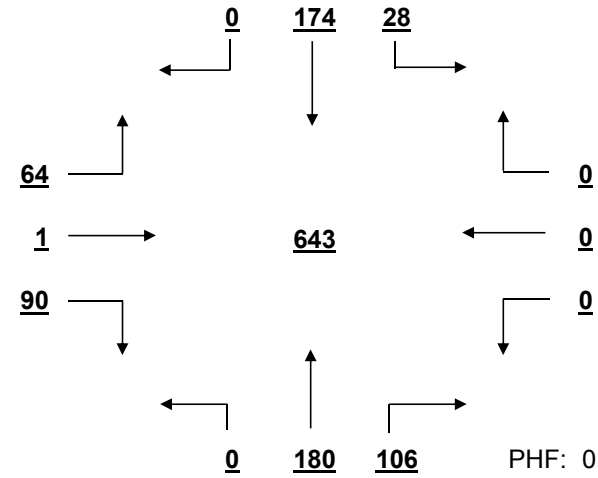
PHF: 0.909

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.893

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 12/1/2004

Major Rt: SC18/SC329 Minor Rt: SC18

Day of Week: Wednesday Weather: Clear Name: Carns

Type of Control: Stop Sign Speed Limit (major st) 45

Direction of Minor Street: N-S Intersection ADT - 7900 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

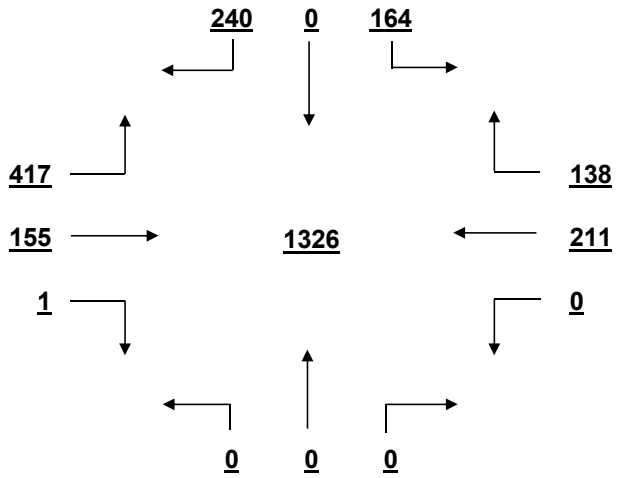
INTERSECTION VOLUME SUMMARY

	From N SC18				From S SC18				From E SC18/SC329				From W SC18/SC329				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	28	0	24	52	0	0	0	0	0	28	15	43	58	19	0	77	172	0
7:15 - 7:30	29	0	38	67	0	0	0	0	0	28	28	56	60	25	0	85	208	0
7:30 - 7:45	35	0	28	63	0	0	0	0	0	37	20	57	68	25	0	93	213	0
7:45 - 8:00	32	0	31	63	0	0	0	0	0	27	22	49	59	25	0	84	196	0
8:00 - 8:15	19	0	33	52	0	0	0	0	0	27	23	50	43	28	0	71	173	0
8:15 - 8:30	7	0	23	30	0	0	0	0	0	18	6	24	40	15	0	55	109	0
8:30 - 8:45	7	0	33	40	0	0	0	0	0	22	7	29	43	9	1	53	122	0
8:45 - 9:00	7	0	30	37	0	0	0	0	0	24	17	41	46	9	0	55	133	0
TOTAL	164	0	240	404	0	0	0	0	0	211	138	349	417	155	1	573	1326	0
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%

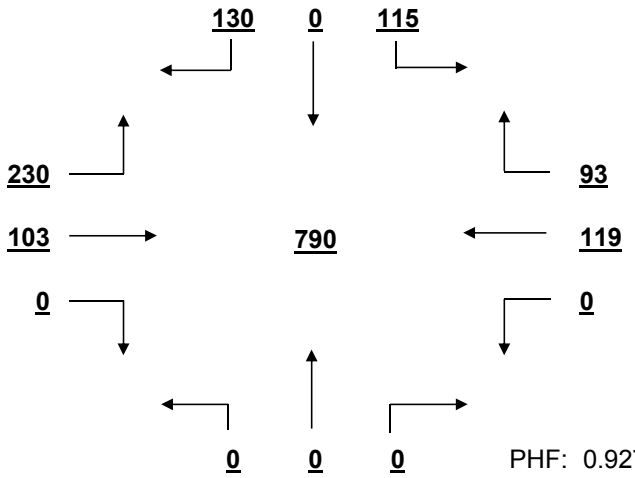
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC18/SC329 AT SC18 Date: 12/1/2004

2.0 HOUR TOTAL VOLUME
FROM 7:00 TO 9:00

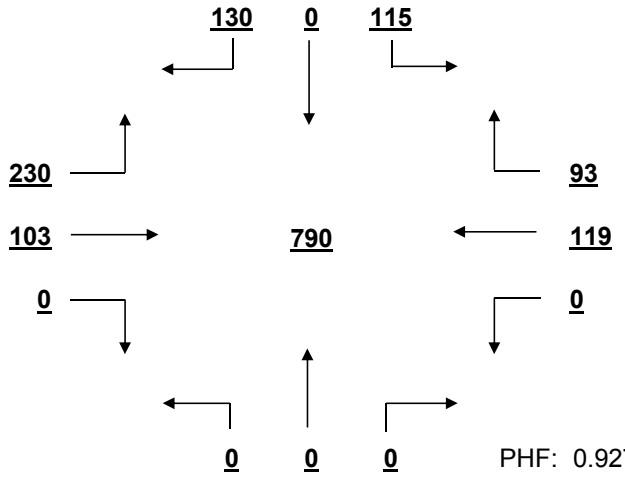


OVERALL PEAK HOUR VOLUME
FROM 7:15 TO 8:15



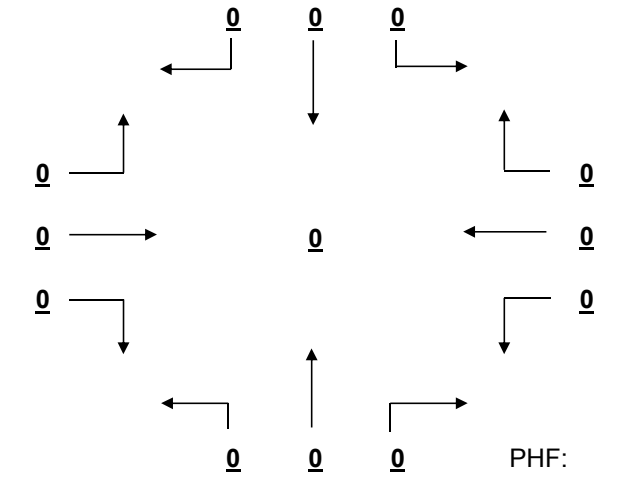
PHF: 0.927

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



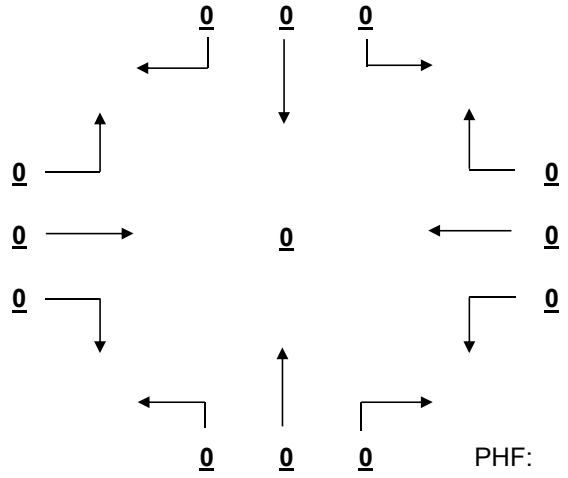
PHF: 0.927

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 0:00 TO 0:00



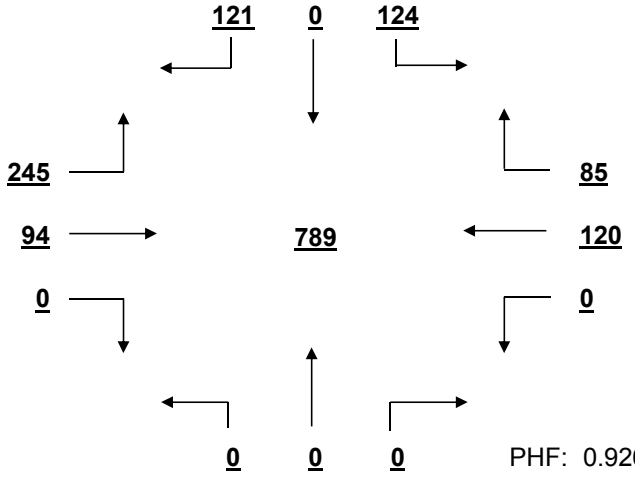
PHF:

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.926

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Gaffney Date: 11/30/2004

Major Rt: SC18/SC329 Minor Rt: SC18

Day of Week: Tuesday Weather: Clear Name: Carns

Type of Control: Stop Sign Speed Limit (major st) 45

Direction of Minor Street: N-S Intersection ADT - 8660 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

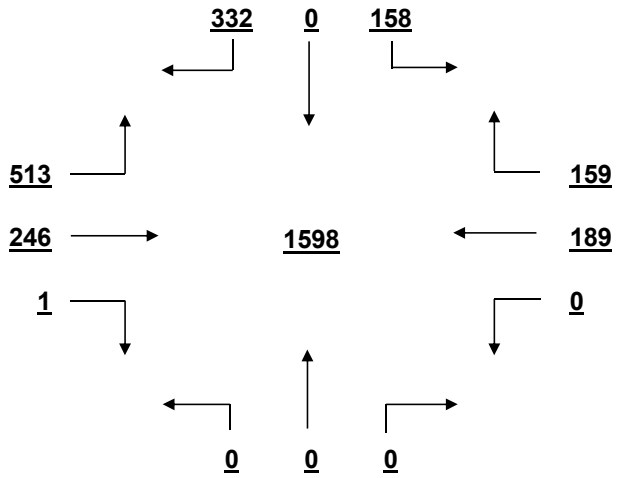
INTERSECTION VOLUME SUMMARY

	From N SC18				From S SC18				From E SC18/SC329				From W SC18/SC329				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
16:00 - 16:15	23	0	44	67	0	0	0	0	0	33	17	50	56	26	0	82	199	0
16:15 - 16:30	15	0	30	45	0	0	0	0	0	27	11	38	51	35	0	86	169	0
16:30 - 16:45	14	0	36	50	0	0	0	0	0	20	21	41	65	32	0	97	188	0
16:45 - 17:00	12	0	45	57	0	0	0	0	0	20	22	42	56	30	0	86	185	0
17:00 - 17:15	22	0	41	63	0	0	0	0	0	29	19	48	72	29	0	101	212	0
17:15 - 17:30	27	0	58	85	0	0	0	0	0	20	25	45	81	36	0	117	247	0
17:30 - 17:45	22	0	35	57	0	0	0	0	0	26	20	46	82	37	0	119	222	0
17:45 - 18:00	23	0	43	66	0	0	0	0	0	14	24	38	50	21	1	72	176	0
TOTAL	158	0	332	490	0	0	0	0	0	189	159	348	513	246	1	760	1598	0
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%

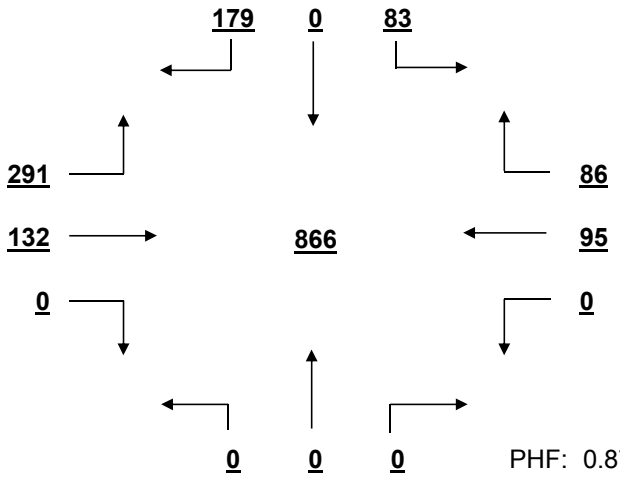
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

SC18/SC329 AT SC18 Date: 11/30/2004

2.0 HOUR TOTAL VOLUME
FROM 16:00 TO 18:00

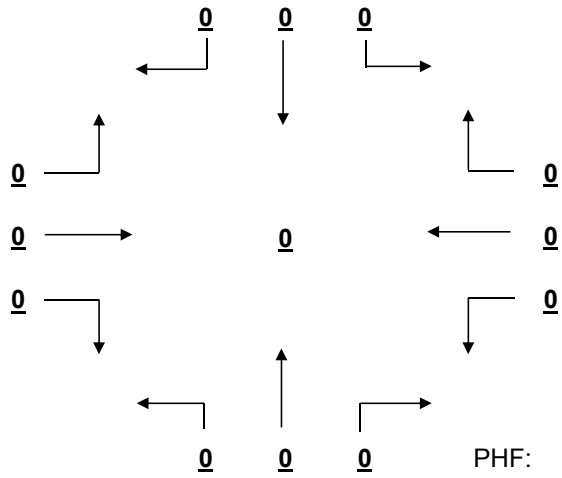


OVERALL PEAK HOUR VOLUME
FROM 16:45 TO 17:45



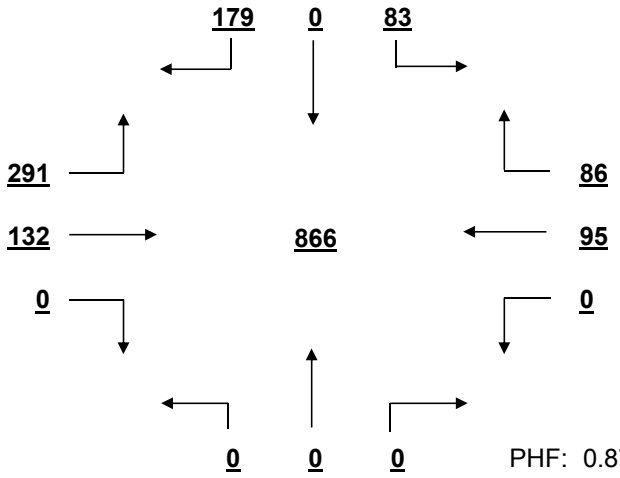
PHF: 0.877

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 0:00 TO 0:00



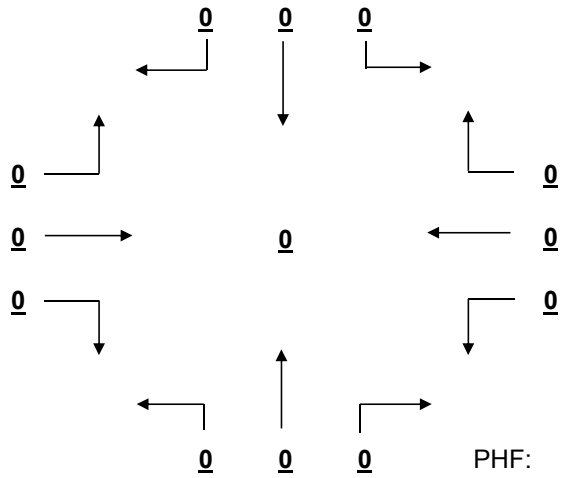
PHF:

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:45 TO 17:45



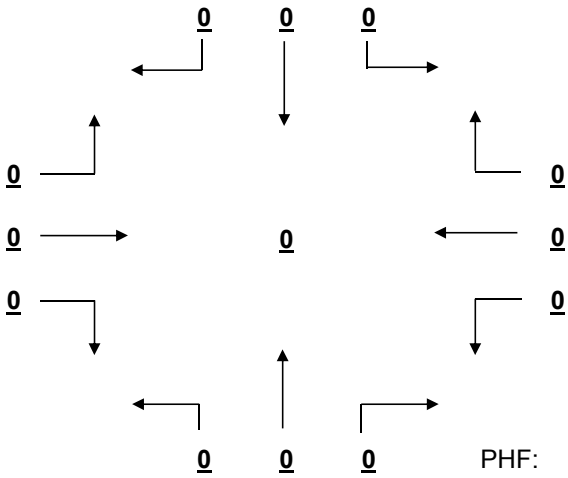
PHF: 0.877

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF:

Type of peak hour being reported: Intersection Peak

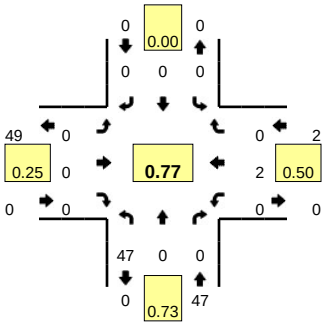
Method for determining peak hour: Total Entering Volume

LOCATION: I-85 SB Off-Ramp -- Wilcox Ave

QC JOB #: 12896531

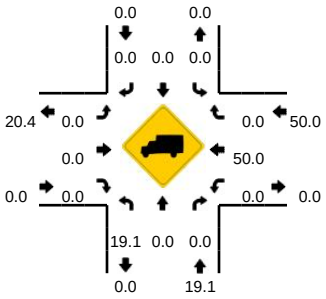
CITY/STATE: Gaffney, SC

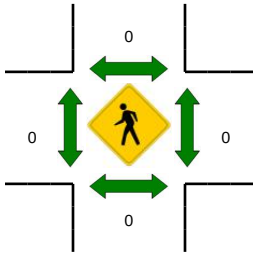
DATE: Thu, Sep 25 2014

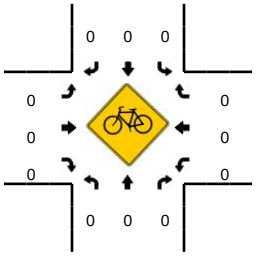


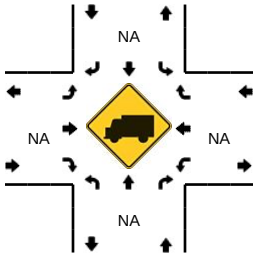
Peak-Hour: 7:30 AM -- 8:30 AM

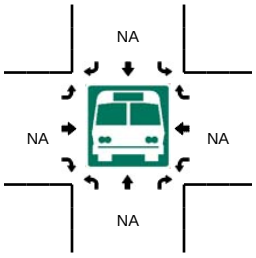
Peak 15-Min: 8:15 AM -- 8:30 AM











15-Min Count Period Beginning At	I-85 SB Off-Ramp (Northbound)				I-85 SB Off-Ramp (Southbound)				Wilcox Ave (Eastbound)				Wilcox Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	
7:15 AM	8	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	9	
7:30 AM	9	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	10	
7:45 AM	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	44
8:00 AM	14	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	15	42
8:15 AM	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	49
8:30 AM	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	47
8:45 AM	7	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	10	49

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
Heavy Trucks	12	0	0		0	0	0		0	0	0		0	0	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

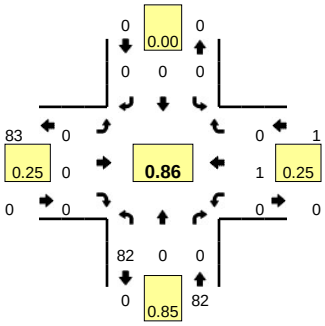
Method for determining peak hour: Total Entering Volume

LOCATION: I-85 SB Off-Ramp -- Wilcox Ave

CITY/STATE: Gaffney, SC

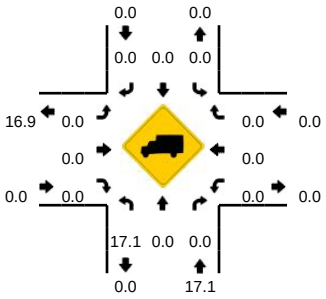
QC JOB #: 12896532

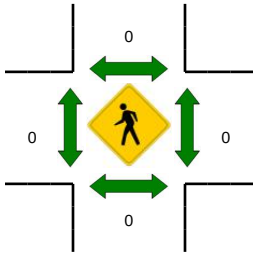
DATE: Thu, Sep 25 2014

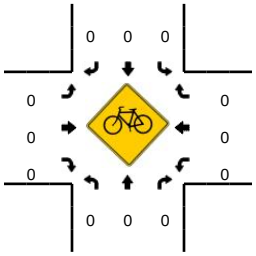


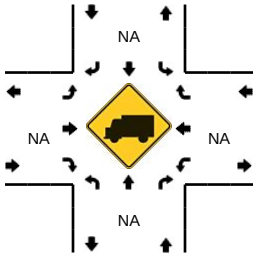
Peak-Hour: 4:00 PM -- 5:00 PM

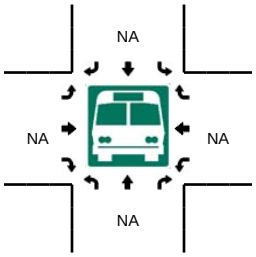
Peak 15-Min: 4:00 PM -- 4:15 PM











15-Min Count Period Beginning At	I-85 SB Off-Ramp (Northbound)				I-85 SB Off-Ramp (Southbound)				Wilcox Ave (Eastbound)				Wilcox Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	
4:15 PM	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	
4:30 PM	18	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	19	
4:45 PM	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23	83
5:00 PM	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	69
5:15 PM	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	67
5:30 PM	15	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	18	66
5:45 PM	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	58

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96
Heavy Trucks	12	0	0		0	0	0		0	0	0		0	0	0		12
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896533 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896533
Start Date : 9/25/2014
Page No : 1

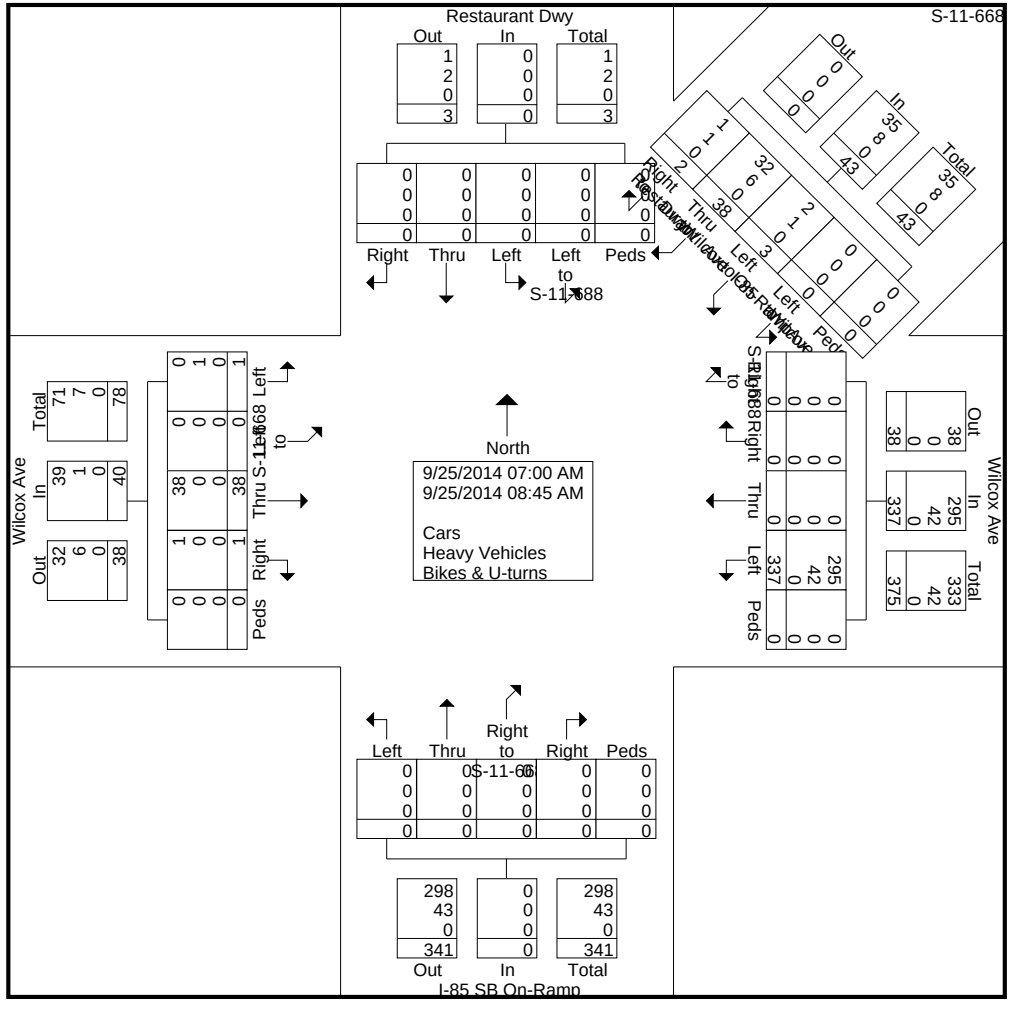
Groups Printed- Cars - Heavy Vehicles - turns

	Restaurant Dwy Southbound						S-11-668						Wilcox Ave Westbound						I-85 SB On-Ramp Northbound						Wilcox Ave Eastbound						
Start Time	Right	Thru	Left	Left to S-11-688	Peds	App. Total	Right to Restaurant Dwy	Thru to Wilcox Ave	Left to I-85 On-Ramp	Left to Wilcox Ave	Peds	App. Total	Right to S-11-688	Right	Thru	Left	Peds	App. Total	Right	Right to S-11-668	Thru	Left	Peds	App. Total	Right	Thru	Left to S-11-668	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	44	0	44	0	0	0	0	0	0	0	6	0	0	0	6	52
07:15 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	60	0	60	0	0	0	0	0	0	0	2	0	0	0	2	65
07:30 AM	0	0	0	0	0	0	0	8	1	0	0	9	0	0	0	39	0	39	0	0	0	0	0	0	1	5	0	0	0	6	54
07:45 AM	0	0	0	0	0	0	0	5	1	0	0	6	0	0	0	52	0	52	0	0	0	0	0	0	0	8	0	0	0	8	66
Total	0	0	0	0	0	0	0	18	2	0	0	20	0	0	0	195	0	195	0	0	0	0	0	0	1	21	0	0	0	22	237
08:00 AM	0	0	0	0	0	0	2	3	0	0	0	5	0	0	0	28	0	28	0	0	0	0	0	0	0	4	0	0	0	4	37
08:15 AM	0	0	0	0	0	0	0	6	1	0	0	7	0	0	0	38	0	38	0	0	0	0	0	0	0	3	0	0	0	3	48
08:30 AM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	40	0	40	0	0	0	0	0	0	0	3	0	1	0	4	48
08:45 AM	0	0	0	0	0	0	0	7	0	0	0	7	0	0	0	36	0	36	0	0	0	0	0	0	0	7	0	0	0	7	50
Total	0	0	0	0	0	0	2	20	1	0	0	23	0	0	0	142	0	142	0	0	0	0	0	0	0	17	0	1	0	18	183
Grand Total	0	0	0	0	0	0	2	38	3	0	0	43	0	0	0	337	0	337	0	0	0	0	0	0	1	38	0	1	0	40	420
Apprch %	0	0	0	0	0		4.7	88.4	7	0	0		0	0	0	100	0		0	0	0	0	0		2.5	95	0	2.5	0		
Total %	0	0	0	0	0	0	0.5	9	0.7	0	0	10.2	0	0	0	80.2	0	80.2	0	0	0	0	0	0	0.2	9	0	0.2	0	9.5	
Cars	0	0	0	0	0	0	1	32	2	0	0	35	0	0	0	295	0	295	0	0	0	0	0	0	1	38	0	0	0	39	369
% Cars	0	0	0	0	0	0	50	84.2	66.7	0	0	81.4	0	0	0	87.5	0	87.5	0	0	0	0	0	0	100	100	0	0	0	97.5	87.9
Heavy Vehicles																															
% Heavy Vehicles	0	0	0	0	0	0	50	15.8	33.3	0	0	18.6	0	0	0	12.5	0	12.5	0	0	0	0	0	0	0	0	0	100	0	2.5	12.1
Bikes & U-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896533 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896533
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

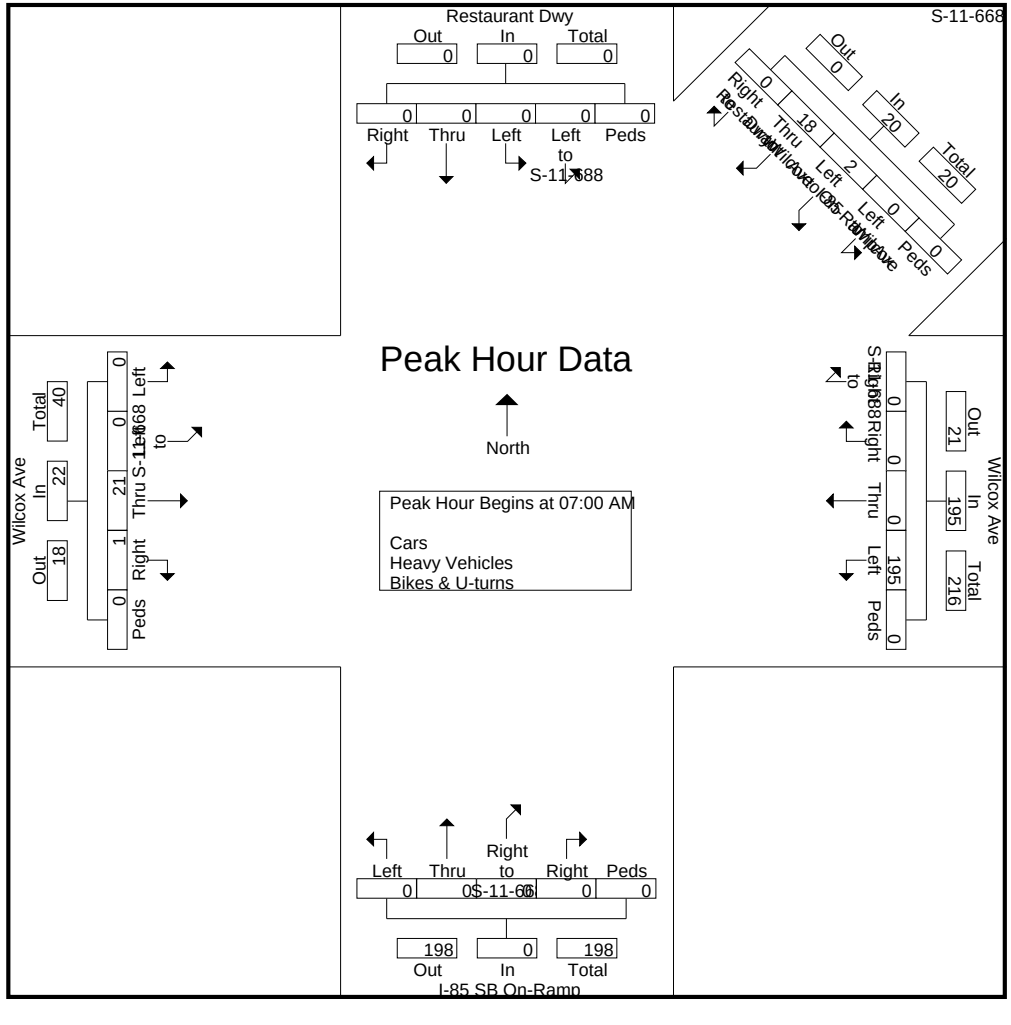
File Name : 12896533 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896533
Start Date : 9/25/2014
Page No : 3

	Restaurant Dwy Southbound						S-11-668						Wilcox Ave Westbound						I-85 SB On-Ramp Northbound						Wilcox Ave Eastbound						
Start Time	Right	Thru	Left	Left to S-11-688	Peds	App. Total	Right to Restaurant Dwy	Thru to Wilcox Ave	Left to I-85 On-Ramp	Left to Wilcox Ave	Peds	App. Total	Right to S-11-688	Right	Thru	Left	Peds	App. Total	Right	Right to S-11-668	Thru	Left	Peds	App. Total	Right	Thru	Left to S-11-668	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																														
Peak Hour for Entire Intersection Begins at 07:00 AM																														
07:00 AM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	44	0	44	0	0	0	0	0	0	0	6	0	0	0	6	52
07:15 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	**60**		**60**													
07:30 AM	0	0	0	0	0	0	0	**8**	**1**	0	0	**9**	0	0	0	39	0	39	0	0	0	0	0	0	**1**	5	0	0	0	6	54
07:45 AM	0	0	0	0	0	0	0	5	1	0	0	6	0	0	0	52	0	52	0	0	0	0	0	0	0	**8**	0	0	0	**8**	**66**
Total Volume	0	0	0	0	0	0	0	18	2	0	0	20	0	0	0	195	0	195	0	0	0	0	0	0	1	21	0	0	0	22	237
% App. Total	0	0	0	0	0		0	90	10	0	0		0	0	0	100	0		0	0	0	0	0		4.5	95.5	0	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.563	.500	.000	.000	.556	.000	.000	.000	.813	.000	.813	.000	.000	.000	.000	.000	.000	.250	.656	.000	.000	.000	.688	.898

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896533 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896533
Start Date : 9/25/2014
Page No : 4



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896534 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896534
Start Date : 9/25/2014
Page No : 1

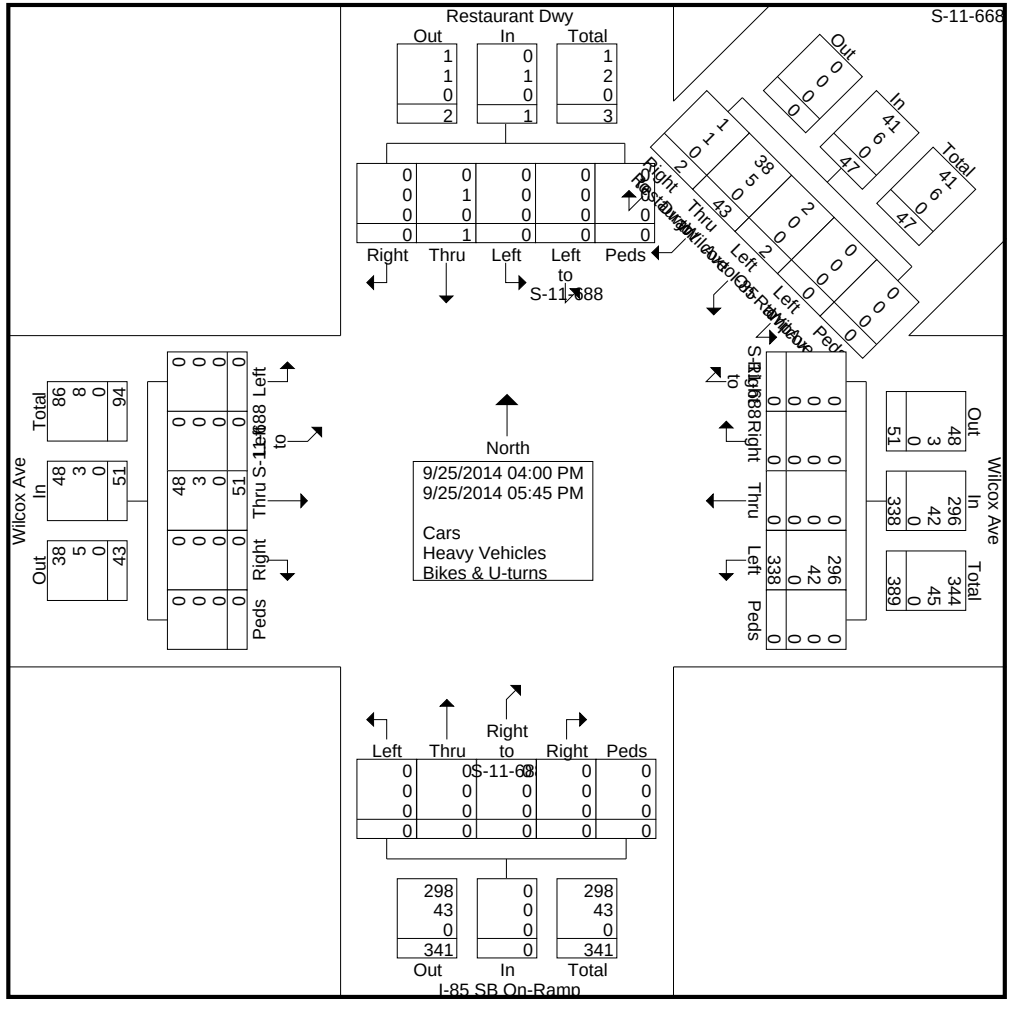
Groups Printed- Cars - Heavy Vehicles - turns

	Restaurant Dwy Southbound						S-11-668						Wilcox Ave Westbound						I-85 SB On-Ramp Northbound						Wilcox Ave Eastbound						
Start Time	Right	Thru	Left	Left to S-11-688	Peds	App. Total	Right to Restaurant Dwy	Thru to Wilcox Ave	Left to I-85 On-Ramp	Left to Wilcox Ave	Peds	App. Total	Right to S-11-688	Right	Thru	Left	Peds	App. Total	Right	Right to S-11-688	Thru	Left	Peds	App. Total	Right	Thru	Left to S-11-688	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	44	0	44	0	0	0	0	0	0	0	5	0	0	0	5	51
04:15 PM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	40	0	40	0	0	0	0	0	0	0	11	0	0	0	11	59
04:30 PM	0	0	0	0	0	0	1	9	0	0	0	10	0	0	0	32	0	32	0	0	0	0	0	0	0	5	0	0	0	5	47
04:45 PM	0	1	0	0	0	1	1	4	2	0	0	7	0	0	0	43	0	43	0	0	0	0	0	0	0	8	0	0	0	8	59
Total	0	1	0	0	0	1	2	23	2	0	0	27	0	0	0	159	0	159	0	0	0	0	0	0	0	29	0	0	0	29	216
05:00 PM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	54	0	54	0	0	0	0	0	0	0	6	0	0	0	6	68
05:15 PM	0	0	0	0	0	0	0	6	0	0	0	6	0	0	0	38	0	38	0	0	0	0	0	0	0	10	0	0	0	10	54
05:30 PM	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	40	0	40	0	0	0	0	0	0	0	2	0	0	0	2	44
05:45 PM	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	47	0	47	0	0	0	0	0	0	0	4	0	0	0	4	55
Total	0	0	0	0	0	0	0	20	0	0	0	20	0	0	0	179	0	179	0	0	0	0	0	0	0	22	0	0	0	22	221
Grand Total	0	1	0	0	0	1	2	43	2	0	0	47	0	0	0	338	0	338	0	0	0	0	0	0	0	51	0	0	0	51	437
Apprch %	0	100	0	0	0		4.3	91.5	4.3	0	0		0	0	0	100	0		0	0	0	0	0		0	100	0	0	0		
Total %	0	0.2	0	0	0	0.2	0.5	9.8	0.5	0	0	10.8	0	0	0	77.3	0	77.3	0	0	0	0	0	0	0	11.7	0	0	0	11.7	
Cars	0	0	0	0	0	0	1	38	2	0	0	41	0	0	0	296	0	296	0	0	0	0	0	0	0	48	0	0	0	48	385
% Cars	0	0	0	0	0	0	50	88.4	100	0	0	87.2	0	0	0	87.6	0	87.6	0	0	0	0	0	0	0	94.1	0	0	0	94.1	88.1
Heavy Vehicles																															
% Heavy Vehicles	0	100	0	0	0	100	50	11.6	0	0	0	12.8	0	0	0	12.4	0	12.4	0	0	0	0	0	0	0	5.9	0	0	0	5.9	11.9
Bikes & U-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bikes & U-turns	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896534 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896534
Start Date : 9/25/2014
Page No : 2



Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

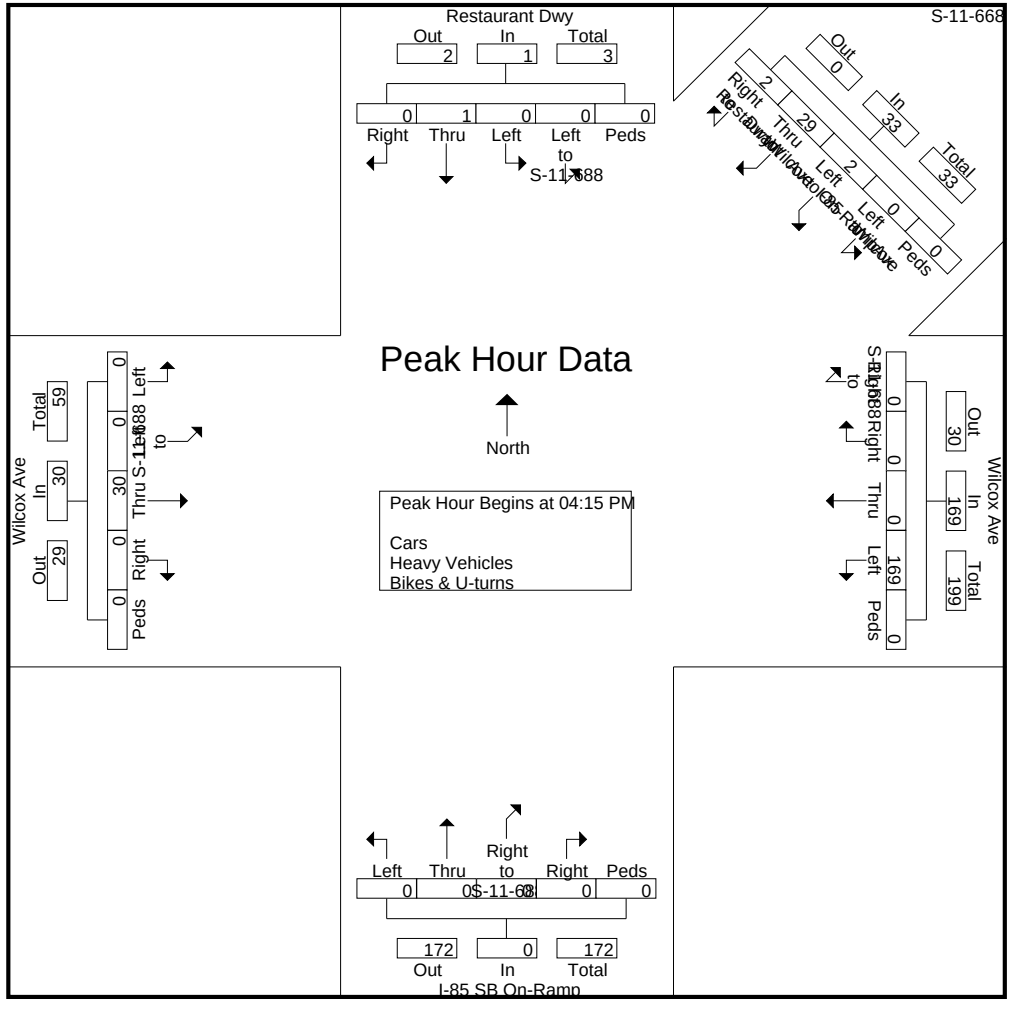
File Name : 12896534 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896534
Start Date : 9/25/2014
Page No : 3

	Restaurant Dwy Southbound						S-11-668						Wilcox Ave Westbound						I-85 SB On-Ramp Northbound						Wilcox Ave Eastbound						
Start Time	Right	Thru	Left	Left to S-11-688	Peds	App. Total	Right to Restaurant Dwy	Thru to Wilcox Ave	Left to I-85 On-Ramp	Left to Wilcox Ave	Peds	App. Total	Right to S-11-688	Right	Thru	Left	Peds	App. Total	Right	Right to S-11-688	Thru	Left	Peds	App. Total	Right	Thru	Left to S-11-688	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																														
Peak Hour for Entire Intersection Begins at 04:15 PM																														
04:15 PM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	40	0	40	0	0	0	0	0	0	0	11				11	
04:30 PM	0	0	0	0	0	0	1	9	0	0	0	**10**	0	0	0	32	0	32	0	0	0	0	0	0	0	5	0	0	0	5	47
04:45 PM	0	**1**	0	0	0	**1**	1	4	**2**	0	0	7	0	0	0	43	0	43	0	0	0	0	0	0	0	8	0	0	0	8	59
05:00 PM	0	0	0	0	0	0	0	8	0	0	0	8	0	0	0	**54**	0	**54**	0	0	0	0	0	0	0	6	0	0	0	6	**68**
Total Volume	0	1	0	0	0	1	2	29	2	0	0	33	0	0	0	169	0	169	0	0	0	0	0	0	0	30	0	0	0	30	233
% App. Total	0	100	0	0	0		6.1	87.9	6.1	0	0		0	0	0	100	0		0	0	0	0	0		0	100	0	0	0		
PHF	.000	.250	.000	.000	.000	.250	.500	.806	.250	.000	.000	.825	.000	.000	.000	.782	.000	.782	.000	.000	.000	.000	.000	.000	.000	.682	.000	.000	.000	.682	.857

Quality Counts, LLC

920 Blairhill Rd Ste B106
Charlotte, NC 28217

File Name : 12896534 - Restaurant Dwy -- I-85 On-Ramp-Wilcox Ave
Site Code : 12896534
Start Date : 9/25/2014
Page No : 4



Type of peak hour being reported: Intersection Peak

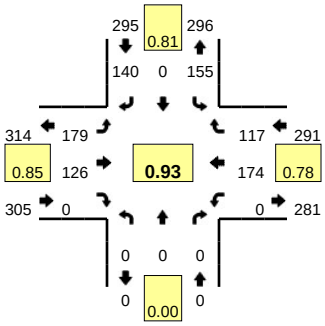
Method for determining peak hour: Total Entering Volume

LOCATION: Shelby Hwy -- Victory Trail Rd/Shelby Hwy

QC JOB #: 12896547

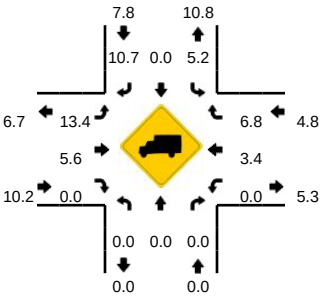
CITY/STATE: Gaffney, SC

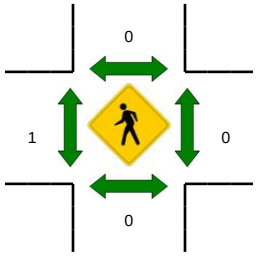
DATE: Thu, Sep 25 2014

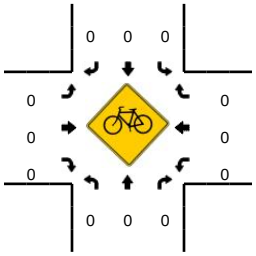


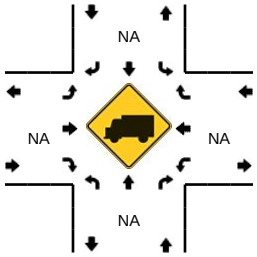
Peak-Hour: 7:00 AM -- 8:00 AM

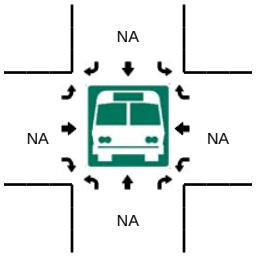
Peak 15-Min: 7:45 AM -- 8:00 AM











15-Min Count Period Beginning At	Shelby Hwy (Northbound)				Shelby Hwy (Southbound)				Victory Trail Rd/Shelby Hwy (Eastbound)				Victory Trail Rd/Shelby Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	27	0	35	0	44	22	0	0	0	56	37	0	221	
7:15 AM	0	0	0	0	30	0	28	0	45	32	0	0	0	39	30	0	204	
7:30 AM	0	0	0	0	51	0	40	0	39	33	0	0	0	38	26	0	227	
7:45 AM	0	0	0	0	47	0	37	0	51	39	0	0	0	41	24	0	239	891
8:00 AM	0	0	0	0	14	0	33	0	40	15	0	0	0	37	13	0	152	822
8:15 AM	0	0	0	0	12	0	31	0	38	13	0	0	0	25	21	0	140	758
8:30 AM	0	0	0	0	16	0	29	0	51	9	0	0	0	26	19	0	150	681
8:45 AM	0	0	0	0	8	0	37	0	28	17	0	0	0	21	16	0	127	569

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	188	0	148	0	204	156	0	0	0	164	96	0	956
Heavy Trucks	0	0	0		8	0	16		24	0	0		0	4	12		64
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

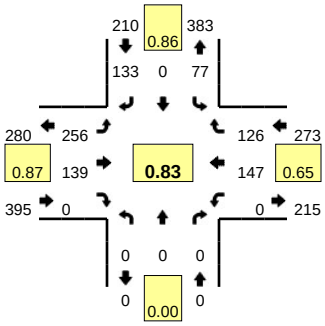
Method for determining peak hour: Total Entering Volume

LOCATION: Shelby Hwy -- Victory Trail Rd/Shelby Hwy

CITY/STATE: Gaffney, SC

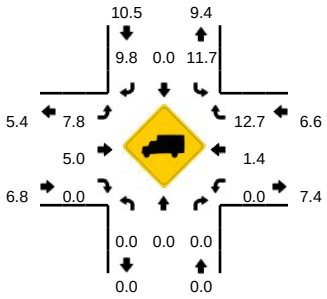
QC JOB #: 12896548

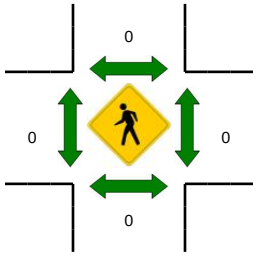
DATE: Thu, Sep 25 2014

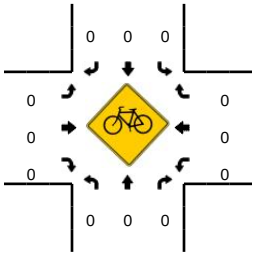


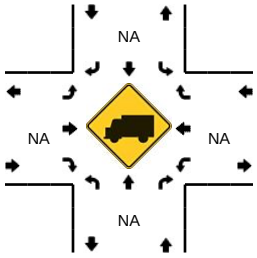
Peak-Hour: 4:00 PM -- 5:00 PM

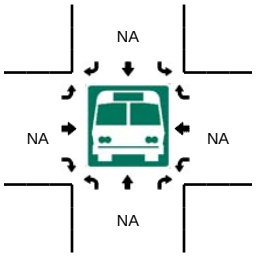
Peak 15-Min: 4:00 PM -- 4:15 PM











15-Min Count Period Beginning At	Shelby Hwy (Northbound)				Shelby Hwy (Southbound)				Victory Trail Rd/Shelby Hwy (Eastbound)				Victory Trail Rd/Shelby Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	11	0	36	1	70	43	0	0	0	69	36	0	266	
4:15 PM	0	0	0	0	19	0	38	0	61	40	0	0	0	36	40	0	234	
4:30 PM	0	0	0	0	18	0	33	0	61	33	0	0	0	21	29	0	195	
4:45 PM	0	0	0	0	28	0	26	0	64	23	0	0	0	21	21	0	183	878
5:00 PM	0	0	0	0	14	0	38	1	58	37	0	0	0	29	41	0	218	830
5:15 PM	0	0	0	0	19	0	35	0	82	33	0	0	0	26	21	0	216	812
5:30 PM	0	0	0	0	27	0	43	0	59	37	0	0	0	24	28	0	218	835
5:45 PM	0	0	0	0	20	0	43	0	60	22	0	0	0	22	23	0	190	842

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	44	0	144	4	280	172	0	0	0	276	144	0	1064
Heavy Trucks	0	0	0		4	0	8		24	0	0		0	8	16		60
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

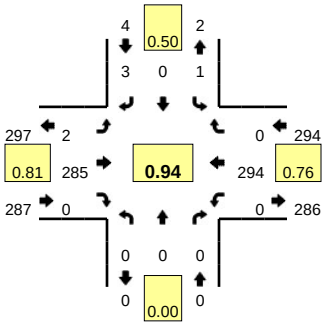
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

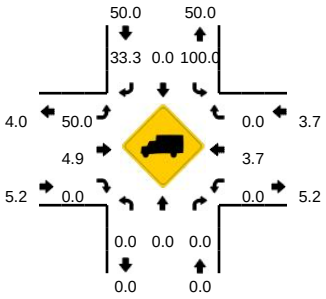
Method for determining peak hour: Total Entering Volume

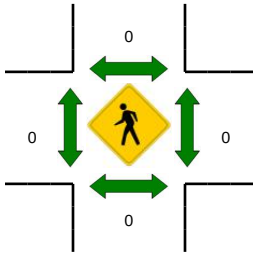
LOCATION: SC 18 -- Wind Hill Rd
CITY/STATE: Gaffney, SC

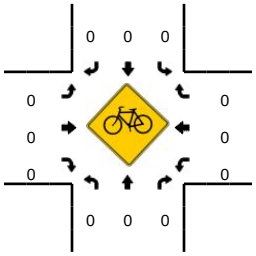
QC JOB #: 12896535
DATE: Thu, Sep 25 2014

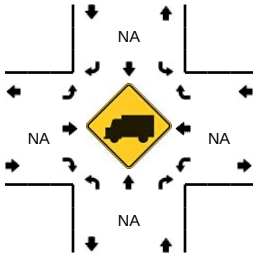


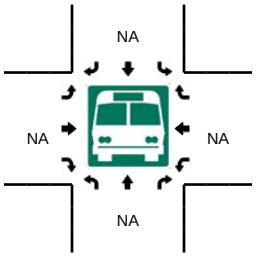
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:45 AM -- 8:00 AM











15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Wind Hill Rd (Eastbound)				Wind Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	2	49	0	0	0	97	0	0	148	
7:15 AM	0	0	0	0	0	0	2	0	0	63	0	0	0	67	0	0	132	
7:30 AM	0	0	0	0	0	0	1	0	0	84	0	0	0	65	0	0	150	
7:45 AM	0	0	0	0	1	0	0	0	0	89	0	0	0	65	0	0	155	585
8:00 AM	0	0	0	0	0	0	0	0	1	43	0	0	0	69	0	0	113	550
8:15 AM	0	0	0	0	0	0	0	0	0	16	0	0	0	40	0	0	56	474
8:30 AM	0	0	0	0	0	0	0	0	1	23	0	0	0	44	0	0	68	392
8:45 AM	0	0	0	0	0	0	2	0	1	26	0	0	0	36	1	0	66	303

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	4	0	0	0	0	356	0	0	0	260	0	0	620
Heavy Trucks	0	0	0		4	0	0		0	8	0		0	12	0		24
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

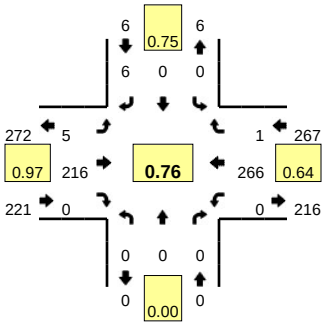
Type of peak hour being reported: Intersection Peak

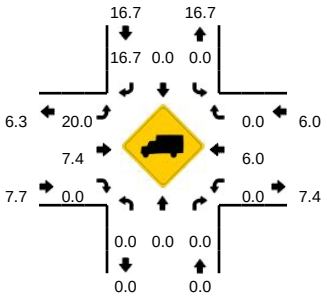
Method for determining peak hour: Total Entering Volume

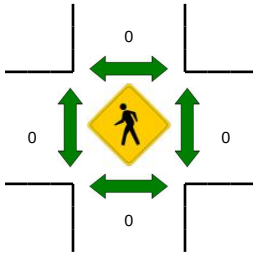
LOCATION: SC 18 -- Wind Hill Rd
CITY/STATE: Gaffney, SC

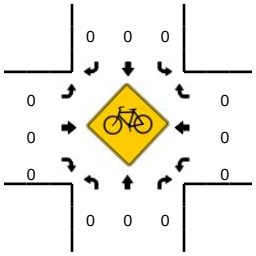
QC JOB #: 12896536
DATE: Thu, Sep 25 2014

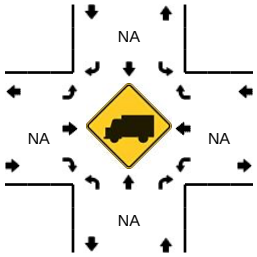
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:00 PM -- 4:15 PM

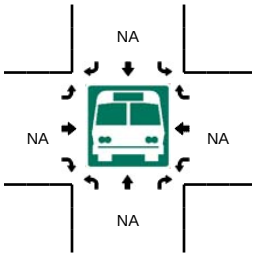












15-Min Count Period Beginning At	SC 18 (Northbound)				SC 18 (Southbound)				Wind Hill Rd (Eastbound)				Wind Hill Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	1	0	0	57	0	0	0	104	0	0	162	
4:15 PM	0	0	0	0	0	0	1	0	2	55	0	0	0	73	0	0	131	
4:30 PM	0	0	0	0	0	0	2	0	1	53	0	0	0	50	1	0	107	
4:45 PM	0	0	0	0	0	0	2	0	2	51	0	0	0	39	0	0	94	494
5:00 PM	0	0	0	0	0	0	0	0	1	48	0	0	0	71	0	0	120	452
5:15 PM	0	0	0	0	0	0	1	0	0	50	0	0	0	46	0	0	97	418
5:30 PM	0	0	0	0	1	0	0	0	2	65	0	0	0	53	0	0	121	432
5:45 PM	0	0	0	0	0	0	1	0	0	43	0	0	0	44	0	0	88	426

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	4	0	0	228	0	0	0	416	0	0	648
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	24	0		28
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Exit 97

Type of peak hour being reported: Intersection Peak

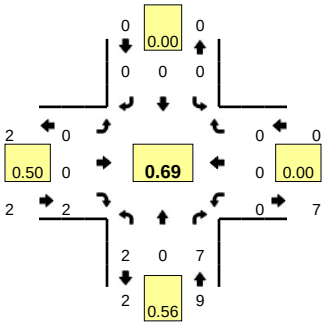
Method for determining peak hour: Total Entering Volume

LOCATION: Frontage Rd -- Gaffney Ferry Rd

CITY/STATE: Gaffney, SC

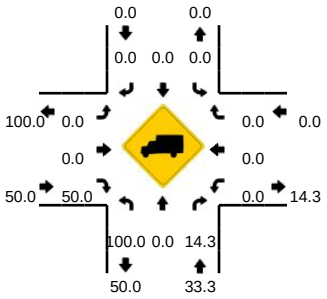
QC JOB #: 12896545

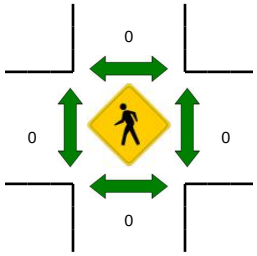
DATE: Thu, Sep 25 2014

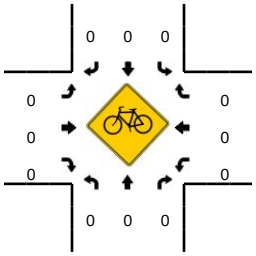


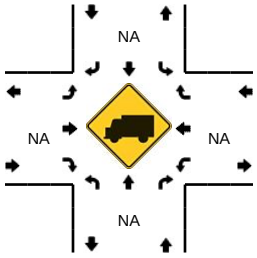
Peak-Hour: 7:00 AM -- 8:00 AM

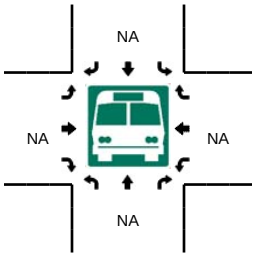
Peak 15-Min: 7:30 AM -- 7:45 AM











15-Min Count Period Beginning At	Frontage Rd (Northbound)				Frontage Rd (Southbound)				Gaffney Ferry Rd (Eastbound)				Gaffney Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
7:15 AM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	
7:30 AM	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
7:45 AM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	11
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	5
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	12	0	0	0	0	0	0	0	0	0	0	0	0	0	16
Heavy Trucks	4	0	4		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Frontage Rd -- Gaffney Ferry Rd

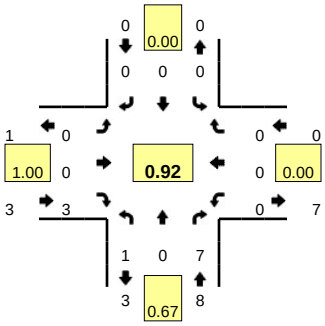
CITY/STATE: Gaffney, SC

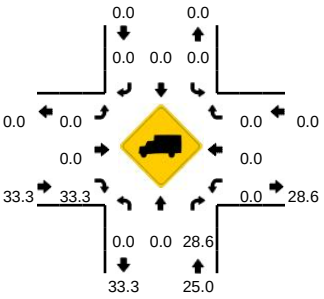
QC JOB #: 12896546

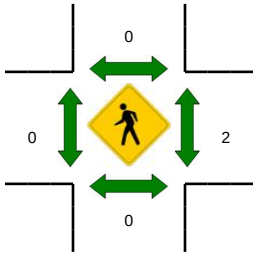
DATE: Thu, Sep 25 2014

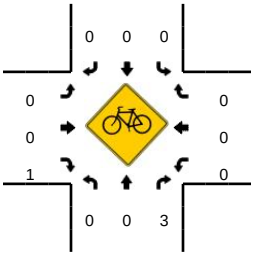
Peak-Hour: 4:45 PM -- 5:45 PM

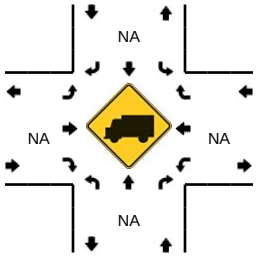
Peak 15-Min: 4:45 PM -- 5:00 PM

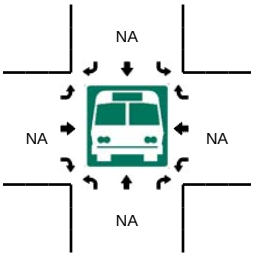












15-Min Count Period Beginning At	Frontage Rd (Northbound)				Frontage Rd (Southbound)				Gaffney Ferry Rd (Eastbound)				Gaffney Ferry Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	3	
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
4:45 PM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	3	7
5:00 PM	0	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	3	10
5:15 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	10
5:30 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	11
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	8	0	0	0	0	0	0	0	4	0	0	0	0	0	12
Heavy Trucks	0	0	0		0	0	0		0	0	4		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	1		0	0	0		1
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Exit 100

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Blacksburg Date: 4/16/2013

Major Rt: S-83 Minor Rt: I-85 SB

Day of Week: Tuesday Weather: Partly Cloudy Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 4030 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

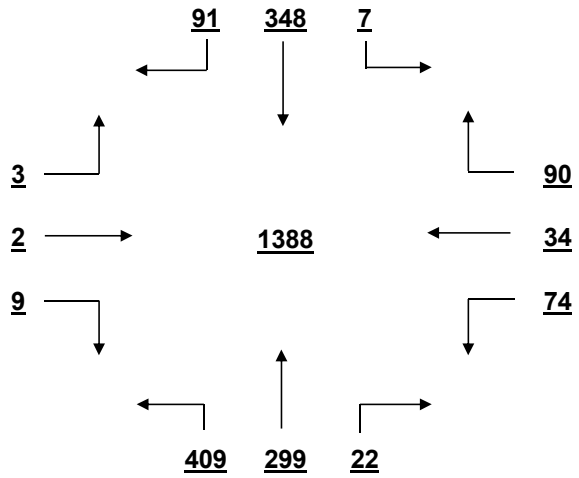
INTERSECTION VOLUME SUMMARY

	From N S-83				From S S-83				From E I-85 SB				From W I-85 SB				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	1	25	9	35	13	10	0	23	3	0	2	5	0	0	0	0	63	0
7:15 - 7:30	0	38	5	43	24	12	0	36	10	3	4	17	0	0	0	0	96	0
7:30 - 7:45	0	52	13	65	18	15	1	34	6	0	5	11	0	0	1	1	111	0
7:45 - 8:00	0	24	4	28	23	16	0	39	6	1	9	16	0	0	0	0	83	0
8:00 - 8:15	0	18	3	21	23	14	2	39	5	1	6	12	0	0	1	1	73	0
8:15 - 8:30	1	13	3	17	18	10	1	29	6	0	3	9	0	0	1	1	56	0
8:30 - 8:45	0	11	4	15	18	10	2	30	2	3	0	5	0	0	0	0	50	0
8:45 - 9:00	0	17	5	22	19	17	1	37	3	3	2	8	0	0	0	0	67	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	0	26	7	33	48	31	0	79	1	2	3	6	1	0	0	1	119	0
16:15 - 16:30	0	15	7	22	30	16	2	48	6	5	5	16	1	1	1	3	89	0
16:30 - 16:45	3	17	8	28	31	25	2	58	6	4	5	15	1	0	0	1	102	0
16:45 - 17:00	0	15	5	20	28	20	3	51	5	6	10	21	0	0	1	1	93	0
17:00 - 17:15	0	16	7	23	32	28	1	61	3	2	8	13	0	1	1	2	99	0
17:15 - 17:30	0	15	4	19	34	24	0	58	5	1	8	14	0	0	1	1	92	0
17:30 - 17:45	1	19	5	25	31	27	3	61	4	1	14	19	0	0	1	1	106	0
17:45 - 18:00	1	27	2	30	19	24	4	47	3	2	6	11	0	0	1	1	89	0
TOTAL	7	348	91	446	409	299	22	730	74	34	90	198	3	2	9	14	1388	0
Trucks	0	8	15	23	12	9	1	22	3	2	5	10	0	0	0	0	55	4.0%
School Buses	0	5	0	5	0	1	0	1	0	0	0	0	0	0	0	0	6	0.4%

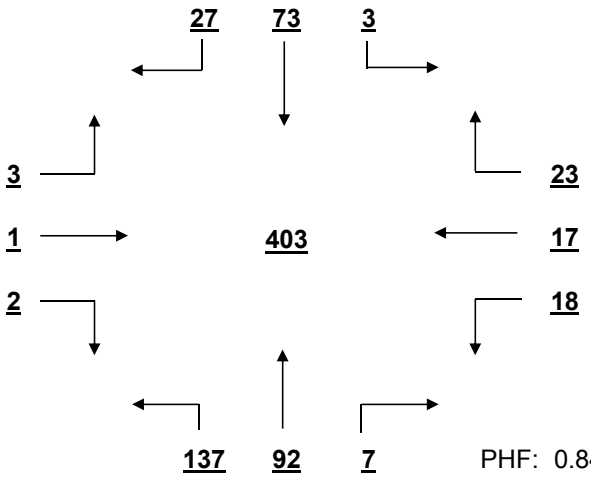
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

S-83 AT I-85 SB Date: 4/16/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

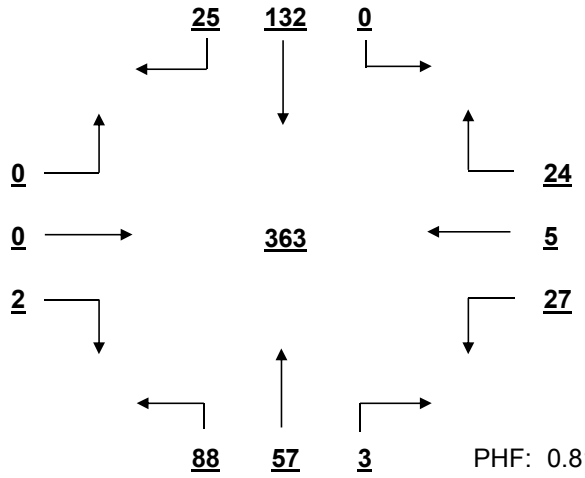


OVERALL PEAK HOUR VOLUME
FROM 16:00 TO 17:00



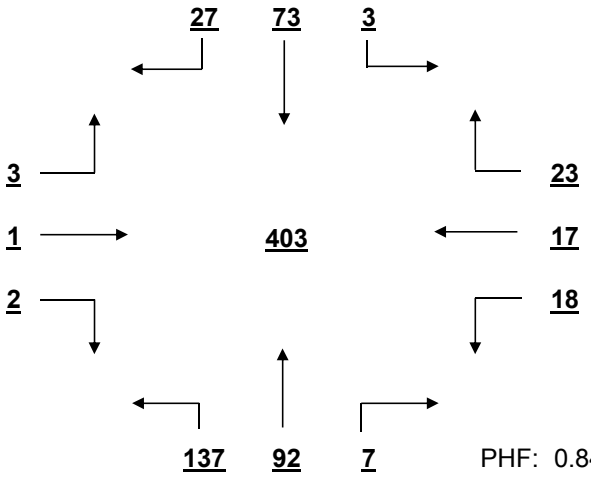
PHF: 0.847

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



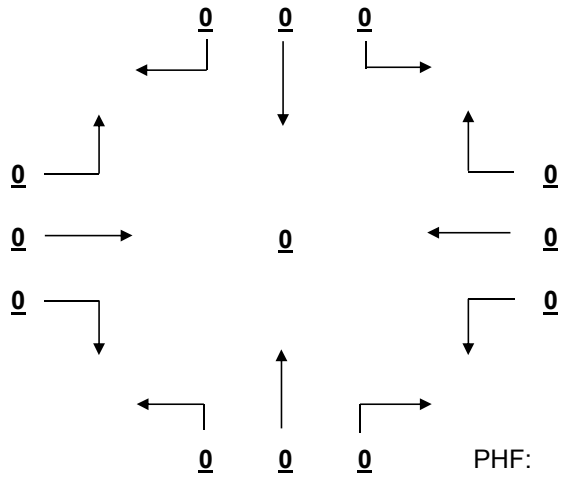
PHF: 0.818

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:00 TO 17:00



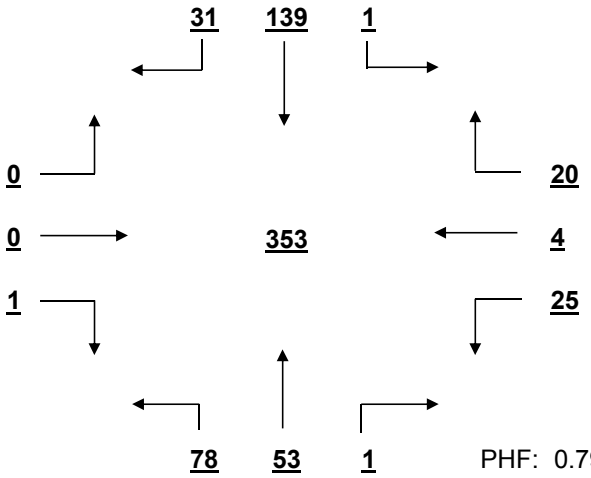
PHF: 0.847

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.795

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Blacksburg Date: 4/16/2013

Major Rt: I-85 SB Minor Rt: Crawford Rd
* Not on State System

Day of Week: Tuesday Weather: Partly Cloudy Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: N-S Intersection ADT - 2070 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1
* Each Direction

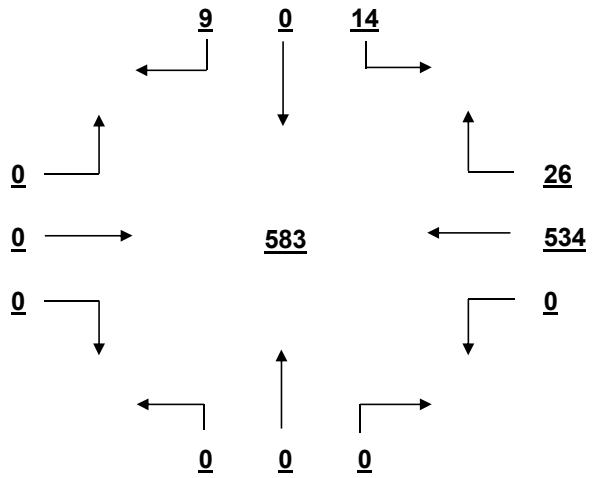
INTERSECTION VOLUME SUMMARY

	From N Crawford Rd				From S Crawford Rd				From E I-85 SB				From W I-85 SB				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	0	0	0	0	0	0	0	0	0	22	0	22	0	0	0	0	22	0
7:15 - 7:30	0	0	1	1	0	0	0	0	0	32	1	33	0	0	0	0	34	0
7:30 - 7:45	1	0	0	1	0	0	0	0	0	31	0	31	0	0	0	0	32	0
7:45 - 8:00	0	0	0	0	0	0	0	0	0	28	1	29	0	0	0	0	29	0
8:00 - 8:15	1	0	2	3	0	0	0	0	0	27	1	28	0	0	0	0	31	0
8:15 - 8:30	1	0	1	2	0	0	0	0	0	21	1	22	0	0	0	0	24	0
8:30 - 8:45	0	0	0	0	0	0	0	0	0	25	0	25	0	0	0	0	25	0
8:45 - 9:00	0	0	0	0	0	0	0	0	0	27	1	28	0	0	0	0	28	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	1	0	0	1	0	0	0	0	0	57	5	62	0	0	0	0	63	0
16:15 - 16:30	4	0	1	5	0	0	0	0	0	42	5	47	0	0	0	0	52	0
16:30 - 16:45	1	0	1	2	0	0	0	0	0	43	3	46	0	0	0	0	48	0
16:45 - 17:00	0	0	2	2	0	0	0	0	0	39	3	42	0	0	0	0	44	0
17:00 - 17:15	2	0	1	3	0	0	0	0	0	41	2	43	0	0	0	0	46	0
17:15 - 17:30	1	0	0	1	0	0	0	0	0	39	0	39	0	0	0	0	40	0
17:30 - 17:45	1	0	0	1	0	0	0	0	0	37	2	39	0	0	0	0	40	0
17:45 - 18:00	1	0	0	1	0	0	0	0	0	23	1	24	0	0	0	0	25	0
TOTAL	14	0	9	23	0	0	0	0	0	534	26	560	0	0	0	0	583	0
Trucks	0	0	0	0	0	0	0	0	0	29	0	29	0	0	0	0	29	5.0%
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%

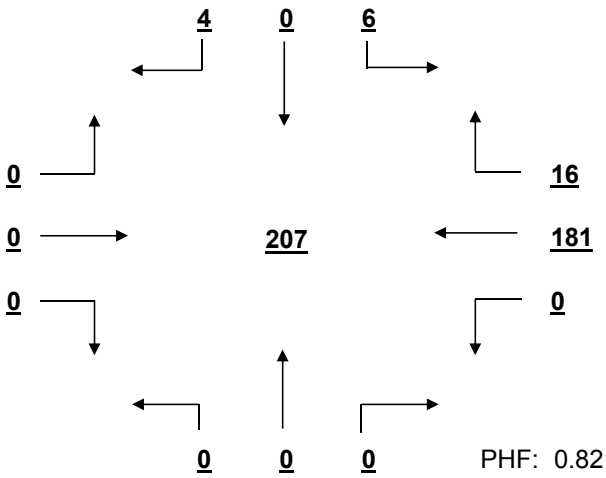
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I-85 SB AT Crawford Rd Date: 4/16/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

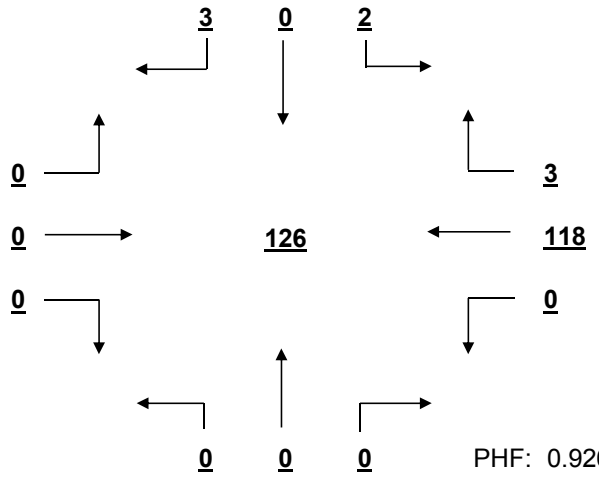


OVERALL PEAK HOUR VOLUME
FROM 16:00 TO 17:00



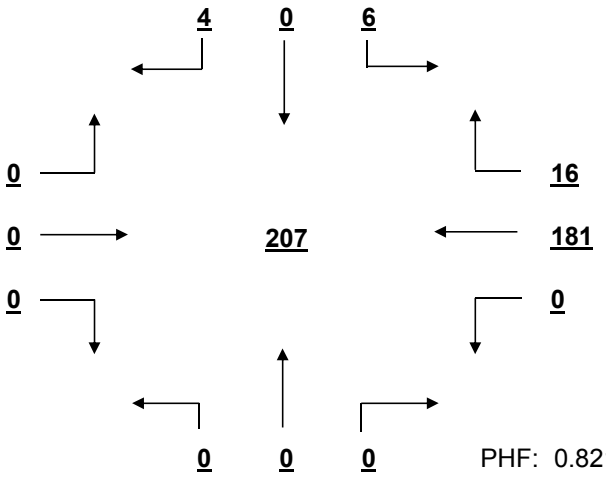
PHF: 0.821

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



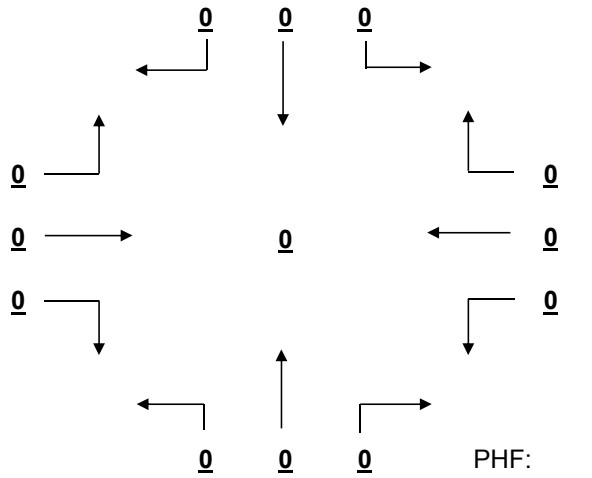
PHF: 0.926

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 16:00 TO 17:00



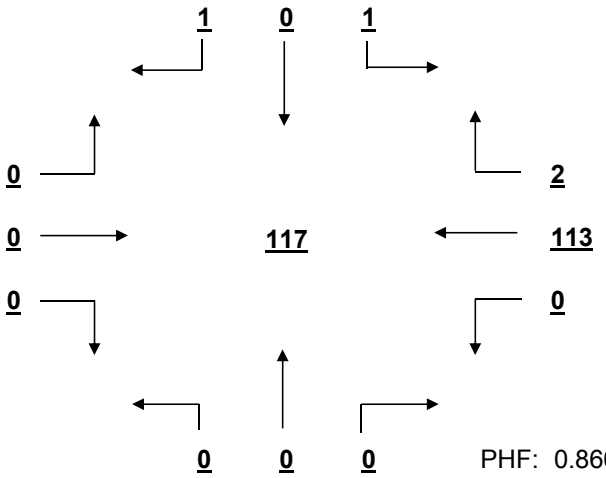
PHF: 0.821

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.860

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Blacksburg Date: 4/16/2013

Major Rt: I-85 NB Minor Rt: S-670

Day of Week: Tuesday Weather: Partly Cloudy Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 2090 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1

* Each Direction

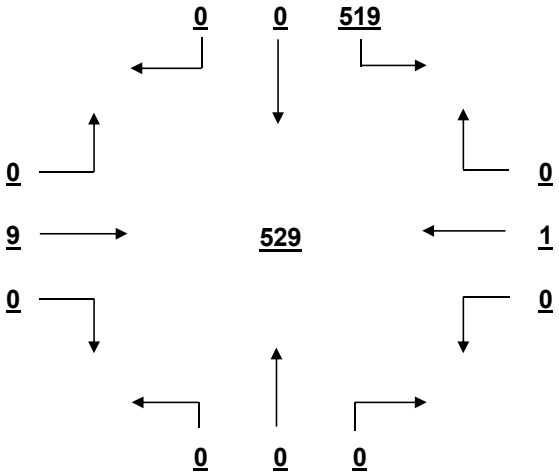
INTERSECTION VOLUME SUMMARY

	From N I-85 NB				From S I-85 NB				From E S-670				From W S-670				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	30	0	0	30	0	0	0	0	0	0	0	0	0	0	0	0	30	0
7:15 - 7:30	48	0	0	48	0	0	0	0	0	0	0	0	0	1	0	1	49	0
7:30 - 7:45	71	0	0	71	0	0	0	0	0	0	0	0	0	0	0	0	71	0
7:45 - 8:00	59	0	0	59	0	0	0	0	0	0	0	0	0	0	0	0	59	0
8:00 - 8:15	24	0	0	24	0	0	0	0	0	0	0	0	0	1	0	1	25	0
8:15 - 8:30	13	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0	13	0
8:30 - 8:45	11	0	0	11	0	0	0	0	0	0	0	0	0	0	0	0	11	0
8:45 - 9:00	19	0	0	19	0	0	0	0	0	0	0	0	0	0	0	0	19	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	22	0	0	22	0	0	0	0	0	0	0	0	0	0	0	0	22	0
16:15 - 16:30	23	0	0	23	0	0	0	0	0	0	0	0	0	2	0	2	25	0
16:30 - 16:45	23	0	0	23	0	0	0	0	0	1	0	1	0	1	0	1	25	0
16:45 - 17:00	33	0	0	33	0	0	0	0	0	0	0	0	0	0	0	0	33	0
17:00 - 17:15	30	0	0	30	0	0	0	0	0	0	0	0	0	1	0	1	31	0
17:15 - 17:30	32	0	0	32	0	0	0	0	0	0	0	0	0	1	0	1	33	0
17:30 - 17:45	35	0	0	35	0	0	0	0	0	0	0	0	0	1	0	1	36	0
17:45 - 18:00	46	0	0	46	0	0	0	0	0	0	0	0	0	1	0	1	47	0
TOTAL	519	0	0	519	0	0	0	0	0	1	0	1	0	9	0	9	529	0
Trucks	24	0	0	24	0	0	0	0	0	0	0	0	0	0	0	0	24	4.5%
School Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0%

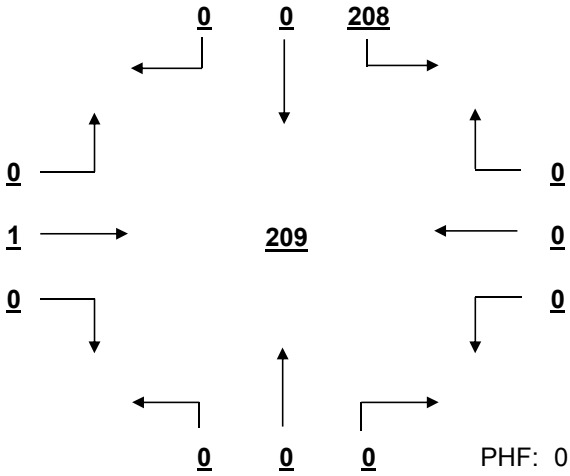
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

I-85 NB AT S-670 Date: 4/16/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

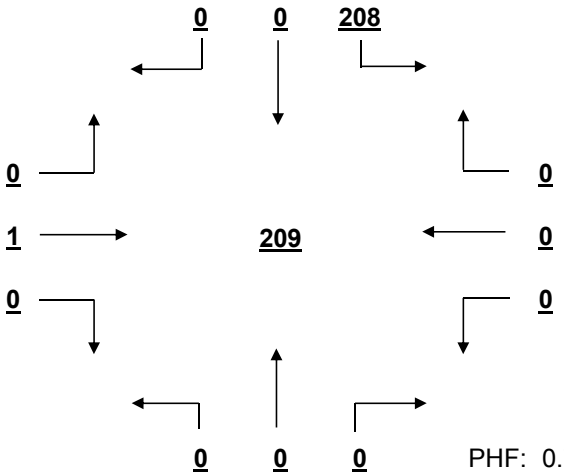


OVERALL PEAK HOUR VOLUME
FROM 7:00 TO 8:00



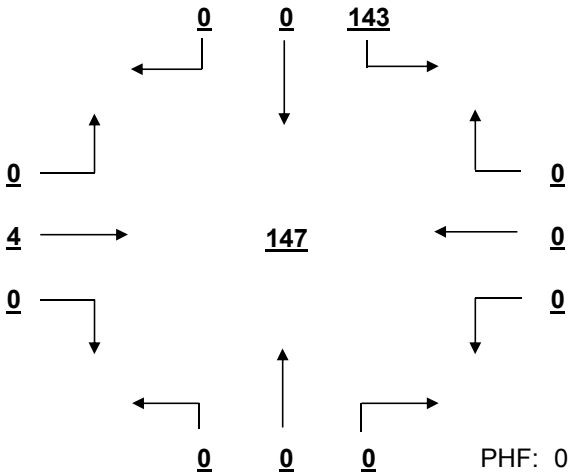
PHF: 0.736

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:00 TO 8:00



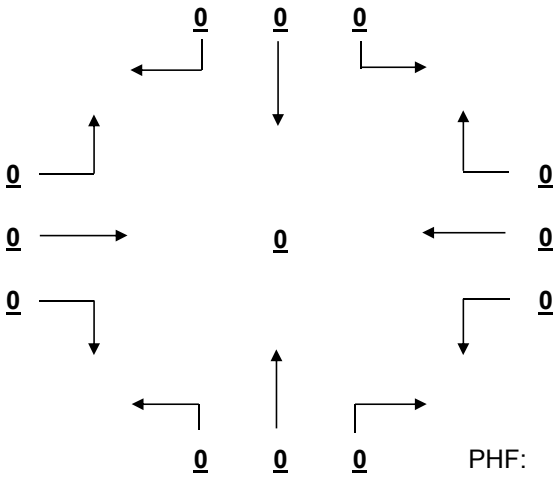
PHF: 0.736

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



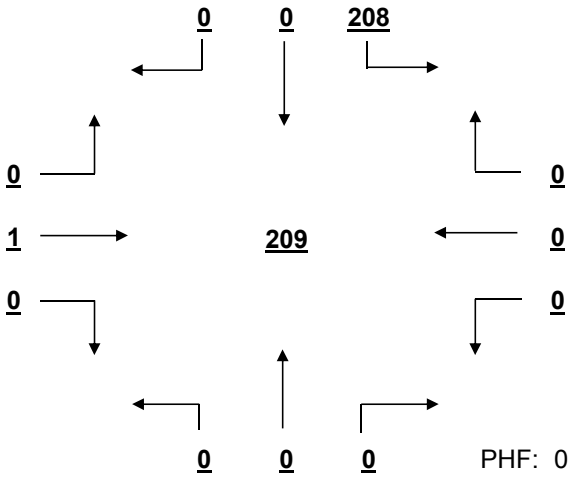
PHF: 0.782

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.736

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4
TRAFFIC ENGINEERING

County: Cherokee City: Blacksburg Date: 4/16/2013

Major Rt: S-83 Minor Rt: I 85 NB
* Not on State System

Day of Week: Tuesday Weather: Partly Cloudy Office: Feemster, P.C. TWF

Type of Control: Stop Sign Speed Limit (major st) 35

Direction of Minor Street: E-W Intersection ADT - 5110 (Calc)

Number of Lanes (major st)* 1 Number of Lanes (minor st)* 1
* Each Direction

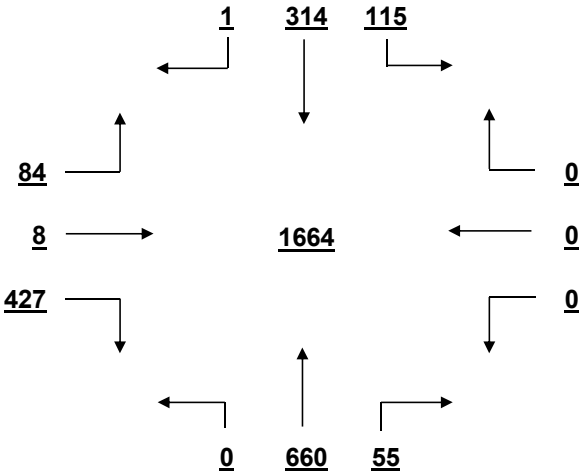
INTERSECTION VOLUME SUMMARY

	From N S-83				From S S-83				From E I 85 NB				From W I 85 NB				Total	Total
	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	LT	STR	RT	TOT	Vol	Peds
7:00 - 7:15	8	18	0	26	0	24	1	25	0	0	0	0	2	1	27	30	81	0
7:15 - 7:30	15	39	0	54	0	32	1	33	0	0	0	0	3	0	45	48	135	0
7:30 - 7:45	14	43	0	57	0	31	2	33	0	0	0	0	4	2	65	71	161	0
7:45 - 8:00	6	19	0	25	0	36	2	38	0	0	0	0	1	0	58	59	122	0
8:00 - 8:15	7	19	0	26	0	34	9	43	0	0	0	0	6	0	18	24	93	0
8:15 - 8:30	3	13	0	16	0	24	2	26	0	0	0	0	2	0	11	13	55	0
8:30 - 8:45	5	10	0	15	0	38	6	44	0	0	0	0	2	1	8	11	70	0
8:45 - 9:00	4	13	0	17	0	27	2	29	0	0	0	0	4	0	15	19	65	0
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00 - 16:15	1	27	0	28	0	75	3	78	0	0	0	0	5	0	17	22	128	0
16:15 - 16:30	8	16	0	24	0	43	4	47	0	0	0	0	6	0	17	23	94	0
16:30 - 16:45	7	14	1	22	0	51	2	53	0	0	0	0	7	0	16	23	98	0
16:45 - 17:00	11	12	0	23	0	45	3	48	0	0	0	0	8	1	24	33	104	0
17:00 - 17:15	9	15	0	24	0	54	6	60	0	0	0	0	6	0	24	30	114	0
17:15 - 17:30	5	13	0	18	0	60	7	67	0	0	0	0	6	1	25	32	117	0
17:30 - 17:45	4	20	0	24	0	50	3	53	0	0	0	0	11	1	23	35	112	0
17:45 - 18:00	8	23	0	31	0	36	2	38	0	0	0	0	11	1	34	46	115	0
TOTAL	115	314	1	430	0	660	55	715	0	0	0	0	84	8	427	519	1664	0
Trucks	6	6	0	12	0	16	2	18	0	0	0	0	8	4	12	24	54	3.2%
School Buses	0	4	0	4	0	1	0	1	0	0	0	0	0	0	1	1	6	0.4%

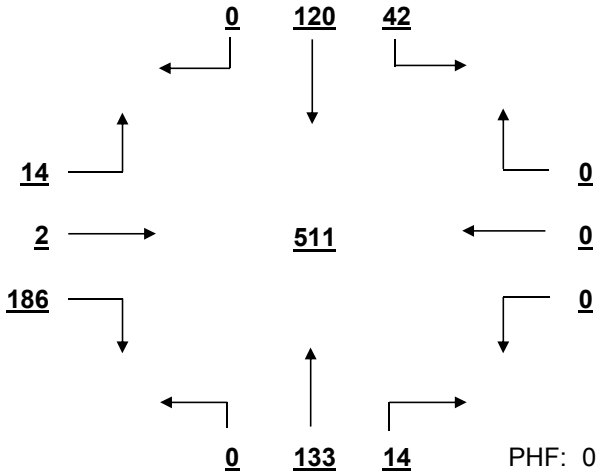
TOTAL AND PEAK HOUR VOLUME DIAGRAMS

S-83 AT I 85 NB Date: 4/16/2013

8.0 HOUR TOTAL VOLUME
FROM 7:00 TO 18:00

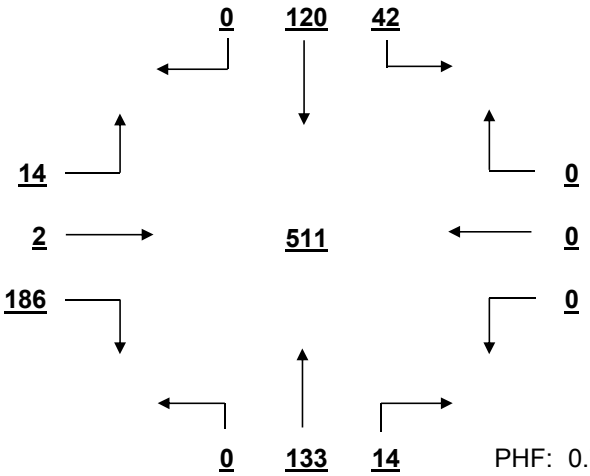


OVERALL PEAK HOUR VOLUME
FROM 7:15 TO 8:15



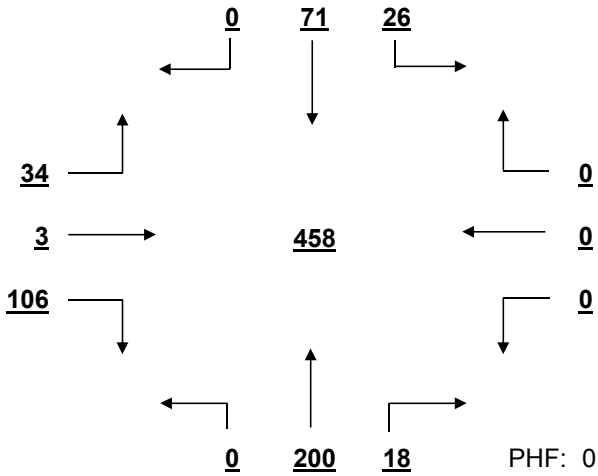
PHF: 0.793

AM PEAK HOUR VOLUME (0:00-10:45)
FROM 7:15 TO 8:15



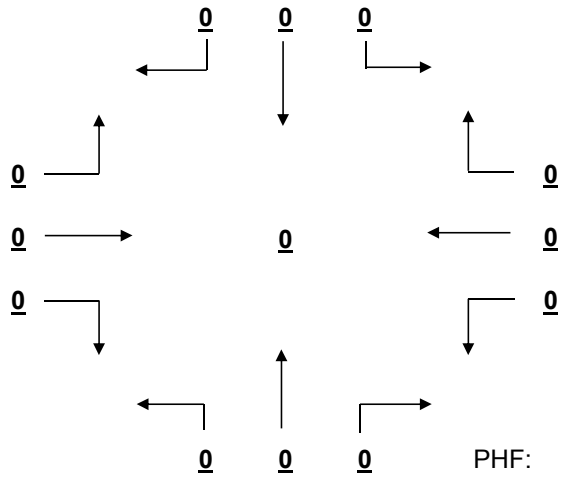
PHF: 0.793

PM PEAK HOUR VOLUME (14:15-23:45)
FROM 17:00 TO 18:00



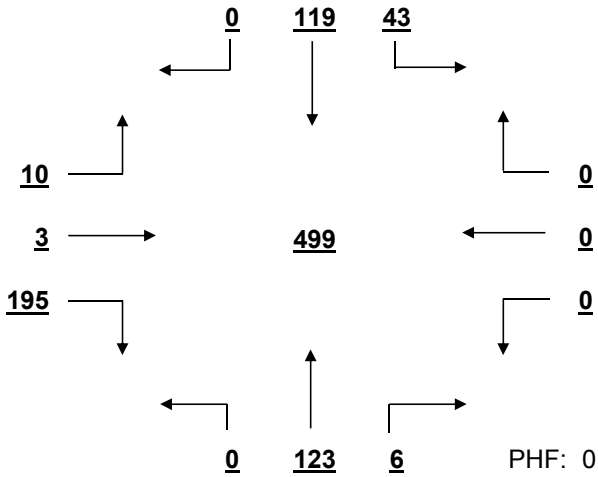
PHF: 0.979

MID-DAY PEAK HOUR VOLUME (11:00-14:00)
FROM 0:00 TO 0:00



PHF:

OTHER HOUR VOLUME
FROM 7:00 TO 8:00



PHF: 0.775

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

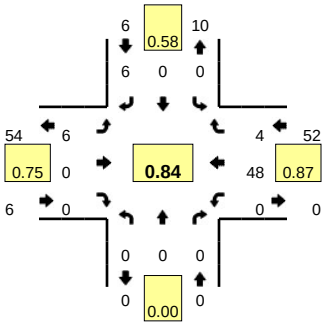
LOCATION: Store Dwys (Entire Frontage) -- I-85 SB Off-Ramp

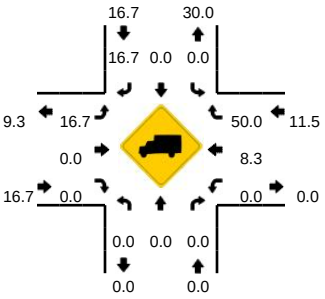
QC JOB #: 12896541

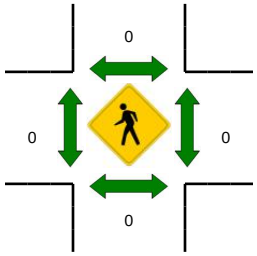
CITY/STATE: Blacksburg, SC

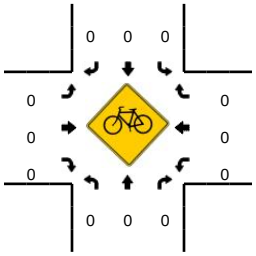
DATE: Thu, Sep 25 2014

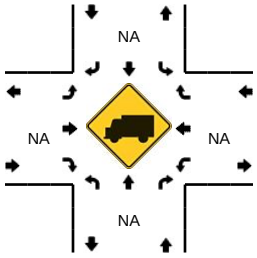
Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

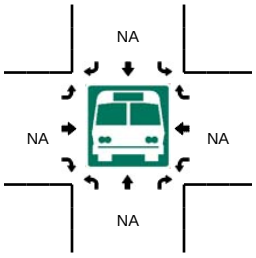












15-Min Count Period Beginning At	Store Dwys (Entire Frontage) (Northbound)				Store Dwys (Entire Frontage) (Southbound)				I-85 SB Off-Ramp (Eastbound)				I-85 SB Off-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	9	3	0	12	
7:15 AM	0	0	0	0	0	0	3	0	1	0	0	0	0	12	1	0	17	
7:30 AM	0	0	0	0	0	0	2	0	2	0	0	0	0	15	0	0	19	
7:45 AM	0	0	0	0	0	0	1	0	3	0	0	0	0	12	0	0	16	64
8:00 AM	0	0	0	0	0	0	1	0	2	0	0	0	0	7	1	0	11	63
8:15 AM	0	0	0	0	0	0	3	0	2	0	0	0	0	8	3	0	16	62
8:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	7	0	0	9	52
8:45 AM	0	0	0	0	0	0	1	0	2	0	0	0	0	9	2	0	14	50

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	8	0	8	0	0	0	0	60	0	0	76
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Try to get best coverage of ramps/driveways in case driveway volumes are needed.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

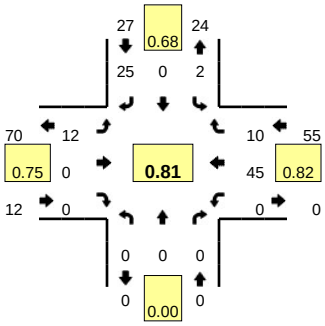
Method for determining peak hour: Total Entering Volume

LOCATION: Store Dwys (Entire Frontage) -- I-85 SB Off-Ramp

QC JOB #: 12896542

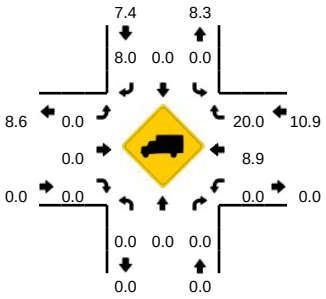
CITY/STATE: Blacksburg, SC

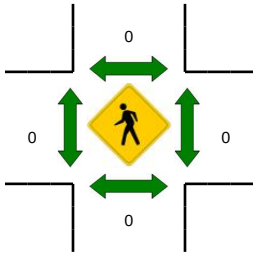
DATE: Thu, Sep 25 2014

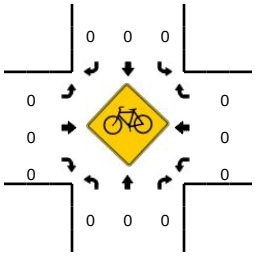


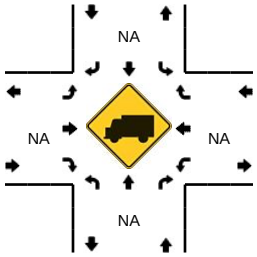
Peak-Hour: 4:30 PM -- 5:30 PM

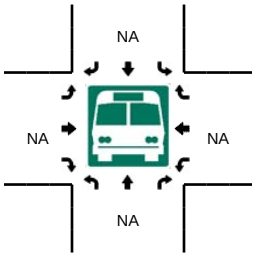
Peak 15-Min: 5:00 PM -- 5:15 PM











15-Min Count Period Beginning At	Store Dwys (Entire Frontage) (Northbound)				Store Dwys (Entire Frontage) (Southbound)				I-85 SB Off-Ramp (Eastbound)				I-85 SB Off-Ramp (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	0	7	1	5	0	0	0	0	10	2	0	25	
4:15 PM	0	0	0	0	0	0	2	1	2	0	0	0	0	7	5	0	17	
4:30 PM	0	0	0	0	0	0	9	1	3	0	0	0	0	7	3	0	23	
4:45 PM	0	0	0	0	0	0	4	0	1	0	0	0	0	14	3	0	22	87
5:00 PM	0	0	0	0	0	0	7	1	5	0	0	0	0	13	3	0	29	91
5:15 PM	0	0	0	0	0	0	5	0	3	0	0	0	0	11	1	0	20	94
5:30 PM	0	0	0	0	0	0	4	1	4	0	0	0	0	8	3	0	20	91
5:45 PM	0	0	0	0	0	0	4	0	3	0	0	0	0	9	4	0	20	89

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	28	4	20	0	0	0	0	52	12	0	116
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	4		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Try to get best coverage of ramps/driveways in case driveway volumes are needed.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: I-85 SB On-Ramp -- Crawford Rd

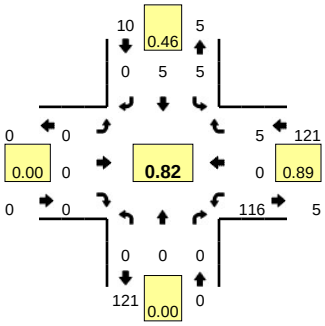
QC JOB #: 12896543

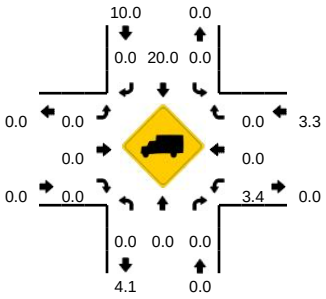
CITY/STATE: Blacksburg, SC

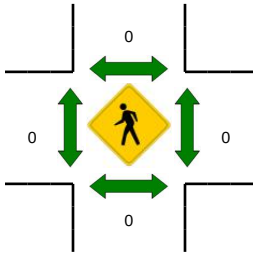
DATE: Thu, Sep 25 2014

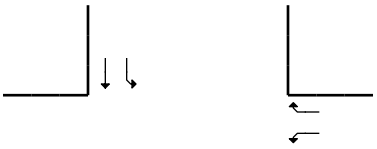
Peak-Hour: 7:30 AM -- 8:30 AM

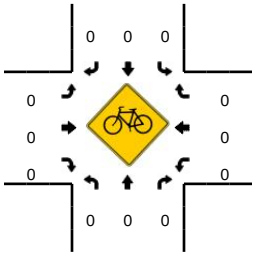
Peak 15-Min: 7:30 AM -- 7:45 AM

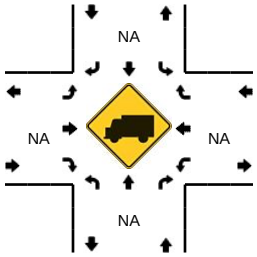


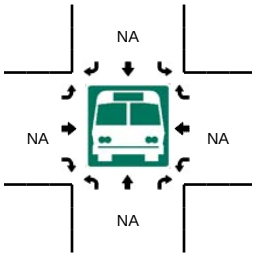












15-Min Count Period Beginning At	I-85 SB On-Ramp (Northbound)				I-85 SB On-Ramp (Southbound)				Crawford Rd (Eastbound)				Crawford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	22	0	1	0	23	
7:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	22	0	1	0	25	
7:30 AM	0	0	0	0	3	3	0	0	0	0	0	0	31	0	3	0	40	
7:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	27	0	2	0	31	119
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	27	0	0	0	28	124
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	31	0	0	0	32	131
8:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	20	0	0	0	21	112
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	13	94

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	12	12	0	0	0	0	0	0	124	0	12	0	160
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Include EBR from Crawford to I-85.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: I-85 SB On-Ramp -- Crawford Rd

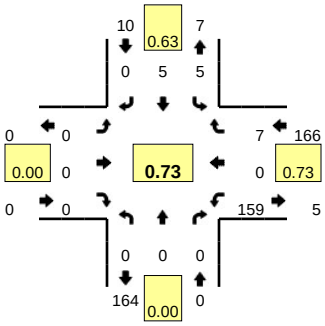
CITY/STATE: Blacksburg, SC

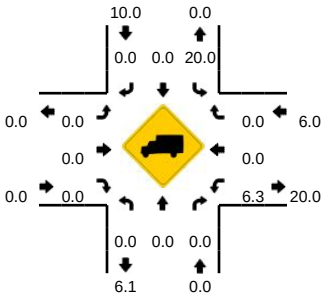
QC JOB #: 12896544

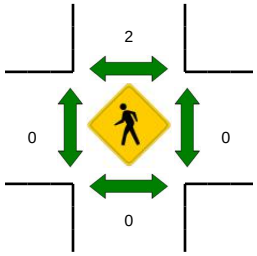
DATE: Thu, Sep 25 2014

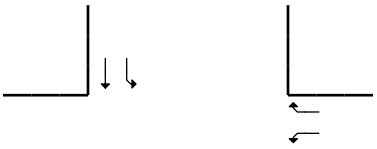
Peak-Hour: 4:00 PM -- 5:00 PM

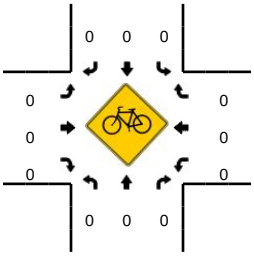
Peak 15-Min: 4:00 PM -- 4:15 PM

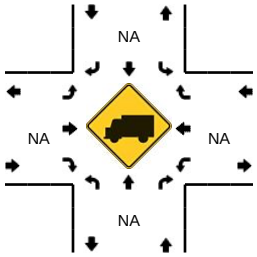


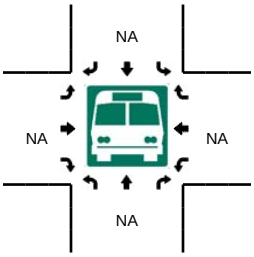












15-Min Count Period Beginning At	I-85 SB On-Ramp (Northbound)				I-85 SB On-Ramp (Southbound)				Crawford Rd (Eastbound)				Crawford Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	1	0	0	0	0	0	0	53	0	4	0	60	
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	35	0	0	0	36	
4:30 PM	0	0	0	0	1	3	0	0	0	0	0	0	35	0	0	0	39	
4:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	36	0	3	0	41	176
5:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	56	0	0	0	57	173
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	24	0	2	0	27	164
5:30 PM	0	0	0	0	1	1	0	0	0	0	0	0	19	0	3	0	24	149
5:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	29	0	1	0	32	140

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	8	4	0	0	0	0	0	0	212	0	16	0	240
Heavy Trucks	0	0	0		4	0	0		0	0	0		0	0	0		4
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments: Include EBR from Crawford to I-85.

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

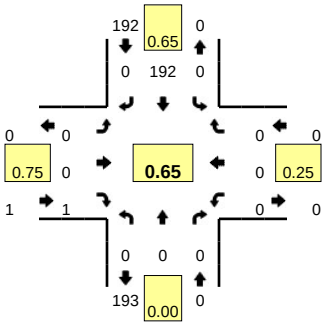
Method for determining peak hour: Total Entering Volume

LOCATION: I-85 NB Off-Ramp/Frontage Rd -- Frontage Rd/Milliken Rd

QC JOB #: 12896537

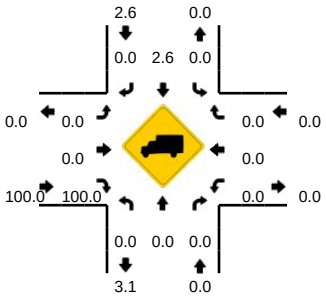
CITY/STATE: Blacksburg, SC

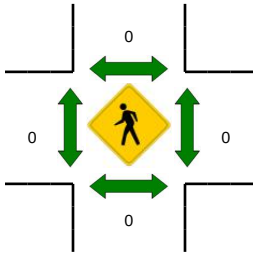
DATE: Thu, Sep 25 2014

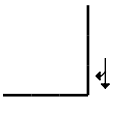


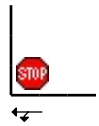
Peak-Hour: 7:00 AM -- 8:00 AM

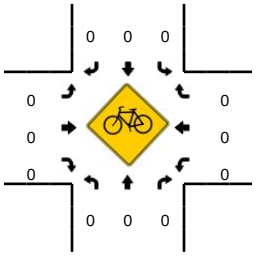
Peak 15-Min: 7:45 AM -- 8:00 AM

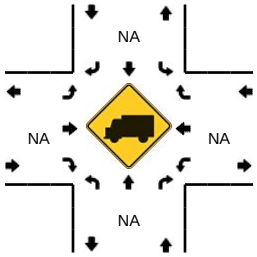


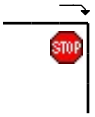


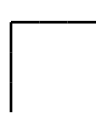


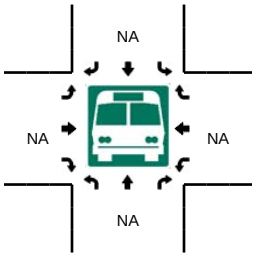












15-Min Count Period Beginning At	I-85 NB Off-Ramp/Frontage Rd (Northbound)				I-85 NB Off-Ramp/Frontage Rd (Southbound)				Frontage Rd/Milliken Rd (Eastbound)				Frontage Rd/Milliken Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	25	
7:15 AM	0	0	0	0	0	36	0	0	0	0	1	0	0	0	0	0	37	
7:30 AM	0	0	0	0	0	57	0	0	0	0	0	0	0	0	0	0	57	
7:45 AM	0	0	0	0	0	74	0	0	0	0	0	0	0	0	0	0	74	193
8:00 AM	0	0	0	0	0	23	0	0	0	0	1	0	0	0	0	0	24	192
8:15 AM	0	0	0	0	0	13	0	0	0	0	1	0	0	0	0	0	14	169
8:30 AM	0	0	0	0	0	16	0	0	0	0	2	0	0	0	0	0	18	130
8:45 AM	0	0	0	0	0	10	0	0	0	0	2	0	0	1	0	0	13	69

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	296	0	0	0	0	0	0	0	0	0	0	296
Heavy Trucks	0	0	0		0	16	0		0	0	0		0	0	0		16
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

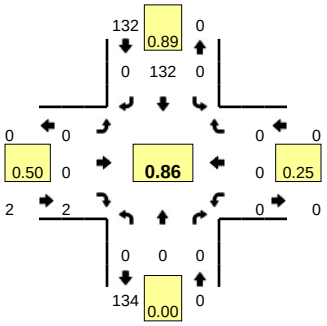
Method for determining peak hour: Total Entering Volume

LOCATION: I-85 NB Off-Ramp/Frontage Rd -- Frontage Rd/Milliken Rd

QC JOB #: 12896538

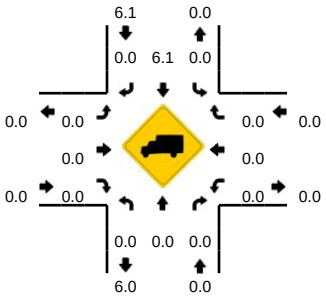
CITY/STATE: Blacksburg, SC

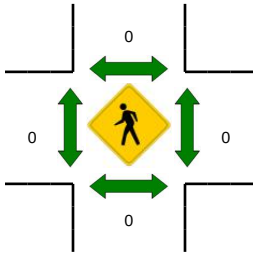
DATE: Thu, Sep 25 2014

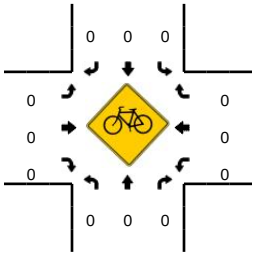


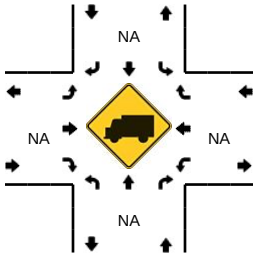
Peak-Hour: 4:45 PM -- 5:45 PM

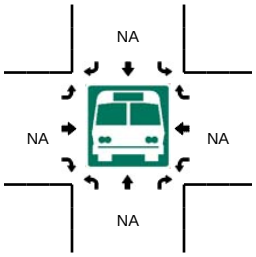
Peak 15-Min: 5:30 PM -- 5:45 PM











15-Min Count Period Beginning At	I-85 NB Off-Ramp/Frontage Rd (Northbound)				I-85 NB Off-Ramp/Frontage Rd (Southbound)				Frontage Rd/Milliken Rd (Eastbound)				Frontage Rd/Milliken Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	0	24	0	0	0	0	2	0	0	1	0	0	27	
4:15 PM	0	0	0	0	0	24	0	0	0	0	0	0	0	0	0	0	24	
4:30 PM	0	0	0	0	0	31	0	0	0	0	0	0	0	0	0	0	31	
4:45 PM	0	0	0	0	0	35	0	0	0	0	0	0	0	0	0	0	35	117
5:00 PM	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	37	127
5:15 PM	0	0	0	0	0	23	0	0	0	0	0	0	0	0	0	0	23	126
5:30 PM	0	0	0	0	0	37	0	0	0	0	2	0	0	0	0	0	39	134
5:45 PM	0	0	0	0	0	26	0	0	0	0	2	0	0	0	0	0	28	127

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	148	0	0	0	0	8	0	0	0	0	0	156
Heavy Trucks	0	0	0		0	8	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

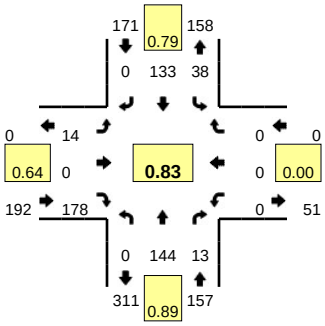
Method for determining peak hour: Total Entering Volume

LOCATION: Blacksburg Hwy -- I-85 NB On-Ramp/Frontage Rd/Mill

QC JOB #: 12896539

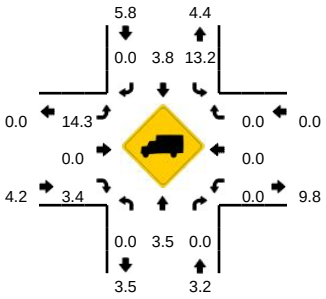
CITY/STATE: Blacksburg, SC

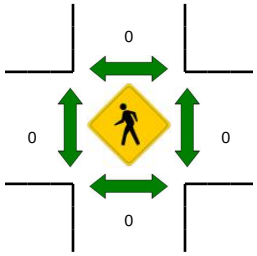
DATE: Thu, Sep 25 2014

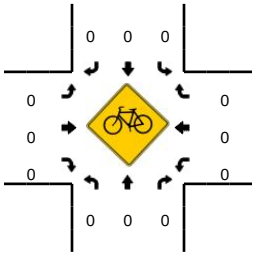


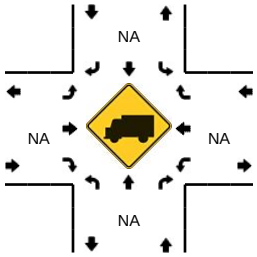
Peak-Hour: 7:15 AM -- 8:15 AM

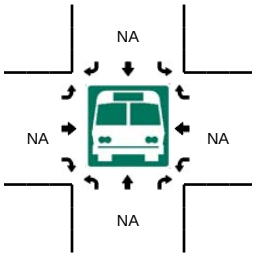
Peak 15-Min: 7:45 AM -- 8:00 AM











15-Min Count Period Beginning At	Blacksburg Hwy (Northbound)				Blacksburg Hwy (Southbound)				I-85 NB On-Ramp/Frontage Rd/Mill (Eastbound)				I-85 NB On-Ramp/Frontage Rd/Mill (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	25	2	0	7	15	0	0	3	0	22	0	0	0	0	0	74	
7:15 AM	0	27	3	0	16	41	0	0	3	0	34	0	0	0	0	0	124	
7:30 AM	0	42	2	0	10	46	0	0	4	0	52	0	0	0	0	0	156	
7:45 AM	0	35	2	0	8	37	0	0	4	0	71	0	0	0	0	0	157	511
8:00 AM	0	40	6	0	4	9	0	0	3	0	21	0	0	0	0	0	83	520
8:15 AM	0	32	5	0	5	10	0	0	2	1	11	0	0	0	0	0	66	462
8:30 AM	0	28	0	0	1	12	0	0	4	2	11	0	0	0	0	0	58	364
8:45 AM	1	18	2	0	1	21	0	0	2	1	10	0	0	0	0	0	56	263

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	140	8	0	32	148	0	0	16	0	284	0	0	0	0	0	628
Heavy Trucks	0	0	0		8	8	0		4	0	12		0	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak

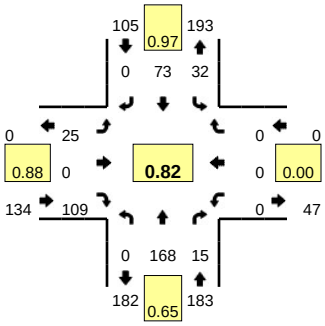
Method for determining peak hour: Total Entering Volume

LOCATION: Blacksburg Hwy -- I-85 NB On-Ramp/Frontage Rd/Mill

QC JOB #: 12896540

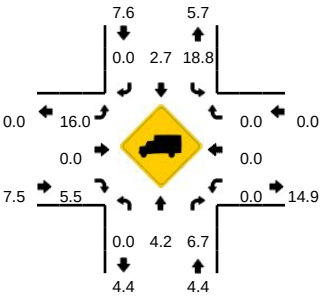
CITY/STATE: Blacksburg, SC

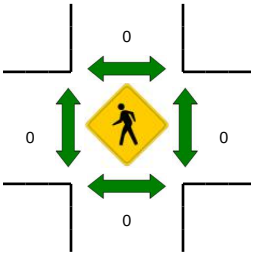
DATE: Thu, Sep 25 2014

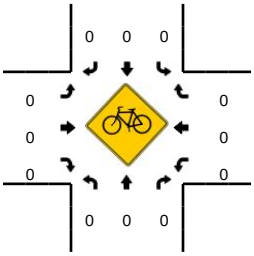


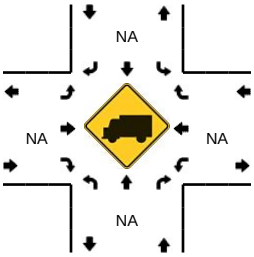
Peak-Hour: 4:45 PM -- 5:45 PM

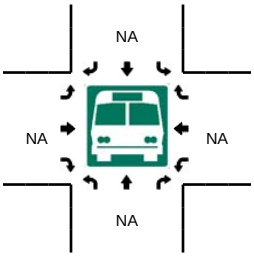
Peak 15-Min: 5:00 PM -- 5:15 PM











15-Min Count Period Beginning At	Blacksburg Hwy (Northbound)				Blacksburg Hwy (Southbound)				I-85 NB On-Ramp/Frontage Rd/Mill (Eastbound)				I-85 NB On-Ramp/Frontage Rd/Mill (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	76	9	0	4	15	1	0	7	0	20	0	0	0	0	0	132	
4:15 PM	0	42	7	0	6	16	0	0	3	0	21	0	0	0	0	0	95	
4:30 PM	0	41	2	0	4	17	0	0	11	0	19	0	0	0	0	0	94	
4:45 PM	0	40	3	0	3	18	0	0	6	0	30	0	0	0	0	0	100	421
5:00 PM	0	56	7	0	9	20	0	0	5	0	31	0	0	0	0	0	128	417
5:15 PM	0	44	4	0	8	18	0	0	4	0	20	0	0	0	0	0	98	420
5:30 PM	0	28	1	0	12	17	0	0	10	0	28	0	0	0	0	0	96	422
5:45 PM	0	38	1	0	5	23	0	0	9	0	21	0	0	0	0	0	97	419

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	224	28	0	36	80	0	0	20	0	124	0	0	0	0	0	512
Heavy Trucks	0	8	0		0	0	0		0	0	0		0	0	0		8
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 10/7/2014 1:32 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Appendix C

INRIX Speed Data

I-85 Southbound 2013

Tuesday, Wednesday, Thursday

TMC CODE	NAME	MILES	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
125N05448	SC-198/EXIT 102	0.45003	65.73	65.73	65.62	65.58	65.59	65.59	66.06	66.49	66.88	66.72	66.69	66.87	66.62	66.76	66.48	66.64	66.71	66.68	66.58	66.36	66.04	65.87	65.84	65.78
125-05447	SC-5/EXIT 100	2.144116	68.59	68.62	68.47	68.48	68.49	68.44	68.76	69.08	69.38	69.15	69.07	69.17	68.96	69.08	68.82	69.02	69.12	69.15	69.24	69.2	68.92	68.82	68.66	68.73
125N05447	SC-5/EXIT 100	0.514631	66.97	67	66.79	66.82	66.76	66.83	67.21	67.6	67.91	67.72	67.66	67.71	67.37	67.59	67.52	67.47	67.63	67.63	67.67	67.44	67.26	67.15	67.04	66.99
125-05446	SC-18/SHELBY HWY/EXIT 96	2.921556	66.39	66.38	66.15	66.17	66.19	66.43	66.86	67.24	67.63	67.31	67.13	67.22	66.91	66.92	66.91	66.98	67.03	67.01	67.15	67.06	66.77	66.55	66.48	66.48
125N05446	SC-18/SHELBY HWY/EXIT 96	0.287081	64.85	64.85	64.75	64.67	64.67	64.98	65.18	65.61	66.06	65.65	65.46	65.55	65.44	65.36	64.96	65.38	65.39	65.29	65.44	65.53	65.17	64.87	64.87	64.88
125-05445	SC-150/SC-18/ROAD 82/EXIT 95	1.048681	67.21	67.15	66.98	66.97	67.01	67.21	67.25	67.62	67.96	67.65	67.6	67.64	67.5	67.28	66.99	67.5	67.44	67.4	67.56	67.73	67.48	67.23	67.13	67.24
125N05445	SC-150/SC-18/ROAD 82/EXIT 95	0.287714	65.82	65.72	65.61	65.57	65.6	65.87	65.84	66.05	66.3	66.21	66.17	66.23	66.02	65.84	65.56	66.11	65.81	65.88	66.1	66.13	65.99	65.75	65.74	65.79
125-05444	SC-11/EXIT 92	2.227408	65.85	65.8	65.67	65.62	65.63	65.9	65.93	66.11	66.33	66.39	66.31	66.27	66.25	65.81	65.66	66.06	65.73	65.95	66.17	66.05	65.97	65.72	65.68	65.83
125N05444	SC-11/EXIT 92	0.470698	66.08	66.08	65.99	65.94	65.99	66.06	66.46	66.77	66.95	66.62	66.37	66.24	66.52	66.07	65.9	66.2	66.02	66.29	66.45	66.22	66.17	65.88	65.98	66.01
125-05443	HYATT ST/EXIT 90	1.958584	66.66	66.65	66.57	66.66	66.71	66.81	67.14	67.54	67.65	67.25	66.91	66.89	67.12	66.96	66.72	66.59	66.64	66.96	67.17	67.04	66.98	66.79	66.9	66.85
125N05443	HYATT ST/EXIT 90	0.441623	65.37	65.32	65.33	65.27	65.34	65.46	65.97	66.52	66.53	66.02	65.8	65.83	66.05	66.04	65.72	65.51	65.86	66.08	66.22	65.78	65.58	65.48	65.67	65.48
125-05442	GREEN RIVER RD/EXIT 87	2.813103	65.97	65.93	65.8	65.88	65.97	66.17	66.52	66.98	66.97	66.37	66.39	66.37	66.46	66.41	66.07	65.71	66.16	66.02	66.33	66.32	66.29	65.99	66.19	66
125N05442	GREEN RIVER RD/EXIT 87	0.307233	64.14	64.15	64.16	64.13	64.14	64.41	65.06	65.61	65.68	65.11	65.04	64.94	64.91	64.86	64.5	64.46	64.53	64.21	64.38	64.24	64.32	64.02	64.19	64.16
125-05441	CHEROKEE--SPARTANBURG COUNTY BORDER	2.914453	66.46	66.75	66.73	66.68	66.82	67.14	67.15	67.87	68.02	67.64	67.54	67.38	67.32	67.31	66.99	67.06	67.06	66.27	66.72	67.14	67.13	66.71	66.67	66.48
125-05058	SPARTANBURG--CHEROKEE COUNTY BORDER	0.011229	66.5	66.69	66.67	66.67	66.72	67.2	67.77	68.28	68.46	68.01	67.91	67.71	67.7	67.73	67.47	67.44	67.31	66.8	67.28	67.28	67.15	66.72	66.69	66.48
125-05057	SC-110/EXIT 83	0.249616	65.67	65.81	65.8	65.74	65.91	66.31	66.58	67.09	67.25	66.84	66.69	66.55	66.54	66.52	66.21	66.37	66.16	65.64	66.19	66.34	66.2	65.82	65.85	65.62
125N05057	SC-110/EXIT 83	0.342683	64.5	64.74	64.71	64.56	64.7	65.03	65.28	65.75	65.87	65.5	65.33	65.17	65.19	65.1	64.69	64.97	64.65	64.13	64.74	64.99	64.82	64.41	64.69	64.61
125-05056	GOSSETT RD/EXIT 80	3.218324	66.69	66.81	66.58	66.73	66.88	67.28	67.47	67.88	67.81	67.65	67.49	67.32	67.44	67.42	67.08	67.2	67.09	66.47	66.64	66.96	66.7	66.64	66.72	66.65
125N05056	GOSSETT RD/EXIT 80	0.825281	65.56	65.67	65.54	65.48	65.64	66.19	66.45	66.96	66.86	66.62	66.52	66.47	66.67	66.62	66.25	66.56	66.7	66.5	66.32	66.01	65.68	65.43	65.66	65.39

I-85 Northbound 2013

Tuesday, Wednesday, Thursday

TMC CODE	NAME	MILES	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
125P05056	GOSSETT RD/EXIT 80	0.530993	67.39	67.4	67.21	67.11	67.59	67.87	68.34	68.12	68.29	68.22	68.31	68.47	68.39	67.92	67.98	67.33	67.34	67.05	67.55	67.54	67.62	67.43	67.74	67.51
125+05057	SC-110/EXIT 83	3.054585	66.15	66.03	66.03	65.73	66.27	66.5	66.89	66.76	67.01	66.92	67.04	67.04	67.02	66.73	66.57	66.05	65.89	65.92	66.23	66.61	66.49	66.19	66.41	66.14
125P05057	SC-110/EXIT 83	0.736837	65.67	65.65	65.63	65.5	65.9	66.02	66.38	66.41	66.78	66.62	66.7	66.73	66.85	66.58	66.55	66.06	66.08	66.21	66.07	66.28	66.11	65.72	65.86	65.64
125+05058	SPARTANBURG--CHEROKEE COUNTY BORDER	0.178019	68.86	68.78	68.64	68.63	69.12	69.2	69.34	69.36	69.7	69.21	69.24	69.31	69.33	69.15	69.18	69.27	69.48	69.44	69.06	69.65	69.34	68.98	68.98	68.86
125+05441	CHEROKEE--SPARTANBURG COUNTY BORDER	0.012211	69.23	69.13	69.03	68.99	69.43	69.49	69.62	69.64	69.98	69.35	69.38	69.44	69.45	69.33	69.29	69.63	69.85	69.8	69.34	69.88	69.66	69.33	69.39	69.18
125+05442	GREEN RIVER RD/EXIT 87	2.920611	66.57	66.5	66.41	66.34	66.78	66.87	67.25	67.34	67.68	67.47	67.56	67.69	67.76	67.5	67.18	67.16	67.54	67.31	67.02	67.3	66.82	66.46	66.73	66.59
125P05442	GREEN RIVER RD/EXIT 87	0.365371	69.16	69.1	68.97	68.95	69.32	69.41	69.67	69.71	70.02	69.73	69.86	69.92	70.05	69.76	69.07	69.31	69.77	69.43	69.29	69.85	69.39	69.08	69.37	69.3
125+05443	HYATT ST/EXIT 90	2.817341	66.4	66.25	66.23	66.19	66.61	66.74	67.04	66.94	67.29	67.23	67.35	67.53	67.49	67.16	66.58	66.95	67.4	66.96	66.85	67.26	66.71	66.44	66.59	66.46
125P05443	HYATT ST/EXIT 90	0.419513	66.39	66.09	66.02	66.03	66.48	66.75	67.28	67.46	67.91	67.52	67.52	67.85	67.87	67.59	67.53	67.64	67.52	67.19	67.23	67.3	66.74	66.56	66.6	66.38
125+05444	SC-11/EXIT 92	1.964544	65.67	65.48	65.17	65.26	65.76	66.01	66.24	66.37	66.84	66.49	66.59	66.86	66.94	66.69	66.67	66.93	66.86	66.65	66.68	66.64	66.18	65.9	65.99	65.74
125P05444	SC-11/EXIT 92	0.497083	66.7	66.76	66.51	66.46	67	67.1	67.28	67.32	67.72	67.41	67.48	67.73	67.77	67.6	67.53	67.78	67.77	67.59	67.66	67.59	67.16	66.97	67	66.88
125+05445	SC-150/SC-18/ROAD 82/EXIT 95	1.606102	66.98	67.03	66.65	66.69	67.2	67.33	67.45	67.5	67.85	67.55	67.62	67.9	67.9	67.71	67.56	67.85	67.76	67.69	67.72	67.69	67.28	67.13	67.14	67.04
125P05445	SC-150/SC-18/ROAD 82/EXIT 95	0.671267	67.01	67.07	66.78	66.79	67.37	67.54	67.64	67.61	67.9	67.25	67.28	67.48	67.52	67.32	67.26	67.89	67.81	67.7	67.75	67.8	67.34	67.18	67.18	67.11
125+05446	SC-18/SHELBY HWY/EXIT 96	1.121055	66.43	66.55	66.24	66.19	66.58	66.84	66.83	66.83	67.29	66.96	67.07	67.19	67.31	67.19	67.21	67.52	67.34	67.37	67.27	67.28	66.81	66.63	66.61	66.58
125P05446	SC-18/SHELBY HWY/EXIT 96	0.354732	63.04	63.15	62.81	62.82	63	63.3	63.79	63.9	64.56	64.02	64.19	64.25	64.37	64.32	64.4	64.52	64.33	64.3	64.27	63.82	63.32	63.07	63.16	63.13
125+05447	SC-5/EXIT 100	3.031289	67.23	67.3	67.08	67.02	67.32	67.53	67.73	67.96	68.23	67.87	68.01	67.95	68.17	68.22	68.21	68.13	68	68.19	68.15	67.75	67.27	67.29	67.27	67.21
125P05447	SC-5/EXIT 100	0.307034	66.71	66.78	66.59	66.49	66.91	67.17	67.33	67.69	67.72	67.51	67.65	67.75	67.9	67.78	67.72	67.38	67.22	67.31	67.27	67.29	66.57	66.64	66.54	66.6
125+05448	SC-198/EXIT 102	1.955763	64.31	64.38	64.18	64.05	64.38	64.9	64.99	65.32	65.29	65.23	65.49	65.61	65.72	65.6	65.48	65.47	65.44	65.51	65.42	64.88	64.14	64.2	64	64.18
125P05448	SC-198/EXIT 102	0.778832	61.66	61.95	61.84	61.49	61.58	62.73	62.69	63.34	63.75	63.19	63.54	63.81	63.95	63.82	63.77	63.52	63.7	63.74	63.14	62.85	62.13	61.92	61.75	61.74

I-85 Southbound 2013

Sunday, Monday, Friday, Saturday

TMC CODE	NAME	MILES	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
125N05448	SC-198/EXIT 102	0.45003	65.63	65.56	65.34	65.28	65.36	65.35	65.56	66.1	66.49	66.55	66.64	66.8	66.78	66.68	66.8	66.58	66.68	66.81	66.54	66.36	66.06	65.81	65.62	65.77
125-05447	SC-5/EXIT 100	2.144116	68.31	68.1	68	67.87	68.05	68.2	68.42	68.77	69.01	68.96	68.92	69.19	69.16	69.28	69.22	69.11	69.24	69.35	69.03	68.92	68.54	68.38	68.3	68.48
125N05447	SC-5/EXIT 100	0.514631	66.83	66.68	66.58	66.5	66.57	66.86	66.93	67.36	67.6	67.56	67.37	67.76	67.7	67.84	67.67	67.72	67.87	67.9	67.55	67.21	67.25	67.25	66.94	66.99
125-05446	SC-18/SHELBY HWY/EXIT 96	2.921556	66.24	66.08	65.91	65.86	65.88	66.15	66.4	66.87	67.18	67.09	67.15	67.33	67.29	67.42	67.11	67.17	67.22	67.31	66.72	66.6	66.64	66.63	66.37	66.4
125N05446	SC-18/SHELBY HWY/EXIT 96	0.287081	64.88	64.8	64.59	64.58	64.66	64.76	65.12	65.59	65.94	65.55	65.68	65.86	65.74	65.92	65.59	65.66	65.49	65.62	65.14	65.04	64.98	65.01	64.96	65.06
125-05445	SC-150/SC-18/ROAD 82/EXIT 95	1.048681	66.91	66.79	66.64	66.63	66.76	66.97	67.06	67.5	67.75	67.54	67.56	67.68	67.62	67.88	67.61	67.66	67.38	67.47	67.36	67.31	67.05	67.09	67.07	67.07
125N05445	SC-150/SC-18/ROAD 82/EXIT 95	0.287714	65.55	65.47	65.39	65.4	65.48	65.63	65.78	66.13	66.38	66.18	66.28	66.3	66.19	66.38	66.1	66.13	66.06	66.02	65.95	65.93	65.66	65.69	65.63	65.65
125-05444	SC-11/EXIT 92	2.227408	65.6	65.63	65.48	65.41	65.57	65.69	65.91	66.24	66.47	66.35	66.37	66.4	66.28	66.38	66.21	66.1	66.11	66.23	66.02	66.05	65.8	65.77	65.71	65.7
125N05444	SC-11/EXIT 92	0.470698	65.83	65.85	65.53	65.62	65.79	65.87	66.18	66.6	66.85	66.67	66.68	66.78	66.61	66.67	66.57	66.37	66.53	66.48	66.26	66.22	65.9	65.86	65.79	65.85
125-05443	HYATT ST/EXIT 90	1.958584	66.57	66.47	66.28	66.28	66.5	66.62	66.85	67.26	67.49	67.33	67.32	67.43	67.29	67.32	67.04	66.7	66.96	66.98	66.97	67.11	66.75	66.71	66.71	66.64
125N05443	HYATT ST/EXIT 90	0.441623	65.46	65.51	65.19	65.3	65.35	65.45	65.67	66.09	66.39	66.29	66.33	66.45	66.33	66.26	65.89	65.58	65.97	65.74	65.82	66.13	65.71	65.74	65.64	65.63
125-05442	GREEN RIVER RD/EXIT 87	2.813103	65.83	65.68	65.49	65.47	65.77	65.84	66.16	66.51	66.77	66.66	66.67	66.84	66.58	66.56	66.23	65.95	66.28	66.1	66.02	66.32	65.97	65.87	65.86	65.88
125N05442	GREEN RIVER RD/EXIT 87	0.307233	64.32	64.12	63.96	63.95	64.32	64.28	64.74	65.12	65.29	65.12	65.15	65.26	65.07	65.04	64.87	64.52	64.71	64.45	64.46	64.54	64.23	63.97	64.16	64.4
125-05441	CHEROKEE--SPARTANBURG COUNTY BORDER	2.914453	66.61	66.34	66.36	66.2	66.66	66.91	67.05	67.43	67.58	67.59	67.62	67.76	67.62	67.59	67.37	67.17	67.2	66.53	66.83	67	66.68	66.57	66.67	66.82
125-05058	SPARTANBURG--CHEROKEE COUNTY BORDER	0.011229	66.78	66.65	66.64	66.5	66.81	66.97	67.22	67.64	67.83	67.77	67.91	67.98	67.94	67.89	67.74	67.59	67.43	66.79	67.03	67.14	67.01	66.99	67.04	67.01
125-05057	SC-110/EXIT 83	0.249616	65.73	65.76	65.72	65.54	65.9	65.98	66.16	66.55	66.72	66.77	66.92	67.02	66.96	66.86	66.67	66.54	66.33	65.69	65.99	66.02	66.01	66.02	66.03	66.07
125N05057	SC-110/EXIT 83	0.342683	64.66	64.71	64.58	64.46	64.75	65.05	65.04	65.39	65.43	65.52	65.54	65.6	65.54	65.37	65.09	65.11	64.77	64.16	64.53	64.67	64.71	64.82	64.91	64.97
125-05056	GOSSETT RD/EXIT 80	3.218324	66.74	66.41	66.27	66.23	66.67	67.11	67.23	67.28	67.33	67.54	67.6	67.67	67.63	67.56	67.42	66.95	66.78	66.55	66.54	66.71	66.77	66.8	66.88	66.93
125N05056	GOSSETT RD/EXIT 80	0.825281	65.73	65.64	65.39	65.23	65.57	65.95	66.13	66.1	66.39	66.65	66.68	66.8	66.78	66.76	66.69	66.51	66.67	66.65	66.35	66.48	66.14	65.79	65.73	65.8

I-85 Northbound 2013

Sunday, Monday, Friday, Saturday

TMC CODE	NAME	MILES	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM
125P05056	GOSSETT RD/EXIT 80	0.530993	67.21	67.21	66.96	66.91	67.1	67.38	67.72	67.98	68.19	68.28	68.2	68.41	68.38	68.36	68.2	67.85	67.9	67.59	67.82	67.52	67.66	67.36	67.53	67.32
125+05057	SC-110/EXIT 83	3.054585	66.09	66.11	65.8	65.62	65.87	66.11	66.42	66.73	67.04	67.04	66.99	67.09	67.09	67.07	67.01	66.49	66.68	66.33	66.29	66.42	66.5	66.27	66.34	66.23
125P05057	SC-110/EXIT 83	0.736837	65.75	65.76	65.68	65.45	65.58	65.81	66.15	66.44	66.8	66.81	66.93	66.88	67.05	66.96	66.81	66.7	66.97	66.69	66.56	66.42	66.05	65.81	65.78	65.82
125+05058	SPARTANBURG--CHEROKEE COUNTY BORDER	0.178019	68.49	68.37	68.27	68.09	68.26	68.57	68.72	68.99	69.37	69.26	69.4	69.37	69.56	69.5	69.39	69.45	69.69	69.46	69.38	69.27	68.96	68.68	68.58	68.6
125+05441	CHEROKEE--SPARTANBURG COUNTY BORDER	0.012211	68.81	68.66	68.57	68.39	68.56	68.85	68.87	69.12	69.49	69.57	69.7	69.68	69.85	69.79	69.69	69.66	69.92	69.72	69.64	69.51	69.21	68.92	68.89	68.88
125+05442	GREEN RIVER RD/EXIT 87	2.920611	66.56	66.47	66.38	66.21	66.41	66.64	66.91	67.12	67.28	67.51	67.61	67.69	67.92	67.81	67.68	67.61	67.93	67.64	67.58	67.35	67.1	66.75	66.71	66.61
125P05442	GREEN RIVER RD/EXIT 87	0.365371	68.84	68.68	68.66	68.47	68.61	68.84	69.05	69.33	69.43	69.6	69.79	69.88	70.09	70.01	69.86	69.91	70.06	69.9	69.75	69.62	69.43	69.1	69.07	69.03
125+05443	HYATT ST/EXIT 90	2.817341	66.43	66.35	66.25	66.03	66.22	66.46	66.67	66.96	67.08	67.19	67.49	67.56	67.71	67.56	67.31	67.37	67.6	67.4	67.4	67.22	67.05	66.69	66.66	66.55
125P05443	HYATT ST/EXIT 90	0.419513	66.13	66.2	66.02	65.74	65.9	66.21	66.5	66.73	67.09	67.2	67.61	67.48	67.63	67.56	67.32	67.22	67.49	67.45	67.38	66.96	66.85	66.49	66.46	66.37
125+05444	SC-11/EXIT 92	1.964544	65.57	65.61	65.44	65.13	65.29	65.6	65.81	66.07	66.39	66.51	66.78	66.55	66.74	66.72	66.42	66.54	66.58	66.95	66.85	66.33	66.29	65.72	65.78	65.86
125P05444	SC-11/EXIT 92	0.497083	66.71	66.76	66.62	66.28	66.55	66.77	66.87	67.23	67.54	67.63	67.5	67.42	67.64	67.63	67.51	67.5	67.34	67.84	67.74	67.22	67.16	66.9	66.88	66.94
125+05445	SC-150/SC-18/ROAD 82/EXIT 95	1.606102	66.79	66.85	66.7	66.42	66.68	66.89	67.09	67.45	67.66	67.74	67.55	67.52	67.8	67.73	67.62	67.56	67.31	67.82	67.86	67.35	67.28	67.1	67.11	67.07
125P05445	SC-150/SC-18/ROAD 82/EXIT 95	0.671267	66.87	66.93	66.75	66.49	66.78	66.98	67.05	67.35	67.61	67.32	67.2	67.13	67.45	67.4	67.32	67.28	67.23	67.47	67.57	67.33	67.27	67.14	67.18	67.02
125+05446	SC-18/SHELBY HWY/EXIT 96	1.121055	66.34	66.39	66.25	65.82	66.1	66.41	66.44	66.81	67.06	67.06	67.09	66.95	67.32	67.31	67.24	67.06	67.12	67.23	67.22	66.92	66.79	66.59	66.65	66.53
125P05446	SC-18/SHELBY HWY/EXIT 96	0.354732	63.3	63.5	63.29	62.96	63.12	63.1	63.56	64.09	64.36	64.48	64.62	64.6	64.97	64.9	64.84	64.5	64.67	64.65	64.5	63.7	63.45	63.27	63.33	63.37
125+05447	SC-5/EXIT 100	3.031289	67.01	67.05	66.89	66.61	66.79	67.03	67.19	67.47	67.84	67.95	68.16	68.16	68.43	68.19	68.25	68.2	68.38	68.38	68.07	67.78	67.48	67.35	67.31	67.29
125P05447	SC-5/EXIT 100	0.307034	66.34	66.51	66.39	66.14	66.23	66.57	66.76	67.03	67.58	67.53	67.72	67.73	67.91	67.58	67.7	67.56	67.71	67.7	67.31	66.81	66.81	66.6	66.61	66.58
125+05448	SC-198/EXIT 102	1.955763	64.12	64.27	64.27	63.97	63.99	64.39	64.46	64.91	65.4	65.52	65.68	65.73	65.98	65.43	65.79	65.54	65.69	65.73	65.38	64.69	64.33	64.36	64.45	64.4
125P05448	SC-198/EXIT 102	0.778832	61.81	62.2	62.16	61.83	61.68	62.11	62.24	62.99	63.4	63.68	63.82	64	64.24	63.88	64.15	63.91	63.98	64.04	63.55	63.1	62.11	61.67	61.83	61.95

Appendix D

Signal Plans/Timing Data

Exit 83

FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	SC	SPARTANBURG	42.041326	SU42(008)	SC 110	7	8

SIGNAL EQUIPMENT

ONE (8) PHASE FULLY ACTUATED STANDARD 2070 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND BASE - MOUNTED 332A CABINET. EXT. ▭ PROP. ▬

4 MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXT. △P PROP. ▲P W/ACT. & SIGN

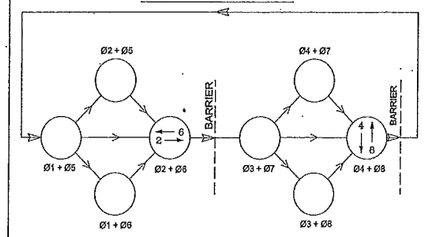
VEHICLE SIGNALS: EXT. ○▷ PROP. ●▶

HEAD NUMBER	.2	4	6	8
LENS	R Y G	R Y G	R Y G	R Y G
PHASE	2	4	6	8
SIZE	12"	12"	12"	12"
QUANTITY	2	2	2	2

OLA OLC
OLB OLD

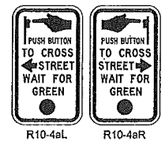
METAL POLES AS NECESSARY: EXT. ○ PROP. ●M
WOOD POLES AS NECESSARY: EXT. ⊙ PROP. ●W

NEMA PHASING



COMPLETE REBUILD

1) INSTALL 4 - 13" X 28' STEEL POLES
2) INSTALL 332 CABINET & 2070 CONTROLLER
3) MAINTAIN EXISTING LOOPS
4) INSTALL PEDESTRIAN PUSH BUTTONS WITH R10-4a SIGNS



R10-4aL R10-4aR

SIGNAL DISPLAY SEQUENCE CHART

G-GREEN
Y-YELLOW
R-RED
G-G, ARROW
Y-Y, ARROW
W-WALK**
DW-DON'T WALK

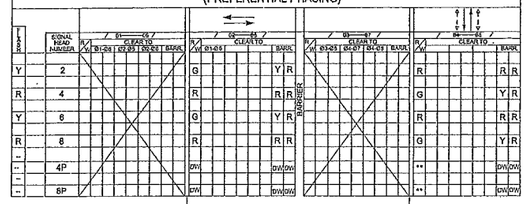
PHASE ON (#)	NON-CONFLICTING PHASE (S)	CONFLICTING PHASE *
2	6, 6P	2, 4, 4, 2P, 4P, 6P
	8, 8P	4, 8, 4P, 8P
4	8, 8P, 8P	2, 6, 2P, 6P
	2, 2P	4, 6, 4P, 6P, 8P
6	2, 2P, 6P	4, 8, 4P, 8P
	4, 4P	2, 6, 8, 2P, 6P
8	4, 4P, 8P	2, 6, 8, 2P, 6P

"G" = COORDINATE Ø2 ; Ø6

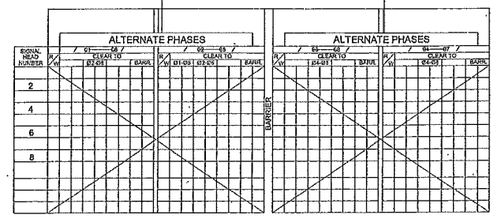
NOTE A: ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
NOTE B: WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL (SEE CHART).
* CONFLICTING PHASES REQUIRE A CLEARANCE INTERVAL.

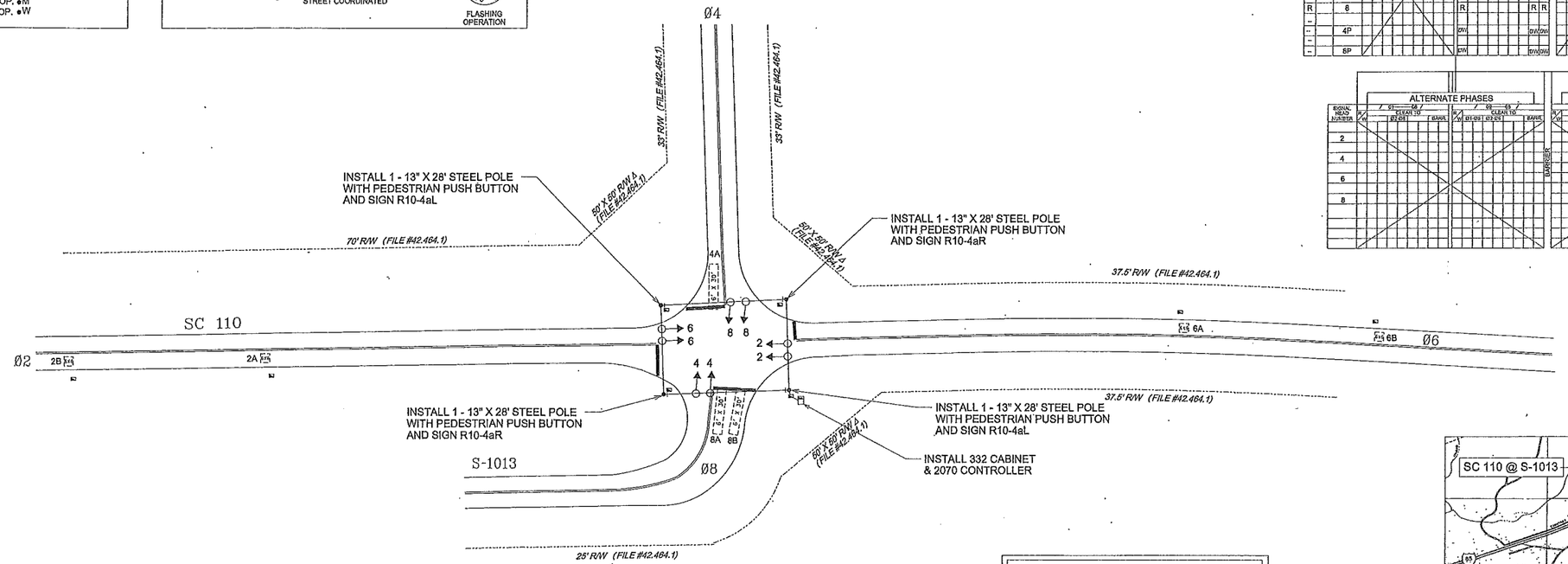
** WHEN CALLED, DISPLAY SOLID "WALKING PERSON" AND TIMES OUT WALK TIMING; THEN DISPLAYS FLASHING "UPRAISED HAND" AND TIMES WALK CLEARANCE (DON'T WALK TIMING), THEN DISPLAYS A SOLID "UPRAISED HAND."

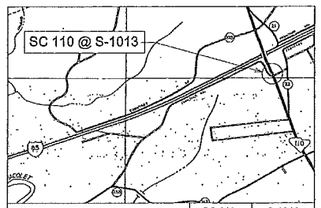
SIGNAL DISPLAY SEQUENCE (PREFERENTIAL PHASING)



ALTERNATE PHASES







ROUTE NUMBER	SC 110		S-1013	
APPROACH DIRECTION	SB	NB	EB	WB
SIGNAL DESIGN SPEED	35	35	35	35
GRADE (%)	-2.0	2.0	2.0	-2.0

* ESTIMATED FILE #: SHEET #:

LOOP DETECTOR INSTALLATION CHART

PHASE/ LOOP LTR#	DETECTOR AMP NO.	DETECTOR CHAN NO.	WIRED TO PHASE(S)	LOCK X	NON-LOCK X	PULSE X	PRES X	OPERATION DELAY SEC	OPERATION EXT SEC	SPECIAL FEATURES TIME OF DAY-TOD SWITCHING, etc.	LOOP DESIGN SIZE X	NO.OF TURNS	DIST. FROM ⊕
2A			2	X			X				6' X 6'	4	255'
2B			2	X			X				6' X 6'	4	130'
4A			4		X		X			QUADRUPOLE	6' X 30'	2-4-2	0'
4B			4		X		X			QUADRUPOLE	6' X 30'	2-4-2	0'
6A			6	X			X				6' X 6'	4	255'
6B			6	X			X				6' X 6'	4	130'
8A			8		X		X			QUADRUPOLE	6' X 30'	2-4-2	0'
8B			8		X		X			QUADRUPOLE	6' X 30'	2-4-2	0'

SIGNAL TIMINGS

	PHASE 2	4	6	8
WALK		4		4
DON'T WALK		4		4
MIN INITIAL	15	4	15	4
MAX INITIAL	30		30	
ADD/VEH	1.2		1.2	
VEH EXT	2.5	4	2.5	4
TIM BFR REDUC	20		20	
TIME TO REDUC	10		10	
MIN GAP	2.5		2.5	
MAX LIMIT	45	25	45	25
MAXIMUM 2				
YELLOW	4.5	3.4	4.5	3.4
RED CLEAR	1.4	1.6	1.4	1.6

INTERVAL

NOTE:
Coordinate with Existing Utilities for Placement of Conduit and Pole Foundations.
Return All Existing Traffic Signal Equipment, Poles and Stop Signs to SCDOT

TRAFFIC SIGNALS & SYSTEMS ENGINEER
3/21/2012
REGISTERED PROFESSIONAL ENGINEER SOUTH CAROLINA NO. 14773 V. CAROL JONES
FOR / CONSTRUCTION : _____ DATE

SCDOT
South Carolina Department of Transportation
Post Office Box 191
Columbia, South Carolina 29202 ©

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DATE	REVISIONS
JKS	332 CABINET 2070 CONTROLLER STEEL POLES
2/29/12	ADDED PED P/Bs AND R/W INFO

SCDOT
SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA , S.C.

SUBJECT TITLE: TRAFFIC SIGNAL PLAN
SPECIFIC LOCATION: SC 110 (BATTLEGROUND RD) @ S-1013 (BUD ARTHUR BRIDGE RD)
CITY: COWPENS COUNTY: SPARTANBURG

DESIGNED		APPROVED BY	
DRAWN	JKS		
CHECKED		DISTRICT # TRAFFIC ENGINEER	ENGINEER
REVIEWED		SCALE: 1"= 40'	DATE: 05/11/2011
RECOMMENDED		SHEET NO.: TS-5 OF 8	INDEX NO.:

KYLE SHIRLEY
R:\Signal Plans\District 3\Spartanburg\ 42.041326\UPDATED SIGNAL PLANS\sc-110\13.dgn
5/11/2011; REV 2/29/2012 LJL

Exit 90

FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHEROKEE	11.682	BST-APCB (004)	SC 105	TS-6	

SIGNAL EQUIPMENT

ONE (1) 8 PHASE FULLY ACTUATED STANDARD 170 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND ~~POLE~~/BASE-MOUNTED ~~336~~/332A CABINET.

EXISTING ☒
PROPOSED ■
PROPOSED MASTER 31

7 MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXISTING ☐ PROPOSED ■ WITH ACTUATOR & SIGN
PUSH BUTTON: ■
VEHICLE SIGNALS: EXISTING ○→ PROPOSED ●→

SIGNAL NUMBER	1	2	4	2,5		6		1,8	8		
LENS	ⓇⓎⒼ	ⓇⓎⒼ	ⓇⓎⒼ	ⓇⓎⒼ		ⓇⓎⒼ		ⓇⓎⒼ	ⓇⓎⒼ		
PHASE	1	2	4	5		6		1,8	8		
SIZE	12"	12"	12"	12"		12"		12"	12"		
QUANTITY	2	2	2	1		2		1	1		

OLA=_____ OLC=_____
OLB=_____ OLD=_____
METAL POLES AS NECESSARY: EXISTING ☒ PROPOSED ■
WOOD POLES AS NECESSARY: EXISTING ○ PROPOSED ●

PHASE BANK 1

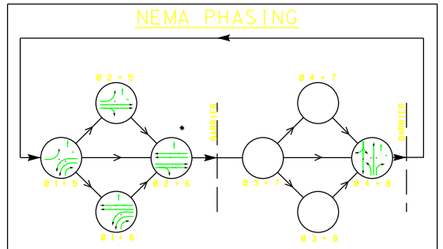
Keystrokes: F + PHASE + INTERVAL

INTERVAL		PHASE 1	2	3	4	5	6	7	8
WALK	D				4		4		
DON'T WALK	D				17		7		
MIN INITIAL	D	7	15		7	15	15		7
TYPE 3 LIMIT	D								
ADD/VEH	D								
VEH EXT	D	3.0	3.0		3.0	3.0	3.0		3.0
TIM BFR RDCE	D								
MIN GAP	D								
MAX LIMIT	D	15	30		20	30	30		20
MAXIMUM 2	D								
YELLOW WALK	D								
PSNT PED CLR	D								
COND SV MIN	D								
TIME TO REDUCE	D								
YELLOW	D	3.3	3.7		3.3	3.0	3.7		3.3
RED CLEAR	D	3.0	1.9		2.5	2.7	1.9		2.5

EXCLUSIVE PED:
WALK DON'T WALK =
FLASH DON'T WALK (IF NOT 11)=
RED CLEARANCE (IF NOT 11)=

LONG POWER DOWN CORRECTION FACTOR (IF NOT 15)=
SHORT POWER DOWN CORRECTION FACTOR (IF NOT 15)=

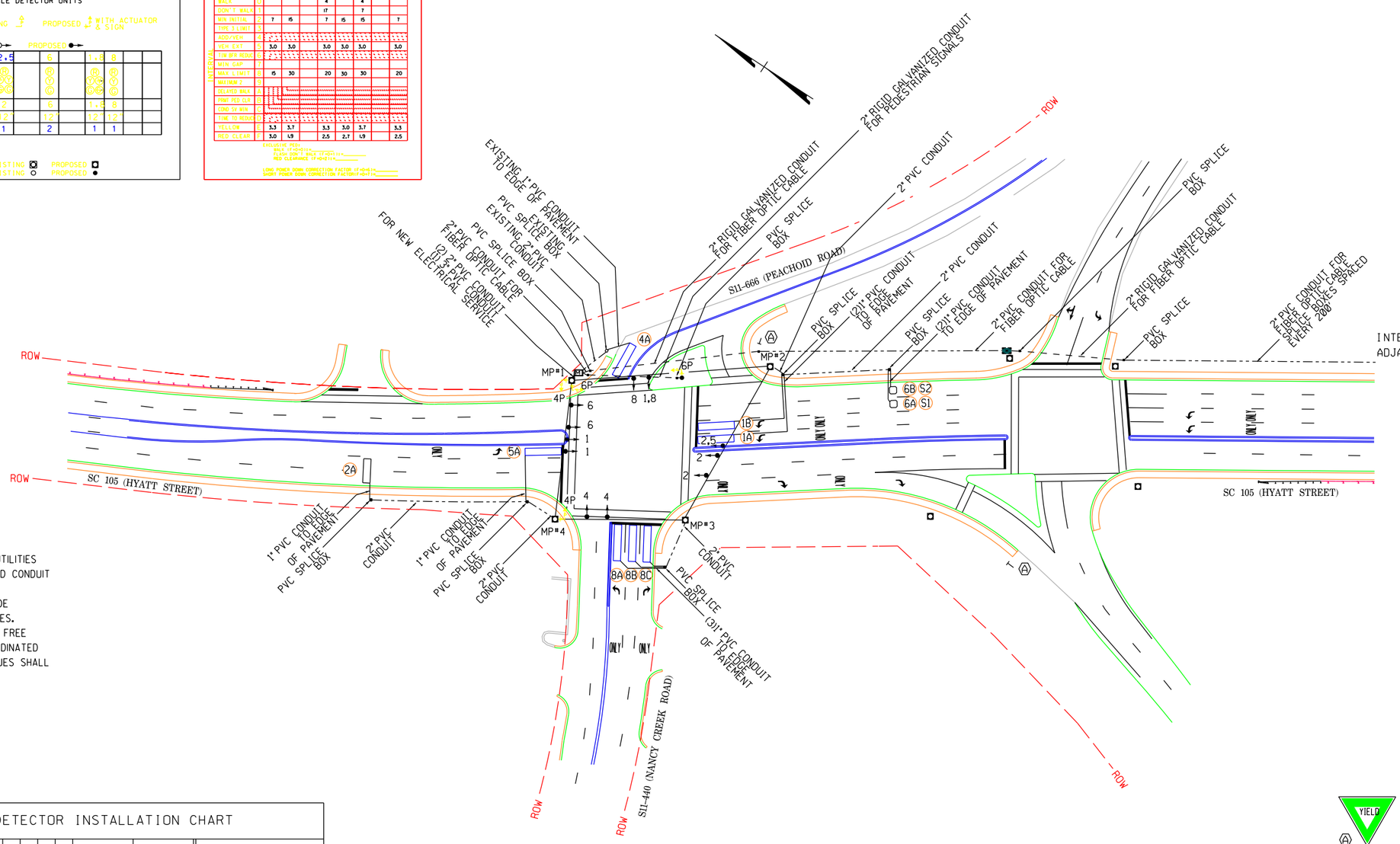
NEMA PHASING



NOTE: ACTUATED PHASES HAVING NO CALL SHALL BE SKIPPED.

● N-S STREET COORDINATED

- - - UNSIGNALIZED MOVEMENT



NOTES

1. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO POLE DRILLING AND CONDUIT TRENCHING.
2. ALL SIGNALHEADS TO INCLUDE RED AND GREEN LED MODULES.
3. MAX TIMES SHOWN ARE FOR FREE RUN OPERATION ONLY. COORDINATED SIGNAL SYSTEM TIMING VALUES SHALL SUPERSEDE THESE VALUES.

170 AS N.E.M.A. 8 PHASE CONTROLLER SEQUENCE DIAGRAM

NOTE A - ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

NOTE B - WHEN ONE PHASE IS ON ALONG ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE

* CONFLICTING PHASES REQUIRE A CLEARANCE INTERVAL.

** WHEN CALLED, TIMES WALK, THEN FLASHING DON'T WALK, THEN GOES STEADY DON'T WALK.

G-GREEN
Y-YELLOW
R-RED
⇨G-G. ARROW
⇨Y-Y. ARROW
W-WALK **
D-DON'T WALK

PHASE ONLY	NON-CONFLICTING PHASE (S)	CONFLICTING PHASE **
1	4,5,6P	2,3,7,8,4P,6P
2	5,6,6P	1,3,4,7,8,4P,6P
3	1,4,6P	2,4,5,6,7,8,4P,6P
4	2,5,6P	1,3,4,6,7,8,4P,6P
5	4,6,6P	1,2,3,7,8,4P,6P
6	1,4,5,6P	2,3,4,7,8,4P,6P
7	1,4,6P	2,3,4,5,6,8,4P,6P
8	2,4,6P	1,3,4,5,6,7,4P,6P

"C" = COORDINATE 82, 86

LOOP DETECTOR INSTALLATION CHART

LOOP NO.	DETECTORS		WIRED TO PHASES	LOCK	NON-LOCK	PULSE	PRES	OPERATION		SPECIAL FEATURES	LOOP DESIGN		
	AMP NO.	CHANNEL NO.		X	X	X	X	DELAY SEC.	EXT. SEC		SIZE	NO. OF TURNS	DIST. FROM STOPBAR
1A, 1B	1	1	Ø1		X		X	—	—	—	6'X30'	3	0'
2A	2	1	Ø2	X			X	—	—	—	6'X20'	3	160'
4A	3	1	Ø4		X		X	—	—	—	6'X30'	3	0'
5A	4	1	Ø5		X		X	—	—	—	6'X30'	3	0'
6A	5	1	Ø6	X			X	—	—	—	6'X6'	3	160'
6B	5	1	Ø6	X			X	—	—	—	6'X6'	3	160'
8A, 8B	6	1	Ø8		X		X	—	—	—	6'X30'	3	0'
8C	6	2	Ø1		X		X	10	—	DELAY	6'X30'	3	0'
S1	7	1	SYSTEM					—	—	—	6'X6'	3	160'
S2	7	2	SYSTEM					—	—	—	6'X6'	3	160'

ROUTE NUMBER	SC 105 (HYATT STREET)	SC 105 (HYATT STREET)	S11-440 (NANCY CREEK RD)	S11-666 (PEACHOID RD)
APPROACH DIRECTION	NORTH BOUND	SOUTH BOUND	EAST BOUND	WEST BOUND
SIGNAL DESIGN SPEED	35 MPH	35 MPH	35 MPH	35 MPH
GRADE (%)	-2%	-1%	3%	5%

SOUTH CAROLINA NOLA/LA CERTIFICATE OF AUTHORIZATION
BARBARA H. MULKEY ENGINEERING, INC.
No. C00957

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
No. 20371
MICHAEL W. BARBEE

YIELD
(A)
R1-2-36

BARBARA H. MULKEY ENGINEERING, INC.
121 Executive Center Drive
Suite 102
Columbia, SC 29210
(803) 798-1912

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South Carolina Department of Transportation
Post Office Box 191
Columbia, South Carolina 29202

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FINAL

DATE	REVISIONS

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA S.C.

SUBJECT TITLE: SIGNAL PLAN

SPECIFIC LOCATION: INTERSECTION OF SC 105/(HYATT STREET) AT S11-440 (NANCY CREEK RD.)AND S11-666 (PEACHOID RD.)

CITY GAFFNEY | COUNTY CHEROKEE

DESIGNED	FVESS	APPROVED BY (DIR. OF TRAFFIC ENGINEERING)	APPROVED BY (ENGINEER)
DRAWN	FVESS		
CHECKED			
REVIEWED	KBISBY	SCALE 1"=50'	DATE 12/01/02
RECOMMENDED		SHEET NO. OF	INDEX NO.

STD8

Times [1.1.1]	1	2	3	4	5	6	7	8
Min Green								
Gap, Ext								
Max 1								
Max 2								
Yel Clear								
Red Clear								
Walk								
Ped Clear								
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time to Reduce								
Reduced By								
Min Gap								
DyMaxLim								
Max Step								
Options [1.1.2]	1	2	3	4	5	6	7	8
Enable								
Min Recall								
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry								
Auto Flash Exit								
Dual Entry								
Enable Simul Gap								
Gaurantee Pass.								
Rest in Walk								
Condition Serv.								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								
Options [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Conflicting Pha								
Conflicting Pha								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

pat#	Cyc	Off	Split	Seq
1	80	0	1	1
2	80	0	2	1
3	80	0	3	1
4				
5				
6				
7				
8				
9				
10				
11				
12				

pat#	Cyc	Off	Split	Seq
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

pat#	Cyc	Off	Split	Seq
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

pat#	Cyc	Off	Split	Seq
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

Split	1	2	3	4	5	6	7	8
1 Coord	24	31		25	20	35		25
In 2		Max				Max		
2 Coord	24	31		25	20	35		25
ave 2		Max				Max		
3 Coord	24	31		25	20	35		25
out 2		Max				Max		
4 Coord								
In 2		Max				Max		
5 Coord								
ave 2		Max				Max		
6 Coord								
out 2		Max				Max		
7 Coord								
In 2		Max				Max		
8 Coord								
ave 2		Max				Max		
9 Coord								
out 2		Max				Max		
10 Coord								
2		Max				Max		
11 Coord								
2		Max				Max		
12 Coord								
2		Max				Max		

Split	1	2	3	4	5	6	7	8
13 Coord								
2		Max				Max		
14 Coord								
2		Max				Max		
15 Coord								
2		Max				Max		
16 Coord								
2		Max				Max		
17 Coord								
2		Max				Max		
18 Coord								
2		Max				Max		
19 Coord								
2		Max				Max		
20 Coord								
2		Max				Max		
21 Coord								
2		Max				Max		
22 Coord								
2		Max				Max		
23 Coord								
2		Max				Max		
24 Coord								
2		Max				Max		

DayPlan1 M-F

	Hour	Min	Act
1	0	0	2
2	6	0	1
3	10	0	2
4	16	0	3
5	20	0	2
6			
7			
8			

DayPlan2 Sat&Sun

	Hour	Min	Act
1	0	0	2
2	6	0	1
3	10	0	2
4	16	0	3
5	20	0	2
6			
7			
8			

DayPlan3

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Notes

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	1
2	1	Green	1
3	1	RED	1
4	1	RED	1
5	2	RED	1
6	2	Green	1
7	2	RED	1
8	2	RED	1

Coord Modes [2.1]	
Test OpMode	**0**
Correction	**SHRT/LNG**
Maximum	**MAX INH**
Force-off	**Fixed**
Closed Loop	**ON**
Stop-in-Walk	**ON**
Auto Rest	**ON**
Expand Splt	**ON**
Ped Recycle	**No Recycle**
Before	**Timed**
After	**Timed**
Auto Flash [1.4.1]	
Auto Flash	**PH OVER**
Flash Yel	**4**
Flash Red	**2**
Unit Params [1.2.1]	
Phase Mode	STD8
IO mode	Mode 0
Loc Flsh Start	ON
Start Flash(s)	0
Star ALLRed	0
Yellow < 3	OFF
Display Time	15
Red Revert	4
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	OFF
Auto Ped Clear	OFF
SDLC Retry	0

System: SC 105 System #405

Intersection: SC 105 at Nancy Creek #4078

Act 99 = free

SIGNAL EQUIPMENT

ONE (1) 8 PHASE FULLY ACTUATED STANDARD
170 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND ~~POLE/~~BASE-MOUNTED ~~3369/~~332A CABINET.

EXISTING ☒
PROPOSED ■
PROPOSED MASTER ■1

6 MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXISTING 🚶 PROPOSED 🚶 WITH ACTUATOR & SIGN
PUSH BUTTON: ⊫
VEHICLE SIGNALS: EXISTING ○→ PROPOSED ●→

SIGNAL NUMBER	2		4		1	6
LENS						
PHASE	2		4		1	6
SIZE	12"		12"		12"	12"
QUANTITY	3		2	2	2	

OLA=_____ OLC=_____
OLB=_____ OLD=_____

METAL POLES AS NECESSARY: EXISTING ☒ PROPOSED ■
WOOD POLES AS NECESSARY: EXISTING ○ PROPOSED ●

PHASE BANK 1

Key=Green, Y = PHASE, = INTERVAL

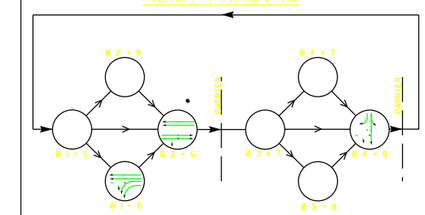
		PHASE 1	2	3	4	5	6	7	8
WALK	0				4				
DON'T WALK	1				14				
MIN INITIAL	2	7	15		7		15		
TYPE 3 LIMIT	3								
ADD/VEH	4								
MIN EXT	5	3.0	3.0		3.0		3.0		
TM BFR RDKT	6								
MIN GAP	7								
MAX LIMIT	8	20	30		20		30		
MXIMUM 2	9								
DELAYED WALK	10								
PRMT PED CLR	11								
LONG SV MIN	12								
TIME TO REDUCE	13								
YELLOW	14	3.0	3.4		3.7		3.4		
RED CLEAR	15	1.8	1.9		1.7		1.9		

EXCLUSIVE PEDS
WALK + PED CLR + FLASH DON'T WALK (IF ON)=_____
RED CLEARANCE (IF ON)=_____

LONG POWER DOWN CORRECTION FACTOR IF<0=0>=_____
SHORT POWER DOWN CORRECTION FACTOR IF<0=0>=_____

FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHEROKEE	11.682	BST-APCB (004)	SC 105	TS-7	

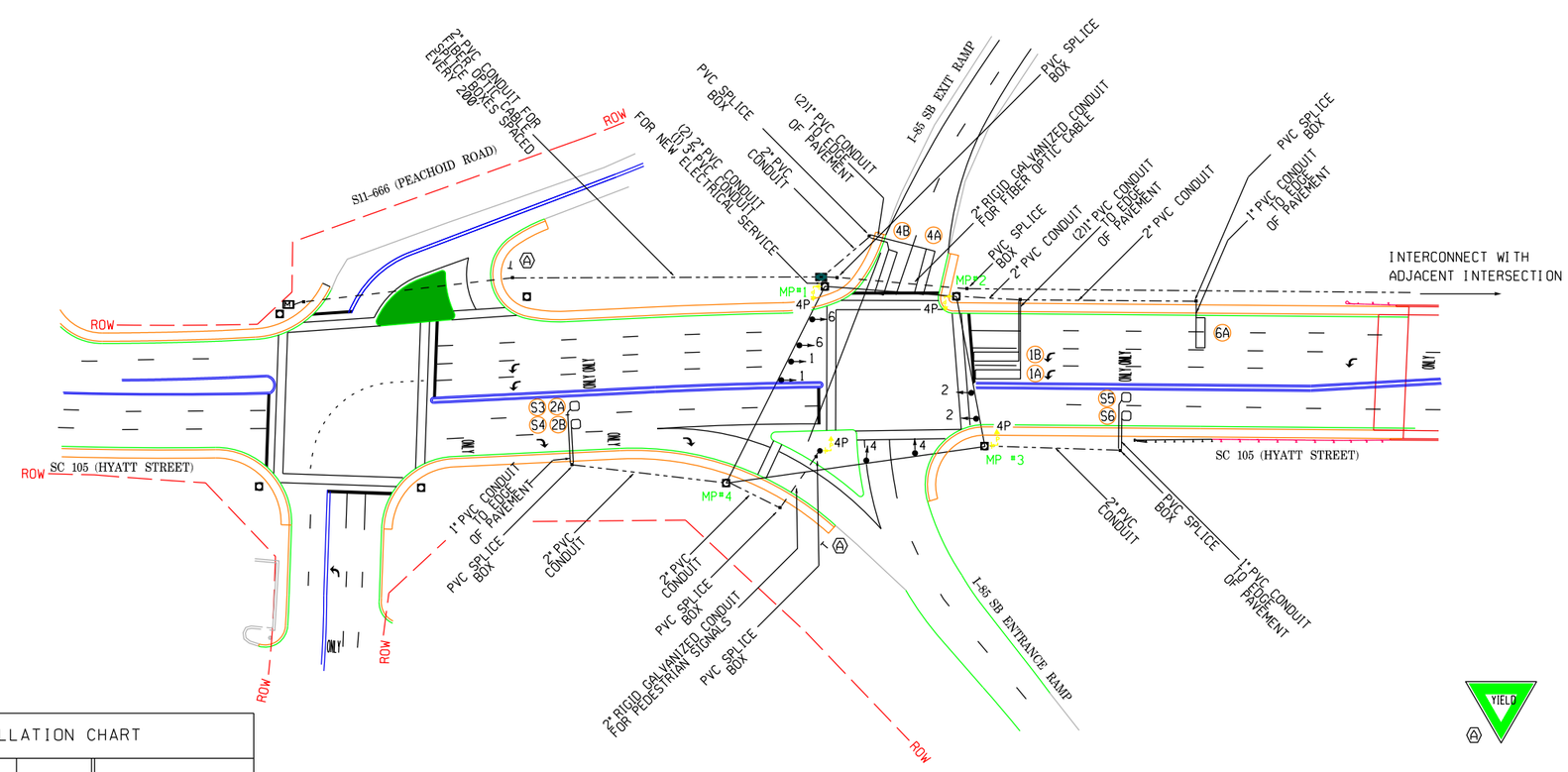
NEMA PHASING



NOTE: ACTUATED PHASES HAVING NO CALL SHALL BE SKIPPED.

• N-S STREET COORDINATED

- - - - UNSIGNALIZED MOVEMENT



NOTES

1. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO POLE DRILLING AND CONDUIT TRENCHING.
2. ALL SIGNALHEADS TO INCLUDE RED AND GREEN LED MODULES.
3. MAX TIMES SHOWN ARE FOR FREE RUN OPERATION ONLY. COORDINATED SIGNAL SYSTEM TIMING VALUES SHALL SUPERSEDE THESE VALUES.

LOOP DETECTOR INSTALLATION CHART

LOOP NO.	DETECTORS AMP NO.	DETECTORS CHANNEL NO.	WIRED TO PHASES	OPERATION LOCK	OPERATION NON-LOCK	OPERATION PULSE	OPERATION PRES	OPERATION DELAY SEC.	OPERATION EXT. SEC.	SPECIAL FEATURES	LOOP DESIGN SIZE	LOOP DESIGN NO. OF TURNS	LOOP DESIGN DIST. FROM STOPBAR
1A, 1B	1	1	01		X		X	—	—	—	6'X30'	3	0'
2A	2	1	02	X			X	—	—	—	6'X6'	3	160'
2B	2	2	02	X			X	—	—	—	6'X6'	3	160'
4A	3	1	04		X		X	—	—	—	6'X30'	3	0'
4B	3	2	04		X		X	10	—	DELAY	6'X30'	3	0'
6A	4	1	06	X			X	—	—	—	6'X20'	3	160'
S3	5	1	SYSTEM					—	—	—	6'X6'	3	160'
S4	5	2	SYSTEM					—	—	—	6'X6'	3	160'
S5	6	1	SYSTEM					—	—	—	6'X6'	3	+200'
S6	6	2	SYSTEM					—	—	—	6'X6'	3	+200'

ROUTE NUMBER	SC 105 (HYATT STREET)	SC 105 (HYATT STREET)	I-85 SB EXIT RAMP
APPROACH DIRECTION	NORTH BOUND	SOUTH BOUND	WEST BOUND
SIGNAL DESIGN SPEED	35 MPH	35 MPH	45 MPH
GRADE (%)	-2%	2%	7%

170 AS N.E.M.A. 8 PHASE CONTROLLER SEQUENCE DIAGRAM

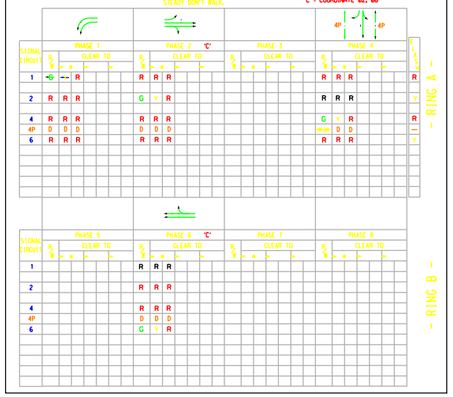
NOTE A - ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
NOTE B - WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE.

G-GREEN
Y-YELLOW
R-RED
→G-G. ARROW
→Y-Y. ARROW
W-WALK ※※
D-DON'T WALK

※CONFLICTING PHASES REQUIRE A CLEARANCE INTERVAL.
※※WHEN CALLED, TIMES WALK, THEN FLASHING DON'T WALK, THEN GOES STEADY DON'T WALK.

PHASE ON(1)	NON-CONFLICTING PHASE *(0)	CONFLICTING PHASE ※(1)
1	5,6※※	2,3※,4,7※,8※
2	5,6※※	1,3※,4※,7※,8※
3	4※,7※	1,2※,5※,6※,8※
4	3※,8※	1,2※,5※,6※,7※
5	1※,6※	2※,3※,4※,7※,8※
6	1※,5※	2※,3※,4※,7※,8※
7	3※,8※	1※,2※,5※,6※,8※
8	4※,7※	1※,2※,5※,6※,7※

'C' = COORDINATE Ø2, Ø6



YIELD Ⓐ

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SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION
No. C00957

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER
No. 20371
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DATE	REVISIONS

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA S.C.

SUBJECT TITLE: SIGNAL PLAN

SPECIFIC LOCATION: INTERSECTION OF SC 105 (HYATT STREET) AT I-85 SB RAMP

CITY GAFFNEY | COUNTY CHEROKEE

DESIGNED	FVESS	APPROVED BY (DIR. OF TRAFFIC ENGINEERING)	APPROVED BY (ENGINEER)
DRAWN	FVESS		
CHECKED			
REVIEWED	KBISBY	SCALE	DATE / SHEET NO. / INDEX NO.
RECOMMENDED		1"=50'	12/01/02 / OF

STD8

Times [1.1.1]	1	2	3	4	5	6	7	8
Min Green								
Gap, Ext								
Max 1								
Max 2								
Yel Clear								
Red Clear								
Walk								
Ped Clear								
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time to Reduce								
Reduced By								
Min Gap								
DyMaxLim								
Max Step								
Options [1.1.2]	1	2	3	4	5	6	7	8
Enable								
Min Recall								
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry								
Auto Flash Exit								
Dual Entry								
Enable Simul Gap								
Gaurantee Pass.								
Rest in Walk								
Condition Serv.								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								
Options [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Conflicting Pha								
Conflicting Pha								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

pat#	Cyc	Off	Split	Seq
1	80	59	1	1
2	80	76	2	1
3	80	76	3	1
4				
5				
6				
7				
8				
9				
10				
11				
12				

pat#	Cyc	Off	Split	Seq
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

pat#	Cyc	Off	Split	Seq
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

pat#	Cyc	Off	Split	Seq
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

Split	1	2	3	4	5	6	7	8
1 Coord	20	32		28		52		28
In 2						Max		
2 Coord	20	32		28		52		28
ave 2						Max		
3 Coord	21	32		27		53		27
out 2						Max		
4 Coord								
In 2		Max				Max		
5 Coord								
ave 2		Max				Max		
6 Coord								
out 2		Max				Max		
7 Coord								
In 2		Max				Max		
8 Coord								
ave 2		Max				Max		
9 Coord								
out 2		Max				Max		
10 Coord								
2		Max				Max		
11 Coord								
2		Max				Max		
12 Coord								
2		Max				Max		

Split	1	2	3	4	5	6	7	8
13 Coord								
2		Max				Max		
14 Coord								
2		Max				Max		
15 Coord								
2		Max				Max		
16 Coord								
2		Max				Max		
17 Coord								
2		Max				Max		
18 Coord								
2		Max				Max		
19 Coord								
2		Max				Max		
20 Coord								
2		Max				Max		
21 Coord								
2		Max				Max		
22 Coord								
2		Max				Max		
23 Coord								
2		Max				Max		
24 Coord								
2		Max				Max		

DayPlan1 M-F

	Hour	Min	Act
1	0	0	2
2	6	0	1
3	10	0	2
4	16	0	3
5	20	0	2
6			
7			
8			

DayPlan2 Sat&Sun

	Hour	Min	Act
1	0	0	2
2	6	0	1
3	10	0	2
4	16	0	3
5	20	0	2
6			
7			
8			

DayPlan3

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Notes

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	1
2	1	Green	1
3	1	RED	1
4	1	RED	1
5	2	RED	1
6	2	Green	1
7	2	RED	1
8	2	RED	1

Coord Modes [2.1]	
Test OpMode	**0**
Correction	**SHRT/LNG**
Maximum	**MAX INH**
Force-off	**Fixed**
Closed Loop	**ON**
Stop-in-Walk	**ON**
Auto Rest	**ON**
Expand Splt	**OFF**
Ped Recycle	**No Recycle**
Before	**Timed**
After	**Timed**
Auto Flash [1.4.1]	
Auto Flash	**PH OVER**
Flash Yel	**4**
Flash Red	**2**
Unit Params [1.2.1]	
Phase Mode	STD8
IO mode	Mode 0
Loc Flsh Start	ON
Start Flash(s)	0
Star ALLRed	0
Yellow < 3	OFF
Display Time	15
Red Revert	4
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	OFF
Auto Ped Clear	OFF
SDLC Retry	0

Act 99 = free

System: SC 105 System #405

Intersection: SC 105 at I-85 SB Ramp #4088

FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHEROKEE	11.682	BST-IMCB (004)	SC 105	TS-9	

SIGNAL EQUIPMENT

ONE (1) 8 PHASE FULLY ACTUATED STANDARD
170 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND ~~POLE~~/BASE-MOUNTED ~~3000~~/332A CABINET.

EXISTING ☒
PROPOSED ■
PROPOSED MASTER ■

5 MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXISTING PROPOSED WITH ACTUATOR & SIGN
PUSH BUTTON:
VEHICLE SIGNALS: EXISTING PROPOSED

SIGNAL NUMBER	2		5	6		8
LENS	R Y G		R Y G	R Y G		R Y G
PHASE	2		5	6		8
SIZE	12"		12"	12"		12"
QUANTITY	3		3	2		2

OLA=____ OLC=____
OLB=____ OLD=____

METAL POLES AS NECESSARY: EXISTING ☒ PROPOSED ■
WOOD POLES AS NECESSARY: EXISTING ○ PROPOSED ●

PHASE BANK 1

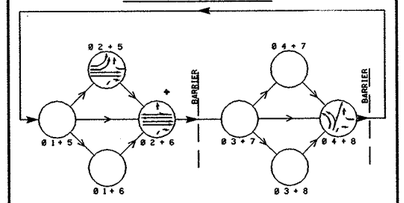
Keystrokes: # + PHASE + INTERVAL

INTERVAL		PHASE 1	2	3	4	5	6	7	8
	WALK	0							
	DON'T WALK	1							
	MIN INITIAL	2		15			7	15	7
	TYPE 3 LIMIT	3							
	ADD/VEH	4							
	VEH EXT	5		3.0			3.0	3.0	3.0
	TIM BFR REDUC	6							
	MIN GAP	7							
	MAX 1 LIMIT	8		30			15	30	15
	MAXIMUM 2	9							
	DELAYED WALK	A							
	PRMT PED CLR	B							
	COND BY MIN	C							
	TIME TO REDUCE	D							
	YELLOW	E		4.1			3.2	4.1	3.0
	RED CLEAR	F		1.9			2.5	1.9	3.3

EXCLUSIVE PED
RUSH PHASE=____
PHASE(S) WALK SPLIT=____
RED CLEARANCE IF =0=____

LONG POWER DOWN CORRECTION FACTOR (F=0=8)=____
SHORT POWER DOWN CORRECTION FACTOR(F=0=7)=____

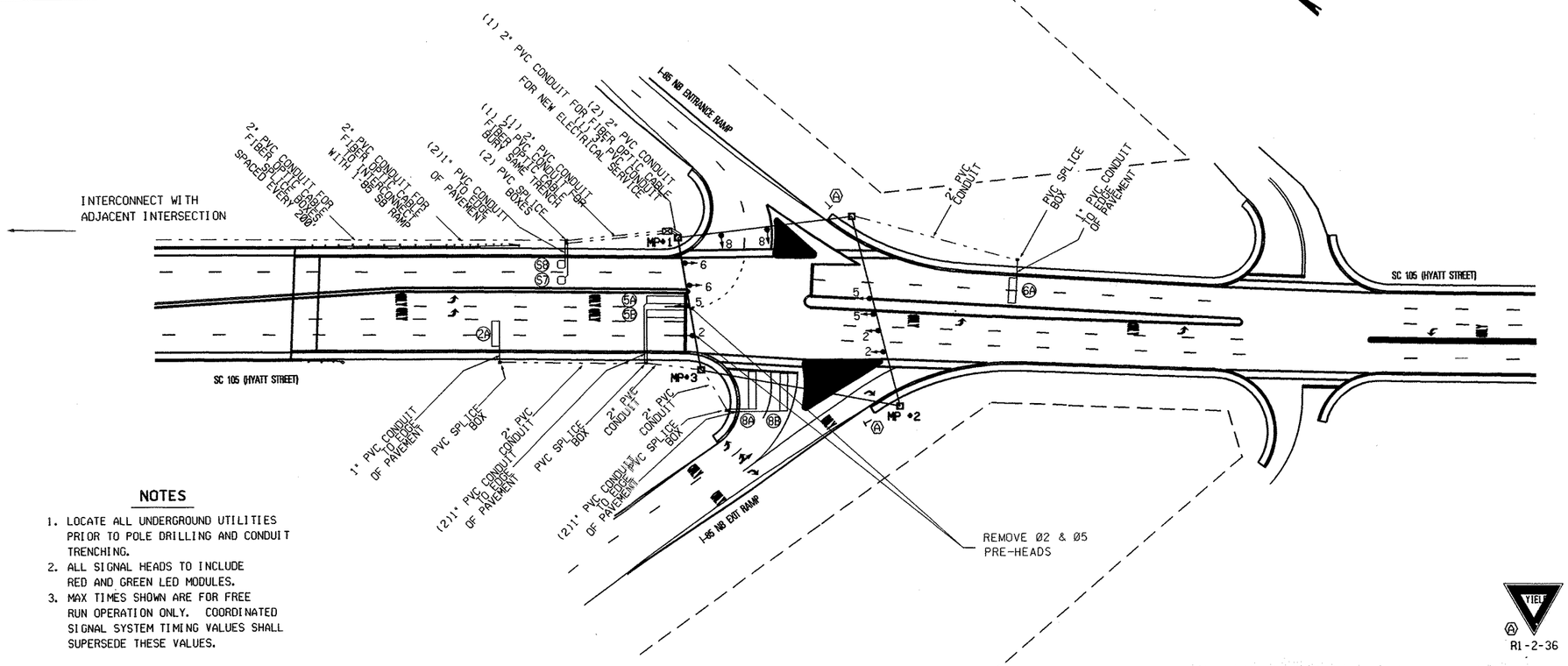
NEMA PHASING



NOTE: ACTUATED PHASES HAVING NO CALL SHALL BE SKIPPED.

✦ N-S STREET COORDINATED

----UNSIGNALIZED MOVEMENT



NOTES

1. LOCATE ALL UNDERGROUND UTILITIES PRIOR TO POLE DRILLING AND CONDUIT TRENCHING.
2. ALL SIGNAL HEADS TO INCLUDE RED AND GREEN LED MODULES.
3. MAX TIMES SHOWN ARE FOR FREE RUN OPERATION ONLY. COORDINATED SIGNAL SYSTEM TIMING VALUES SHALL SUPERSEDE THESE VALUES.

170 AS N. E. M. A. 8 PHASE CONTROLLER SEQUENCE DIAGRAM

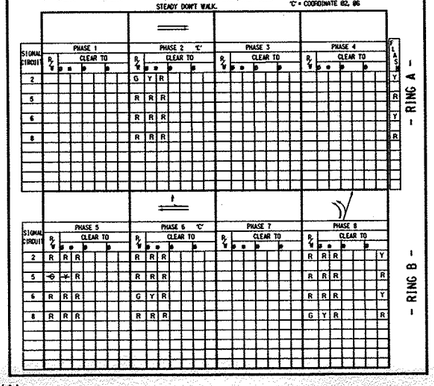
NOTE A - ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
NOTE B - WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE

G-GREEN
Y-YELLOW
R-RED
→G-G. ARROW
→Y-Y. ARROW
W-WALK ✱ ✱
D-DON'T WALK

✱-CONFLICTING PHASES REQUIRE A CLEARANCE INTERVAL.
✱✱-WHEN CALLED, TIMES WALK, THEN FLASHES DON'T WALK, THEN GOES STEADY DON'T WALK.

PHASE (MAX)	NON-CONFLICTING PHASE (B)	CONFLICTING PHASE ✱
1	5,6,8	2,3,4,7,✱,✱,✱
2	5,6,8,✱,✱	1,3,4,7,✱,✱
3	7,8,✱,✱	1,2,4,5,6,✱,✱
4	7,8,✱,✱	1,2,3,5,6,✱,✱
5	1,6,8	2,3,4,7,✱,✱,✱
6	1,5,8,✱	2,3,4,7,✱,✱
7	3,4,✱	1,2,3,5,6,✱,✱
8	3,4,✱,✱	1,2,5,6,✱,✱

✱ = COORDINATE Ø2, Ø6



LOOP DETECTOR INSTALLATION CHART

LOOP NO.	DETECTORS AMP. NO.	DETECTORS CHANNEL NO.	WIRED TO PHASES	OPERATION LOCK	OPERATION NON-LOCK	OPERATION PULSE	OPERATION PRES	OPERATION DELAY SEC.	OPERATION EXT. SEC.	SPECIAL FEATURES	LOOP DESIGN SIZE	LOOP DESIGN NO. OF TURNS	LOOP DESIGN DIST. FROM STOPBAR
2A	1	1	02	X			X	—	—	—	6'X20'	3	160'
5A, 5B	2	1	05		X		X	—	—	—	6'X30'	3	0'
6A	3	1	06	X			X	—	—	—	6'X20'	3	160'
8A, 8B	4	1	08		X		X	—	—	—	6'X30'	3	0'
S7	5	1	SYSTEM					—	—	—	6'X6'	4	+200'
S8	5	2	SYSTEM					—	—	—	6'X6'	4	+200'

ROUTE NUMBER	SC 105 (HYATT STREET)	SC 105 (HYATT STREET)	I-85 (NB EXIT RAMP)
APPROACH DIRECTION	NORTH BOUND	SOUTH BOUND	EAST BOUND
SIGNAL DESIGN SPEED	35 MPH	35 MPH	45 MPH
GRADE (%)	+5%	-5%	2%

BARBARA H. MULKEY ENGINEERING, INC. No. C00957 CERTIFICATE OF AUTHORIZATION SOUTH CAROLINA

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FINAL

DATE	REVISIONS
4-07	REMOVE Ø2 & 5 PRE-HEADS MGS

DESIGNED FVESS
DRAWN FVESS
CHECKED
REVIEWED KBISBY
RECOMMENDED

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA S.C.

SUBJECT TITLE
SIGNAL PLAN

SPECIFIC LOCATION
INTERSECTION OF SC 105/(HYATT STREET) AT I-85 RAMP

CITY GAFFNEY COUNTY CHEROKEE

APPROVED BY ____ DDS. OF TRAFFIC ENGINEERING

APPROVED BY ____ ENGINEER

SCALE	DATE	SHEET NO.	INDEX NO.
1"=50'	12/01/02	OF	

STD8

Times [1.1.1]	1	2	3	4	5	6	7	8
Min Green								
Gap, Ext								
Max 1								
Max 2								
Yel Clear								
Red Clear								
Walk								
Ped Clear								
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time to Reduce								
Reduced By								
Min Gap								
DyMaxLim								
Max Step								
Options [1.1.2]	1	2	3	4	5	6	7	8
Enable								
Min Recall								
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry								
Auto Flash Exit								
Dual Entry								
Enable Simul Gap								
Gaurantee Pass.								
Rest in Walk								
Condition Serv.								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								
Options [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Conflicting Pha								
Conflicting Pha								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

pat#	Cyc	Off	Split	Seq
1	80	15	1	1
2	80	32	2	1
3	80	25	3	1
4				
5				
6				
7				
8				
9				
10				
11				
12				

pat#	Cyc	Off	Split	Seq
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

pat#	Cyc	Off	Split	Seq
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

pat#	Cyc	Off	Split	Seq
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

Split	1	2	3	4	5	6	7	8
1		52		28	20	32		28
In		Max						
2		52		28	20	32		28
ave		Max						
3		53		27	22	31		27
out		Max						
4								
In		Max				Max		
5								
ave		Max				Max		
6								
out		Max				Max		
7								
In		Max				Max		
8								
ave		Max				Max		
9								
out		Max				Max		
10								
		Max				Max		
11								
		Max				Max		
12								
		Max				Max		

Split	1	2	3	4	5	6	7	8
13								
		Max				Max		
14								
		Max				Max		
15								
		Max				Max		
16								
		Max				Max		
17								
		Max				Max		
18								
		Max				Max		
19								
		Max				Max		
20								
		Max				Max		
21								
		Max				Max		
22								
		Max				Max		
23								
		Max				Max		
24								
		Max				Max		

DayPlan1 M-F	Hour	Min	Act
1	0	0	2
2	6	0	1
3	10	0	2
4	16	0	3
5	20	0	2
6			
7			
8			

DayPlan2 Sat&Sun	Hour	Min	Act
1	0	0	2
2	6	0	1
3	10	0	2
4	16	0	3
5	20	0	2
6			
7			
8			

DayPlan3	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Notes

Act 99 = free

System: SC 105 System #405

Intersection: SC 105 at I-85 NB Ramp #4077

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	1
2	1	Green	1
3	1	RED	1
4	1	RED	1
5	2	RED	1
6	2	Green	1
7	2	RED	1
8	2	RED	1

Coord Modes [2.1]	
Test OpMode	**0**
Correction	**SHRT/LNG**
Maximum	**MAX INH**
Force-off	**Fixed**
Closed Loop	**ON**
Stop-in-Walk	**ON**
Auto Rest	**ON**
Expand Splt	**OFF**
Ped Recycle	**No Recycle**
Before	**Timed**
After	**Timed**
Auto Flash [1.4.1]	
Auto Flash	**PH OVER**
Flash Yel	**4**
Flash Red	**2**
Unit Params [1.2.1]	
Phase Mode	STD8
IO mode	Mode 0
Loc Flsh Start	ON
Start Flash(s)	0
Star ALLRed	0
Yellow < 3	OFF
Display Time	15
Red Revert	4
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	OFF
Auto Ped Clear	OFF
SDLC Retry	0

—SIGNAL EQUIPMENT—

ONE (1) 8 PHASE FULLY ACTUATED STANDARD 170 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND POLE/BASE-MOUNTED 336S/332A CABINET. EXT. ▭ PROP. ▬

5 MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXT. P PROP. P W/ACT. & SIGN

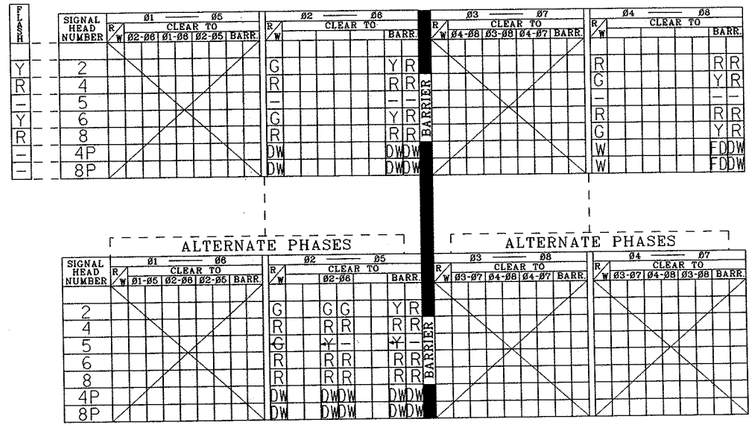
VEHICLE SIGNALS: EXT. ○▷ PROP. ●▶

SIGNAL NUMBER	5	2		4		6		8	4P	8P
LENS	⊕Ⓡ Ⓨ Ⓖ	Ⓡ Ⓨ Ⓖ		Ⓡ Ⓨ Ⓖ		Ⓡ Ⓨ Ⓖ		Ⓡ Ⓨ Ⓖ	↑	↑
PHASE	5	2		4		6		8	4P	8P
SIZE	12"	12"		12"		12"		12"	—	—
QUANTITY	1	1		2		2		2	2	2

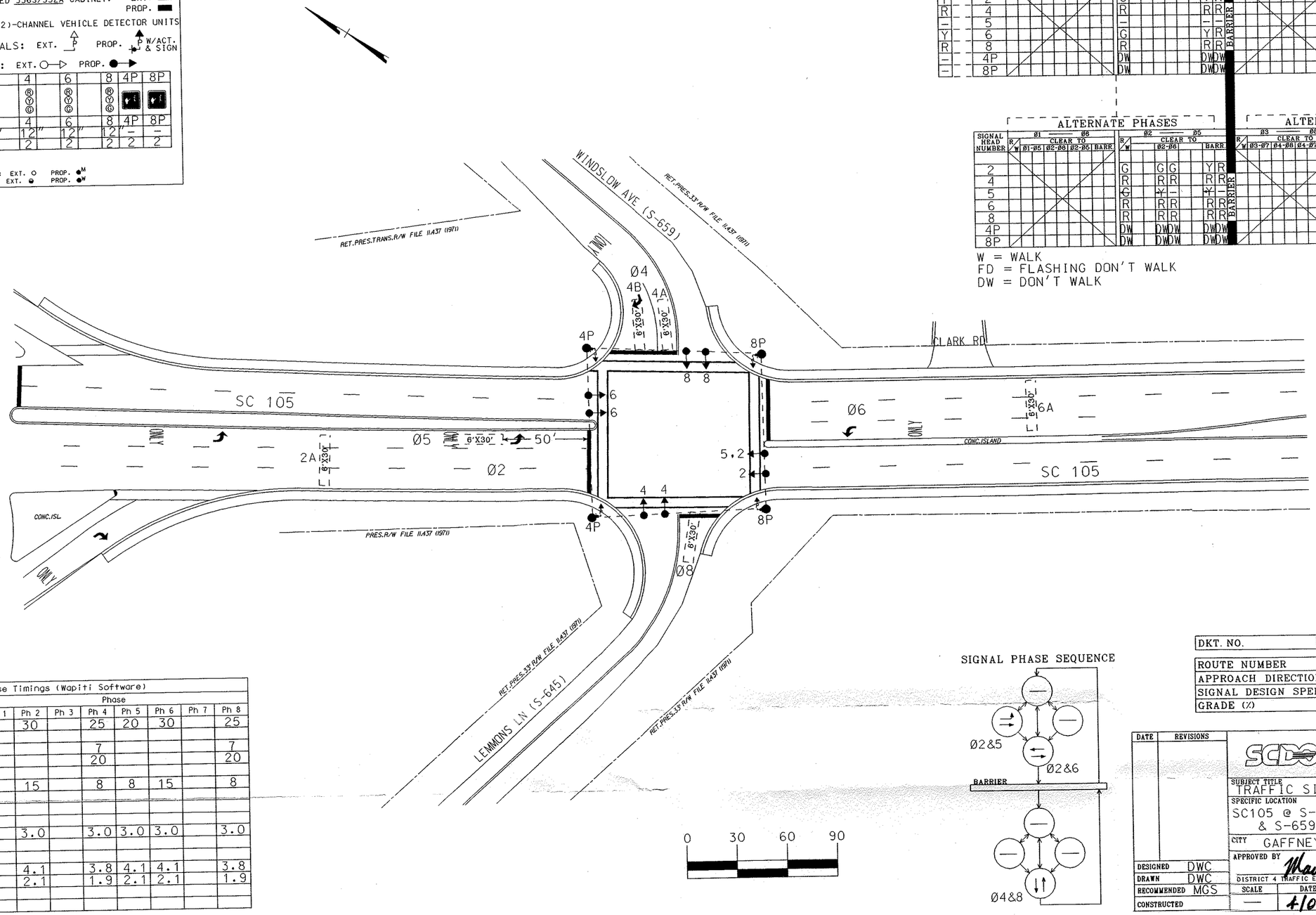
OLA=____ OLC=____
OLB=____ OLD=____

METAL POLES AS NECESSARY: EXT. ○ PROP. ●M
WOOD POLES AS NECESSARY: EXT. ◒ PROP. ●W

SIGNAL DISPLAY SEQUENCE (PREFERENTIAL PHASING)



W = WALK
FD = FLASHING DON'T WALK
DW = DON'T WALK



SIGNAL PHASE SEQUENCE

Phase Timings (Wapiti Software)

Phase+Key		Phase							
FUNCTION	KEY	Ph 1	Ph 2	Ph 3	Ph 4	Ph 5	Ph 6	Ph 7	Ph 8
Max I	0		30		25	20	30		25
Max II/HFDW	1								
Walk	2				7				7
Flashing DW	3				20				20
Max Initial	4								
Min Green	5		15		8	8	15		8
TBR	6								
ITR	7								
Observe Gap	8								
Passage	9		3.0		3.0	3.0	3.0		3.0
Min Gap	A								
Added Actuation	B								
Yellow	C		4.1		3.8	4.1	4.1		3.8
Red Clear	D		2.1		1.9	2.1	2.1		1.9
Red Revert	E								
Walk II	F								

DKT. NO.	SHEET NO.

ROUTE NUMBER	SC105		S-645/659	
APPROACH DIRECTION	NB	SB	EB	WB
SIGNAL DESIGN SPEED	35	35	35	35
GRADE (%)	-4	+3	+2	+2

DATE	REVISIONS

SCDOT — SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4 TRAFFIC ENGINEERING
CHESTER, S.C.

SUBJECT TITLE: TRAFFIC SIGNAL INSTALLATION
SPECIFIC LOCATION: SC105 @ S-645 (LEMMONS LANE) & S-659 (WINDSLOW AVE)
CITY: GAFFNEY COUNTY: CHEROKEE
APPROVED BY: Mark D. Shaver
DISTRICT 4 TRAFFIC ENGINEER DATE

DESIGNED	DWC
DRAWN	DWC
RECOMMENDED	MGS
CONSTRUCTED	

SCALE	DATE	SHEET NO.	INDEX NO.
—	4/07	1 OF 1	11-105-645/659

STD8

Times [1.1.1]	1	2	3	4	5	6	7	8
Min Green								
Gap, Ext								
Max 1								
Max 2								
Yel Clear								
Red Clear								
Walk								
Ped Clear								
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time to Reduce								
Reduced By								
Min Gap								
DyMaxLim								
Max Step								
Options [1.1.2]	1	2	3	4	5	6	7	8
Enable								
Min Recall								
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry								
Auto Flash Exit								
Dual Entry								
Enable Simul Gap								
Gaurantee Pass.								
Rest in Walk								
Condition Serv.								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								
Options [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Conflicting Pha								
Conflicting Pha								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

pat#	Cyc	Off	Split	Seq
1	80	8	1	1
2	80	24	2	1
3	80	24	3	1
4				
5				
6				
7				
8				
9				
10				
11				
12				

pat#	Cyc	Off	Split	Seq
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

pat#	Cyc	Off	Split	Seq
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

pat#	Cyc	Off	Split	Seq
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

Split	1	2	3	4	5	6	7	8
1 Coord		55		25	20	35		25
In 2		Max						
2 Coord		55		25	20	35		25
ave 2		Max						
3 Coord		55		25	20	35		25
out 2		Max						
4 Coord						Max		
In 2		Max						
5 Coord						Max		
ave 2		Max						
6 Coord						Max		
out 2		Max						
7 Coord						Max		
In 2		Max						
8 Coord						Max		
ave 2		Max						
9 Coord						Max		
out 2		Max						
10 Coord						Max		
2		Max						
11 Coord						Max		
2		Max						
12 Coord						Max		
2		Max						

Split	1	2	3	4	5	6	7	8
13 Coord								
2		Max				Max		
14 Coord								
2		Max				Max		
15 Coord								
2		Max				Max		
16 Coord								
2		Max				Max		
17 Coord								
2		Max				Max		
18 Coord								
2		Max				Max		
19 Coord								
2		Max				Max		
20 Coord								
2		Max				Max		
21 Coord								
2		Max				Max		
22 Coord								
2		Max				Max		
23 Coord								
2		Max				Max		
24 Coord								
2		Max				Max		

DayPlan1 M-F

	Hour	Min	Act
1	0	0	2
2	6	0	1
3	10	0	2
4	16	0	3
5	20	0	2
6			
7			
8			

DayPlan2 Sat&Sun

	Hour	Min	Act
1	0	0	2
2	6	0	1
3	10	0	2
4	16	0	3
5	20	0	2
6			
7			
8			

DayPlan3

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Notes

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	1
2	1	Green	1
3	1	RED	1
4	1	RED	1
5	2	RED	1
6	2	Green	1
7	2	RED	1
8	2	RED	1

Coord Modes [2.1]	
Test OpMode	**0**
Correction	**SHRT/LNG**
Maximum	**MAX INH**
Force-off	**Fixed**
Closed Loop	**ON**
Stop-in-Walk	**ON**
Auto Rest	**ON**
Expand Splt	**OFF**
Ped Recycle	**No Recycle**
Before	**Timed**
After	**Timed**
Auto Flash [1.4.1]	
Auto Flash	**PH OVER**
Flash Yel	**4**
Flash Red	**2**
Unit Params [1.2.1]	
Phase Mode	STD8
IO mode	Mode 0
Loc Flsh Start	ON
Start Flash(s)	0
Star ALLRed	0
Yellow < 3	OFF
Display Time	15
Red Revert	4
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	OFF
Auto Ped Clear	OFF
SDLC Retry	0

Act 99 = free

System: SC 105 System #405

Intersection: SC 105 at Lemmons / Windslow #4089

Exit 92

FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHEROKEE	11.645	~~U-0853(116)~~	11	TS7	13

—SIGNAL EQUIPMENT—

ONE (1) 8 PHASE FULLY ACTUATED STANDARD 170 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND POLE (BASE) MOUNTED 336S (332A) CABINET. EXT. ▭ PROP. ▬

_____ MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXT. △P PROP. P W/ACT. & SIGN

VEHICLE SIGNALS: EXT. ○—▷ PROP. ●—▶

SIGNAL NUMBER	1	2		4	5	6		8			
LENS	R Y G ⊕	R Y G		R Y G ⊕	R Y G ⊕	R Y G		R Y G			
PHASE	1	2		4	5	6		8			
SIZE	12"	12"		12"	12"	12"		12"			
QUANTITY	1	2		2	1	2		2			

OLA=_____ OLC=_____
OLB=_____ OLD=_____

METAL POLES AS NECESSARY: EXT. ○ PROP. ●M
WOOD POLES AS NECESSARY: EXT. ◒ PROP. ●W

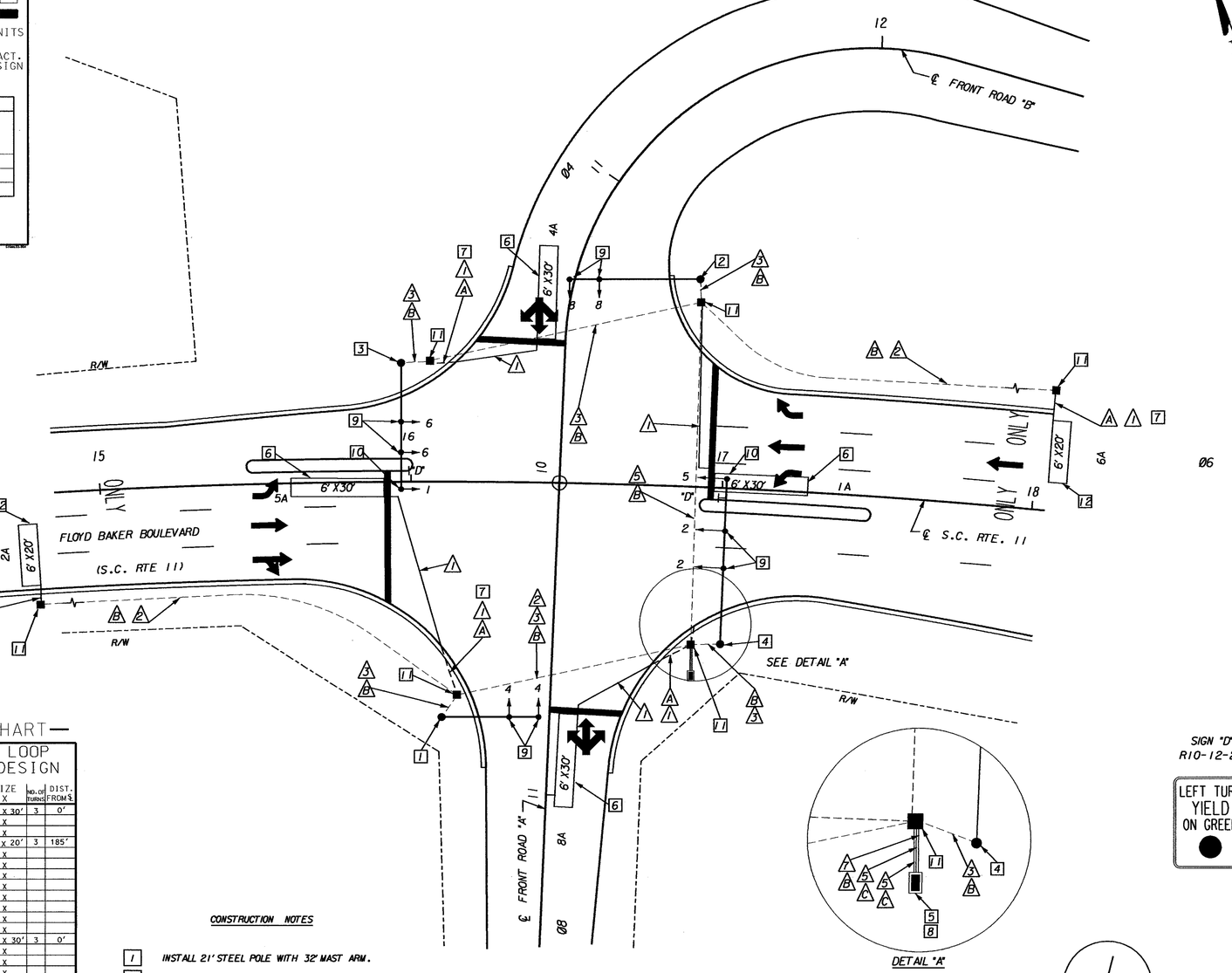
PHASE BANK 1

Keystrokes: # + PHASE + INTERVAL

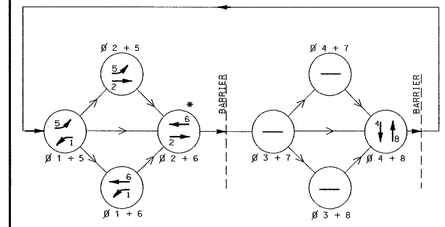
INTERVAL		PHASE 1	2	3	4	5	6	7	8
WALK	0								
DON'T WALK	1								
MIN INITIAL	2	8	20		20	8	20		20
TYPE 3 LIMIT	3								
ADD/VEH	4								
VEH EXT	5	3	–		3.2	–	–		3.2
TIM BFR REDIC	6								
MIN GAP	7								
MAX LIMIT	8	26	41		33	8	59		33
MAXIMUM 2	9								
DELAYED WALK	A								
PRMT PED CLR	B								
COND SV MIN	C								
TIME TO REDIC	D								
YELLOW	E	3	3		3	3	3		3
RED CLEAR	F	2	2		2	2	2		2

EXCLUSIVE PED= WALK (F+04)=1#_____ FLASH DON'T WALK (F+05)=1#_____ RED CLEARANCE (F+06)=1#_____

LONG POWER DOWN CORRECTION FACTOR (F+06)=_____ SHORT POWER DOWN CORRECTION FACTOR(F+07)=_____



NEMA PHASING



NOTE: ACTUATED PHASES HAVING NO CALL, SHALL BE SKIPPED.

* E-W STREET COORDINATED

FLASHING OPERATION

—LOOP DETECTOR INSTALLATION CHART—

PHASE & LOOP LET#	RACK SLOT NO.	RACK CHAN NO.	WIRED TO PHASE	PULSE	PRES	QUADRUPOLE DET. NO.	OPERATION DELAY SEC	OPERATION EXT SEC	SPECIAL FEATURES TIME OF DAY-TOD, SWITCHING, etc.	LOOP DESIGN SIZE X	LOOP DESIGN NO. OF TURNS	LOOP DESIGN DIST. FROM ⊕
1A	11	U	1		X	14	0	0		6' X 30'	3	0'
		L								X		
1	19	U				18	.	.		X		
2A	12	U	2	X		1	0	0		6' X 20'	3	185'
2	12	L				5	.	.		X		
2	13	U				21	.	.		X		
2	13	L				29	.	.		X		
2	14	U				9	.	.		X		
		L								X		
3	15	U				16	.	.		X		
		L								X		
3	19	L				20	.	.		X		
4A	16	U	4		X	3	0	0		6' X 30'	3	0'
4	16	L				7	.	.		X		
4	17	U				23	.	.		X		
4	17	L				31	.	.		X		
4	18	U				11	.	.		X		
		L								X		
5A	J1	U	5		X	13	0	0		6' X 30'	3	0'
		L								X		
5	J9	U				17	.	.		X		
6A	J2	U	6	X		2	0	0		6' X 20'	3	185'
6	J2	L				6	.	.		X		
6	J3	U				22	.	.		X		
6	J3	L				30	.	.		X		
6	J4	U				10	.	.		X		
		L								X		
7	J5	U				15	.	.		X		
		L								X		
7	J9	L				19	.	.		X		
8A	J6	U	8		X	4	0	0		6' X 30'	3	0'
8	J6	L				8	.	.		X		
8	J7	U				24	.	.		X		
8	J7	L				32	.	.		X		
8	J8	U				12	.	.		X		
		L								X		

}=1 OUTPUT: 'LOCK' IS A CONTROLLER PHASE FLAG! SPECIAL FEATURE=4,5,7 UNLESS OTHERWISE SHOWN

4 = COUNT. 5 = EXTENSION. 6 = TYPE 3. 7 = CALLING

CONSTRUCTION NOTES

1. INSTALL 21' STEEL POLE WITH 32' MAST ARM.
2. INSTALL 21' STEEL POLE WITH 42' MAST ARM.
3. INSTALL 21' STEEL POLE WITH 40' MAST ARM.
4. INSTALL 21' STEEL POLE WITH 54' MAST ARM.
5. INSTALL NEW CONTROLLER AND BASE MOUNTED CABINET ON NEW CONCRETE FOUNDATION.
6. INSTALL 6'X30' LOOP DETECTOR.
7. INSTALL DETECTOR LEAD-IN CABLE IN NEW JUNCTION BOX.
8. INSTALL NEW LOOP DETECTOR AMPLIFIER WITH WIRING HARNESS.
9. INSTALL 1-WAY 3 SECTION (R Y G)VEHICLE TRAFFIC SIGNAL HEAD.
10. INSTALL 1-WAY 3 SECTION (R YA G)VEHICLE TRAFFIC SIGNAL HEAD.
11. INSTALL JUNCTION BOX.
12. INSTALL 6'X20' LOOP DETECTOR.

CABLE

1. 1-2C
2. 1-4C
3. 1-8C
4. 2-8C
5. 4-8C
6. 7-8C
7. 1-ELECTRICAL SERVICE

CONDUIT

A. 1-1" PVC
B. 1-2" PVC
C. 1-3" PVC

SIGN "D" R10-12-24

LEFT TURN YIELD ON GREEN

170 AS N. E. M. A. 8 PHASE CONTROLLER SEQUENCE DIAGRAM

NOTE A - ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

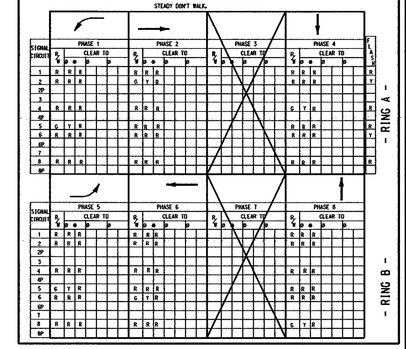
NOTE B - WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL (SEE CHART).

G-GREEN
Y-YELLOW
R-RED
-G-Y. ARROW
-Y-Y. ARROW
W-WALK
D-DON'T WALK

⊕ WHEN FLASHING DON'T WALK, THEN GOES STEADY DON'T WALK.

⊕⊕ WHEN CALLED, TIMES WALK, CONFLICTING PHASES REQUIRE A CLEARANCE

PHASE ENDS	NON-CONFLICTING PHASE ⊕⊕	CONFLICTING PHASE ⊕⊕
1	5,6,8	2,3,4,7
2	5,6,8	1,3,4,7
3	1,4,7	2,5,6,8
4	1,4,7	2,5,6,8
5	1,2,7	3,4,6,8
6	1,2,7	3,4,5,8
7	3,4,5	1,2,6,8
8	3,4,5	1,2,6,7



SCALE
0 20' 40'

SCDOT
South Carolina Department of Transportation
Post Office Box 191
Columbia, South Carolina 29202 ©

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DATE	REVISIONS

DESIGNED	RPS
DRAWN	MPL
CHECKED	RPS
REVIEWED	
RECOMMENDED	

SOUTH CAROLINA
DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA S.C.

SUBJECT TITLE: TRAFFIC SIGNAL PLANS

SPECIFIC LOCATION: FLOYD BAKER BOULEVARD/ FRONTAGE ROAD "A"/ FRONTAGE ROAD "B"

CITY GAFFNEY COUNTY CHEROKEE

APPROVED BY _____ DIR. OF TRAFFIC ENGINEERING

APPROVED BY _____ ENGINEER

SCALE	DATE	SHEET NO.	INDEX NO.
1"=20'	JUNE, 1999	1 OF 1	TS7

Richard A. Lerninger No. 17694 Professional Engineer South Carolina

Michael Baker Jr. Inc. Engineering & Land Surveying No. C00073 Certificate of Authorization South Carolina

STD8

Times [1.1.1]	1	2	3	4	5	6	7	8
Min Green	8	15		8	8	15		8
Gap, Ext	3	3		3	3	3		3
Max 1	20	40		25	20	40		25
Max 2								
Yel Clear	3.6	3.6		3.2	3.6	3.6		3.2
Red Clear	1.9	1.9		2.3	1.9	1.9		2.3
Walk								
Ped Clear								
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time to Reduce								
Reduced By								
Min Gap								
DyMaxLim								
Max Step								
Options [1.1.2]	1	2	3	4	5	6	7	8
Enable	X	X		X	X	X		X
Min Recall		X				X		
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry								
Auto Flash Exit								
Dual Entry								
Enable Simul Gap								
Gaurantee Pass.								
Rest in Walk								
Condition Serv.								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								
Options [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Conflicting Pha								
Conflicting Pha								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

pat#	Cyc	Off	Split	Seq
1	90	33	1	1
2	90	63	2	1
3	90	55	3	1
4				
5				
6				
7				
8				
9				
10				
11				
12				

pat#	Cyc	Off	Split	Seq
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

pat#	Cyc	Off	Split	Seq
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

pat#	Cyc	Off	Split	Seq
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

Split	1	2	3	4	5	6	7	8
1 Coord	20	44		26	20	44		26
am 2		Max						
2 Coord	20	42		28	20	42		28
avg 2		Max						
3 Coord	20	42		28	20	42		28
pm 2		Max						
4 Coord								
5 Coord								
6 Coord								
7 Coord								
8 Coord								
9 Coord								
10 Coord								
11 Coord								
12 Coord								

Split	1	2	3	4	5	6	7	8
13 Coord								
14 Coord								
15 Coord								
16 Coord								
17 Coord								
18 Coord								
19 Coord								
20 Coord								
21 Coord								
22 Coord								
23 Coord								
24 Coord								

DayPlan2 Sat&Sun

	Hour	Min	Act
1	0	0	99
2	6	0	2
3	23	0	99
4			
5			
6			
7			
8			

DayPlan3

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Act 99 = free

Notes

99 is Free operation

Ring/Startup [1.1.4]

Phs	Ring	Start	Enable
1	1	RED	1
2	1	Green	1
3	1	RED	0
4	1	RED	1
5	2	RED	1
6	2	Green	1
7	2	RED	0
8	2	RED	1

Coord Modes [2.1]	
Test OpMode	**0**
Correction	**SHRT/LNG**
Maximum	**MAX INH**
Force-off	**Fixed**
Closed Loop	**ON**
Stop-in-Walk	**ON**
Auto Rest	**ON**
Expand Splt	**ON**
Ped Recycle	**No Recycle**
Before	**Timed**
After	**Timed**
Auto Flash [1.4.1]	
Auto Flash	**PH OVER**
Flash Yel	**4**
Flash Red	**2**
Unit Params [1.2.1]	
Phase Mode	STD8
IO mode	Mode 0
Loc Flsh Start	ON
Start Flash(s)	0
Star ALLRed	0
Yellow < 3	OFF
Display Time	15
Red Revert	4
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	OFF
Auto Ped Clear	OFF
SDLC Retry	0

System: SC 11 Floyd Baker

Intersection: SC 11 & Frontage Rd

FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHEROKEE	11.645 ~~IU-0853(116)~~		11	TS8	13

—SIGNAL EQUIPMENT—

ONE (1) 8 PHASE FULLY ACTUATED STANDARD 170 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND POLE (BASE) MOUNTED 336S (332A) CABINET. EXT. ☐ PROP. ■

_____ MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXT. △P PROP. P W/ACT. & SIGN

VEHICLE SIGNALS: EXT. ○—▷ PROP. ●—►

SIGNAL NUMBER		2		4		6					
LENS		Ⓡ Ⓨ Ⓖ		Ⓡ Ⓨ Ⓖ		Ⓡ Ⓨ Ⓖ					
PHASE		2		4		6					
SIZE		12"		12"		12"					
QUANTITY		2		2		2					

OLA=_____ OLC=_____
OLB=_____ OLD=_____

METAL POLES AS NECESSARY: EXT. ○ PROP. ●M
WOOD POLES AS NECESSARY: EXT. ◒ PROP. ●W

PHASE BANK 1

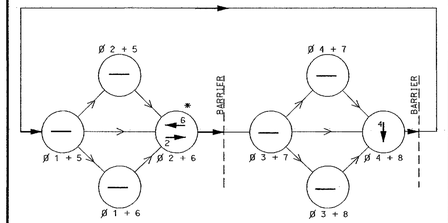
Keystrokes: F + PHASE + INTERVAL

INTERVAL		PHASE 1	2	3	4	5	6	7	8
WALK	0								
DON'T WALK	1								
MIN INITIAL	2		20		8		20		
TYPE 3 LIMIT	3								
ADD/VEH	4								
VEH EXT	5		-		3		-		
TIM BFR REDUC	6								
MIN GAP	7								
MAX LIMIT	8		68		32		68		
MAXIMUM 2	9								
DELAYED WALK	A								
PNMT PED CLR	B								
COND SV MIN	C								
TIME TO REDUC	D								
YELLOW	E		3		3		3		
RED CLEAR	F		2		2		2		

EXCLUSIVE PED:
WALK (F+04)11=_____
FLASH DON'T WALK (F+04)12=_____
RED CLEARANCE (F+04)13=_____

LONG POWER DOWN CORRECTION FACTOR (F+04)14=_____
SHORT POWER DOWN CORRECTION FACTOR (F+04)15=_____

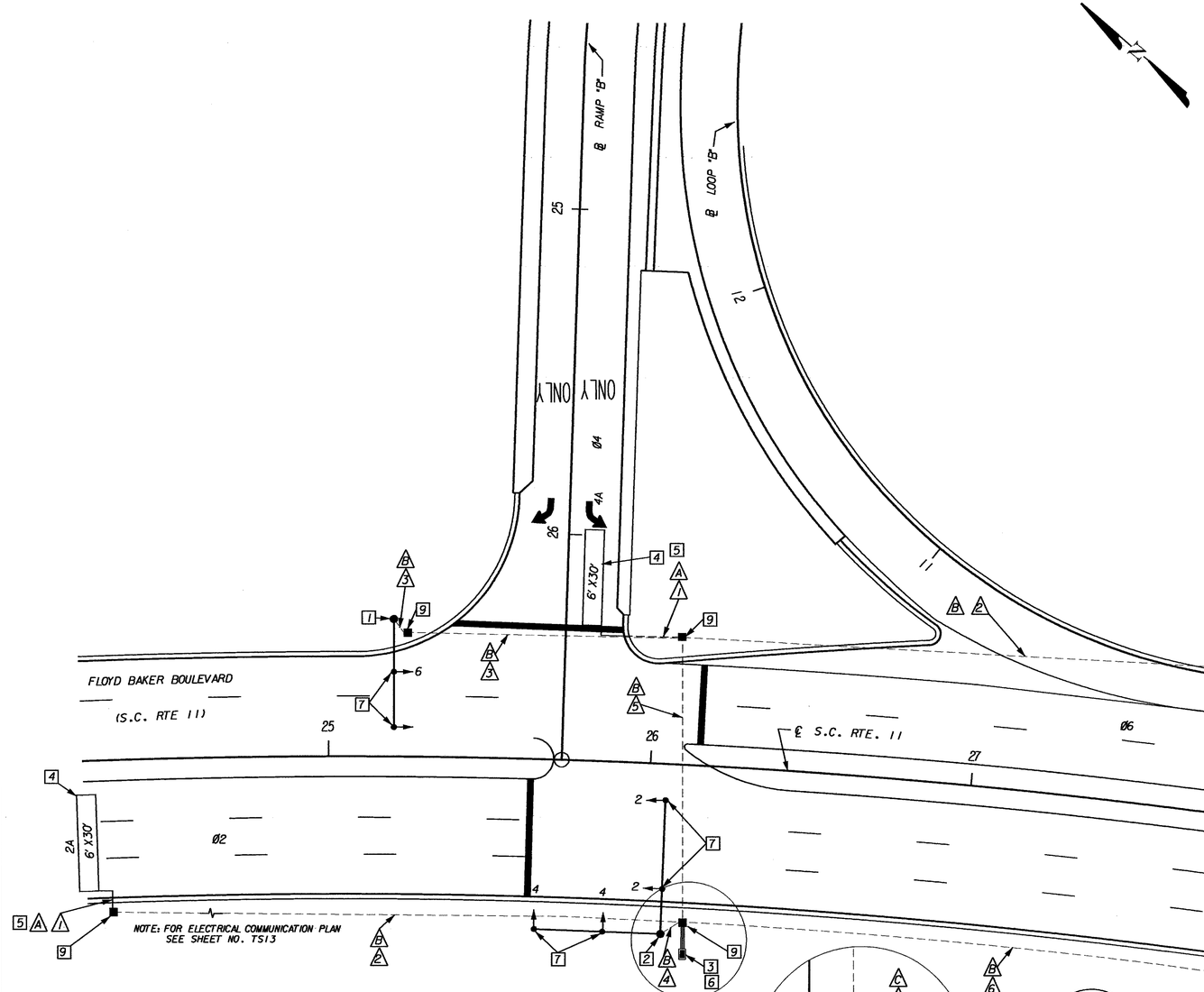
NEMA PHASING



NOTE: ACTUATED PHASES HAVING NO CALL, SHALL BE SKIPPED.

* E-W STREET COORDINATED

FLASHING OPERATION



—LOOP DETECTOR INSTALLATION CHART—

PHASE & LOOP LET#	RACK SLOT NO.	RACK CHAN NO.	WIRED TO PHASE	PULSE X	PRES X	QN DET. NO.	OPERATION DELAY SEC	OPERATION EXT SEC	SPECIAL FEATURES TIME OF DAY-TOD SWITCHING, etc.	LOOP DESIGN SIZE X	LOOP DESIGN NO. OF TURNS	LOOP DESIGN DIST. FROM ℄
1	I1	U				14	.	.		X		
		L								X		
1	I9	U				18	.	.		X		
2A	I2	U	2	X		1	0	0		6' x 30'	3	185'
2	I2	L				5	.	.		X		
2	I3	U				21	.	.		X		
2	I3	L				29	.	.		X		
2	I4	U				9	.	.		X		
		L								X		
3	I5	U				16	.	.		X		
		L								X		
3	I9	L				20	.	.		X		
4A	I6	U	4		X	3	0	0		6' x 30'	3	0'
4	I6	L				7	.	.		X		
4	I7	U				23	.	.		X		
4	I7	L				31	.	.		X		
4	I8	U				11	.	.		X		
		L								X		
5	J1	U				13	.	.		X		
		L								X		
5	J9	U				17	.	.		X		
6A	J2	U	6	X		2	0	0		6' x 30'	3	185'
6	J2	L				6	.	.		X		
6	J3	U				22	.	.		X		
6	J3	L				30	.	.		X		
6	J4	U				10	.	.		X		
		L								X		
7	J5	U				15	.	.		X		
		L								X		
7	J9	L				19	.	.		X		
8	J6	U				4	.	.		X		
8	J6	L				8	.	.		X		
8	J7	U				24	.	.		X		
8	J7	L				32	.	.		X		
8	J8	U				12	.	.		X		
		L								X		

}=1 OUTPUT: 'LOCK' IS A CONTROLLER PHASE FLAG: SPECIAL FEATURE=4,5,7 UNLESS OTHERWISE SHOWN

4 = COUNT, 5 = EXTENSION, 6 = TYPE 3, 7 = CALLING

CONSTRUCTION NOTES

1. INSTALL 21' STEEL POLE WITH 34' MAST ARM.
2. INSTALL 21' STEEL POLE WITH TWIN MAST ARM (40'X42').
3. INSTALL NEW CONTROLLER AND BASE MOUNTED CABINET ON NEW CONCRETE FOUNDATION.
4. INSTALL 6'X30' LOOP DETECTOR.
5. INSTALL DETECTOR LEAD-IN CABLE IN NEW JUNCTION BOX.
6. INSTALL NEW LOOP DETECTOR AMPLIFIER WITH WIRING HARNESS.
7. INSTALL 1-WAY 3 SECTION (R Y G) VEHICLE TRAFFIC SIGNAL HEAD.
8. INSTALL INTERCONNECT CABLE (BURIED).
9. INSTALL JUNCTION BOX.
10. INSTALL 6'X20' LOOP DETECTOR.

CABLE

- △1 1-2C
- 2 1-4C
- 3 1-8C
- 4 2-8C
- 5 3-8C
- 6 1-12PR
- 7 1-ELECTRICAL SERVICE

CONDUIT

- A 1-1" PVC
- B 1-2" PVC
- C 1-3" PVC

170 AS N.E.M.A. 8 PHASE CONTROLLER SEQUENCE DIAGRAM

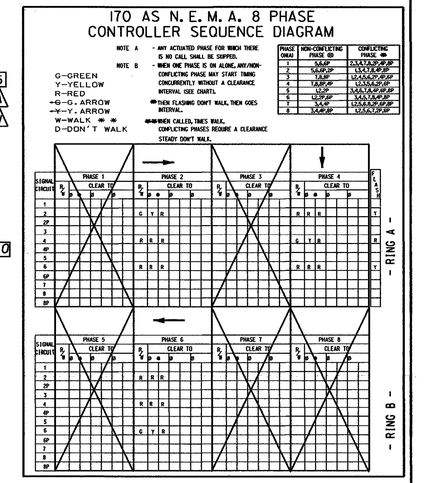
NOTE A - ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.

NOTE B - WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL (SEE CHART).

G-GREEN
Y-YELLOW
R-RED
→G-ARROW
→Y-ARROW
W-WALK ✱ ✱
D-DON'T WALK

✱✱ WHEN CALLED, TIMES WALK, CONFLICTING PHASES REQUIRE A CLEARANCE INTERVAL. STEADY DON'T WALK.

PHASE OMAX	NON-CONFLICTING PHASE (S)	CONFLICTING PHASE ✱✱
1	5,6,8*	2,3,4,7,8*,9*,10*
2	5,6,8*	1,3,4,7,8*,9*,10*
3	1,8*	2,4,5,6,9*,10*
4	1,8*	2,3,5,6,9*,10*
5	1,2*	3,4,6,7,8*,9*,10*
6	1,2*	3,4,5,7,8*,9*,10*
7	3,4,8*	1,2,5,6,9*,10*
8	1,2,4,8*	3,5,6,7,9*,10*



SCALE 0 20' 40'

2

SOUTH CAROLINA PROFESSIONAL ENGINEER RICHARD A LENNINGER No. 17694

MICHAEL BAKER JR, INC. ENGINEERING & LAND SURVEYING NO. C00672 CERTIFICATE OF AUTHORIZATION

SCDOT South Carolina Department of Transportation
Post Office Box 191
Columbia, South Carolina 29202 ©

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DATE	REVISIONS

DESIGNED	RPS
DRAWN	MPL
CHECKED	RPS
REVIEWED	
RECOMMENDED	

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA S.C.

SUBJECT TITLE: TRAFFIC SIGNAL PLANS

SPECIFIC LOCATION: FLOYD BAKER BOULEVARD/ RAMP "B"/LOOP "B"

CITY GAFFNEY | COUNTY CHEROKEE

APPROVED BY _____ DIR. OF TRAFFIC ENGINEERING

APPROVED BY _____ ENGINEER

SCALE	DATE	SHEET NO.	INDEX NO.
1"=20'	JUNE, 1999	1 OF 1	TS8

STD8

Times [1.1.1]	1	2	3	4	5	6	7	8
Min Green		15		8		15		
Gap, Ext		3		3		3		
Max 1		40		30		40		
Max 2								
Yel Clear		3.6		3.2		3.6		
Red Clear		1.6		1.6		1.6		
Walk								
Ped Clear								
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time to Reduce								
Reduced By								
Min Gap								
DyMaxLim								
Max Step								

Options [1.1.2]	1	2	3	4	5	6	7	8
Enable		X		X		X		
Min Recall		X				X		
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry								
Auto Flash Exit								
Dual Entry								
Enable Simul Gap								
Gaurantee Pass.								
Rest in Walk								
Condition Serv.								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								

Options [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Conflicting Pha								
Conflicting Pha								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

pat#	Cyc	Off	Split	Seq
1	90	67	1	1
2	90	66	2	1
3	90	62	3	1
4				
5				
6				
7				
8				
9				
10				
11				
12				

pat#	Cyc	Off	Split	Seq
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

pat#	Cyc	Off	Split	Seq
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

pat#	Cyc	Off	Split	Seq
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

Split	1	2	3	4	5	6	7	8
1		55		35		55		35
am		Max						
2		55		35		55		35
avg		Max						
3		55		35		55		35
pm		Max						
4								
5								
6								
7								
8								
9								
10								
11								
12								

Split	1	2	3	4	5	6	7	8
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

DayPlan1 M-F

	Hour	Min	Act
1	0	0	99
2	6	0	1
3	10	0	2
4	14	0	3
5	23	0	99
6			
7			
8			

DayPlan2 Sat&Sun

	Hour	Min	Act
1	0	0	99
2	6	0	2
3	23	0	99
4			
5			
6			
7			
8			

DayPlan3

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Notes

99 is Free operation

Ring/Startup [1.1.4]			
Phs	Ring	Start	Enable
1	1	RED	0
2	1	Green	1
3	1	RED	0
4	1	RED	1
5	2	RED	0
6	2	Green	1
7	2	RED	0
8	2	RED	0

Coord Modes [2.1]	
Test OpMode	0
Correction	SHRT/LNG
Maximum	MAX INH
Force-off	Fixed
Closed Loop	ON
Stop-in-Walk	ON
Auto Rest	ON
Expand Splt	ON
Ped Recycle	No Recycle
Before	Timed
After	Timed

Auto Flash [1.4.1]	
Auto Flash	PH OVER
Flash Yel	4
Flash Red	2

Unit Params [1.2.1]	
Phase Mode	STD8
IO mode	Mode 0
Loc Flsh Start	ON
Start Flash(s)	0
Star ALLRed	0
Yellow < 3	OFF
Display Time	15
Red Revert	4
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	OFF
Auto Ped Clear	OFF
SDLC Retry	0

System: SC 11 Floyd Baker

Intersection: SC 11 & SB Ramp

Act 99 = free

FED. ROAD DIV. NO.	STATE	COUNTY	FILE NO.	PROJECT NO.	ROUTE NO.	SHEET NO.	TOTAL SHEETS
3	S.C.	CHEROKEE	11.645	~~BU-0853(16)~~	11	TS9	13

—SIGNAL EQUIPMENT—

ONE (1) 8 PHASE FULLY ACTUATED STANDARD 170 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT, AND POLE (BASE) MOUNTED 336S (332A) CABINET. EXT. ☐ PROP. ■

_____ MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXT. P PROP. P W/ACT. & SIGN

VEHICLE SIGNALS: EXT. ○→▷ PROP. ●→

SIGNAL NUMBER		2				6		8			
LENS		(R) (Y) (G)				(R) (Y) (G)		(R) (Y) (G)			
PHASE		2				6		8			
SIZE		12"				12"		12"			
QUANTITY		2				2		2			

OLA=_____ OLC=_____
OLB=_____ OLD=_____

METAL POLES AS NECESSARY: EXT. ○ PROP. ●M
WOOD POLES AS NECESSARY: EXT. ◒ PROP. ●W

PHASE BANK 1

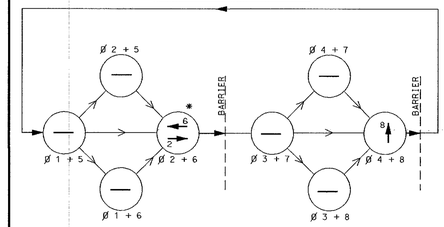
Keystroke: F + PHASE + INTERVAL

INTERVAL		PHASE 1	2	3	4	5	6	7	8
WALK	0								
DON'T WALK	1								
MIN INITIAL	2		21				21		8
TYPE 3 LIMIT	3								
ADD/VEH	4								
VEH EXT	5		–				–		3
TIM BFR REDUC	6								
MIN GAP	7								
MAX LIMIT	8		42				42		38
MAXIMUM 2	9								
DELAYED WALK	A								
PRMT PED CLR	B								
COND SV MIN	C								
TIME TO REDUC	D								
YELLOW	E		3				3		3
RED CLEAR	F		2				2		2

EXCLUSIVE PED: WALK IF+0=01=_____ FLASH DON'T WALK IF+0=11=_____ RED CLEARANCE IF+0=21=_____

LONG POWER DOWN CORRECTION FACTOR IF+0=6=_____
SHORT POWER DOWN CORRECTION FACTOR IF+0=7=_____

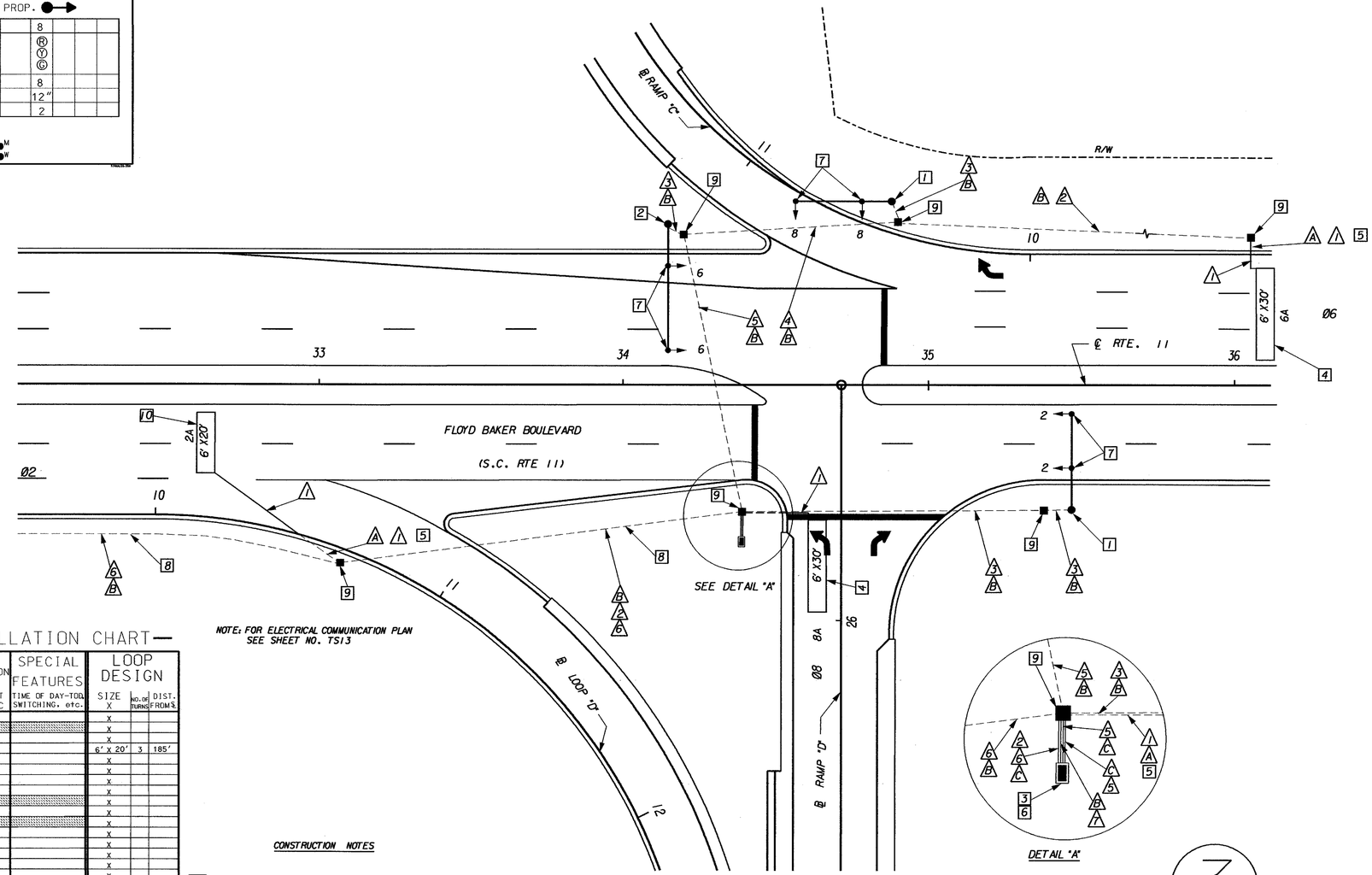
NEMA PHASING



NOTE: ACTUATED PHASES HAVING NO CALL, SHALL BE SKIPPED.

* E-W STREET COORDINATED

FLASHING OPERATION



NOTE: FOR ELECTRICAL COMMUNICATION PLAN SEE SHEET NO. TS13

—LOOP DETECTOR INSTALLATION CHART—

PHASE & LOOP LET#	RACK SLOT NO.	RACK CHAN NO.	WIRED TO PHASE	PULSE	PRES	QN DET. NO.	OPERATION DELAY SEC	OPERATION EXT SEC	SPECIAL FEATURES TIME OF DAY-TOD SWITCHING, etc.	LOOP DESIGN SIZE X	LOOP DESIGN NO. OF TURNS	LOOP DESIGN DIST. FROM ℄
1	I1	U				14	.	.		X		
		L								X		
1	I9	U				18	.	.		X		
2A	I2	U	2	X		1	0.0	.		6' X 20'	3	185'
2	I2	L				5	.	.		X		
2	I3	U				21	.	.		X		
2	I3	L				29	.	.		X		
2	I4	U				9	.	.		X		
		L								X		
3	I5	U				16	.	.		X		
		L								X		
3	I9	L				20	.	.		X		
4	I6	U				3	.	.		X		
4	I6	L				7	.	.		X		
4	I7	U				23	.	.		X		
4	I7	L				31	.	.		X		
4	I8	U				11	.	.		X		
		L								X		
5	J1	U				13	.	.		X		
		L								X		
5	J9	U				17	.	.		X		
6A	J2	U	6	X		2	0.0	.		6' X 30'	3	185'
6	J2	L				6	.	.		X		
6	J3	U				22	.	.		X		
6	J3	L				30	.	.		X		
6	J4	U				10	.	.		X		
		L								X		
7	J5	U				15	.	.		X		
		L								X		
7	J9	L				19	.	.		X		
8A	J6	U	8		X	4	0.0	.		6' X 30'	3	0'
8	J6	L				8	.	.		X		
8	J7	U				24	.	.		X		
8	J7	L				32	.	.		X		
8	J8	U				12	.	.		X		
		L								X		

} =1 OUTPUT: 'LOCK' IS A CONTROLLER PHASE FLAG± SPECIAL FEATURE=4.5.7 UNLESS OTHERWISE SHOWN

4 = COUNT, 5 = EXTENSION, 6 = TYPE 3, 7 = CALLING

CONSTRUCTION NOTES

1. INSTALL 21' STEEL POLE WITH 32' MAST ARM.
2. INSTALL 21' STEEL POLE WITH 42' MAST ARM.
3. INSTALL NEW CONTROLLER AND BASE MOUNTED CABINET ON NEW CONCRETE FOUNDATION.
4. INSTALL 6'X30' LOOP DETECTOR.
5. INSTALL DETECTOR LEAD-IN CABLE IN NEW JUNCTION BOX.
6. INSTALL NEW LOOP DETECTOR AMPLIFIER WITH WIRING HARNESS.
7. INSTALL 1-WAY 3 SECTION (R Y G) VEHICLE TRAFFIC SIGNAL HEAD.
8. INSTALL INTERCONNECT CABLE (BURIED).
9. INSTALL JUNCTION BOX.
10. INSTALL 6'X20' LOOP DETECTOR.

CABLE

1. 1-2C
2. 1-4C
3. 1-8C
4. 2-8C
5. 3-8C
6. 1-12PR
7. 1-ELECTRICAL SERVICE

CONDUIT

A. 1-1" PVC
B. 1-2" PVC
C. 1-3" PVC

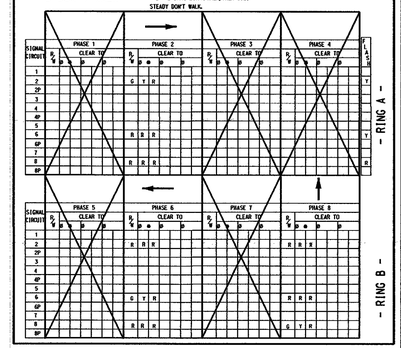
SCALE 0 20' 40'

170 AS N.E.M.A. 8 PHASE CONTROLLER SEQUENCE DIAGRAM

NOTE A - ANY ACTUATED PHASE FOR WHICH THERE IS NO CALL SHALL BE SKIPPED.
NOTE B - WHEN ONE PHASE IS ON ALONE, ANY NON-CONFLICTING PHASE MAY START TIMING CONCURRENTLY WITHOUT A CLEARANCE INTERVAL (SEE CHART).
** CONFLICTING PHASES REQUIRE A CLEARANCE INTERVAL.
WHEN CALLED, TIMES WALK, THEN FLASHING DON'T WALK, THEN GOES STEADY DON'T WALK.

G-GREEN
Y-YELLOW
R-RED
→G-G. ARROW
→Y-Y. ARROW
W-WALK # ##
D-DON'T WALK

PHASE ###	NON-CONFLICTING PHASE (S)	CONFLICTING PHASE ##
1	5,6,8*	2,3,4,7,2*,3*,7*
2	5,6,8*,7*	1,3,4,7,8*
3	7,8,8*	1,2,4,5,7*,8*
4	7,8,8*,7*	1,2,3,5,6,7*
5	1,2,8*	3,4,6,7,8*,3*,8*
6	1,2,7,8*	3,4,5,7,8*
7	1,2*,8*	3,4,5,6,8*,3*
8	1,4,7,8*	1,2,3,5,7*,8*



3

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DATE	REVISIONS

DESIGNED	RPS
DRAWN	MPL
CHECKED	RPS
REVIEWED	
RECOMMENDED	

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
ENGINEERING DIVISION
COLUMBIA S.C.

SUBJECT TITLE: TRAFFIC SIGNAL PLANS

SPECIFIC LOCATION: FLOYD BAKER BOULEVARD/ RAMP "D"/LOOP "D"

CITY GAFFNEY | COUNTY CHEROKEE

APPROVED BY _____ DIR. OF TRAFFIC ENGINEERING

APPROVED BY _____ ENGINEER

SCALE	DATE	SHEET NO.	INDEX NO.
1"=20'	JUNE, 1999	1 OF 1	TS9

SOUTH CAROLINA PROFESSIONAL ENGINEER No. 17694 RICHARD A. LEMINGER REGISTERED

MICHAEL BAKER JR, INC. ENGINEERING & LAND SURVEYING NO. C00670 CERTIFICATE OF AUTHORIZATION

STD8

Times [1.1.1]	1	2	3	4	5	6	7	8
Min Green		15				15		8
Gap, Ext		3				3		3
Max 1		40				40		30
Max 2								
Yel Clear		3.6				3.6		3.2
Red Clear		1.6				1.6		1.8
Walk								
Ped Clear								
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time to Reduce								
Reduced By								
Min Gap								
DyMaxLim								
Max Step								

Options [1.1.2]	1	2	3	4	5	6	7	8
Enable		X				X		X
Min Recall		X				X		
Max Recall								
Ped Recall								
Soft Recall								
Lock Calls								
Auto Flash Entry								
Auto Flash Exit								
Dual Entry								
Enable Simul Gap								
Gaurantee Pass.								
Rest in Walk								
Condition Serv.								
Non-Actuated 1								
Non-Actuated 2								
Add Init Calc								

Options [1.1.3]	1	2	3	4	5	6	7	8
Reservice								
PedClr Thru Yel								
Skip Red No Call								
Red Rest								
Max II								
Conflicting Pha								
Conflicting Pha								
Omit Yellow								
Ped Delay								
Grn/Ped Delay								

pat#	Cyc	Off	Split	Seq
1	90	2	1	1
2	90	49	2	1
3	90	50	3	1
4				
5				
6				
7				
8				
9				
10				
11				
12				

pat#	Cyc	Off	Split	Seq
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				

pat#	Cyc	Off	Split	Seq
25				
26				
27				
28				
29				
30				
31				
32				
33				
34				
35				
36				

pat#	Cyc	Off	Split	Seq
37				
38				
39				
40				
41				
42				
43				
44				
45				
46				
47				
48				

Split	1	2	3	4	5	6	7	8
1		55		35		55		35
am		Max						
2		55		35		55		35
avg		Max						
3		55		35		55		35
pm		Max						
4								
5								
6								
7								
8								
9								
10								
11								
12								

Split	1	2	3	4	5	6	7	8
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								

Ring/Startup [1.1.4]			
Phs	Ring	Start	Enable
1	1	RED	0
2	1	Green	1
3	1	RED	0
4	1	RED	0
5	2	RED	0
6	2	Green	1
7	2	RED	0
8	2	RED	1

Coord Modes [2.1]	
Test OpMode	0
Correction	SHRT/LNG
Maximum	MAX INH
Force-off	Fixed
Closed Loop	ON
Stop-in-Walk	ON
Auto Rest	ON
Expand Splt	ON
Ped Recycle	No Recycle
Before	Timed
After	Timed

Auto Flash [1.4.1]	
Auto Flash	PH OVER
Flash Yel	4
Flash Red	2

Unit Params [1.2.1]	
Phase Mode	STD8
IO mode	Mode 0
Loc Flsh Start	ON
Start Flash(s)	0
Star ALLRed	0
Yellow < 3	OFF
Display Time	15
Red Revert	4
MCE Timeout	0
Feature Profile	0
Free Ring Seq	1
Auxswitch	STOPTM
SDLC Retry	0
TS2 Det Faults	OFF
Auto Ped Clear	OFF
SDLC Retry	0

DayPlan1 M-F

	Hour	Min	Act
1	0	0	99
2	6	0	1
3	10	0	2
4	14	0	3
5	23	0	99
6			
7			
8			

DayPlan2 Sat&Sun

	Hour	Min	Act
1	0	0	99
2	6	0	2
3	23	0	99
4			
5			
6			
7			
8			

DayPlan3

	Hour	Min	Act
1			
2			
3			
4			
5			
6			
7			
8			

Notes

99 is Free operation

Act 99 = free

System: SC 11 Floyd Baker

Intersection: SC 11 & NB Ramp

Exit 95

—SIGNAL EQUIPMENT—

ONE (1) 8 PHASE FULLY ACTUATED STANDARD
2070 CONTROLLER WITH FLASHER, SIGNAL MONITOR UNIT,
AND POLE/BASE-MOUNTED 336S/332A CABINET. EXT. ☐ PROP. ■

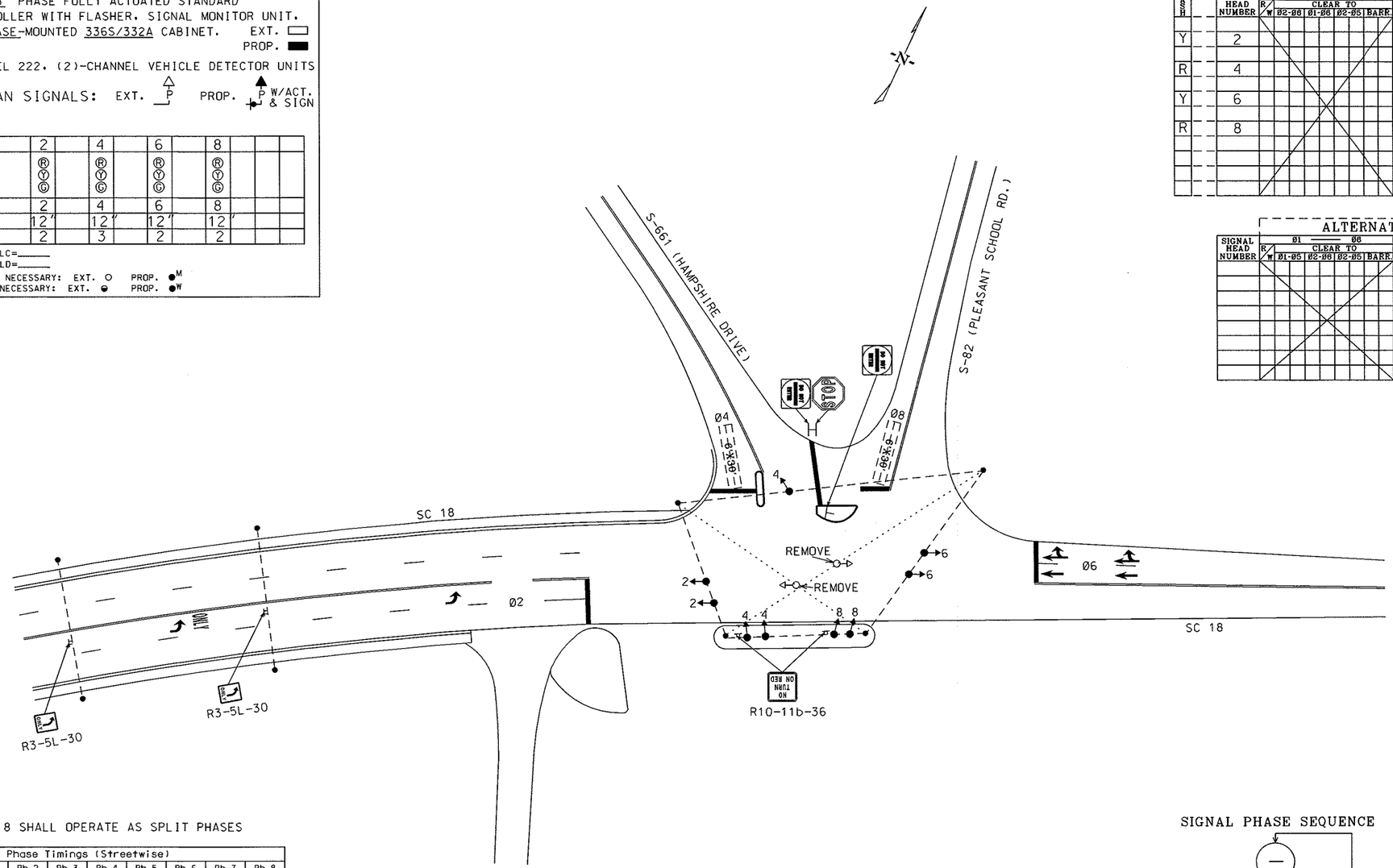
2 MODEL 222, (2)-CHANNEL VEHICLE DETECTOR UNITS

PEDESTRIAN SIGNALS: EXT. P PROP. P W/ACT. & SIGN

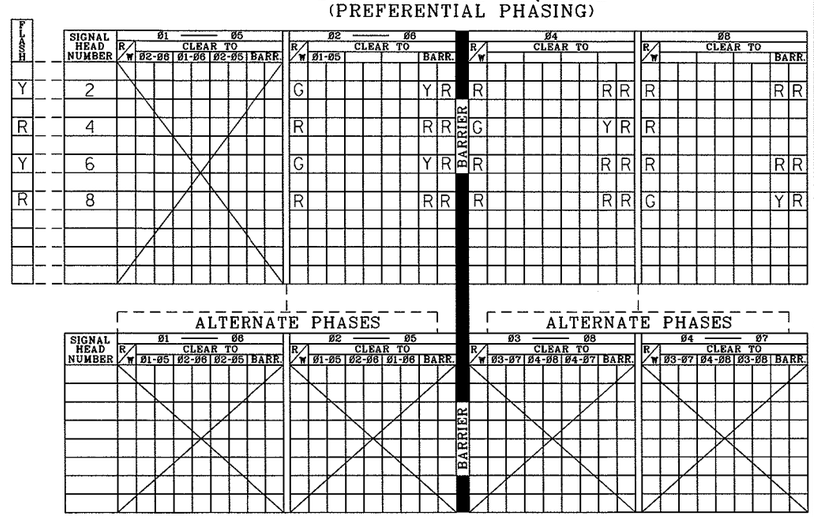
SIGNAL NUMBER		2		4		6		8			
LENS		Ⓡ Ⓨ Ⓖ		Ⓡ Ⓨ Ⓖ		Ⓡ Ⓨ Ⓖ		Ⓡ Ⓨ Ⓖ			
PHASE		2		4		6		8			
SIZE		12"		12"		12"		12"			
QUANTITY		2		3		2		2			

OLA=_____ OLC=_____
OLB=_____ OLD=_____

METAL POLES AS NECESSARY: EXT. ○ PROP. ●M
WOOD POLES AS NECESSARY: EXT. ◒ PROP. ●W



SIGNAL DISPLAY SEQUENCE (PREFERENTIAL PHASING)

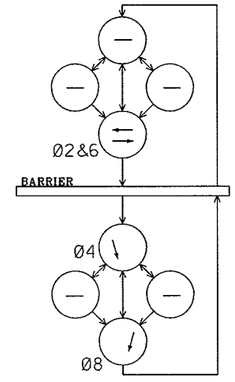


NOTE: Ø4 & 8 SHALL OPERATE AS SPLIT PHASES

Phase Timings (Streetwise)								
	Ph 1	Ph 2	Ph 3	Ph 4	Ph 5	Ph 6	Ph 7	Ph 8
Min Green				8				8
Gap. Ext				4.0				4.0
Max 1		40		25		40		25
Max 2								
Yel Clearance		4.3		3.6		4.3		3.6
Red Clearance		2.3		1.7		2.3		1.7
Walk								
Ped Clearance								
Red Revert								
Add Initial								
Max Initial								
Time B4 Reduct								
Cars B4 Reduct								
Time To Reduce								
Reduce By								
Min Gap								
DyMaxLim								
Max Step								
Recall		Max		Off		Max		Off

0 30 60 90

SIGNAL PHASE SEQUENCE



DKT. NO.	SHEET NO.

ROUTE NUMBER	S-661	S-82	SC18	
APPROACH DIRECTION	SB	SB	EB	WB
SIGNAL DESIGN SPEED	35	35	45	45
GRADE (%)	-	-	-	-

DATE	REVISIONS
6-13	REVISE Ø2.4.6.8 YELLOW & RED TIMES. ADD Ø4 PRE-HEAD UPDATE SIG PLAN

DESIGNED
DRAWN DWC
RECOMMENDED MGS
CONSTRUCTED

SOUTH CAROLINA DEPARTMENT OF TRANSPORTATION
DISTRICT 4 TRAFFIC ENGINEERING
CHESTER,S.C.

SUBJECT TITLE: TRAFFIC SIGNAL

SPECIFIC LOCATION: SC 18 & S-82 & S-661

CITY GAFFNEY COUNTY CHEROKEE

APPROVED BY _____
DISTRICT 4 TRAFFIC ENGINEER DATE

SCALE	DATE	SHEET NO.	INDEX NO.
——	6/13	1 OF 1	11-18-82-661

Appendix E

Accident Analysis Report

Accident Analysis Report

I-85 Widening Project MM 80 to MM 96
Spartanburg and Cherokee Counties, SC

Prepared for:
South Carolina Department of Transportation

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BIHL ENGINEERING

Accident Analysis Report
I-85 Widening Project MM 80 – MM 96
Spartanburg and Cherokee Counties
South Carolina

Prepared for:
South Carolina Department of Transportation

Prepared by:
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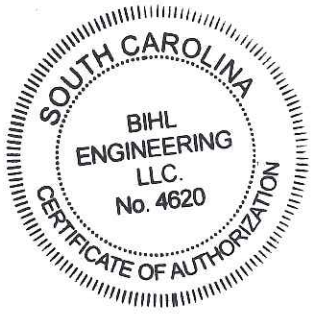
(843) 637-9187



December 2014
(revised March 2015)

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1.0 Executive Summary

The South Carolina Department of Transportation (SCDOT) is proposing a widening of Interstate 85 (I-85) from four lanes to six lanes from near Gossett Rd. (S-57) (Exit 80) to just north of SC 18 (Exit 96) in Spartanburg and Cherokee Counties. The project includes adding a travel lane in each direction, improving various interchanges and exit ramps, and replacing overpass bridges. As part of the widening project, the crash information is being reviewed for the interstate and its ramp interchanges and surrounding roadways.

For the study, historic crash data from the last three years were reviewed for the entirety of the proposed widening including access points at the following interchanges: Exit 82 (Bud's Drive)/Exit 83 (SC 110), Exit 87 (Green River Rd.), Exit 95 (SC 18 – Gaffney), and Exit 96 (SC 18 – Shelby and the Gaffney Ferry Road northbound on-ramp). Data included accidents occurring on the interstate as well as on the ramps and the surrounding roads in the vicinity of each of these interchanges.

The 1,019 crashes (902 interstate or interstate ramp crashes and 117 surrounding roadway crashes) were reviewed to identify hot spot locations and trends.

A majority of the accidents were classified as property damage only; however, 14% were classified as possible injuries, 3% as non-incapacitating injuries, less than 1% as incapacitating injuries and less than 1% as fatalities. One additional fatality has occurred since December 2014. Fatal crashes were a mixture of fixed object, angle and head-on crashes as well as crashes involving pedestrians. Reviewing the available information regarding the fatality locations, there does not appear to be a trend in cause. An increase in lighting at locations where pedestrians are expected could be considered during the design.

The most common accident type along I-85 was "not a collision with a motor vehicle in transport (collision with fixed object)," comprising 358 of the 902 total crashes (40%). These included collisions with fixed objects such as the guardrail, median, or fence. Rear-end collisions (27%) and sideswipes, same direction, (14%) were the next most common crash types.

Study area hot spots are listed below:

- Various areas along the corridor with limited clear zone due to bridges, fencing, embankments, etc.
- I-85 North and South at vertical curve locations between MM 80 and MM 81
- I-85 South at MM 82.542
- I-85 North at Exit 82 off-ramp
- I-85 South at Exit 83 on-ramp

- I-85 South at MM 83.675
- I-85 North Exit 90 on-ramp
- Surrounding roadways at Exit 95, east of interstate (Hampshire Drive and SC 18 from Matthew Drive to the S-82 Overpass) – approximately half of crashes on the non-interstate roadways occur in this area.
- I-85 North at Exit 96 off-ramp
- I-85 North at Exit 96 on-ramp
- I-85 North at Gaffney Ferry Road on-ramp

A review of the crash history shows that the geometric conditions of the interchanges and how they tie into the non-interstate roadway system play a large role in the crash locations. Merging distance at on-ramps should be improved to SCDOT standards. There are some vertical curve locations on the interstate that show an increase in accidents; however, most do not appear to have a significant effect on crash locations. Many of the fixed object crashes on I-85 occur where there is a limited recovery zone due to fencing, guardrails, etc. Many guardrails, fences, etc. are installed to help prevent more severe crashes; however, maximizing the recovery distance without compromising the safety installation reason of a fixed object may help reduce the number of fixed object crashes.

Also, the non-interstate system has many nonstandard intersections (skew, general design, sight distance, etc.) that likely cause driver confusion as they enter or exit the interstate contributing to area crashes.

2.0 Introduction

Figure 1 shows the project limits of the crash data review. As stated previously, SCDOT is proposing to widen Interstate 85 (I-85) from four lanes to six lanes from near Gossett Rd. (S-57) (Exit 80) to just north of SC 18 (Exit 96) in Spartanburg and Cherokee Counties.

For the interstate corridor, historic crash data from the last three years, from January 2011 through December 2013, were reviewed for the project study area including the following interchanges: Exit 82 (Bud's Drive)/Exit 83 (SC 110), Exit 87 (Green River Rd.), Exit 95 (SC 18 – Gaffney), and Exit 96 (SC 18 – Shelby including the Gaffney Ferry Road northbound on-ramp). Data included accidents occurring on the interstate as well as on the ramps. One additional fatality that occurred since December 2014 is also discussed. For other study area roads in the vicinity of these interchanges, crash data included events from January 2011 through August 2014.

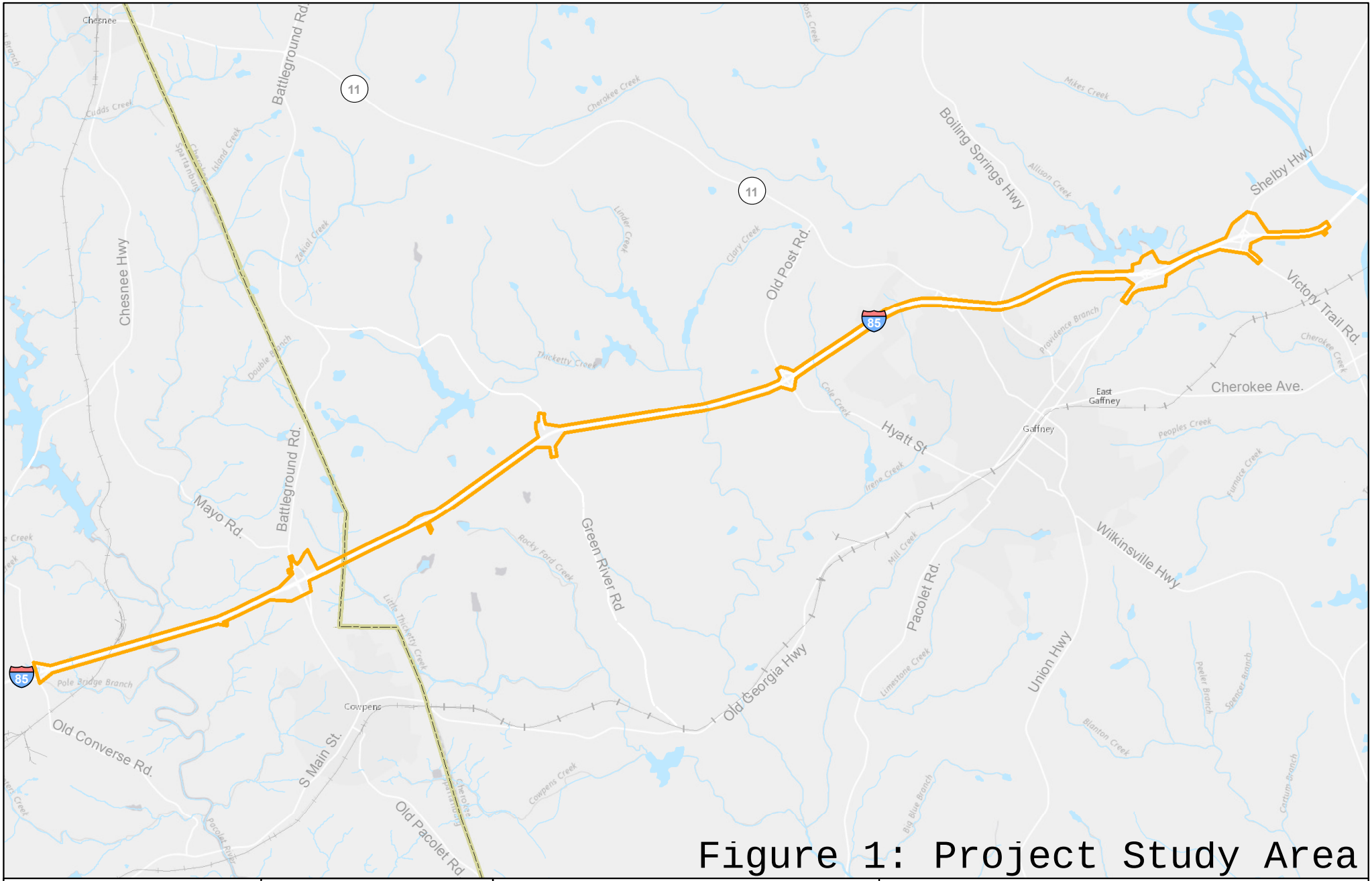
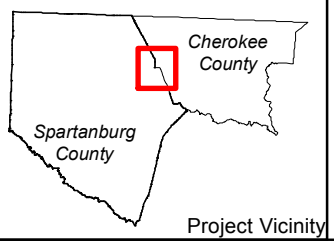


Figure 1: Project Study Area

SCDOT



I-85 Widening MM 80 to MM 96

Project Study Area
Cherokee & Spartanburg Counties

N

0 1 2 4
Miles

Project Study Area
County Line
Road
River/Stream
Rail
Water Body

Source: ESRI; US Census; USDA Geospatial Gateway; SCDNR

3.0 Data Collection

Crash data was provided for the project study area by SCDOT Safety Office staff for the three year period from January 2011 through December 2013. Location, manner of collision, and severity were noted for crash locations on I-85 and its ramps. Location and manner of collision were noted for the accidents on other study area roads in the vicinity of the interchanges (the direction of the accidents on these roads was not available).

The following list shows the manner of collision classification:

- Not a Collison with a Motor Vehicle
    - Non-Collision (run off road, rollover/overturn, jackknife, etc.)
    - Collision with Object Not Fixed (animal, pedestrian, etc.)
    - Collision with Fixed Object (guardrail, median, ditch, sign, tree, etc.)
- Rear End
- Head-on
- Rear-to-Rear (vehicle backing into the rear of another vehicle)
- Angle
- Sideswipe, Same Direction
- Sideswipe, Opposite Direction

Injury Status is broken into five categories: property damage only (PDO) and INJ1 – INJ4, with INJ1 being the least severe and INJ4 as fatalities. The following is a description of the injury status codes:

- PDO – Property Damage Only
- INJ1 – Possible
- INJ2 – Non-Incapacitating
- INJ3 – Incapacitating
- INJ4 – Fatal

SCDOT Safety Office staff reviewed many of the locations classified as injury status of INJ4 (fatality) or unique accident types such as rear-to-rear on the interstate to confirm the detailed accident report was coded into the database properly.

There were 902 crashes on I-85 from MM 80 to MM 96 on the mainline and ramps in the vicinity of Exits 82, 83, 87, 95 and 96 that were reviewed. A summary table of the raw data is provided in the **Appendix**. The crash data were mapped according to type and location and are shown on **Figures 2 – 12.** These figures also provide a breakdown of the manner of collision (rear end, head-on, sideswipe, etc.) and the injury status (PDO, injury, or fatality (INJ4)) for each crash.

Since the December 2014 submittal an additional fatality crash occurred. This is discussed later in the report.

In addition to the interstate data, the following roadways were included in the study area (data included crashes from January 2011 through August 2014):

- Bud's Drive (Spartanburg County)
- S-42-737 (Bud Arthur Road and Frontage Road N) (Spartanburg County)
- SC 110 (Spartanburg County)
- Edgefield Road (S-42-22) (Spartanburg County)
- Horry Road (S-42-9725 and S-42-9724) (Spartanburg County)
- Phillips Drive (Spartanburg County)
- Webber Road (S-11-665) (Cherokee County)
- Lindley Road (Cherokee County)
- Hampshire Drive (S-18-661) (Cherokee County)
- Suzanna Drive (Cherokee County)
- Matthew Road (S-11-614) (Cherokee County)
- SC 18 (Cherokee County)
- Fatz Drive (Cherokee County)
- Pleasant School Road (S-11-82) (Cherokee County)
- Wilcox Avenue (S-11-668) (Cherokee County)
- SC 329 (Victory Trail Road) (Cherokee County)
- Wind Hill Road (S-11-663) (Cherokee County)
- Gaffney Ferry Road (S-11-49) (Cherokee County)

There were 117 crashes on the other study area state, secondary, and county roads during the study time period. Type of collision is noted on the figures. Due to the availability of data, the direction of travel is not noted in the provided data for these locations. A unique symbology and numbering system is used for these crashes and is shown in **Figures 2 - 12.** Note that some roadways were accident free during our study time period. Crash stack data and summary data is provided in the **Appendix.**

A crash summary and analysis is provided in **Section 4**.

4.0 Crash Analysis

The data was summarized into eight groups, five interchange areas Exit 82 (Bud's Drive)/Exit 83 (SC 110), Exit 87 (Green River Rd.), Exit 95 (SC 18 – Gaffney), and Exit 96 (SC 18 – Shelby including the Gaffney Ferry Road northbound on-ramp) and three segments for the remainder of I-85 in the study area (MM 80 to Exit 82, Exit 83 to Exit 87, Exit 87 to Exit 95). Data on I-85 within 0.5 miles of an interchange was included in the respective interchange summaries. For

each group, the crash data were summarized and analyzed to identify any hot spots, trends, or locations with particularly high crash frequency.

4.1 I-85 from MM 80 to Exit 82 (Bud's Drive)

I-85 has two travel lanes in each direction in this segment with vertical curves noted in the vicinity of the following locations: MM 80.4, MM 80.7, and MM 81.0. This segment is approximately 1.5 miles long. The I-85 crash data for this segment are shown **Figure 2**.

Table 1 shows a summary of the crash data on this segment.

Table 1:
I-85 between MM 80 and Exit 82 Crash Data Summary

I-85 North

Collision Type	Number of Collisions	Injury Status		
		Property Damage Only	Injury (INJ1 – INJ3)	Fatality (INJ4)
Non-Collision	2	2	0	0
Non-Fixed Object	5	5	0	0
Fixed Object	18	17	1	0
Rear End	38	31	7	0
Angle	2	2	0	0
Sideswipe, Same Direction	9	7	2	0
Sideswipe, Opposite Direction	1	1	0	0
Total	**75**	**65**	**10**	**0**

I-85 South

Collision Type	Number of Collisions	Injury Status		
		Property Damage Only	Injury (INJ1 – INJ3)	Fatality (INJ4)
Non-Collision	0	0	0	0
Non-Fixed Object	2	2	0	0
Fixed Object	8	7	1	0
Rear End	21	18	3	0
Head-on	1	0	1	0
Angle	5	4	1	0
Sideswipe, Same Direction	4	3	1	0
Unknown	1	1	0	0
Total	**42**	**35**	**7**	**0**

NOT TO SCALE

(75) 12/26/2012 INJ1
(74) 1/11/2013 PDO
(73) 3/2/2013 PDO
(72) 3/1/2013 PDO
(71) 3/1/2013 PDO
(70) 1/30/2012 PDO
(69) 6/12/2011 PDO
(68) 11/13/2011 PDO
(67) 5/24/2011 PDO
(66) 8/20/2012 PDO
(65) 11/23/2011 PDO
(64) 11/26/2013 PDO
(63) 12/20/2013 PDO
(62) 11/26/2013 PDO
(61) 9/9/2011 PDO
(60) 1/20/2012 PDO
(59) 11/26/2013 PDO
(58) 5/3/2013 INJ1
(57) 3/1/2012 PDO
(56) 11/27/2013 PDO
(55) 10/12/2012 PDO
(54) 8/19/2013 PDO
(53) 3/1/2012 PDO
(52) 3/1/2012 INJ1
(51) 11/17/2013 PDO
(50) 5/27/2011 PDO
(49) 10/8/2012 PDO
(48) 9/30/2011 PDO
(47) 4/21/2012 PDO
(46) 11/17/2011 PDO
(45) 12/24/2011 INJ1
(44) 12/26/2012 INJ1
(43) 11/17/2011 INJ1
(42) 12/22/2011 INJ1
(41) 8/9/2011 PDO
(40) 9/9/2011 INJ1
(39) 12/26/2012 PDO
(38) 9/7/2012 PDO
(37) 9/7/2013 INJ1
(36) 5/15/2012 PDO
(35) 12/26/2012 PDO
(34) 3/6/2011 PDO
(33) 4/22/2013 PDO
(32) 11/26/2013 PDO
(31) 2/19/2012 PDO
(30) 1/6/2012 PDO
(29) 8/19/2013 PDO
(28) 11/17/2011 PDO
(27) 9/14/2011 PDO
(26) 2/19/2012 PDO
(25) 5/27/2011 PDO
(24) 5/27/2011 INJ1
(23) 10/25/2013 PDO
(22) 11/23/2011 PDO
(21) 5/23/2013 PDO
(20) 11/23/2011 PDO
(19) 10/25/2013 PDO
(18) 5/23/2013 PDO
(17) 11/17/2013 PDO
(16) 8/21/2013 PDO
(15) 9/18/3012 PDO
(14) 7/14/2013 PDO
(13) 9/1/2012 PDO
(12) 1/30/2011 PDO
(11) 6/6/2013 PDO
(10) 10/19/2011 PDO
(9) 12/26/2012 PDO
(8) 8/19/2013 PDO
(7) 5/23/2013 PDO
(6) 11/27/2013 PDO
(5) 6/4/2012 PDO
(4) 10/31/2013 PDO
(3) 11/17/2013 PDO
(2) 9/23/2011 PDO
(1) 3/23/2012 PDO

(861) 5/5/2013 PDO
(862) 5/5/2013 PDO
(863) 5/5/2013 PDO
(864) 12/30/2012 PDO
(865) 7/21/2012 PDO
(866) 1/28/2013 PDO
(867) 12/22/2011 PDO
(868) 12/21/2012 PDO
(869) 7/22/2013 PDO
(870) 1/10/2011 PDO
(871) 8/30/2013 PDO
(872) 8/28/2012 INJ1
(873) 5/23/2013 INJ2
(874) 11/26/2013 PDO
(875) 2/15/2013 PDO
(876) 5/27/2011 PDO
(877) 7/22/2013 PDO
(878) 2/14/2013 PDO
MM 81
(879) 6/2/2013 PDO
(880) 4/4/2013 PDO
(881) 11/27/2013 PDO
(882) 11/18/2013 PDO
(883) 6/7/2013 INJ1
(884) 1/3/2013 PDO
(885) 6/23/2013 PDO
(886) 4/29/2012 PDO
(887) 12/7/2012 PDO
(888) 11/13/2011 INJ2
(889) 9/25/2013 PDO
(890) 2/2/2012 INJ2
(891) 10/25/2013 PDO
(892) 4/4/2013 PDO
(893) 9/8/2011 PDO
(894) 10/26/2012 PDO
(895) 6/21/2012 PDO
(896) 4/27/2012 PDO
(897) 12/17/2012 PDO
(898) 9/6/2012 PDO
(899) 8/30/2013 INJ1
(900) 7/22/2013 PDO
(901) 4/29/2013 INJ3
(902) 11/27/2011 PDO
MM 80

Interstate Crashes Legend

(x) **Crash Identification Number**
XX/XX/XXXX **Date of Crash**

Manner of Collision

- **Not Collision with Motor Vehicle in Transport (Non-Collision)**
- **Not Collision with Motor Vehicle in Transport (Collision with Object Not Fixed)**
- **Not Collision with Motor Vehicle in Transport (Collision with Fixed Object)**
- **Rear End**
- **Head-On**
- **Rear-to-Rear**
- **Angle**
- **Sideswipe, Same Direction**
- **Sideswipe Opposite Direction**
- **Unknown**

Injury Status

PDO - Property Damage Only
INJ1 - Possible Injury
INJ2 - Non-Incapacitating Injury
INJ3 - Incapacitating
INJ4 - Fatal

BIHL ENGINEERING

I-85 Widening Project
MM 80 – MM 96

Mainline between
MM 80 – Exit 92

Figure 2

There was one incapacitating accident southbound (MM 80.058) on I-85 that was classified as an angle collision on a dry pavement. No additional information was available as to mitigating factors.

Northbound rear-end collisions are the most numerous on this section of roadway with three clusters located between MM 80 and MM 81. There are three vertical curves in this section and the clusters track with the curves. There is also a cluster of rear-end crashes southbound at approximately MM 81.5.

4.2 Exit 82 (Bud's Drive)

I-85 Exit 82 is a northbound only off-ramp and provides access to Bud's Drive and Bud Arthur Bridge Road approximately 1.2 miles south of the Exit 83 overpass. The I-85 and other study area road crash data for the vicinity of this interchange are shown **Figure 3**. This segment of I-85 is approximately 1.5 miles long. There are vertical curves at the following northbound and southbound locations: MM 82, MM 82.2, and MM 83.

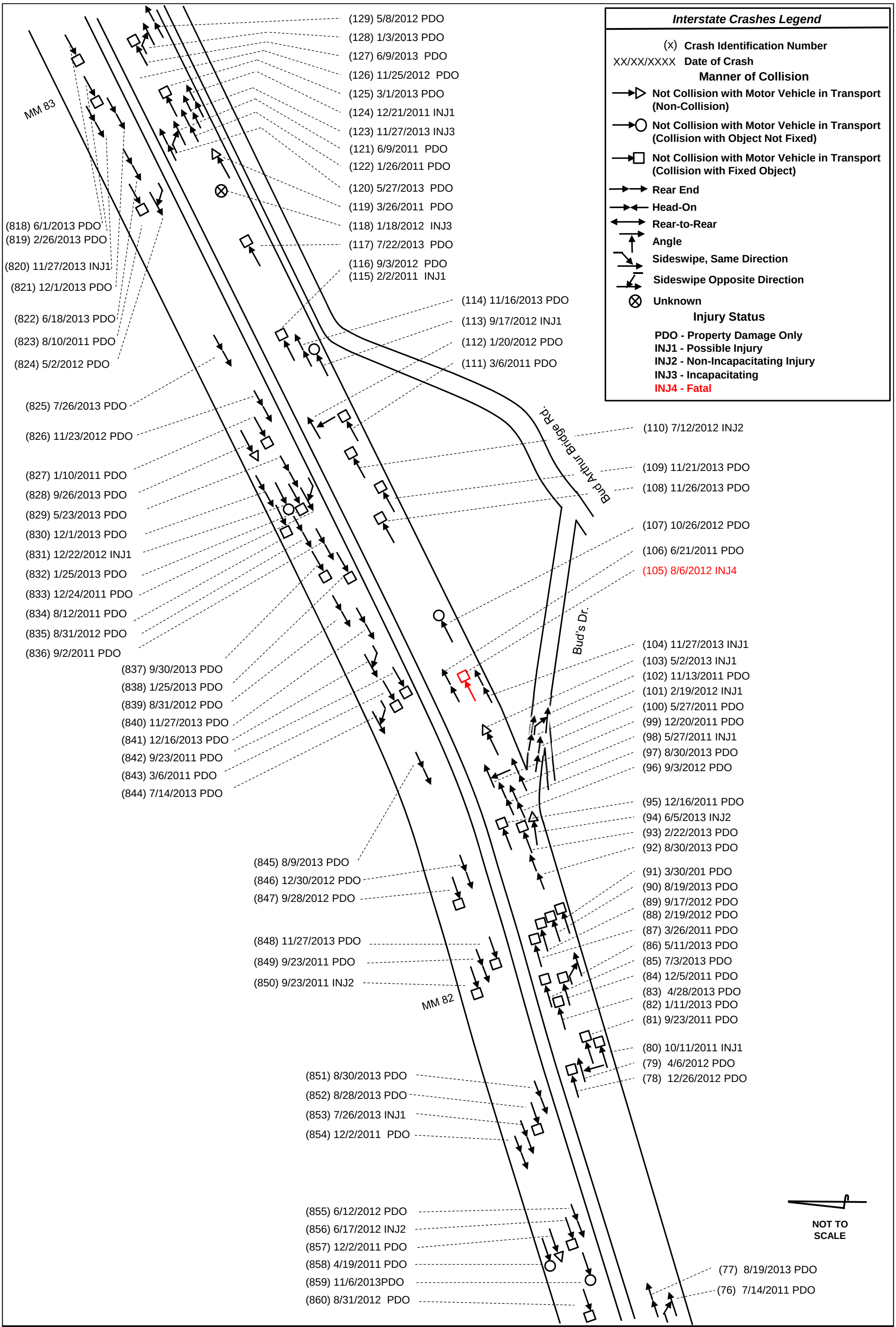
Bud's Drive is a slip road from I-85 northbound to Bud Arthur Bridge Road where Bud's Drive is stop controlled. There were three accidents on Bud's Drive as vehicles exited the interstate (two rear-end and one angle). The unusual ramp design with other traffic crossing the ramp as it merges with Bud's Drive was a likely contributing factor to these accidents. There are 26 northbound accidents in the vicinity of Bud's Drive: 14 were collisions with a fixed object, six were rear end, two were angle collisions, and the remaining crashes were sideswipes, non-collision, or collision with object not fixed.

Of the collisions with fixed objects south of the exit ramp, four crashes involved a ditch within 0.07-mile stretch (MMs 81.946, 81.989, 81.99, 82.013). The remaining fixed object collisions involved crashes with medians, a culvert, embankments etc. but were not clustered in one particular area.

A collision with the median barrier just beyond Exit 82 at MM 82.322 resulted in a fatality. The crash occurred on dry pavement. No other contributing factors were available.

There were two incapacitating injury crashes on northbound I-85 in the vicinity of Exit 82. One occurred at MM 82.83 and was classified as not a collision with a motor vehicle with an unknown sequence of events on wet pavement. The other occurred at MM 82.935 and was classified as a rear-end crash on dry pavement.

Clusters of northbound and southbound rear-end crashes occurred at the MM 83 vertical curve. There does not appear to be an increase in crash occurrences at the other vertical curve location.



BIHL ENGINEERING	**I-85 Widening Project MM 80 – MM 96**	**Exit 82 Vicinity**	**Figure 3**

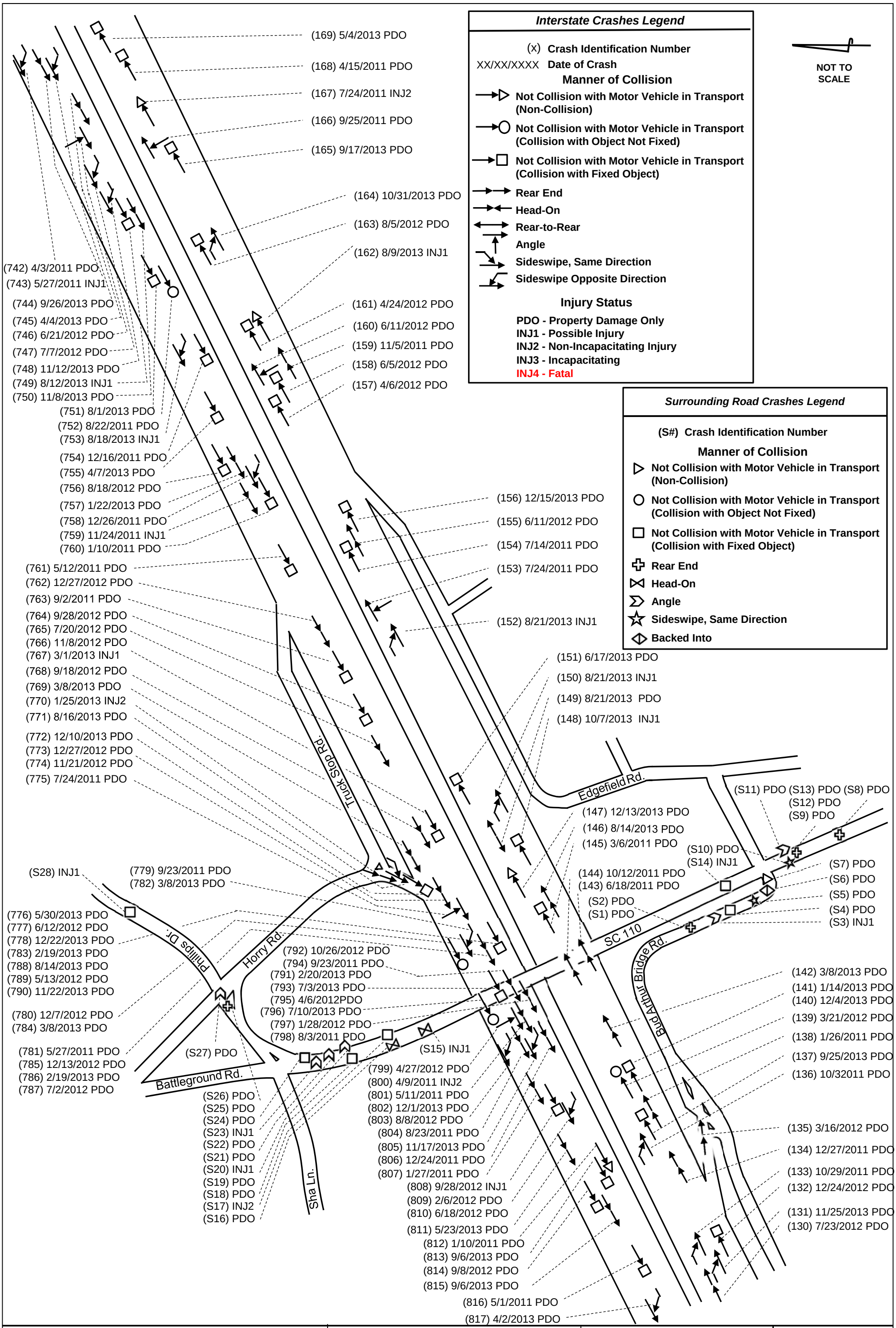
Table 2 shows a summary of the crash data at this location on I-85 or its ramps.

Table 2: Exit 82 Crash Data Summary				
I-85 North				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	3	1	2	0
Non-Fixed Object	2	1	1	0
Fixed Object	24	20	3	1
Rear End	16	11	5	0
Angle	3	3	0	0
Sideswipe, Same Direction	5	5	0	0
Unknown	1	0	1	0
Total	54	41	12	**1**
I-85 South				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	2	2	0	0
Non-Fixed Object	3	2	1	0
Fixed Object	16	14	2	0
Rear End	18	16	2	0
Sideswipe, Same Direction	4	4	0	0
Total	43	38	5	**0**

4.3 Exit 83 (SC 110)

I-85 Exit 83 provides northbound and southbound access to SC 110 via Bud Arthur Bridge Road, Edgefield Road, Horry Road, Sha Lane, and Phillips Drive. The crash data for this interchange are shown in **Figure 4**. This segment of I-85 is approximately 0.75 miles long. There is a vertical curve northbound at MM 83.5.

As shown in **Figure 4**, there were 34 collisions in less than a 0.04 mile range south of the southbound on-ramp. Of these accidents, 15 were classified as rear-end collisions. Possible contributing factors to the high occurrence of rear-end collisions in this area include the radius of the on-ramp coupled with a short merge lane (approximately 130 feet full width merge distance) and the close proximity to a narrowed clear zone due to an overpass for SC 110.



BIHL ENGINEERING

I-85 Widening Project
MM 80 – MM 96

Exit 83
Vicinity

Figure
4

Table 3 shows a summary of the crash data at this location on I-85 or its ramps.

Table 3: Exit 83 Crash Data Summary				
I-85 North				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	3	1	2	0
Non-Fixed Object	1	1	0	0
Fixed Object	16	15	1	0
Rear End	10	10	0	0
Rear-to-Rear	1	1	0	0
Angle	3	3	0	0
Sideswipe, Same Direction	6	4	2	0
Total	40	35	5	**0**
I-85 South				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	1	1	0	0
Non-Fixed Object	4	4	0	0
Fixed Object	26	23	3	0
Rear End	28	24	4	0
Angle	3	3	0	0
Sideswipe, Same Direction	14	13	1	0
Total	76	68	8	**0**

There does not appear to be an increase in crash occurrences at the vertical curve location.

As Bud Arthur Bridge Road approaches SC 110, there appears to be sight distance issues in both directions due to tree cover.

4.4 I-85 from Exit 83 (SC 110) to Exit 87 (S. Green River Road)

This segment is approximately two miles long. I-85 has two travel lanes in each direction in this segment with a vertical curve noted at MM 83.9 northbound.

The I-85 crash data for this segment of I-85 are shown **Figure 5**. **Table 4** shows a summary of the crash data at this location.

NOT TO SCALE

(196) 10/9/2013 PDO
(195) 2/12/2013 PDO
(194) 2/19/2013 INJ1
(193) 2/6/2011 PDO
(192) 4/12/2011 PDO

(710) 7/21/2013 PDO
(711) 7/20/2012 PDO
(712) 3/5/2012 PDO
(713) 7/24/2013 PDO
(714) 6/20/2012 INJ2
(715) 5/9/2013 PDO

(191) 11/20/2012 PDO

(190) 11/23/2011 PDO
(189) 7/12/2012 INJ1
(188) 11/23/2011 PDO
(187) 2/19/2011 INJ1
(186) 2/4/2011 PDO

(716) 1/18/2012 PDO
(717) 9/14/2011 INJ4
(718) 1/10/2011 PDO
(719) 9/18/2012 PDO
(720) 4/3/2011 PDO

(185) 7/4/2011 PDO
(184) 11/1/2013 PDO
(183) 6/29/2012 PDO

(721) 6/4/2012 PDO

(722) 1/11/2013 PDO

(723) 1/17/2011 PDO
(724) 4/4/2013 PDO
(725) 1/4/2012 INJ2

(182) 7/2/2012 PDO
(181) 7/2/2011 PDO
(180) 8/7/2011 PDO

MM 85

(179) 8/22/2013 PDO
(178) 6/18/2011 INJ1
(177) 11/9/2012 PDO

(726) 12/21/2013 PDO
(727) 2/27/2013 PDO
(728) 1/11/2011PDO

(729) 4/3/2011 PDO
(730) 8/7/2011 PDO
(731) 8/7/2011 PDO
(732) 9/23/2011 PDO

(176) 7/8/2013 PDO

(175) 1/22/2013 PDO

(733) 9/2/2011 PDO
(734) 12/27/2012 INJ1
(735) 8/7/2011 PDO
(736) 8/7/2011 PDO
(737) 8/21/2013 PDO

(174) 1/2/2013 PDO

(738) 9/30/2011 PDO

(173) 8/15/2012 PDO

(739) 7/20/2012 PDO

(172) 12/2/2013 PDO

(171) 9/27/2013 INJ1

(170) 9/28/2013 PDO

(740) 1/11/2013 PDO

MM 84

(741) 8/5/2011 INJ4

Interstate Crashes Legend

(x) **Crash Identification Number**
XX/XX/XXXX **Date of Crash**

Manner of Collision

Not Collision with Motor Vehicle in Transport (Non-Collision)
Not Collision with Motor Vehicle in Transport (Collision with Object Not Fixed)
Not Collision with Motor Vehicle in Transport (Collision with Fixed Object)
Rear End
Head-On
Rear-to-Rear
Angle
Sideswipe, Same Direction
Sideswipe Opposite Direction
Unknown

Injury Status

PDO - Property Damage Only
INJ1 - Possible Injury
INJ2 - Non-Incapacitating Injury
INJ3 - Incapacitating
INJ4 - Fatal

BIHL ENGINEERING

I-85 Widening Project
MM 80 – MM 96

Mainline between Exit 83 and Exit 87

Figure 5

Table 4: I-85 between Exit 83 and Exit 87 Crash Data Summary				
I-85 North				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	1	1	0	0
Non-Fixed Object	2	2	0	0
Fixed Object	11	10	1	0
Rear End	5	3	2	0
Angle	3	2	1	0
Sideswipe, Same Direction	4	3	1	0
Backed Into	1	1	0	0
Total	**27**	**22**	**5**	**0**
I-85 South				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	3	2	1	0
Non-Fixed Object	0	0	0	0
Fixed Object	13	11	1	1
Rear End	11	10	1	0
Head-on	1	0	0	1
Angle	1	1	0	0
Sideswipe, Same Direction	2	2	0	0
Unknown	1	1	0	0
Total	**32**	**27**	**3**	**2**

Collision with a fixed object is the most common crash type with most crashes occurring around MM 84.7. There is also a cluster of rear-end crashes on southbound I-85 around MM 84.7. This is in the vicinity of an overpass, with limited clear zone due to the overpass structure and guardrail around the bridge supports; however, the cause of other incidents is unclear based on available data.

There were two fatality crashes southbound in this section both on I-85southbound. One was a head-on collision at MM 83.857 and the other was a collision with a fixed object (fence) at MM 85.489. Both occurred on dry pavement.

4.5 Exit 87 (S. Green River Road)

I-85 Exit 87 provides access to S. Green River Road via Cannons Campground and Lindley Road for northbound traffic and via Webber Road and S-665 for southbound traffic. The crash data for this interchange are shown in **Figure 6**. This segment of I-85 is approximately 1.25 miles long. There are vertical curves at MM 86.1 (northbound and southbound) and MMs 86.4, 86.7, and 87.1 (southbound).

Table 5 below shows a summary of the crash data at this location on I-85 or its ramps.

Table 5:
Exit 87 Crash Data Summary

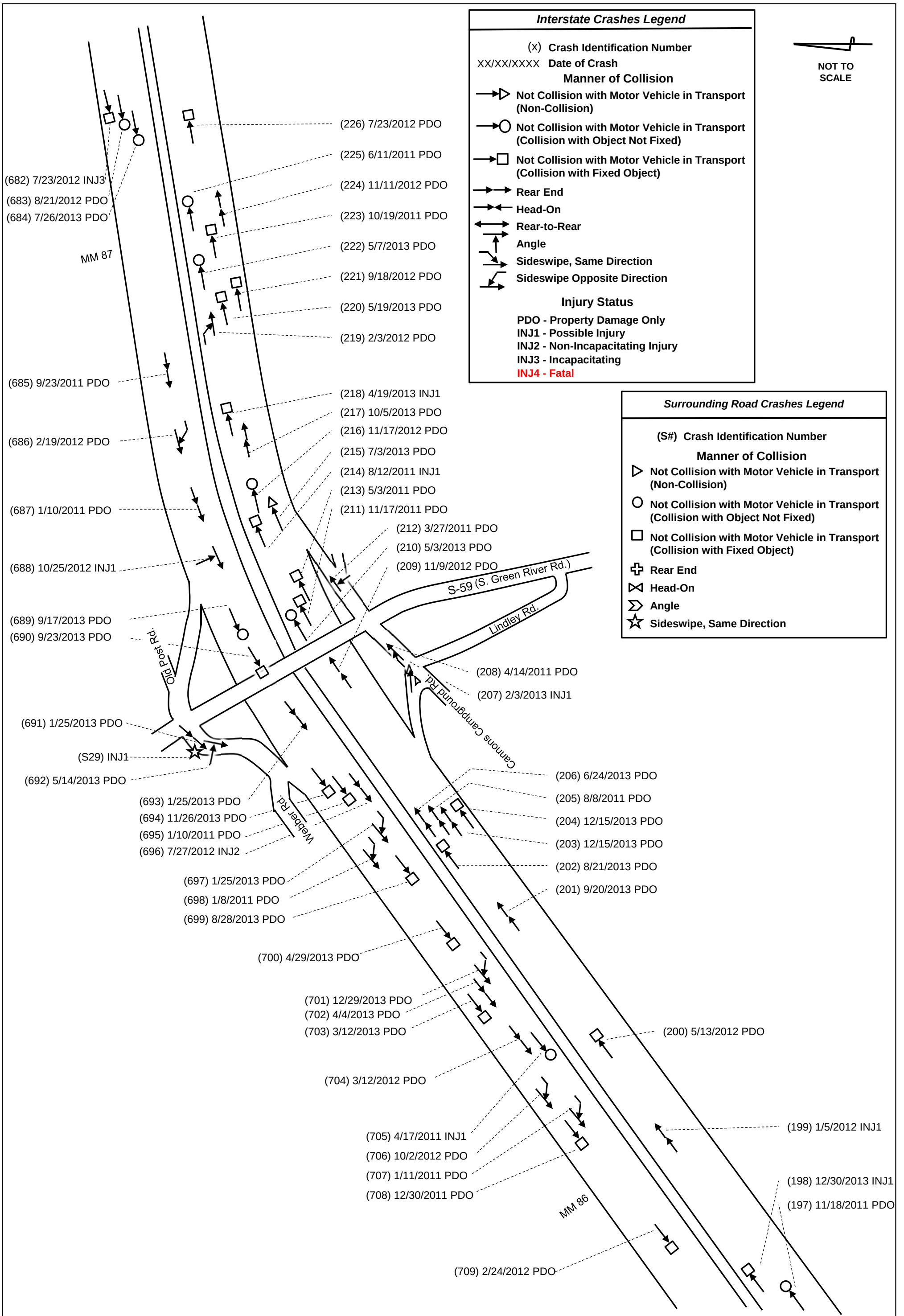
I-85 North

Collision Type	Number of Collisions	Injury Status		
		Property Damage Only	Injury (INJ1 – INJ3)	Fatality (INJ4)
Non-Collision	2	1	1	0
Non-Fixed Object	5	5	0	0
Fixed Object	12	9	3	0
Rear End	8	7	1	0
Angle	1	1	0	0
Sideswipe, Same Direction	2	2	0	0
Total	30	25	5	**0**

I-85 South

Collision Type	Number of Collisions	Injury Status		
		Property Damage Only	Injury (INJ1 – INJ3)	Fatality (INJ4)
Non-Collision	0	0	0	0
Non-Fixed Object	4	3	1	0
Fixed Object	9	8	1	0
Rear End	7	6	1	0
Angle	2	1	1	0
Sideswipe, Same Direction	6	6	0	0
Total	28	24	4	**0**

There was one incapacitating accident in this segment which occurred southbound at approximately MM 87.112. This was a collision with a fixed object (median barrier) and occurred on dry pavement.



BIHL ENGINEERING	I-85 Widening Project MM 80 – MM 96	Exit 87 Vicinity	Figure 6

As shown in **Figure 6**, the number of accidents near the interstate ramps was not atypical. The vertical curve occurs just before the northbound off-ramp and the southbound on-ramp; however, there is no apparent increase in crashes at these locations.

4.6 I-85 from Exit 87 (S. Green River Road) to Exit 95 (SC 18)

I-85 has two travel lanes in each direction in this segment with vertical curves noted in the vicinity of the following locations: MMs 89, MM 91.8, MM 92.7 northbound, and MMs 89.1, MM 90.6, MM 91.2, MM 91.7, MM 91.9, and MM 92.8 southbound. This segment is approximately 5.75 miles long.

Crash data for this segment are shown **Figures 7 - 10**.

Table 6 shows a summary of the crash data at this location.

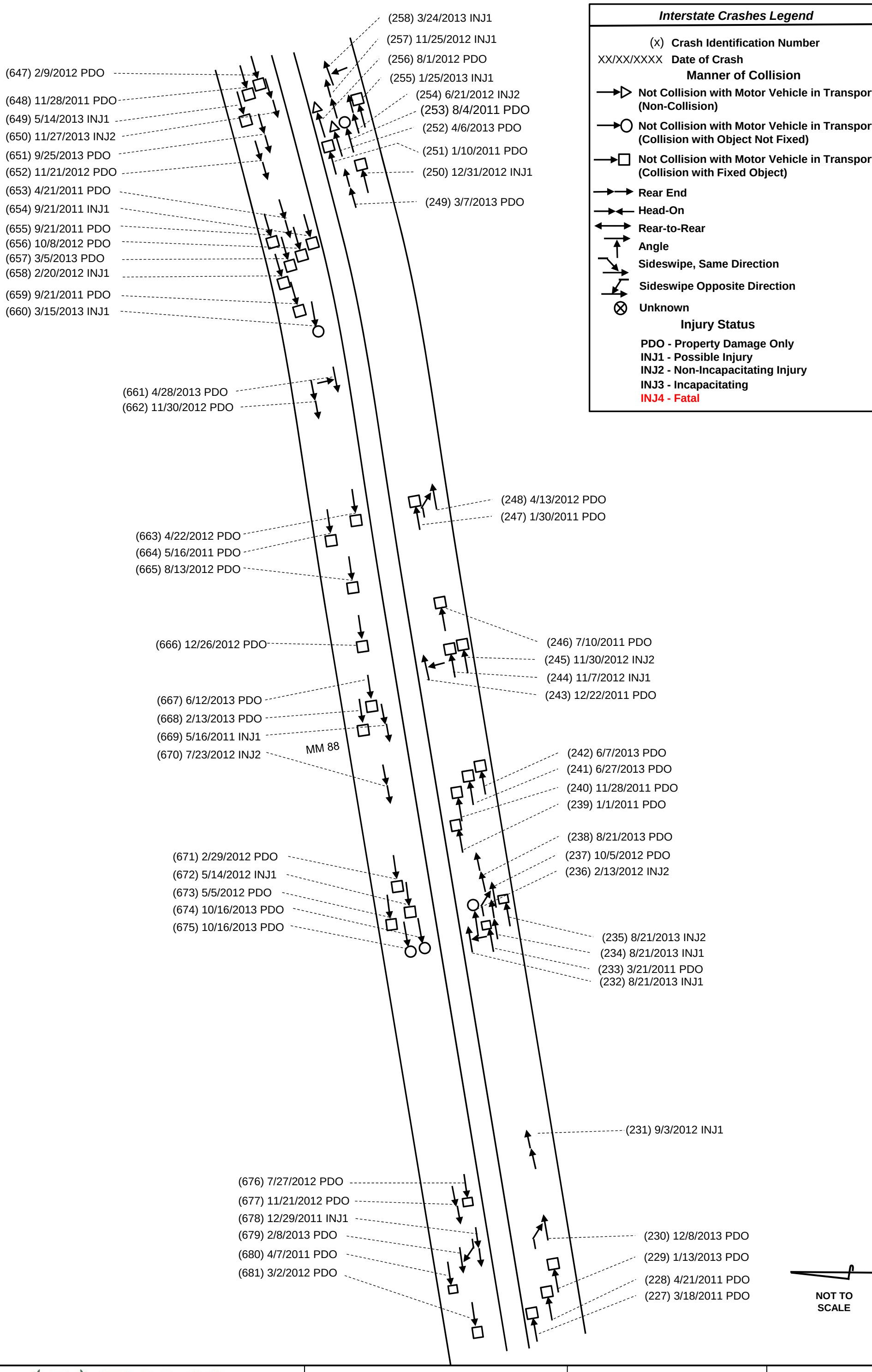
Table 6:
I-85 between Exit 87 and Exit 95 Crash Data Summary

I-85 North

Collision Type	Number of Collisions	Injury Status		
		Property Damage Only	Injury (INJ1 – INJ3)	Fatality (INJ4)
Non-Collision	6	6	0	0
Non-Fixed Object	13	10	2	1
Fixed Object	74	58	16	0
Rear End	26	16	10	0
Angle	16	8	7	1
Sideswipe, Same Direction	26	23	3	0
Total	161	121	38	**2**

I-85 South

Collision Type	Number of Collisions	Injury Status		
		Property Damage Only	Injury (INJ1 – INJ3)	Fatality (INJ4)
Non-Collision	2	2	0	0
Non-Fixed Object	9	8	1	0
Fixed Object	53	44	9	0
Rear End	31	21	10	0
Angle	11	6	5	0
Sideswipe, Same Direction	18	17	1	0
Unknown	2	2	0	0
Total	126	100	26	0



Interstate Crashes Legend

(X) **Crash Identification Number**

XX/XX/XXXX **Date of Crash**

Manner of Collision

- **Not Collision with Motor Vehicle in Transport (Non-Collision)**
- **Not Collision with Motor Vehicle in Transport (Collision with Object Not Fixed)**
- **Not Collision with Motor Vehicle in Transport (Collision with Fixed Object)**
- **Rear End**
- **Head-On**
- **Rear-to-Rear**
- **Angle**
- **Sideswipe, Same Direction**
- **Sideswipe Opposite Direction**
- **Unknown**

Injury Status

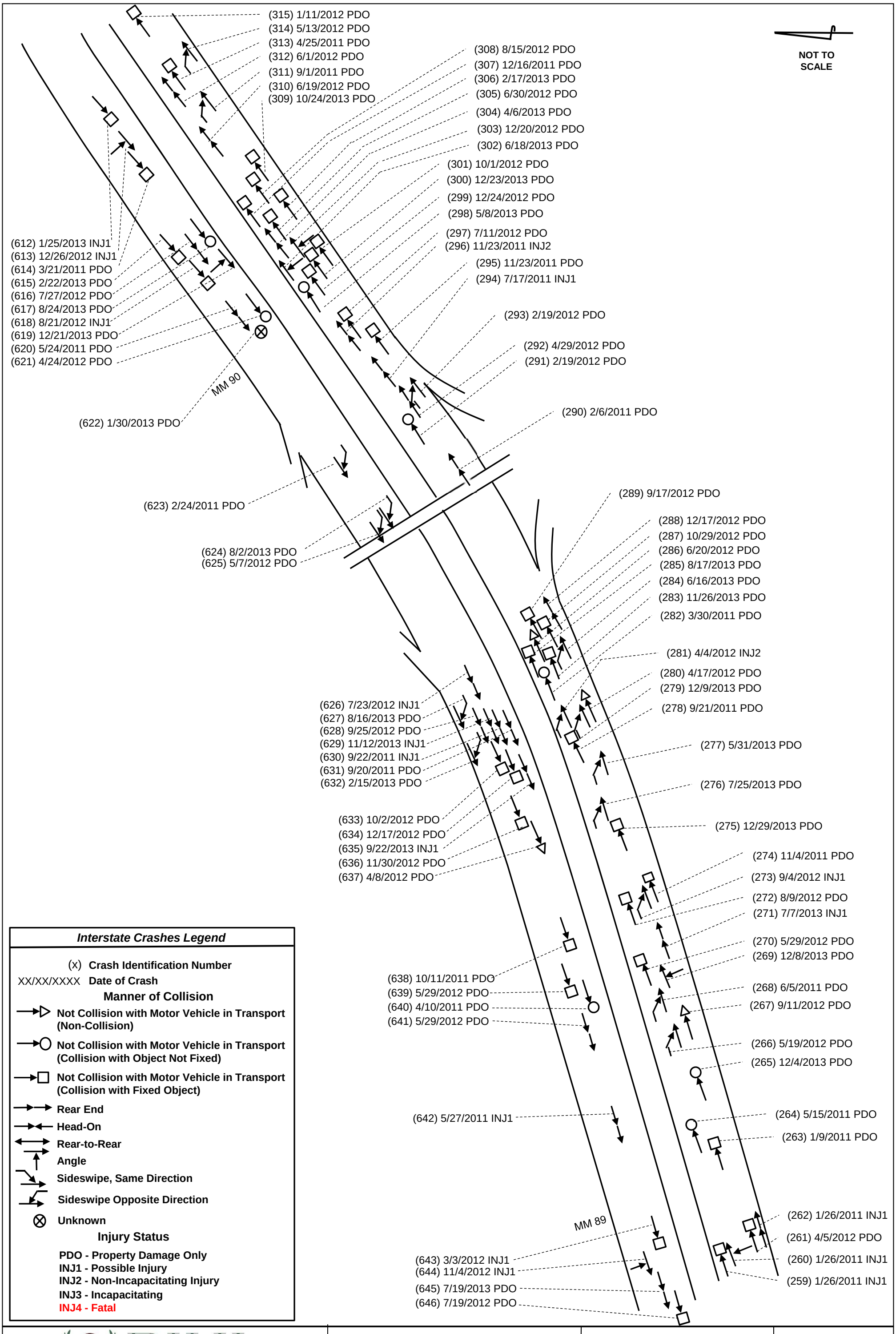
PDO - Property Damage Only
INJ1 - Possible Injury
INJ2 - Non-Incapacitating Injury
INJ3 - Incapacitating
INJ4 - Fatal

BIHL ENGINEERING

I-85 Widening Project
MM 80 – MM 96

Mainline Between Exit 87 and Exit 95 - 1

Figure 7



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I-85 Widening Project
MM 80 – MM 96

Mainline Between Exit 87 and Exit 95 - 2

Figure 8

NOT TO SCALE

(597) 10/11/2013 PDO
(349) 8/17/2013 PDO
(348) 2/26/2013 INJ2
(347) 9/4/2013 PDO
(346) 8/1/2011 INJ1
(345) 11/11/2013 PDO
(344) 4/16/2012 INJ1
(343) 5/4/2011 INJ1
(342) 7/1/2011 PDO
(598) 4/30/2011 PDO
(341) 8/19/2012 PDO
(340) 8/17/2013 PDO
(339) 2/7/2013 PDO
(599) 12/26/2012 PDO
(338) 9/2/2013 INJ1
(337) 5/12/2013 INJ2
(600) 8/31/2012 PDO
(336) 3/24/2012 PDO
(335) 5/15/2012 PDO
(601) 11/8/2011 PDO
(334) 12/23/2013 PDO
(333) 6/22/2011 INJ1
(602) 12/23/2013 PDO
(332) 4/7/2011 PDO
(331) 9/5/2011 INJ1
(603) 7/3/2011 PDO
(604) 4/18/2013 PDO
(330) 8/17/2013 PDO
(329) 8/1/2011 PDO
(605) 12/11/2011 PDO
(328) 9/9/2011 INJ1
(606) 6/22/2011 INJ3
(607) 7/27/2012 PDO
(327) 12/5/2011 PDO
MM 91
(326) 8/7/2012 PDO
(325) 2/19/2012 PDO
(324) 10/19/2011 PDO
(323) 11/29/2011 PDO
(322) 8/1/2013 INJ4
(608) 7/16/2012 PDO
(321) 5/4/2012 INJ1
(320) 4/12/2011 INJ2
(319) 4/20/2012 PDO
(318) 1/2/2013 PDO
(317) 1/17/2013 PDO
(609) 3/27/2011 PDO
(316) 3/6/2013 PDO
(610) 6/7/2013 PDO
(611) 1/25/2013 PDO

Interstate Crashes Legend

(x) **Crash Identification Number**
XX/XX/XXXX **Date of Crash**

Manner of Collision

Not Collision with Motor Vehicle in Transport (Non-Collision)
Not Collision with Motor Vehicle in Transport (Collision with Object Not Fixed)
Not Collision with Motor Vehicle in Transport (Collision with Fixed Object)
Rear End
Head-On
Rear-to-Rear
Angle
Sideswipe, Same Direction
Sideswipe Opposite Direction
Unknown

Injury Status

PDO - Property Damage Only
INJ1 - Possible Injury
INJ2 - Non-Incapacitating Injury
INJ3 - Incapacitating
INJ4 - Fatal

BIHL ENGINEERING

I-85 Widening Project
MM 80 – MM 96

Mainline Between Exit 87 and Exit 95 - 3

Figure 9

NOT TO SCALE

(387) 9/24/2012 PDO
(556) 10/3/2011 PDO
(557) 8/12/2012 PDO
(386) 12/16/2012 PDO
(558) 11/25/2012 INJ1
(559) 9/22/2011 PDO
(385) 11/3/2012 INJ2
(560) 10/19/2012 PDO
(561) 10/12/2013 PDO
(562) 12/16/2013 PDO
(384) 8/26/2011 PDO
(563) 12/21/2011 PDO
(564) 6/3/2011 PDO
(383) 7/5/2013 PDO
(382) 12/22/2011 INJ1
(381) 11/13/2013 PDO
(565) 10/29/2011 PDO
(566) 3/24/2012 PDO
(380) 12/20/2012 PDO
(379) 5/24/2013 PDO
(567) 12/6/2011 PDO
(378) 7/30/2012 PDO
(568) 7/22/2012 PDO
(377) 1/25/2013 PDO
MM 93
(376) 1/8/2013 PDO
(375) 2/11/2013 PDO
***1/20/2015 INJ4
(374) 3/26/2011 INJ1
(569)2/9/2011 PDO
(373) 6/15/2011 INJ1
(372) 5/4/2011 PDO
(570) 2/26/2012 PDO
(571) 8/14/2012 PDO
(371) 7/24/2011 INJ1
(572) 3/16/2011 INJ1
(573) 7/29/2012 PDO
(574) 3/24/2013 PDO
(370) 6/2/2011 PDO
(575) 10/11/2013 PDO
(369) 5/18/2011 PDO
(576) 12/23/2013 PDO
(368) 6/17/2013 PDO
(577) 9/22/2013 PDO
(367) 8/22/2012 PDO
(578) 11/30/2012 PDO
(366) 12/4/2013 PDO
(365) 3/29/2012 PDO
(364) 9/5/2011 PDO
(579) 12/23/2013 PDO
(580) 5/29/2012 PDO
(363) 12/17/2012 INJ1
(581) 7/27/2013 PDO
(582) 3/30/2012 INJ1
(362) 2/29/2012 INJ1
(583) 10/28/2011 INJ2
(584) 10/6/2012 PDO
(361) 11/26/2013 PDO
(585) 5/2/2013 PDO
(360) 9/17/2012 INJ4
(586) 10/6/2012 PDO
(359) 9/25/2013 PDO
(358) 3/3/2013 PDO
(357) 9/16/2012 PDO
(587) 9/21/2013 PDO
(356) 1/14/2013 PDO
(588) 11/26/2013 PDO
(355) 11/1/2013 PDO
(589) 9/25/2013 INJ3
(590) 8/7/2012 PDO
(591) 11/13/2011 INJ1
(592) 2/20/2011 PDO
(354) 1/11/2012 PDO
MM 92
(353) 5/22/2011 PDO
(352) 3/25/2012 PDO
(593) 8/16/2012 PDO
(351) 12/22/2011 PDO
(594) 7/27/2013 PDO
(350) 12/6/2011 PDO
(595) 10/14/2011 PDO
(596) 1/25/2013 PDO

Interstate Crashes Legend

(x) **Crash Identification Number**
XX/XX/XXXX **Date of Crash**
*** **Crash occurred after December 2013**

Manner of Collision

- **Not Collision with Motor Vehicle in Transport (Non-Collision)**
- **Not Collision with Motor Vehicle in Transport (Collision with Object Not Fixed)**
- **Not Collision with Motor Vehicle in Transport (Collision with Fixed Object)**
- **Rear End**
- **Head-On**
- **Rear-to-Rear**
- **Angle**
- **Sideswipe, Same Direction**
- **Sideswipe Opposite Direction**
- **Unknown**

Injury Status

PDO - Property Damage Only
INJ1 - Possible Injury
INJ2 - Non-Incapacitating Injury
INJ3 - Incapacitating
INJ4 - Fatal

BIHL ENGINEERING

I-85 Widening Project
MM 80 – MM 96

Mainline Between Exit 87 and Exit 95 - 4

Figure 10

There are clusters of fixed object crashes throughout this section which occur mainly in areas with limited shoulders on both sides due to fencing or guardrail for frontage roads, bridge structures, or embankments, or medians for bridges, etc.

There is also a cluster of fixed object and other crashes at the northbound on-ramp from Exit 90. This hot spot may have already been addressed because the on-ramp appears to be recently paved and may have been upgraded during that project. This should be reviewed during design to confirm SCDOT merging standards are met or if further action should be considered.

There were two incapacitating injury accidents on southbound I-85 in this segment. One occurred at approximately MM 91.078 and the other occurred at approximately MM 92.139. Both were classified as angle collisions on a dry pavement.

There are clusters of accidents in vicinity of the ramps for Exit 92, one of which is a fatal angle crash that occurred at the northbound on-ramp. The accident occurred near the start of the ramp and it is unclear if it involved merging vehicles or vehicles on the mainline. There is approximately 400 feet of full width merge area for vehicles to enter I-85.

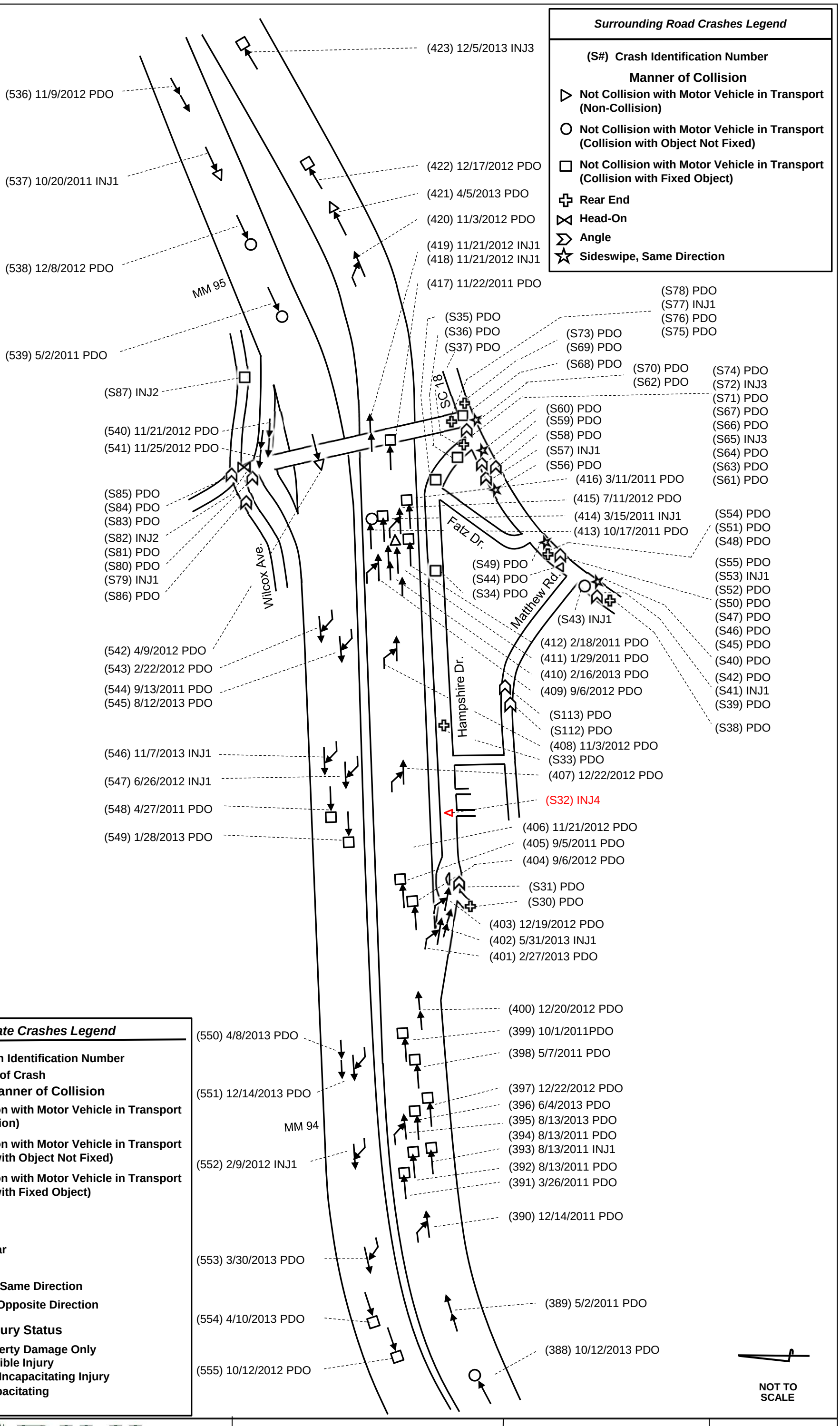
Another fatality occurred northbound on I-85 around MM 90.5 and involved a pedestrian. Further review may be desired to determine if there were other contributing factors that could be mitigated in the design such as lighting or geometric related items.

There was also a fatality that occurred since the December 2014 submittal in the vicinity of MM 92.94 just north of Providence Road. This was a head-on collision caused when a northbound vehicle crossed the cable barrier in the median and struck a southbound vehicle. Excessive speed was cited as a contributing factor.

4.7 Exit 95 (SC 18)

I-85 Exit 95 provides access to SC 18 – Shelby Hwy. via Hampshire Drive and Fatz Drive. The southbound on- and off-ramps connect directly onto SC 18. The northbound off-ramp connects to a bi-directional frontage road (Hampshire Drive) which provides access to SC 18 and adjacent properties. The crash data for this interchange are shown **Figure 11**. This segment of I-85 is approximately 1.75 miles long. There were no vertical curves identified in this section.

As seen in **Figure 11**, there are two areas of concern near Exit 85 northbound. In the approximate 0.2-mile stretch before the northbound exit ramp, there were five vehicle collisions with the median (MMs 93.851, 93.878, 93.946, 93.991, 94.026) and three vehicle collisions with the fence (MMs 93.884, 93.886, 93.927).



BIHL ENGINEERING

I-85 Widening Project
MM 80 – MM 96

Exit 95 Vicinity

Figure 11

Table 7 below shows a summary of the crash data at this location on I-85 or its ramps.

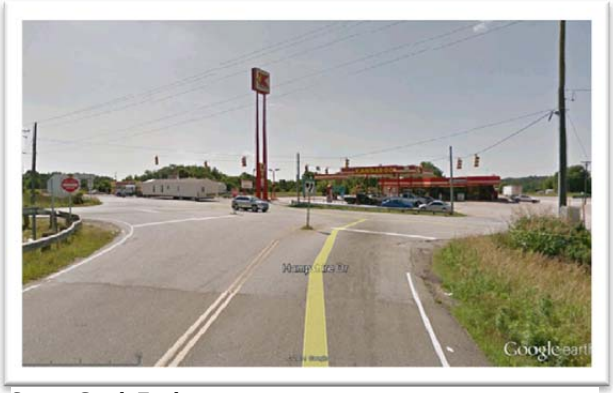
Table 7: Exit 95 Crash Data Summary				
I-85 North				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	2	2	0	0
Non-Fixed Object	2	2	0	0
Fixed Object	16	13	3	0
Rear End	7	4	3	0
Sideswipe, Same Direction	9	9	0	0
Total	36	30	6	**0**
I-85 South				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	2	1	1	0
Non-Fixed Object	2	2	0	0
Fixed Object	4	4	0	0
Rear End	4	4	0	0
Sideswipe, Same Direction	8	5	3	0
Total	20	16	4	**0**

There was one incapacitating accident northbound that occurred in this segment. This accident occurred at approximately MM 95.273 and was classified as a collision with a fixed object (guardrail face) on wet pavement.

There was also a fatality on Hampshire Drive just north of the I-85 northbound exit ramp that was classified as not a collision with a motor vehicle in transport (non-collision) and is noted as a pedestrian accident in dark conditions. Further review may be desired at this location to review if lighting is appropriate to be considered in the design.

On SC 18 from just east of Matthew Drive to the S-82 overpass there were 45 crashes during the study period, most of which were angle or sideswipe. Most crashes were classified as property damage only; however, two angle crashes on SC 18 between Hampshire Drive and the S-82 overpass were classified as incapacitating crashes (INJ3). This photo shows the approach to SC 18 from Hampshire Drive. As can be seen, this intersection is a nonstandard four-leg intersection with driveways that form two additional entry points to the intersection. The redesign of the SC

18 corridor including this intersection along with the intersections at Fatz Drive and Matthew Road would improve operations in this area.



Source: Google Earth

Photo: SC 18 at Hampshire Drive

4.8 Exit 96 and Gaffney Ferry Road On-Ramp

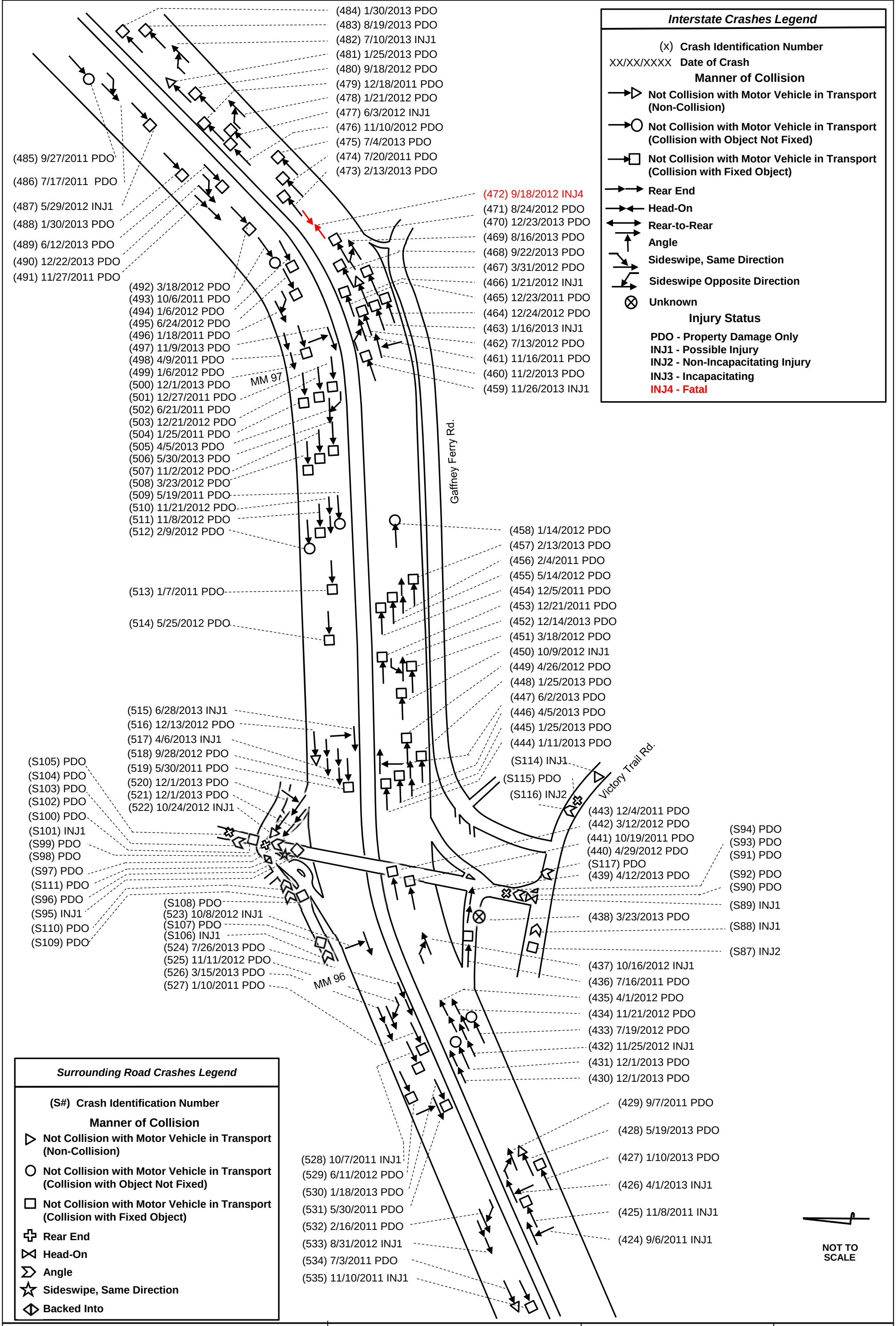
I-85 Exit 96 provides access to SC 18 – Shelby. Also included in this section is the I-85 northbound on-ramp at Gaffney Ferry Road. At Exit 96, the northbound and southbound on- and off-ramps connect directly to SC 18. The crash data for this section are shown **Figure 12**. This section of I-85 is approximately 2.25 miles long, there are vertical curves at MM 95.9 and 96.3 (northbound and southbound) and a vertical curve at 96.0 (southbound).

Table 8 below shows a summary of the crash data at this location on I-85 or its ramps.

As seen in **Figure 12**, immediately before the northbound exit ramp between MM 95.786 and 95.862, there is a cluster of accidents. Immediately after the northbound on-ramp, between MM 96.402 and 96.673, there were 14 accidents, nine of which were a vehicle striking the guardrail or median. Near the Gaffney Ferry Road on-ramp, between MM 96.994 and 97.17 there were 13 accidents, six of which were a vehicle striking the median barrier. There is not a full width merge area at the Gaffney Ferry Road on-ramp so vehicles must immediately begin their merging maneuver when they reach I-85. For the total segment analyzed, 24 of the 61 accidents were vehicles striking the median barrier.

On southbound I-85 between MM 96.836 and 97.018, there were 11 accidents, seven of which were vehicles striking the median barrier. In this area, there is an embankment limiting clear zone area.

There was one head-on collision on I-85 northbound (MM 97.196) near the Gaffney Ferry Road on-ramp. The crash occurred on wet pavement; no other mitigating factors were available.



BIHL ENGINEERING

I-85 Widening Project
MM 80 – MM 96

Exit 96
Vicinity

Figure
12

Table 8: Exit 96 Crash Data Summary				
I-85 North				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	3	2	1	0
Non-Fixed Object	3	3	0	0
Fixed Object	35	29	6	0
Rear End	7	6	1	0
Head-On	1	0	0	1
Angle	4	2	2	0
Sideswipe, Same Direction	6	4	2	0
Sideswipe, Opposite Direction	1	1	0	0
Unknown	1	1	0	0
Total	**61**	**48**	**12**	**1**
I-85 South				
Collision Type	**Number of Collisions**	**Injury Status**		
		Property Damage Only	**Injury (INJ1 – INJ3)**	**Fatality (INJ4)**
Non-Collision	3	2	1	0
Non-Fixed Object	4	4	0	0
Fixed Object	23	20	3	0
Rear End	10	8	2	0
Angle	5	3	2	0
Sideswipe, Same Direction	6	6	0	0
Total	**51**	**43**	**8**	**0**

5.0 Hot Spots and Trends

Trends and hot spots were found as a result of analysis crash location data along the proposed widening corridor.

A majority of the accidents were classified as property damage only; however, 14% were classified as possible injuries, 3% as non-incapacitating injuries, less than 1% as incapacitating injuries and less than 1% were classified as fatal. Fatality crashes were a mixture of fixed object, angle and head-on crashes as well as crashes involving pedestrians.

The most severe injuries (INJ3 and INJ4) and manner of collision are summarized below:

- Fatalities (INJ4)
  - I-85 North at MM 82.322 – Fixed Object - Guardrail
  - I-85 South at MM 83.857 – Head-on
  - I-85 South at MM 85.489 – Fixed Object - Fence
  - I-85 North at MM 90.555 – Object Not Fixed – Pedestrian
  - I-85 North at MM 92.179 – Angle
  - I-85 South at MM 92.94 – Head-on (occurred between December 2014 and February 2015)
  - I-85 North at MM 97.196 – Head-on
  - S-42-661 (Hampshire Drive) at MM 1.440 – Object Not Fixed – Pedestrian
- Incapacitating Injury (INJ3)
  - I-85 South at MM 80.058 – Angle
  - I-85 North at MM 82.935 – Angle
  - I-85 North at MM 82.83 – Not Collision with Motor Vehicle – Unknown Type
  - I-85 South at MM 87.112 – Fixed Object – Median Barrier
  - I-85 South at MM 91.078 – Angle
  - I-85 South at MM 92.139 - Angle
  - I-85 North at MM 95.273 – Fixed Object – Guardrail Face
  - SC 18 at Fatz /S-82 Overpass - Angle
  - SC 18 at Fatz /S-82 Overpass - Angle

The most common accident type was "not a collision with a motor vehicle in transport (collision with fixed object)," comprising 358 of the 902 total crashes (40%). These included crashes with fixed objects such as the guardrail, median, or fence. Rear-end collisions (27%) and sideswipes, same direction, (14%) were the next two most common crash types.

Fewer than 5% of the crashes were due to snow, slush or ice.

Study area hot spots are listed below:

- Various areas along the corridor with limited clear zone due to bridges, fencing, embankments, etc.
- I-85 North and South at Vertical Curve Locations between MM 80 and MM 81
- I-85 South at MM 82.542
- I-85 North at Exit 82 off-ramp
- I-85 South at Exit 83 on-ramp
- I-85 South at MM 83.675
- I-85 North Exit 90 on-ramp

- Surrounding roadways at Exit 95, east of interstate (Hampshire Drive and SC 18 from Matthew Drive to the S-82 Overpass) – approximately half of crashes on the non-interstate roadways occur in this area.
- I-85 North at Exit 96 off-ramp
- I-85 North at Exit 96 on-ramp
- I-85 North at Gaffney Ferry Road on-ramp

In summary, improvements to the geometric conditions of these rural interchanges including improved tie-ins to the non-interstate roadway system would improve traffic operations. Many on-ramps such as Exit 83 and Gaffney Ferry Road have limited merging areas, and off-ramp traffic often encounters nonstandard intersections that likely cause driver confusion.

On the interstate, there are some vertical curve locations that show an increase in accidents where the vertical curve may have been a contributing factor; however, many do not appear to have a significant effect on crash location.

Many of the fixed object crashes on I-85 occur where there is a limited recovery zone due to fencing, guardrails, etc. Maximizing the recovery distance along the corridor during the widening project, where practical, may help reduce the number of fixed object crashes.

On many non-interstate roadways at locations such as Bud Arthur Bridge Road at SC 110 the sight distance could be improved through activities such as trimming trees or other measures.

Lastly, reviewing the available information regarding the fatality locations, there appears to be no trend as causes are varied. Two accidents involved pedestrians. An increase in lighting at locations where pedestrians may be expected could be considered during the design.

Appendix

	Crash Number	County	Route Type	Route Number	Route AUX	Milepoint	Base Intersection Route	Base Intersection Route Number	# of Fatalities	# of Injuries	Max Injury Code	Date	Road Surface	Street Name	BDO	Manner of Collision	First Harmful Event	Unit Number	Direction	AADT	LAT	LON
1	12516119	42	1	85	0	80.024	4	57	0	0	0	3/23/2012 0:00	1	INTERSTATE 85	20	0	39	1	N	57900	35.02746111	-81.87231944
2	11557419	42	1	85	0	80.037	4	57	0	0	0	9/23/2011 0:00	1	INTERSTATE 85	10	0	38	1	N	57900	35.0275	-81.87208889
3	13612885	42	1	85	0	80.135	4	57	0	0	0	11/17/2013 0:00	1	INTERSTATE 85	15	10	23	1	N	57900	35.02791111	-81.87045
4	13605845	42	1	85	0	80.154	4	57	0	0	0	10/31/2013 0:00	1	INTERSTATE 85	25	60	22	1	N	57900	35.02803889	-81.87013889
5	12533982	42	1	85	0	80.215	4	57	0	0	0	6/4/2012 0:00	1	INTERSTATE 85	10	42	38	1	N	57900	35.02823889	-81.86908056
6	13613882	42	1	85	0	80.219	4	57	0	0	0	11/27/2013 0:00	1	INTERSTATE 85	10	10	22	1	N	57900	35.02828056	-81.86903889
7	13539054	42	1	85	0	80.245	4	57	0	0	0	5/23/2013 0:00	2	INTERSTATE 85	100	0	50	1	N	57900	35.02838056	-81.86858056
8	13572469	42	1	85	0	80.261	4	57	0	0	0	8/19/2013 0:00	1	INTERSTATE 85	1	10	22	1	N	57900	35.02843056	-81.86831111
9	12602743	42	1	85	0	80.269	4	57	0	0	0	12/26/2012 0:00	2	INTERSTATE 85	10	10	22	1	N	57900	35.02848056	-81.86818056
10	11572645	42	1	85	0	80.28	4	57	0	0	0	10/19/2011 0:00	2	INTERSTATE 85	100	0	49	1	N	57900	35.02851944	-81.86798889
11	13546090	42	1	85	0	80.281	4	57	0	0	0	6/6/2013 0:00	1	INTERSTATE 85	100	50	22	1	N	57900	35.02853056	-81.86798056
12	11003871	42	1	85	0	80.283	4	57	0	0	0	1/30/2011 0:00	1	INTERSTATE 85	40	50	22	1	N	57900	35.02853056	-81.86793889
13	12561250	42	1	85	0	80.295	4	57	0	0	0	9/1/2012 0:00	1	INTERSTATE 85	10	10	22	1	N	57900	35.02856944	-81.86773889
14	13558101	42	1	85	0	80.334	4	57	0	0	0	7/14/2013 0:00	1	INTERSTATE 85	2	0	46	1	N	57900	35.02873889	-81.86708056
15	12567302	42	1	85	0	80.346	4	57	0	0	0	9/18/2012 0:00	1	INTERSTATE 85	20	10	22	1	N	57900	35.02878056	-81.86686944
16	13571964	42	1	85	0	80.364	4	80	0	0	0	8/21/2013 0:00	1	INTERSTATE 85	56	10	23	1	N	57900	35.02886944	-81.86656944
17	13611504	42	1	85	0	80.389	4	57	0	0	0	11/17/2013 0:00	2	INTERSTATE 85	75	10	22	1	N	57900	35.02896944	-81.86615
18	13542405	42	1	85	0	80.408	4	57	0	0	0	5/23/2013 0:00	2	INTERSTATE 85	20	0	51	1	N	57900	35.02905	-81.86583056
19	13600354	42	1	85	0	80.411	4	57	0	0	0	10/25/2013 0:00	1	INTERSTATE 85	120	0	38	1	N	57900	35.02905	-81.86576944
20	11580314	42	1	85	0	80.435	4	80	0	0	0	11/23/2011 0:00	1	INTERSTATE 85	10	10	22	1	N	57900	35.02915	-81.86536111
21	13540386	42	1	85	0	80.459	4	57	0	0	0	5/23/2013 0:00	2	INTERSTATE 85	66	50	23	1	N	57900	35.02925	-81.86496111
22	11580313	42	1	85	0	80.49	4	80	0	0	0	11/23/2011 0:00	1	INTERSTATE 85	10	10	22	1	N	57900	35.02938889	-81.86445
23	13600374	42	1	85	0	80.499	4	57	0	0	0	10/25/2013 0:00	1	INTERSTATE 85	100	10	22	1	N	57900	35.02941111	-81.86428056
24	11524477	42	1	85	0	80.535	4	57	0	1	1	5/27/2011 0:00	2		50	50	22	1	N	57900	35.0296	-81.86368889
25	11523545	42	1	85	0	80.545	2	221	0	0	0	5/27/2011 0:00	2	INTERSTATE 85	100	10	22	1	N	57900	35.02961111	-81.86351944
26	12508512	42	1	85	0	80.591	4	57	0	0	0	2/19/2012 0:00	2	INTERSTATE 85	100	10	22	1	N	57900	35.02981111	-81.86273056
27	11553892	42	1	85	0	80.604	4	57	0	0	0	9/14/2011 0:00	1	INTERSTATE 85	200	10	22	1	N	57900	35.02985	-81.86251111
28	11580335	42	1	85	0	80.613	4	57	0	0	0	11/17/2011 0:00	2		65	0	44	1	N	57900	35.03071111	-81.86266111
29	13572707	42	1	85	0	80.618	4	57	0	0	0	8/19/2013 0:00	2	INTERSTATE 85	50	0	51	1	N	57900	35.02991944	-81.86228889
30	12500494	42	1	85	0	80.623	3	110	0	0	0	1/6/2012 0:00	1	INTERSTATE 85	120	50	22	1	N	57900	35.02993056	-81.86218889
31	12508992	42	1	85	0	80.629	3	110	0	0	0	2/19/2012 0:00	2	INTERSTATE 85	200	10	22	1	N	57900	35.02996944	-81.8621
32	13614375	42	1	85	0	80.633	4	57	0	0	0	11/26/2013 0:00	2	INTERSTATE 85	83	10	23	1	N	57900	35.02998056	-81.86203056
33	13529191	42	1	85	0	80.64	4	57	0	0	0	4/22/2013 0:00	1	INTERSTATE 85	100	0	20	1	N	57900	35.03001111	-81.86191111
34	11008590	42	1	85	0	80.642	4	57	0	0	0	3/6/2011 0:00	2	INTERSTATE	10	0	51	1	N	57900	35.03006111	-81.8619
35	12605387	42	1	85	0	80.645	4	57	0	0	0	12/26/2012 0:00	2	INTERSTATE 85	50	10	22	1	N	57900	35.03003056	-81.86183056
36	12530612	42	1	85	0	80.648	4	57	0	0	0	5/15/2012 0:00	1	INTERSTATE 85	30	10	22	1	N	57900	35.03003889	-81.86178056
37	13582223	42	1	85	0	80.716	4	57	0	2	1	9/7/2013 0:00	1	INTERSTATE 85	100	10	23	1	N	57900	35.03033889	-81.86063056
38	13581100	42	1	85	0	80.736	4	57	0	0	0	9/7/2013 0:00	1	INTERSTATE 85	100	0	45	1	N	57900	35.03038889	-81.86026944
39	12602744	42	1	85	0	80.747	4	57	0	0	0	12/26/2012 0:00	2		70	10	23	1	N	57900	35.0304	-81.86008056
40	11552014	42	1	85	0	80.754	4	1009	0	1	1	9/9/2011 0:00	1	INTERSTATE 85	31	0	51	1	N	57900	35.03051111	-81.85998889
41	12555418	42	1	85	0	80.805	4	57	0	0	0	8/9/2012 0:00	2	INTERSTATE 85	100	50	22	1	N	57900	35.0307	-81.85911944
42	11589310	42	1	85	0	80.813	4	57	0	4	1	12/22/2011 0:00	2	INTERSTATE 85	10	10	22	1	N	57900	35.03076111	-81.85898889
43	11578069	42	1	85	0	80.839	4	57	0	1	1	11/17/2011 0:00	2	INTERSTATE 85	50	10	22	1	N	57900	35.03085	-81.85855
44	12602814	42	1	85	0	80.849	3	110	0	6	1	12/26/2012 0:00	2	INTERSTATE 85	120	50	22	1	N	57900	35.03088889	-81.85838889
45	11589464	42	1	85	0	80.889	3	110	0	1	1	12/24/2011 0:00	1	INTERSTATE 85	150	10	22	1	N	57900	35.03106111	-81.85771111
46	11577378	42	1	85	0	80.89	4	57	0	0	0	11/17/2011 0:00	2	INTERSTATE 85	50	0	51	1	N	57900	35.03106111	-81.85768889
47	12523523	42	1	85	0	80.952	4	57	0	0	0	4/21/2012 0:00	1		100	0	51	1	N	57900	35.0313	-81.85663889
48	11562627	42	1	85	0	80.973	4	57	0	0	0	9/30/2011 0:00	1	INTERSTATE 85	100	0	40	1	N	57900	35.0314	-81.85628889
49	12576543	42	1	85	0	81.01	4	57	0	0	0	10/8/2012 0:00	1		200	0	68	1	N	57900	35.0314	-81.85561111
50	11523527	42	1	85	0	81.03	4	57	0	0	0	5/27/2011 0:00	1	INTERSTATE 85	100	10	23	1	N	57900	35.03178056	-81.85536944
51	13611496	42	1	85	0	81.047	4	57	0	0	0	11/17/2013 0:00	2	INTERSTATE 85	72	0	18	1	N	57900	35.03168889	-81.85501944
52	12510958	42	1	85	0	81.073	4	57	0	1	1	3/1/2012 0:00	1	INTERSTATE 85	100	10	22	1	N	57900	35.0318	-81.85458889
53	12512216	42	1	85	0	81.099	4	57	0	0	0	3/1/2012 0:00	1	INTERSTATE	110	0	51	1	N	57900	35.03195	-81.85416944
54	13571948	42	1	85	0	81.116	4	57	0	0	0	8/19/2013 0:00	2	INTERSTATE 85	75	50	23	1	N	57900	35.03203056	-81.85388889
55	12577605	42	1	85	0	81.125	4	57	0	0	0	10/12/2012 0:00	1	INTERSTATE 85	100	0	56	1	N	57900	35.03201111	-81.85371111
56	13615930	42	1	85	0	81.146	4	57	0	0	0	11/27/2013 0:00	2	INTERSTATE 85	50	10	23	1	N	57900	35.03208056	-81.85335
57	12512215	42	1	85	0	81.147	4	57	0	0	0	3/1/2012 0:00	1	INTERSTATE 85	80	10	22	1	N	57900	35.03208889	-81.85333056
58	13532099	42	1	85	0	81.155	4	57	0	1	1	5/3/2013 0:00	1	INTERSTATE 85	100	10	22	1	N	57900	35.03215	-81.85321111
59	13613250	42	1	85	0	81.18	4	57	0	0	0	11/26/2013 0:00	2	INTERSTATE 85	20	10	23	1	N	57900	35.03223056	-81.85278056
60	12503188	42	1	85	0	81.193	4	31	0	0	0	1/20/2012 0:00	2	INTERSTATE 85	1420	10	23	1	N	57900	35.03228889	-81.85256111
61	11553902	42	1	85	0	81.211	3	57	0	0	0	9/9/2011 0:00	1	INTERSTATE 85	30	10	22	1	N	57900	35.03236944	-81.85226111
62	13615965	42	1	85	0	81.23	1	8593	0	0	0	11/26/2013 0:00	2	INTERSTATE 85	125	10	22	1	N	57900	35.03258889	-81.85198056
63	13624009	42	1	85	0	81.237	3	110	0	0	0	12/20/2013 0:00	1	INTERSTATE	150	10	22	1	N	57900	35.03255	-81.85183889
64	13615645	42	1	85	0	81.273	4	57	0	0	0	11/26/2013 0:00	2	INTERSTATE 85	2	10	23	1	N	57900	35.03263056	-81.8512
65	11579513	42	1	85	0	81.274	4	57	0	0	0	11/23/2011 0:00	1		5	10	22	1	N	57900	35.03255	-81.85116111
66	12557758	42	1	85	0	81.284	4	57	0	0	0	8/20/2012 0:00	1	INTERSTATE 85	65	43	22	1	N	57900	35.03263889	-81.851
67	11531351	42	1	85	0	81.335	4	50	0	0	0	5/24/2011 0:00	1	INTERSTATE 85	315	0	38	1	N	57900	35.03303889	-81.85021944
68	11575064	42	1	85	0	81.376	3	110	0	0	0	11/13/2011 0:00	1	INTERSTATE 85	110	10	22	1	N	57900	35.03303889	-81.84946944
69	11526706	42	1	85	0	81.385	3	110	0	0	0	6/12/2011 0:00	1		90	50	22	1	N	57900	35.0331	-81.84931944
70	12504889	42	1	85	0	81.451	3	110	0	0	0	1/30/2012 0:00	1	INTERSTATE 85	100	10	22	1	N	57900	35.03336111	-81.84818889
71	13513793	42	1	85	0	81.458	3	110	0	0	0	3/1/2013 0:00	1	INTERSTATE 85	100	0	68	1	N	57900	35.0334	-81.84808056
72	13512375	42	1	85	0	81.471	3	110	0	0	0	3/1/2013 0:00	1	INTERSTATE 85	80	0	18	1	N	57900	35.03345	-81.84786944

73	13512579	42	1	85	0	81.564	3	110	0	0 0	3/2/2013 0:00	1	INTERSTATE 85	100	0	68	1	N	57900	35.03381111	-81.84628889
74	13502250	42	1	85	0	81.626	3	110	0	0 0	1/11/2013 0:00	2	INTERSTATE 85	100	0	56	1	N	57900	35.03423056	-81.84528889
75	12602815	42	1	85	0	81.63	3	110	0	1 1	12/26/2012 0:00	2		120	10	23	1	N	57900	35.03256111	-81.85838889
76	11533332	42	1	85	0	81.69	3	110	0	0 0	7/14/2011 0:00	1	INTERSTATE 85	100	50	22	1	N	57900	35.03431111	-81.84413889
77	13572698	42	1	85	0	81.705	3	110	0	0 0	8/19/2013 0:00	2	INTERSTATE 85	100	10	22	1	N	57900	35.03438056	-81.8439
78	12602742	42	1	85	0	81.936	4	57	0	0 0	12/26/2012 0:00	2	INTERSTATE 85	200	0	51	1	N	57900	35.0353	-81.83996944
79	12520659	42	1	85	0	81.939	4	57	0	0 0	4/6/2012 0:00	2	INTERSTATE 85	200	43	22	1	N	57900	35.03533889	-81.83993889
80	11564245	42	1	85	0	81.944	1	57	0	1 1	10/11/2011 0:00	2	85	212	0	44	1	N	57900	35.03526111	-81.83981111
81	11559945	42	1	85	0	81.946	3	110	0	0 0	9/23/2011 0:00	1	INTERSTATE 85	100	0	46	1	N	57900	35.03536111	-81.83981944
82	13501429	42	1	85	0	81.989	3	110	0	0 0	1/11/2013 0:00	2	INTERSTATE 85	100	0	46	1	N	57900	35.03553889	-81.83908889
83	13532660	42	1	85	0	81.99	5		0	0 0	4/28/2013 0:00	2		20	0	46	1	N	57900	35.03556944	-81.83908056
84	11583590	42	1	85	0	82.013	4	57	0	0 0	12/5/2011 0:00	2	INTERSTATE 85	200	0	46	1	N	57900	35.03563056	-81.83866944
85	13554615	42	1	85	0	82.019	4	57	0	0 0	7/3/2013 0:00	2	INTERSTATE 85	200	0	47	1	N	57900	35.03566111	-81.83858056
86	13534546	42	1	85	0	82.03	5		0	0 0	5/11/2013 0:00	1	INTERSTATE 85	3	50	25	1	N	57900	35.03571111	-81.83838889
87	11515519	42	1	85	0	82.056	3	110	0	0 0	3/26/2011 0:00	1	I-85	100	0	56	1	N	57900	35.03586111	-81.83796111
88	12508418	42	1	85	0	82.069	1	110	0	0 0	2/19/2012 0:00	1	INTERSTATE 85	90	0	56	1	N	57900	35.03585	-81.83773056
89	12567291	42	1	85	0	82.069	3	110	0	0 0	9/17/2012 0:00	2	INTERSTATE 85	100	0	56	1	N	57900	35.03616111	-81.83783889
90	13572684	42	1	85	0	82.072	3	110	0	0 0	8/19/2013 0:00	2	INTERSTATE 85	100	0	56	1	N	57900	35.03588056	-81.83768056
91	12518292	42	1	85	0	82.074	5		0	0 0	3/30/2012 0:00	2	INTERSTATE 85	6	0	61	1	N	57900	35.03588889	-81.83765
92	13575839	42	1	85	0	82.126	3	110	0	0 0	8/30/2013 0:00	1	INTERSTATE 85	100	10	23	1	N	57900	35.03631111	-81.83685
93	13514197	42	1	85	0	82.164	3	110	0	0 0	2/22/2013 0:00	2	INTERSTATE 85	120	0	56	1	N	57900	35.03628889	-81.83613889
94	13545526	42	1	85	0	82.169	5		0	1 2	6/5/2013 0:00	1	RAMP 8564	1	0	8	1	N	57900	35.03625	-81.83603056
95	11590126	42	1	85	0	82.179	4	57	0	0 0	12/16/2011 0:00	2	INTERSTATE 85	50	0	56	1	N	57900	35.03636111	-81.83588056
96	12562628	42	1	85	0	82.194	4	57	0	0 0	9/3/2012 0:00	2	INTERSTATE 85	260	10	22	1	N	57900	35.03643056	-81.83563056
97	13575838	42	1	85	0	82.203	3	110	0	0 0	8/30/2013 0:00	1	INTERSTATE	100	10	23	1	N	57900	35.03636111	-81.83543889
98	11523565	42	1	85	0	82.222	3	110	0	1 1	5/27/2011 0:00	2	INTERSTATE 85	100	10	22	1	N	57900	35.03655	-81.83516111
99	11589156	42	1	85	0	82.229	4	57	0	0 0	12/20/2011 0:00	1	INTERSTATE 85	300	43	22	1	N	57900	35.03658889	-81.83505
100	11524476	42	1	85	0	82.237	4	57	0	0 0	5/27/2011 0:00	2		25	10	22	1	N	57900	35.03625	-81.83476944
101	12508523	42	1	85	0	82.255	4	57	0	1 1	2/19/2012 0:00	2		50	10	22	1	N	57900	35.03626944	-81.83438056
102	11574917	42	1	85	0	82.257	1	110	0	0 0	11/13/2011 0:00	1		112	50	22	1	N	57900	35.0363	-81.83436944
103	13532089	42	1	85	0	82.271	4	1013	0	1 1	5/2/2013 0:00	2	INTERSTATE 85	1	0	4	1	N	57900	35.03683056	-81.83436944
104	13615971	42	1	85	0	82.313	1	110	0	1 1	11/27/2013 0:00	2	INTERSTATE 85	50	10	22	1	N	57900	35.03703889	-81.83368056
105	12554475	42	1	85	0	82.322	5		1	1 4	8/6/2012 0:00	1	INTERSTATE 85	10	0	51	1	N	57900	35.03725	-81.83361111
106	11528639	42	1	85	0	82.325	4	1013	0	0 0	6/21/2011 0:00	1		10	10	22	1	N	57900	35.03716944	-81.83351944
107	12580391	42	1	85	0	82.388	4	737	0	0 0	10/26/2012 0:00	1	INTERSTATE 85	2	0	20	1	N	57900	35.03751111	-81.83248889
108	13617718	42	1	85	0	82.5	3	110	0	0 0	11/26/2013 0:00	2		10	0	47	1	N	57900	35.03816944	-81.83066944
109	13614352	42	1	85	0	82.522	3	110	0	0 0	11/21/2013 0:00	2	INTERSTATE 85	50	0	56	1	N	57900	35.03836111	-81.83036111
110	12543535	42	1	85	0	82.571	4	868	0	2 2	7/12/2012 0:00	1	INTERSTATE 85	50	0	47	1	N	57900	35.03868056	-81.82958056
111	11908305	42	1	85	0	82.599	4	57	0	0 0	3/6/2011 0:00	2	INTERSTATE 85	250	0	58	1	N	57900	35.03886111	-81.82913056
112	12502987	42	1	85	0	82.613	3	110	0	0 0	1/20/2012 0:00	2	INTERSTATE 85	80	43	22	1	N	57900	35.03895	-81.82891944
113	12564665	42	1	85	0	82.672	4	2005	0	1 1	9/17/2012 0:00	2	INTERSTATE 85	75	0	22	1	N	57900	35.03951944	-81.82808889
114	13609613	42	1	85	0	82.684	3	110	0	0 0	11/16/2013 0:00	1	INTERSTATE 85	70	10	22	1	N	57900	35.03938056	-81.82778889
115	11003841	42	1	85	0	82.699	4	57	0	1 1	2/2/2011 0:00	2		200	0	56	1	N	57900	35.03948056	-81.82755
116	12562627	42	1	85	0	82.7	3	110	0	0 0	9/3/2012 0:00	2	INTERSTATE 85	45	0	49	1	N	57900	35.03948889	-81.82753889
117	13562703	42	1	85	0	82.798	3	110	0	0 0	7/22/2013 0:00	2		25	0	56	1	N	57900	35.03998889	-81.82591111
118	12088895	42	1	85	0	82.83	3	110	0	1 3	1/18/2012 0:00	2		2	0		1	N	57900		
119	11012170	42	1	85	0	82.891	3	110	0	0 0	3/26/2011 0:00	1	I-85	1	0	8	1	N	54600	35.04076944	-81.82455
120	13542428	42	1	85	0	82.924	4	57	0	0 0	5/27/2013 0:00	1	INTERSTATE 85	100	10	22	1	N	54600	35.04093889	-81.824
121	11527268	42	1	85	0	82.93	3	110	0	0 0	6/9/2011 0:00	1	INTERSTATE 85	30	50	22	1	N	54600	35.04101111	-81.82391944
122	11007657	42	1	85	0	82.93	3	110	0	0 0	1/26/2011 0:00	2		10	10	23	1	N	54600	35.03455	-81.80158056
123	13619837	42	1	85	0	82.935	3	110	0	2 3	11/27/2013 0:00	1	INTERSTATE 85	2	10	22	1	N	54600	35.04066111	-81.8236
124	11589293	42	1	85	0	82.946	4	57	0	2 1	12/21/2011 0:00	2		200	10	22	1	N	54600	35.04111111	-81.82366944
125	13512959	42	1	85	0	82.96	3	110	0	0 0	3/1/2013 0:00	1	INTERSTATE 85	100	0	68	1	N	54600	35.04118056	-81.82343056
126	12591464	42	1	85	0	83.01	3	110	0	0 0	11/25/2012 0:00	1	INTERSTATE 85	20	10	22	1	N	54600	35.04151111	-81.82263889
127	13543994	42	1	85	0	83.017	3	110	0	0 0	6/9/2013 0:00	1	INTERSTATE 85	50	0	56	1	N	54600	35.04156111	-81.82253889
128	13501376	42	1	85	0	83.029	3	110	0	0 0	1/3/2013 0:00	1	INTERSTATE 85	50	50	22	1	N	54600	35.04161944	-81.82233889
129	12527062	42	1	85	0	83.03	3	110	0	0 0	5/8/2012 0:00	1	INTERSTATE 85	10	10	22	1	N	54600	35.04165	-81.82233056
130	12548149	42	1	85	0	83.083	4	1013	0	0 0	7/23/2012 0:00	1	INTERSTATE 85	25	10	22	1	N	54600	35.0418	-81.82138889
131	13612854	42	1	85	0	83.096	3	110	0	0 0	11/25/2013 0:00	1	INTERSTATE 85	30	50	22	1	N	54600	35.04206111	-81.82128056
132	12602711	42	1	85	0	83.114	3	110	0	0 0	12/24/2012 0:00	2	INTERSTATE 85	35	0	49	1	N	54600	35.04218889	-81.82101111
133	11574579	42	1	85	0	83.117	3	110	0	0 0	10/29/2011 0:00	1	INTERSTATE 85	100	50	22	1	N	54600	35.0422	-81.82096111
134	11590406	42	1	85	0	83.14	3	110	0	0 0	12/27/2011 0:00	1	INTERSTATE 85	25	10	22	1	N	54600	35.04263056	-81.81995
135	12515119	42	1	85	0	83.147	1	85	0	0 0	3/16/2012 0:00	1	RAMP 8523	0	10	22	1	N	54600	35.04258889	-81.81946111
136	11120040	42	1	85	0	83.152	2	221	0	0 0	10/3/2011 0:00	1		80	50	22	1	N	54600	35.04246944	-81.81896944
137	13587059	42	1	85	0	83.153	3	110	0	0 0	9/25/2013 0:00	2	INTERSTATE 85	15	0	56	1	N	54600	35.04293889	-81.81916944
138	11007658	42	1	85	0	83.155	3	110	0	0 0	1/26/2011 0:00	2		10	10	22	1	N	54600	35.04256111	-81.81883056
139	12515660	42	1	85	0	83.16	3	110	0	0 0	3/21/2012 0:00	1		25	0	38	1	N	54600	35.04341111	-81.81891111
140	13615824	42	1	85	0	83.161	3	110	0	0 0	12/4/2013 0:00	2		10	0	56	1	N	54600	35.04328056	-81.81875
141	13501940	42	1	85	0	83.161	3	110	0	0 0	1/14/2013 0:00	2	INTERSTATE 85	12	0	56	1	N	54600	35.04313056	-81.81866944
142	13514627	42	1	85	0	83.175	4	1013	0	0 0	3/8/2013 0:00	1	INTERSTATE 85	15	10	22	1	N	54600	35.04346944	-81.81786111
143	11527951	42	1	85	0	83.191	3	110	0	0 0	6/18/2011 0:00	2	INTERSTATE 85	0	10	22	1	N	54600	35.04386944	-81.81688889
144	11564683	42	1	85	0	83.191	3	110	0	0 0	10/12/2011 0:00	2	INTERSTATE 85	2	10	23	1	N	54600	35.04388056	-81.81685
145	11908307	42	1	85	0	83.204	3	110	0	0 0	3/6/2011 0:00	2	INTERSTATE 85	5	0	56	1	N	54600	35.0442	-81.81605

146	13569195	42	1	85	0	83.207	3	110	0	0	0	8/14/2013 0:00	1	INTERSTATE 85	25	10	22	1	N	54600	35.04426111	-81.81591111
147	13620667	42	1	85	0	83.216	3	110	0	0	0	12/13/2013 0:00	1	INTERSTATE 85	10	0	1	1	N	54600	35.04448889	-81.81536111
148	13593588	42	1	85	0	83.221	3	110	0	1	1	10/7/2013 0:00	2	INTERSTATE 85	11	0	47	1	N	54600	35.04441111	-81.81495
149	13585853	42	1	85	0	83.223	3	110	0	0	0	8/21/2013 0:00	2	INTERSTATE 85	19	30	22	1	N	54600	35.04466111	-81.81493056
150	13591623	42	1	85	0	83.231	3	110	0	1	1	8/21/2013 0:00	1	INTERSTATE 85	20	50	22	1	N	54600	35.04486111	-81.81443889
151	13545631	42	1	85	0	83.238	3	110	0	0	0	6/17/2013 0:00	2	INTERSTATE 85	10	0	56	1	N	54600	35.04503056	-81.81403056
152	13584625	42	1	85	0	83.275	3	110	0	2	1	8/21/2013 0:00	1	INTERSTATE 85	20	50	22	1	N	54600	35.04593056	-81.81178889
153	11535740	42	1	85	0	83.282	3	110	0	0	0	7/24/2011 0:00	1	INTERSTATE 85	66	41	22	1	N	54600	35.04611944	-81.81136111
154	11534776	42	1	85	0	83.296	3	110	0	0	0	7/14/2011 0:00	1	INTERSTATE 85	10	0	56	1	N	54600	35.04646944	-81.81051111
155	12538406	42	1	85	0	83.298	3	110	0	0	0	6/11/2012 0:00	1	INTERSTATE 85	72	10	22	1	N	54600	35.04651944	-81.81036111
156	13622023	42	1	85	0	83.303	1	85	0	0	0	12/15/2013 0:00	2	INTERSTATE 85	6	0	49	1	N	54600	35.04663056	-81.81008889
157	12519051	42	1	85	0	83.363	3	110	0	0	0	4/6/2012 0:00	1	INTERSTATE 85	25	0	47	1	N	54600	35.04733056	-81.80838056
158	12534261	42	1	85	0	83.366	3	110	0	0	0	6/5/2012 0:00	2	INTERSTATE 85	25	0	56	1	N	54600	35.04735	-81.80833056
159	11573929	42	1	85	0	83.378	3	110	0	0	0	11/5/2011 0:00	1	INTERSTATE 85	11	10	22	1	N	54600	35.04746111	-81.80813889
160	12538696	42	1	85	0	83.378	3	110	0	0	0	6/11/2012 0:00	2		24	43	47	1	N	54600	35.04746111	-81.80813889
161	12526789	42	1	85	0	83.426	3	110	0	0	0	4/24/2012 0:00	1		25	0	49	1	N	54600	35.0482	-81.80756944
162	13570057	42	1	85	0	83.429	3	110	0	1	1	8/9/2013 0:00	2	INTERSTATE 85	10	0	18	1	N	54600	35.04778889	-81.80726111
163	12553509	11	1	85	0	83.508	4	131	0	0	0	8/5/2012 0:00	1		75	0	51	1	N	54600	35.04833056	-81.80593056
164	13603737	11	1	85	0	83.509	3	110	0	0	0	10/31/2013 0:00	1	INTERSTATE 85	15	50	22	1	N	54600	35.04833889	-81.80591111
165	13587306	11	1	85	0	83.591	4	39	0	0	0	9/17/2013 0:00	1		250	0	52	1	N	54600	35.04885	-81.80461111
166	11559255	11	1	85	0	83.61	3	110	0	0	0	9/25/2011 0:00	1		75	41	4	1	N	54600	35.04896944	-81.80431944
167	11535772	11	1	85	0	83.647	3	110	0	1	2	7/24/2011 0:00	1	INTERSTATE 85	2	0	8	1	N	54600	35.04921111	-81.80373889
168	11516034	11	1	85	0	83.69	4	131	0	0	0	4/15/2011 0:00	1		127	0	47	1	N	54600	35.04948889	-81.80306111
169	13530839	11	1	85	0	83.724	4	131	0	0	0	5/4/2013 0:00	2		93	0	56	1	N	54600	35.04986944	-81.80261944
170	13588509	11	1	85	0	83.795	3	110	0	0	0	9/28/2013 0:00	1		1	0	51	1	N	54600	35.05018889	-81.8014
171	13593892	11	1	85	0	83.927	4	131	0	1	1	9/27/2013 0:00	1		98	0	60	1	N	54600	35.05103889	-81.79931944
172	13621228	11	1	85	0	83.973	3	18	0	0	0	12/2/2013 0:00	2		20	70	23	1	N	54600	35.05133889	-81.7986
173	12556525	11	1	85	0	84.128	4	131	0	0	0	8/15/2012 0:00	2		100	0	56	1	N	54600	35.05236944	-81.79616944
174	13501144	11	1	85	0	84.333	4	131	0	0	0	1/2/2013 0:00	2		10	10	22	1	N	54600	35.05363889	-81.7929
175	12503927	11	1	85	0	84.366	3	110	0	0	0	1/22/2012 0:00	2		1	50	22	1	N	54600	35.05401944	-81.79248889
176	13560222	11	1	85	0	84.449	4	131	0	0	0	7/8/2013 0:00	1		21	0	56	1	N	54600	35.05438889	-81.79106944
177	12584465	11	1	85	0	84.686	4	131	0	0	0	11/9/2012 0:00	1		0	50	22	1	N	54600	35.05586944	-81.7873
178	11528318	11	1	85	0	84.696	4	131	0	3	1	6/18/2011 0:00	1		4	10	22	1	N	54600	35.056	-81.78716944
179	13573700	11	1	85	0	84.705	4	131	0	0	0	8/22/2013 0:00	1		5	0	38	1	N	54600	35.05605	-81.78703056
180	11540658	11	1	85	0	84.779	4	131	0	0	0	8/7/2011 0:00	1		17	10	22	1	N	54600	35.05656944	-81.78588889
181	11531513	11	1	85	0	84.786	4	131	0	0	0	7/2/2011 0:00	1		10	0	56	1	N	54600	35.05663056	-81.78578889
182	12540561	11	1	85	0	84.805	4	131	0	0	0	7/2/2012 0:00	1		19	0	56	1	N	54600	35.05691944	-81.78561944
183	12540136	11	1	85	0	84.858	4	131	0	0	0	6/29/2012 0:00	1		60	0	49	1	N	54600	35.05718889	-81.78471944
184	13603070	11	1	85	0	84.892	4	39	0	0	0	11/1/2013 0:00	2		200	0	58	1	N	54600	35.0575	-81.78425
185	11530834	11	1	85	0	84.923	4	131	0	0	0	7/4/2011 0:00	2		41	0	56	1	N	54600	35.0579	-81.78393889
186	11904562	11	1	85	0	85.09	4	131	0	0	0	2/4/2011 0:00	2	INTERSTATE	85	43	22	1	N	54600	35.05935	-81.78156111
187	11906885	11	1	85	0	85.146	4	131	0	1	1	2/19/2011 0:00	1		92	10	22	1	N	54600	35.05966944	-81.78063056
188	11579335	11	1	85	0	85.161	4	131	0	0	0	11/23/2011 0:00	1		114	43	22	1	N	54600	35.0598	-81.78041944
189	12543335	11	1	85	0	85.171	4	131	0	1	1	7/12/2012 0:00	2		50	50	22	1	N	54600	35.0599	-81.78028889
190	11579334	11	1	85	0	85.188	4	131	0	0	0	11/23/2011 0:00	1		97	0	56	1	N	54600	35.06003056	-81.78003056
191	12592193	11	1	85	0	85.209	4	39	0	0	0	11/20/2012 0:00	1		124	10	22	1	N	54600	35.06021944	-81.77975
192	11514690	11	1	85	0	85.476	4	39	0	0	0	4/12/2011 0:00	1		100	0	8	1	N	54600	35.06248056	-81.77591944
193	11904993	11	1	85	0	85.496	4	39	0	0	0	2/6/2011 0:00	1		50	0	56	1	N	54600	35.06266111	-81.77563889
194	13511914	11	1	85	0	85.517	4	39	0	1	1	2/19/2013 0:00	2		100	43	22	1	N	54600	35.06283889	-81.77533889
195	13508555	11	1	85	0	85.698	4	39	0	0	0	2/12/2013 0:00	1		100	50	22	1	N	54600	35.06431111	-81.77268889
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199	12500999	11	1	85	0	86.004	4	39	0	2	1	1/5/2012 0:00	1		50	10	22	1	N	54600	35.06698889	-81.76838889
200	12530903	11	1	85	0	86.108	4	39	0	0	0	5/13/2012 0:00	2		50	0	56	1	N	54600	35.0679	-81.76693889
201	13587307	11	1	85	0	86.268	4	39	0	0	0	9/20/2013 0:00	1		50	10	22	1	N	54600	35.06923889	-81.76463056
202	13573583	11	1	85	0	86.345	4	39	0	0	0	8/21/2013 0:00	2		20	0	56	1	N	54600	35.06988056	-81.76351111
203	13625238	11	1	85	0	86.372	3	105	0	0	0	12/15/2013 0:00	1		100	0	47	1	N	54600	35.07011111	-81.76313056
204	13623326	11	1	85	0	86.372	4	39	0	0	0	12/15/2013 0:00	1		100	10	22	1	N	54600	35.07011111	-81.76313056
205	11540654	11	1	85	0	86.378	4	39	0	0	0	8/8/2011 0:00	1		23	10	22	1	N	54600	35.07015	-81.76303056
206	13549637	11	1	85	0	86.382	4	39	0	0	0	6/24/2013 0:00	2		100	10	22	1	N	54600	35.07018889	-81.76298056
207	13506225	11	1	85	0	86.51	4	234	0	2	1	2/3/2013 0:00	1	RAMP 8527	1	0	1	1	N	54600	35.07076944	-81.76073056
208	11514872	11	1	85	0	86.53	4	39	0	0	0	4/14/2011 0:00	1		100	50	22	1	N	54600	35.07076111	-81.76036111
209	12585687	11	1	85	0	86.59	4	39	0	0	0	11/9/2012 0:00	1		1	10	22	1	N	54600	35.06781111	-81.70116944
210	13533142	11	1	85	0	86.624	4	39	0	0	0	5/3/2013 0:00	1		4	0	22	1	N	53800	35.07208056	-81.7594
211	11578622	11	1	85	0	86.626	4	39	0	0	0	11/17/2011 0:00	1		1	0	51	1	N	53800	35.0721	-81.75938056
212	11012472	11	1	85	0	86.626	4	31	0	0	0	3/27/2011 0:00	1	RAMP 8528	0	42	22	1	N	53800	35.07186111	-81.75925
213	11519253	11	1	85	0	86.643	4	39	0	0	0	5/3/2011 0:00	1		82	0	56	1	N	53800	35.07218889	-81.75908889
214	11543923	11	1	85	0	86.714	4	39	0	4	1	8/12/2011 0:00	1		6	0	47	1	N	53800	35.07251111	-81.75791111
215	13554245	11	1	85	0	86.722	4	83	0	0	0	7/3/2013 0:00	2		20	0	7	1	N	53800	35.07261944	-81.75781111
216	12588740	11	1	85	0	86.75	4	39	0	0	0	11/17/2012 0:00	1		24	0	21	1	N	53800	35.07273056	-81.75733056
217	13594127	11	1	85	0	86.792	4	39	0	0	0	10/5/2013 0:00	1		10	10	22	1	N	53800	35.07286111	-81.75661111
218	13529359	11	1	85	0	86.824	4	39	0	1	1	4/19/2013 0:00	1		10	0	56	1	N	53800	35.07295	-81.75606111

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221	12565707	11	1	85	0	86.939	4	39	0	0 0	9/18/2012 0:00	1		1	0	56	1	N	53800	35.0735	-81.75411111
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224	12585567	11	1	85	0	87.015	4	39	0	0 0	11/11/2012 0:00	1		40	10	22	1	N	53800	35.0734	-81.75273889
225	11526319	11	1	85	0	87.02	4	39	0	0 0	6/11/2011 0:00	1		20	0	38	1	N	53800	35.0734	-81.75265
226	12549846	11	1	85	0	87.107	4	39	0	0 0	7/23/2012 0:00	1		100	0	56	1	N	53800	35.07365	-81.75113056
227	11011186	11	1	85	0	87.243	4	39	0	0 0	3/18/2011 0:00	1	INTERSTATE	50	0	56	1	N	53800	35.07433889	-81.74885
228	11516802	11	1	85	0	87.266	4	39	0	0 0	4/21/2011 0:00	1		50	0	51	1	N	53800	35.07398056	-81.74836111
229	13502124	11	1	85	0	87.3	4	39	0	0 0	1/13/2013 0:00	1		25	0	51	1	N	53800	35.07405	-81.74776944
230	13620252	11	1	85	0	87.359	4	39	0	0 0	12/8/2013 0:00	2		10	50	22	1	N	53800	35.07418056	-81.74673889
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232	13571702	11	1	85	0	87.73	4	39	0	1 1	8/21/2013 0:00	2		192	43	22	1	N	53800	35.07506111	-81.74028889
233	11011690	11	1	85	0	87.735	4	39	0	0 0	3/21/2011 0:00	1		100	0	49	1	N	53800	35.07508889	-81.7402
234	13571704	11	1	85	0	87.745	4	39	0	3 1	8/21/2013 0:00	2		182	10	22	1	N	53800	35.07511944	-81.74001944
235	13571547	11	1	85	0	87.758	4	29	0	1 2	8/21/2013 0:00	2		1	0	46	1	N	53800	35.07513056	-81.7398
236	12507976	11	1	85	0	87.759	4	39	0	1 2	2/13/2012 0:00	1		150	0	38	1	N	53800	35.07511111	-81.73978056
237	12573018	11	1	85	0	87.783	4	39	0	0 0	10/5/2012 0:00	1		50	50	22	1	N	53800	35.07518056	-81.73936111
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239	11000101	11	1	85	0	87.869	4	39	0	0 0	1/1/2011 0:00	2		75	0	56	1	N	53800	35.0754	-81.73786944
240	11581378	11	1	85	0	87.907	4	39	0	0 0	11/28/2011 0:00	2		100	0	49	1	N	53800	35.07546944	-81.7372
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245	12594224	11	1	85	0	88.081	4	39	0	2 2	11/30/2012 0:00	1		200	0	49	1	N	53800	35.07588056	-81.73416944
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247	11903458	11	1	85	0	88.274	3	105	0	0 0	1/30/2011 0:00	1		103	0	56	1	N	53800	35.07641111	-81.73081944
248	12522247	11	1	85	0	88.286	3	105	0	0 0	4/13/2012 0:00	1		100	50	22	1	N	53800	35.07636944	-81.7306
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256	12549910	11	1	85	0	88.784	3	105	0	0 0	8/1/2012 0:00	1		50	0	18	1	N	53800	35.07783889	-81.72201111
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258	13517788	11	1	85	0	88.825	3	105	0	1 1	3/24/2013 0:00	2		8	43	56	1	N	53800	35.07818889	-81.72138889
259	11003728	11	1	85	0	88.903	3	105	0	1 1	1/26/2011 0:00	2		100	0	56	1	N	53800	35.07833056	-81.71998889
260	11904994	11	1	85	0	88.903	3	105	0	1 1	1/26/2011 0:00	2		100	43	23	1	N	53800	35.07833056	-81.71998889
261	12519533	11	1	85	0	88.911	3	105	0	0 0	4/5/2012 0:00	2		100	0	56	1	N	53800	35.07836944	-81.71986111
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263	11000755	11	1	85	0	89.009	3	105	0	0 0	1/9/2011 0:00	1		100	0	56	1	N	53800	35.07875	-81.7182
264	11521534	11	1	85	0	89.035	3	105	0	0 0	5/15/2011 0:00	1	INTERSTATE	100	0	38	1	N	53800	35.07886111	-81.71776111
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268	11525613	11	1	85	0	89.18	3	105	0	0 0	6/5/2011 0:00	1		60	50	22	1	N	53800	35.07941944	-81.71528889
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292	12525729	11	1	85	0	89.86	3	105	0	0	0	4/29/2012 0:00	1	10	10	23	1	N	48900	35.08118056	-81.70498056
293	12508492	11	1	85	0	89.862	3	105	0	0	0	2/19/2012 0:00	2	1	50	22	1	N	48900	35.08336111	-81.70431944
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296	11580533	11	1	85	0	89.95	1	85	0	1	2	11/23/2011 0:00	1	4	10	23	1	N	48900	35.08421944	-81.70316111
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299	12602583	11	1	85	0	90.015	3	105	0	0	0	12/24/2012 0:00	2	10	0	58	1	N	48900	35.08461111	-81.7021
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311	11551331	11	1	85	0	90.241	3	105	0	0	0	9/1/2011 0:00	1	25	50	22	1	N	48900	35.08643889	-81.69878056
312	12533964	11	1	85	0	90.271	3	105	0	0	0	6/1/2012 0:00	1	100	10	22	1	N	48900	35.08668056	-81.69833889
313	11517685	11	1	85	0	90.283	4	81	0	0	0	4/25/2011 0:00	1	25	0	47	1	N	48900	35.08678889	-81.69816944
314	12528272	11	1	85	0	90.293	3	105	0	0	0	5/13/2012 0:00	2	45	50	22	1	N	48900	35.08686944	-81.69801944
315	12501263	11	1	85	0	90.353	3	105	0	0	0	1/11/2012 0:00	2	50	0	49	1	N	48900	35.08735	-81.69713889
316	13514444	11	1	85	0	90.403	3	105	0	0	0	3/6/2013 0:00	1	80	0	56	1	N	48900	35.08791944	-81.69656111
317	13503455	11	1	85	0	90.47	3	105	0	0	0	1/17/2013 0:00	2	25	0	49	1	N	48900	35.08831944	-81.69545
318	13500482	11	1	85	0	90.476	3	105	0	0	0	1/2/2013 0:00	2	25	0	56	1	N	48900	35.08836944	-81.69536111
319	12522615	11	1	85	0	90.508	3	105	0	0	0	4/20/2012 0:00	1	20	10	22	1	N	48900	35.08861111	-81.69488889
320	11514930	11	1	85	0	90.531	3	105	0	1	2	4/12/2011 0:00	1	60	43	22	1	N	48900	35.08881944	-81.69456111
321	12527876	11	1	85	0	90.539	3	105	0	2	1	5/4/2012 0:00	1	100	10	22	1	N	48900	35.08888889	-81.69445
322	13566776	11	1	85	0	90.555	3	105	1	0	4	8/1/2013 0:00	1	25	0	27	1	N	48900	35.08901111	-81.69421944
323	11581010	11	1	85	0	90.589	3	105	0	0	0	11/29/2011 0:00	2	70	0	56	1	N	48900	35.08936111	-81.69378056
324	11566895	11	1	85	0	90.613	3	105	0	0	0	10/19/2011 0:00	2	90	0	56	1	N	48900	35.08948889	-81.69336944
325	12509042	11	1	85	0	90.617	3	105	0	0	0	2/19/2012 0:00	2	100	0	46	1	N	48900	35.08951944	-81.69331111
326	12553363	11	1	85	0	90.758	3	105	0	0	0	8/7/2012 0:00	1	100	0	38	1	N	48900	35.09078889	-81.69133889
327	11115441	11	1	85	0	90.76	3	105	0	1	1	9/9/2011 0:00	1	100	0	49	1	N	48900	35.43041944	-81.67278056
328	11584341	11	1	85	0	90.76	3	105	0	0	0	12/5/2011 0:00	2	100	0	49	1	N	48900	35.06781111	-81.70116944
329	11539656	11	1	85	0	90.762	3	105	0	0	0	8/1/2011 0:00	1	100	50	22	1	N	48900	35.09071111	-81.69118889
330	13569647	11	1	85	0	90.793	3	105	0	0	0	8/17/2013 0:00	2	100	50	22	1	N	48900	35.09096111	-81.69075
331	11551874	11	1	85	0	90.805	3	105	0	1	1	9/5/2011 0:00	2	100	0	56	1	N	48900	35.09151111	-81.69093056
332	11514928	11	1	85	0	90.857	3	105	0	0	0	4/7/2011 0:00	1	80	0	56	1	N	48900	35.09148889	-81.68981111
333	11530239	11	1	85	0	90.983	3	105	0	1	1	6/22/2011 0:00	1	100	43	22	1	N	48900	35.09251944	-81.68798056
334	13625397	11	1	85	0	91.007	3	11	0	0	0	12/23/2013 0:00	2	1	0	47	1	N	48900	35.09271944	-81.68763889
335	12530586	11	1	85	0	91.024	3	11	0	0	0	5/15/2012 0:00	1	110	0	49	1	N	48900	35.09286111	-81.68738056
336	12520555	11	1	85	0	91.033	3	11	0	0	0	3/24/2012 0:00	2	80	0	49	1	N	48900	35.09293056	-81.68726111
337	13535882	11	1	85	0	91.043	3	11	0	1	2	5/12/2013 0:00	1	125	0	49	1	N	48900	35.09298889	-81.68708889
338	13576581	11	1	85	0	91.117	3	11	0	1	1	9/2/2013 0:00	1	80	0	39	1	N	48900	35.09368889	-81.68608889
339	13507784	11	1	85	0	91.14	3	11	0	0	0	2/7/2013 0:00	2	100	50	56	1	N	48900	35.09378889	-81.68568889
340	13569644	11	1	85	0	91.243	3	105	0	0	0	8/17/2013 0:00	2	100	10	22	1	N	48900	35.09463889	-81.68418056
341	12558164	11	1	85	0	91.281	3	11	0	0	0	8/19/2012 0:00	1	1177	0	56	1	N	48900	35.09493889	-81.68361111
342	11533878	11	1	85	0	91.383	3	11	0	0	0	7/1/2011 0:00	1	0	42	22	1	N	48900	35.09563056	-81.68203056
343	11049032	11	1	85	0	91.489	4	83	0	1	1	5/4/2011 0:00	1	100	0	58	1	N	48900	35.09636111	-81.68036111
344	12522260	11	1	85	0	91.496	3	11	0	1	1	4/16/2012 0:00	1	102	0	56	1	N	48900	35.09626944	-81.68018889
345	13608721	11	1	85	0	91.525	3	11	0	0	0	11/11/2013 0:00	1	50	50	22	1	N	48900	35.09641111	-81.67971944
346	11539650	11	1	85	0	91.54	3	11	0	1	1	8/1/2011 0:00	1	2	50	22	1	N	48900	35.09646944	-81.67946111
347	12562533	11	1	85	0	91.624	3	11	0	0	0	9/4/2012 0:00	2	100	0	46	1	N	48900	35.09681111	-81.67803056
348	13512590	11	1	85	0	91.653	3	11	0	1	2	2/26/2013 0:00	2	35	0	47	1	N	48900	35.09688056	-81.67753056
349	13572275	11	1	85	0	91.72	3	11	0	0	0	8/17/2013 0:00	2	25	0	56	1	N	48900	35.09708056	-81.67636944
350	11584795	11	1	85	0	91.866	3	11	0	0	0	12/6/2011 0:00	1	20	50	22	1	N	48900	35.09728056	-81.67381111
351	11590060	11	1	85	0	91.914	1	85	0	0	0	12/22/2011 0:00	2	6	10	22	1	N	48900	35.09726944	-81.67296111
352	12520556	11	1	85	0	91.94	3	11	0	0	0	3/25/2012 0:00	1	3	0	49	1	N	48900	35.09723056	-81.67251111
353	11523896	11	1	85	0	91.948	3	11	0	0	0	5/22/2011 0:00	1	50	10	23	1	N	48900	35.09726944	-81.67236111
354	12502098	11	1	85	0	91.954	3	11	0	0	0	1/11/2012 0:00	1	24	50	22	1	N	48900	35.09726944	-81.67226111
355	13605651	11	1	85	0	92.128	3	105	0	0	0	11/1/2013 0:00	1	8	0	38	1	N	48900	35.09706944	-81.66918889
356	13501538	11	1	85	0	92.136	3	11	0	0	0	1/14/2013 0:00	2	5	0	56	1	N	48900	35.09698056	-81.66905
357	12565855	11	1	85	0	92.169	3	11	0	0	0	9/16/2012 0:00	1	1	10	22	1	N	48900	35.09701111	-81.66846111
358	13512920	11	1	85	0	92.17	3	11	0	0	0	3/3/2013 0:00	1	1	10	22	1	N	48900	35.09503056	-81.66733056
359	13588767	11	1	85	0	92.17	3	11	0	0	0	9/25/2013 0:00	2	1	0	59	1	N	48900	35.09128889	-81.6675
360	12565206	11	1	85	0	92.179	3	11	1	0	4	9/17/2012 0:00	2	70	42	22	1	N	48800	35.09701111	-81.66828889
361	13616000	11	1	85	0	92.18	3	11	0	0	0	11/26/2013 0:00	2	1	42	22	1	N	48800	35.09698889	-81.66828056
362	12510837	11	1	85	0	92.186	3	11	0	1	1	2/29/2012 0:00	2	1	43	22	1	N	48800	35.09698056	-81.66816944
363	12598579	11	1	85	0	92.194	3	11	0	6	1	12/17/2012 0:00	2	1	42	22	1	N	48800	35.09716111	-81.66801111
364	11561159	11	1	85	0	92.206	3	11	0	0	0	9/5/2011 0:00	2	5	50	22	1	N	48800	35.09695	-81.66781944

365	12533198	11	1	85	0	92.207	3	11	0	0 0	5/29/2012 0:00	2	1	43	22	1	N	48800	35.09696111	-81.6678
366	13617254	11	1	85	0	92.235	3	11	0	0 0	12/4/2013 0:00	2	10	0	56	1	N	48800	35.09691944	-81.6673
367	12557846	11	1	85	0	92.318	3	11	0	0 0	8/22/2012 0:00	1	25	0	56	1	N	48800	35.09688889	-81.66583056
368	13545195	11	1	85	0	92.377	3	105	0	0 0	6/17/2013 0:00	1	100	50	22	1	N	48800	35.09666111	-81.66481111
369	11523407	11	1	85	0	92.394	3	11	0	0 0	5/18/2011 0:00	1	20	43	22	1	N	48800	35.0967	-81.66451111
370	11525206	11	1	85	0	92.406	3	11	0	0 0	6/2/2011 0:00	1	2	50	22	1	N	48800	35.09688056	-81.66428056
371	11535712	11	1	85	0	92.541	3	11	0	1 1	7/24/2011 0:00	1	2	0	56	1	N	48800	35.09651944	-81.66193056
372	11521535	11	1	85	0	92.671	3	150	0	0 0	5/4/2011 0:00	1	10	0	1	1	N	48800	35.09638056	-81.65963889
373	11528594	11	1	85	0	92.774	3	150	0	2 1	6/15/2011 0:00	2	1	0	50	1	N	48800	35.09641111	-81.65781944
374	11911694	11	1	85	0	92.799	3	150	0	1 1	3/26/2011 0:00	2	1	0	50	1	N	48800	35.09643056	-81.65738889
375	13500799	11	1	85	0	92.814	3	11	0	0 0	1/8/2013 0:00	1	10	50	22	1	N	48800	35.09648889	-81.65713056
376	13507906	11	1	85	0	92.814	3	150	0	0 0	2/11/2013 0:00	2	1	0	51	1	N	48800	35.0965	-81.65713056
377	13505174	11	1	85	0	92.82	3	150	0	0 0	1/25/2013 0:00	1	2	0	38	1	N	48800	35.66118889	-81.70178056
378	12549862	11	1	85	0	92.839	3	150	0	0 0	7/30/2012 0:00	1	4	10	22	1	N	48800	35.09656944	-81.65668889
379	13537905	11	1	85	0	92.888	3	150	0	0 0	5/24/2013 0:00	1	12	0	22	1	N	48800	35.09673889	-81.65586111
380	12602915	11	1	85	0	92.917	3	150	0	0 0	12/20/2012 0:00	2	22	10	22	1	N	48800	35.09685	-81.65536944
381	13608730	11	1	85	0	93.015	3	11	0	0 0	11/13/2013 0:00	1	1	50	22	1	N	48800	35.09731111	-81.65371944
382	11590064	11	1	85	0	93.127	3	150	0	1 1	12/22/2011 0:00	2	139	0	49	1	N	48800	35.0981	-81.65198056
383	13556202	11	1	85	0	93.149	3	150	0	0 0	7/5/2013 0:00	2	30	0	49	1	N	48800	35.09825	-81.65163889
384	11549897	11	1	85	0	93.178	3	150	0	0 0	8/26/2011 0:00	1	203	0	49	1	N	48800	35.09843889	-81.65118889
385	12583000	11	1	85	0	93.208	3	150	0	2 2	11/3/2012 0:00	1	8	10	22	1	N	48800	35.09863889	-81.65071944
386	12602672	11	1	85	0	93.303	3	150	0	0 0	12/16/2012 0:00	1	252	0	49	1	N	48800	35.09926944	-81.64923056
387	12571340	11	1	85	0	93.402	3	150	0	0 0	9/24/2012 0:00	1	50	0	56	1	N	48800	35.09976111	-81.64758056
388	13594124	11	1	85	0	93.589	3	150	0	0 0	10/12/2013 0:00	1	129	0	20	1	N	48800	35.10116111	-81.64473056
389	11518414	11	1	85	0	93.683	3	150	0	0 0	5/2/2011 0:00	1		10	22	1	N	48800	35.10168056	-81.6432
390	11586510	11	1	85	0	93.799	3	150	0	0 0	12/14/2011 0:00	1	120	50	22	1	N	48800	35.10208056	-81.64123056
391	11011695	11	1	85	0	93.851	4	82	0	0 0	3/26/2011 0:00	2	100	0	56	1	N	48800	35.10213056	-81.64031111
392	11543671	11	1	85	0	93.878	4	82	0	0 0	8/13/2011 0:00	2	70	0	56	1	N	48800	35.10206111	-81.63983056
393	11543672	11	1	85	0	93.884	4	82	0	1 1	8/13/2011 0:00	2	70	0	49	1	N	48800	35.10205	-81.63971944
394	11543670	11	1	85	0	93.886	4	82	0	0 0	8/13/2011 0:00	2	70	0	49	1	N	48800	35.10206944	-81.63968889
395	13571536	11	1	85	0	93.922	3	150	0	0 0	8/13/2013 0:00	1	100	50	22	1	N	48800	35.10223889	-81.63906944
396	13541066	11	1	85	0	93.927	3	11	0	0 0	6/4/2013 0:00	1	100	0	49	1	N	48800	35.10223056	-81.63896944
397	12600341	11	1	85	0	93.946	3	150	0	0 0	12/22/2012 0:00	1	211	0	56	1	N	48800	35.10223889	-81.63863889
398	11520292	11	1	85	0	93.991	3	150	0	0 0	5/7/2011 0:00	1	60	0	56	1	N	48800	35.1023	-81.63783889
399	11560086	11	1	85	0	94.026	4	82	0	0 0	10/1/2011 0:00	1	1	0	56	1	N	48800	35.10228056	-81.63723056
400	12600740	11	1	85	0	94.064	4	82	0	0 0	12/20/2012 0:00	2	100	10	22	1	N	48800	35.10231111	-81.63656111
401	13511912	11	1	85	0	94.163	4	82	0	0 0	2/27/2013 0:00	1	40	50	22	1	N	48800	35.10191944	-81.63478056
402	13539397	11	1	85	0	94.176	3	150	0	1 1	5/31/2013 0:00	1	200	10	22	1	N	48800	35.10193889	-81.63456111
403	12601077	11	1	85	0	94.182	4	39	0	0 0	12/19/2012 0:00	1	30	50	22	1	N	48800	35.10183056	-81.63443889
404	12566516	11	1	85	0	94.186	4	82	0	0 0	9/6/2012 0:00	1	92	0	58	1	N	48800	35.10238889	-81.6344
405	11550546	11	1	85	0	94.213	4	82	0	0 0	9/5/2011 0:00	2	89	0	56	1	N	48800	35.10241111	-81.63393889
406	12589381	11	1	85	0	94.272	3	18	0	0 0	11/21/2012 0:00	1	38	10	22	1	N	48800	35.10245	-81.63288889
407	12600075	11	1	85	0	94.348	4	82	0	0 0	12/22/2012 0:00	1	76	50	23	1	N	48800	35.10246111	-81.63155
408	12583003	11	1	85	0	94.503	1	82	0	0 0	11/3/2012 0:00	1	10	50	22	1	N	48800	35.10258889	-81.62881111
409	12561892	11	1	85	0	94.611	4	661	0	0 0	9/6/2012 0:00	1	7	50	22	1	N	48800	35.10266111	-81.62691111
410	13508889	11	1	85	0	94.613	4	82	0	0 0	2/16/2013 0:00	2	13	10	22	1	N	48800	35.10266111	-81.62686944
411	11904630	11	1	85	0	94.635	4	82	0	0 0	1/29/2011 0:00	1	3	0	8	1	N	48800	35.10258056	-81.62648889
412	11006873	11	1	85	0	94.643	4	82	0	0 0	2/18/2011 0:00	1	10	0	46	1	N	48800	35.10268056	-81.62633889
413	11571035	11	1	85	0	94.65	4	82	0	0 0	10/17/2011 0:00	1	50	0	38	1	N	48800	35.10271944	-81.62621944
414	11911683	11	1	85	0	94.659	4	82	0	1 1	3/15/2011 0:00	1	9	0	49	1	N	48800	35.10268889	-81.62606111
415	12543163	11	1	85	0	94.663	4	82	0	0 0	7/11/2012 0:00	1	8	50	22	1	N	48800	35.10268889	-81.62598889
416	11010125	11	1	85	0	94.671	4	82	0	0 0	3/11/2011 0:00	1	7	0	46	1	N	48800	35.10263056	-81.62585
417	11133711	11	1	85	0	94.76	4	82	0	0 0	11/22/2011 0:00	1	1	0	49	1	N	48800	35.00033056	-81.63416944
418	12589054	11	1	85	0	94.768	4	82	0	1 1	11/21/2012 0:00	1	1	10	22	1	N	47000	35.10163889	-81.62408056
419	12589051	11	1	85	0	94.768	4	82	0	1 1	11/21/2012 0:00	1	1	10	22	1	N	47000	35.10163889	-81.62408056
420	12580658	11	1	85	0	94.975	4	82	0	0 0	11/3/2012 0:00	1	71	50	22	1	N	47000	35.10331111	-81.62056944
421	13521897	11	1	85	0	95.047	4	82	0	0 0	4/5/2013 0:00	1	10	0	8	1	N	47000	35.10381111	-81.61946944
422	12598576	11	1	85	0	95.105	3	18	0	0 0	12/17/2012 0:00	1	1	0	47	1	N	47000	35.10421944	-81.61858056
423	13620240	11	1	85	0	95.273	3	18	0	1 3	12/5/2013 0:00	2	40	0	51	1	N	47000	35.10533889	-81.61593889
424	11552428	11	1	85	0	95.489	3	18	0	2 1	9/6/2011 0:00	1	50	42	22	1	N	47000	35.10663056	-81.61246944
425	11575898	11	1	85	0	95.526	3	18	0	1 1	11/8/2011 0:00	1	1	0	56	1	N	47000	35.10686944	-81.61186944
426	12518244	11	1	85	0	95.557	3	18	0	1 1	4/1/2012 0:00	1	100	43	22	1	N	47000	35.10705	-81.61136944
427	11002694	11	1	85	0	95.559	3	18	0	0 0	1/10/2011 0:00	5	20	0	56	1	N	47000	35.10721944	-81.61141944
428	13535516	11	1	85	0	95.576	3	18	0	0 0	5/19/2013 0:00	2	10	0	7	1	N	47000	35.10718889	-81.61108056
429	11551350	11	1	85	0	95.603	4	82	0	0 0	9/7/2011 0:00	1	1	50	22	1	N	47000	35.10751111	-81.61073056
430	13616022	11	1	85	0	95.786	3	18	0	0 0	12/1/2013 0:00	1	50	10	23	1	N	47000	35.10835	-81.60765
431	13618131	11	1	85	0	95.796	3	18	0	0 0	12/1/2013 0:00	1	50	0	22	1	N	47000	35.10838056	-81.60748889
432	12589407	11	1	85	0	95.812	3	18	0	4 1	11/25/2012 0:00	1	3	10	23	1	N	47000	35.10836111	-81.60716944
433	12545973	11	1	85	0	95.824	3	18	0	0 0	7/19/2012 0:00	1	50	0	20	1	N	47000	35.10856111	-81.60703056
434	12589052	11	1	85	0	95.852	3	18	0	0 0	11/21/2012 0:00	1	30	10	22	1	N	47000	35.1087	-81.60658056
435	12519525	11	1	85	0	95.862	4	82	0	0 0	4/1/2012 0:00	1	50	10	23	1	N	47000	35.10871111	-81.60638889
436	11534033	11	1	85	0	95.971	1	85	0	0 0	7/16/2011 0:00	1 RAMP 8416	17	0	60	1	N	47000	35.10891111	-81.60503056
437	12574779	11	1	85	0	96.041	3	18	0	1 1	10/16/2012 0:00	1	19	50	22	1	N	47000	35.10946111	-81.60438889

438	12516670	11	1	85	0	96.13	2	18	0	0 0	3/23/2012 0:00	1		40	99	22	1	N	47000	35.10853056	-81.60296944
439	13524039	11	1	85	0	96.144	3	18	0	0 0	4/12/2013 0:00	1	RAMP 8416	1	10	23	1	N	47000	35.10871111	-81.60293889
440	12524510	11	1	85	0	96.173	3	18	0	0 0	4/29/2012 0:00	1		2	0	56	1	N	47000	35.10981944	-81.60286944
441	11568046	11	1	85	0	96.175	3	18	0	0 0	10/19/2011 0:00	2		2	0	56	1	N	47000	35.10983056	-81.60283889
442	12515662	11	1	85	0	96.185	3	18	0	0 0	3/12/2012 0:00	1		2	0	56	1	N	47000	35.10985	-81.60273056
443	11582995	11	1	85	0	96.188	3	18	0	0 0	12/4/2011 0:00	1		50	0	51	1	N	47000	35.10973889	-81.60266944
444	13501967	11	1	85	0	96.402	3	18	0	0 0	1/11/2013 0:00	2		25	0	46	1	N	47000	35.10998889	-81.59981944
445	13507658	11	1	85	0	96.408	3	18	0	0 0	1/25/2013 0:00	5		1	0	51	1	N	47000	35.10986111	-81.59968889
446	13521899	11	1	85	0	96.409	3	18	0	0 0	4/5/2013 0:00	1		15	10	22	1	N	47000	35.11001111	-81.59968056
447	13541060	11	1	85	0	96.431	3	18	0	0 0	6/2/2013 0:00	1		7	43	22	1	N	47000	35.11003056	-81.59921111
448	13507659	11	1	85	0	96.437	3	18	0	0 0	1/25/2013 0:00	5		1	0	56	1	N	47000	35.10995	-81.59908889
449	12524477	11	1	85	0	96.457	3	18	0	0 0	4/26/2012 0:00	2		20	0	56	1	N	47000	35.11005	-81.59866944
450	12573029	11	1	85	0	96.522	3	18	0	1 1	10/9/2012 0:00	1		1	0	51	1	N	47000	35.11008889	-81.5973
451	12515880	11	1	85	0	96.558	3	18	0	0 0	3/18/2012 0:00	1		1	0	56	1	N	47000	35.1103	-81.59656944
452	13057979	11	1	85	0	96.56	3	18	0	0 0	12/14/2013 0:00	2		10	60	22	1	N	47000		
453	11590071	11	1	85	0	96.565	1	85	0	0 0	12/21/2011 0:00	2		0	0	56	1	N	47000	35.11031111	-81.59641944
454	11583042	11	1	85	0	96.64	3	18	0	0 0	12/5/2011 0:00	2		2	0	56	1	N	47000	35.11016111	-81.59483056
455	12528563	11	1	85	0	96.656	3	18	0	0 0	5/14/2012 0:00	2		80	0	51	1	N	47000	35.11028056	-81.5945
456	11904996	11	1	85	0	96.66	3	18	0	0 0	2/4/2011 0:00	2		1	10	22	1	N	47000	35.10128056	-81.60081111
457	13507913	11	1	85	0	96.673	3	18	0	0 0	2/13/2013 0:00	2		23	0	56	1	N	44900	35.1102	-81.59413056
458	12501651	11	1	85	0	96.755	3	18	0	0 0	1/14/2012 0:00	1		70	0	20	1	N	44900	35.11023889	-81.59241944
459	13615521	11	1	85	0	96.994	3	18	0	1 1	11/26/2013 0:00	2		160	0	60	1	N	44900	35.11051111	-81.58738889
460	13613017	11	1	85	0	97.004	3	18	0	0 0	11/2/2013 0:00	2	INTERSTATE	20	43	22	1	N	44900	35.11045	-81.58716111
461	11576716	11	1	85	0	97.044	3	18	0	0 0	11/16/2011 0:00	2		40	50	22	1	N	44900	35.11076111	-81.58638056
462	12547193	11	1	85	0	97.048	3	18	0	0 0	7/13/2012 0:00	2		95	0	56	1	N	44900	35.11076111	-81.58631111
463	13503447	11	1	85	0	97.052	3	18	0	1 1	1/16/2013 0:00	2		50	0	52	1	N	44900	35.11058056	-81.58613889
464	12601099	11	1	85	0	97.057	3	18	0	0 0	12/24/2012 0:00	2		75	0	46	1	N	44900	35.11081944	-81.58611944
465	11589590	11	1	85	0	97.087	3	18	0	0 0	12/23/2011 0:00	1		100	0	56	1	N	44900	35.11101944	-81.58553889
466	12503777	11	1	85	0	97.095	3	18	0	1 1	1/21/2012 0:00	2		100	0	8	1	N	44900	35.11105	-81.58538056
467	12518120	11	1	85	0	97.099	3	18	0	0 0	3/31/2012 0:00	2		59	0	56	1	N	44900	35.11123889	-81.5854
468	13586936	11	1	85	0	97.122	3	18	0	0 0	9/22/2013 0:00	2		100	0	56	1	N	44900	35.11128889	-81.58488056
469	13569641	11	1	85	0	97.146	4	83	0	0 0	8/16/2013 0:00	1		1	50	22	1	N	44900	35.11138889	-81.58438889
470	13625384	11	1	85	0	97.16	3	18	0	0 0	12/23/2013 0:00	2		50	0	56	1	N	44900	35.11158889	-81.58416944
471	12559114	11	1	85	0	97.17	3	18	0	0 0	8/24/2012 0:00	1		100	0	56	1	N	44900	35.11183889	-81.58413056
472	12568489	11	1	85	0	97.196	3	18	3	1 4	9/18/2012 0:00	2		125	20	56	1	N	44900	35.11206944	-81.58368056
473	13508091	11	1	85	0	97.251	3	18	0	0 0	2/13/2013 0:00	2		10	0	56	1	N	44900	35.11256111	-81.58293889
474	11536426	11	1	85	0	97.281	3	18	0	0 0	7/20/2011 0:00	2		100	0	56	1	N	44900	35.11275	-81.58243889
475	13554266	11	1	85	0	97.31	3	18	0	0 0	7/4/2013 0:00	2		100	0	56	1	N	44900	35.11303056	-81.58206944
476	12585382	11	1	85	0	97.386	3	18	0	0 0	11/10/2012 0:00	1		100	0	56	1	N	44900	35.11381944	-81.58111111
477	12535286	11	1	85	0	97.403	3	18	0	2 1	6/3/2012 0:00	1		100	0	51	1	N	44900	35.11391944	-81.58083056
478	12503778	11	1	85	0	97.419	3	18	0	0 0	1/21/2012 0:00	2		80	50	22	1	N	44900	35.11415	-81.5807
479	11588780	11	1	85	0	97.441	3	18	0	0 0	12/18/2011 0:00	1		200	0	51	1	N	44900	35.11438889	-81.58043056
480	12565209	11	1	85	0	97.489	3	18	0	0 0	9/18/2012 0:00	2			0	56	1	N	44900	35.11488056	-81.57985
481	13505976	11	1	85	0	97.531	3	18	0	0 0	1/25/2013 0:00	1		75	0	4	1	N	44900	35.11531111	-81.57931944
482	13554679	11	1	85	0	97.554	4	83	0	2 1	7/10/2013 0:00	1		200	50	22	1	N	44900	35.1155	-81.57896944
483	13570929	11	1	85	0	97.618	3	18	0	0 0	8/19/2013 0:00	2		150	0	56	1	N	44900	35.11618056	-81.57821111
484	13506945	11	1	85	0	97.638	4	83	0	1 1	1/30/2013 0:00	2		10	0	56	1	N	44900	35.11651944	-81.57811944
485	12537867	11	1	85	0	97.754	3	18	0	0 0	6/14/2012 0:00	1		91	0	22	1	N	44900	35.11761111	-81.57655
486	13616007	11	1	85	0	97.848	3	18	0	0 0	12/1/2013 0:00	1		200	10	22	1	N	44900	35.1186	-81.5754
487	13620234	11	1	85	0	97.942	3	18	0	0 0	12/1/2013 0:00	1		205	10	23	1	N	44900	35.11955	-81.57421111
488	12601804	11	1	85	0	97.955	4	83	0	0 0	12/26/2012 0:00	2		70	10	22	1	N	44900	35.11966111	-81.57403056

	Crash Number	County	Route Type	Route Number	Route AUX	Milepoint	Base Intersection Route	Base Intersection Route Number	# of Fatalities	# of Injuries	Max Injury Code	Date	Road Surface	Street Name	BDO	Manner of Collision	First Harmful Event	Unit Number	Direction	AADT	LAT	LON
902	11585107	42	1	85	0	80.009	3	110	0	0	0	11/27/2011 0:00	1		100	10	22	1	S	57900	35.02788056	-81.87273889
901	13531653	42	1	85	0	80.058	3	110	0	1	3	4/29/2013 0:00	1	INTERSTATE 85	212	43	22	1	S	57900	35.02776111	-81.87181111
900	13562701	42	1	85	0	80.069	4	57	0	0	0	7/22/2013 0:00	1		150	10	23	1	S	57900	35.02805	-81.8717
899	13575847	42	1	85	0	80.109	3	110	0	1	1	8/30/2013 0:00	1	83MM	30	10	23	1	S	57900	35.02823056	-81.87103056
898	12561333	42	1	85	0	80.118	3	110	0	0	0	9/6/2012 0:00	1	INTERSTATE 85	30	0	38	1	S	57900	35.02801111	-81.87078889
897	12602696	42	1	85	0	80.266	4	57	0	0	0	12/17/2012 0:00	2	INTERSTATE 85	10	0	56	1	S	57900	35.02845	-81.86821944
896	12524370	42	1	85	0	80.282	1	85	0	0	0	4/27/2012 0:00	1	INTERSTATE 85	178	43	22	1	S	57900	35.02871111	-81.86803056
895	12538218	42	1	85	0	80.291	4	57	0	0	0	6/21/2012 0:00	1	INTERSTATE 85	30	50	22	1	S	57900	35.02873056	-81.86786111
894	12584154	42	1	85	0	80.297	4	57	0	0	0	10/26/2012 0:00	1	INTERSTATE 85	100	10	23	1	S	57900	35.02873889	-81.86776111
893	11552233	42	1	85	0	80.308	1	85	0	0	0	9/8/2011 0:00	1	INTERSTATE 85	7	43	22	1	S	57900	35.0288	-81.86758056
892	13521550	42	1	85	0	80.377	4	57	0	0	0	4/4/2013 0:00	2	INTERSTATE 85	100	10	22	1	S	57900	35.02906944	-81.86641111
891	13600420	42	1	85	0	80.378	1	85	0	0	0	10/25/2013 0:00	1	INTERSTATE 85	14	0	51	1	S	57900	35.02908056	-81.8664
890	12506534	42	1	85	0	80.378	4	57	0	1	2	2/2/2012 0:00	1	INTERSTATE 85	45	10	22	1	S	57900	35.02891944	-81.86633889
889	13587698	42	1	85	0	80.398	4	57	0	0	0	9/25/2013 0:00	1	INTERSTATE 85	100	99	23	1	S	57900	35.02916111	-81.86605
888	11575141	42	1	85	0	80.428	3	110	0	1	2	11/13/2011 0:00	1	INTERSTATE 85	275	20	22	1	S	57900	35.0293	-81.86556111
887	12594382	42	1	85	0	80.577	4	57	0	0	0	12/7/2012 0:00	1	INTERSTATE 85	50	10	22	1	S	57900	35.02991111	-81.86303056
886	12526096	42	1	85	0	80.598	4	57	0	0	0	4/29/2012 0:00	1	INTERSTATE 85	10	0	51	1	S	57900	35.02998889	-81.86268056
885	13551781	42	1	85	0	80.637	4	57	0	0	0	6/23/2013 0:00	1	INTERSTATE 85	108	10	22	1	S	57900	35.03015	-81.86201944
884	13501860	42	1	85	0	80.657	4	57	0	0	0	1/3/2013 0:00	1	INTERSTATE 85	30	10	22	1	S	57900	35.03023889	-81.86168889
883	13544785	42	1	85	0	80.66	4	57	0	1	1	6/7/2013 0:00	1	INTERSTATE 85	100	50	51	1	S	57900	35.03023889	-81.86163056
882	13613861	42	1	85	0	80.794	4	57	0	0	0	11/18/2013 0:00	1	INTERSTATE 85	20	42	22	1	S	57900	35.03076111	-81.85933889
881	13617269	42	1	85	0	80.824	3	110	0	0	0	11/27/2013 0:00	2	INTERSTATE 85	253	10	22	1	S	57900	35.03101111	-81.85888889
880	13522289	42	1	85	0	80.873	3	57	0	0	0	4/4/2013 0:00	2	INTERSTATE 85	100	0	51	1	S	57900	35.0311	-81.85801944
879	13542795	42	1	85	0	80.911	4	57	0	0	0	6/2/2013 0:00	2	INTERSTATE 85	50	10	22	1	S	57900	35.03128889	-81.85738889
878	13509574	42	1	85	0	81.011	4	57	0	0	0	2/14/2013 0:00	1	INTERSTATE 85	20	42	22	1	S	57900	35.03171111	-81.85568889
877	13560817	42	1	85	0	81.019	3	110	0	0	0	7/22/2013 0:00	2	INTERSTATE 85	200	10	22	1	S	57900	35.03173889	-81.85556944
876	11563381	42	1	85	0	81.085	4	50	0	0	0	5/27/2011 0:00	1	INTERSTATE 85	50	50	22	1	S	57900	35.03201111	-81.85443889
875	13509388	42	1	85	0	81.104	3	110	0	0	0	2/15/2013 0:00	1		50	10	22	1	S	57900	35.03203889	-81.85411111
874	13615970	42	1	85	0	81.127	1	8593	0	0	0	11/26/2013 0:00	2	INTERSTATE 85	40	10	22	1	S	57900	35.03216111	-81.85373056
873	13546089	42	1	85	0	81.194	3	110	0	1	2	5/23/2013 0:00	2		212	10	22	1	S	57900	35.03243889	-81.8526
872	12559296	42	1	85	0	81.207	3	110	0	1	1	8/28/2012 0:00	1	INTERSTATE 85	390	0	51	1	S	57900	35.03251944	-81.85238889
871	13575896	42	1	85	0	81.317	4	57	0	0	0	8/30/2013 0:00	1	INTERSTATE 85	10	10	23	1	S	57900	35.03296944	-81.85053056
870	11001057	42	1	85	0	81.458	3	110	0	0	0	1/10/2011 0:00	3		200	0	56	1	S	57900	35.03358889	-81.84816111
869	13560656	42	1	85	0	81.495	3	110	0	0	0	7/22/2013 0:00	2	INTERSTATE 85	200	10	22	1	S	57900	35.03371111	-81.84751111
868	12600327	42	1	85	0	81.509	3	110	0	0	0	12/21/2012 0:00	1	INTERSTATE 85	200	50	22	1	S	57900	35.03376944	-81.84726944
867	11589446	42	1	85	0	81.523	3	110	0	0	0	12/22/2011 0:00	2	INTERSTATE 85	100	10	22	1	S	57900	35.03381111	-81.84703056
866	13504909	42	1	85	0	81.535	3	110	0	0	0	1/28/2013 0:00	1	INTERSTATE 85	130	0	56	1	S	57900	35.03386944	-81.84683056
865	12547554	42	1	85	0	81.557	3	110	0	0	0	7/21/2012 0:00	2	INTERSTATE 85	100	0	38	1	S	57900	35.03396111	-81.84646111
864	12604537	42	1	85	0	81.567	3	110	0	0	0	12/30/2012 0:00	1	INTERSTATE 85	30	0	56	1	S	57900	35.03383056	-81.84623889
863	13534497	42	1	85	0	81.567	3	110	0	0	0	5/5/2013 0:00	2	INTERSTATE 85	300	10	23	1	S	57900	35.03401111	-81.8463
862	13533837	42	1	85	0	81.569	3	110	0	0	0	5/5/2013 0:00	2		10	10	22	1	S	57900	35.03396944	-81.84625
861	13536605	42	1	85	0	81.57	3	110	0	0	0	5/5/2013 0:00	2	INTERSTATE 85	200	10	23	1	S	57900	35.03401111	-81.84625
860	12560556	42	1	85	0	81.695	3	110	0	0	0	8/31/2012 0:00	1	INTERSTATE 85	100	0	56	1	S	57900	35.03453889	-81.84413056
859	13605019	42	1	85	0	81.727	3	110	0	0	0	11/6/2013 0:00	1	INTERSTATE 85	100	0	38	1	S	57900	35.03466944	-81.84358056
858	11517674	42	1	85	0	81.756	3	110	0	0	0	4/19/2011 0:00	1	INTERSTATE 85	1986	0	38	1	S	57900	35.03475	-81.84308056
857	11585466	42	1	85	0	81.769	3	110	0	0	0	12/2/2011 0:00	1	INTERSTATE 85	1984	0	8	1	S	57900	35.03483889	-81.84286944
856	12538590	42	1	85	0	81.774	3	110	0	1	2	6/17/2012 0:00	1	INTERSTATE 85	21	0	56	1	S	57900	35.03485	-81.84278889
855	12535428	42	1	85	0	81.778	3	110	0	0	0	6/12/2012 0:00	2	INTERSTATE 85	183	10	22	1	S	57900	35.03488056	-81.84271944
854	11585469	42	1	85	0	81.865	3	110	0	0	0	12/2/2011 0:00	1	INTERSTATE 85	1708	10	22	1	S	57900	35.03523056	-81.84126111
853	13566818	42	1	85	0	81.882	3	110	0	1	1	7/26/2013 0:00	1	INTERSTATE 85	100	10	22	1	S	57900	35.03508889	-81.84088889
852	13576875	42	1	85	0	81.887	3	110	0	0	0	8/28/2013 0:00	1	INTERSTATE 85	3	0	56	1	S	57900	35.03531944	-81.84088056
851	13575835	42	1	85	0	81.905	3	110	0	0	0	8/30/2013 0:00	1	INTERSTATE	120	10	23	1	S	57900	35.03546111	-81.84061111
850	11558276	42	1	85	0	82.033	5		0	1	2	9/23/2011 0:00	2	INTERSTATE 85	25	0	56	1	S	57900	35.03593056	-81.83841111
849	11559172	42	1	85	0	82.048	3	110	0	0	0	9/23/2011 0:00	2	INTERSTATE 85	100	10	22	1	S	57900	35.03598056	-81.83816111
848	13615225	42	1	85	0	82.053	3	110	0	0	0	11/27/2013 0:00	3	INTERSTATE 85	10	0	46	1	S	57900	35.03601111	-81.83806944
847	12572371	42	1	85	0	82.128	3	110	0	0	0	9/28/2012 0:00	1	INTERSTATE 85	100	0	56	1	S	57900	35.03631111	-81.83681944
846	12605332	42	1	85	0	82.141	3	110	0	0	0	12/30/2012 0:00	1	INTERSTATE 85	100	10	22	1	S	57900	35.03638056	-81.8366
845	13569417	42	1	85	0	82.25	3	110	0	0	0	8/9/2013 0:00	1	INTERSTATE 85	100	10	23	1	S	57900	35.03686111	-81.83478889
844	13560384	42	1	85	0	82.31	3	110	0	0	0	7/14/2013 0:00	1	INTERSTATE 85	120	50	25	1	S	57900	35.0372	-81.83381944
843	11008308	42	1	85	0	82.323	3	110	0	0	0	3/6/2011 0:00	2	INTERSTATE 85	100	0	56	1	S	57900	35.03726944	-81.83361111
842	11557437	42	1	85	0	82.335	3	110	0	0	0	9/23/2011 0:00	2	INTERSTATE 85	150	0	56	1	S	57900	35.03723889	-81.83335
841	13622311	42	1	85	0	82.361	3	110	0	0	0	12/16/2013 0:00	1	INTERSTATE 85	25	50	22	1	S	57900	35.03751944	-81.833
840	13614037	42	1	85	0	82.402	4	57	0	0	0	11/27/2013 0:00	1	INTERSTATE 85	10	10	22	1	S	57900	35.03775	-81.83235
839	12561249	42	1	85	0	82.424	3	110	0	0	0	8/31/2012 0:00	1	INTERSTATE 85	95	10	22	1	S	57900	35.03796944	-81.83203889
838	13504378	42	1	85	0	82.458	3	110	0	0	0	1/25/2013 0:00	5	INTERSTATE 85	100	0	56	1	S	57900	35.03796111	-81.83136944
837	13589324	42	1	85	0	82.469	3	110	0	0	0	9/30/2013 0:00	1	INTERSTATE 85	120	0	51	1	S	57900	35.03818056	-81.83128889
836	11550026	42	1	85	0	82.488	3	110	0	0	0	9/2/2011 0:00	2	INTERSTATE 85	100	10	22	1	S	57900	35.03831111	-81.83098889
835	12560554	42	1	85	0	82.513	3	110	0	0	0	8/31/2012 0:00	1	INTERSTATE 85	20	10	22	1	S	57900	35.03848056	-81.8306
834	11543522	42	1	85	0	82.527	3	110	0	0	0	8/12/2011 0:00	1	INTERSTATE 85	20	0	56	1	S	57900	35.03848056	-81.83031944
833	11589552	42	1	85	0	82.536	3	110	0	0	0	12/24/2011 0:00	1	INTERSTATE 85	84	50	22	1	S	57900	35.03845	-81.83013889
832	13504373	42	1	85	0	82.538	3	110	0	0	0	1/25/2013 0:00	5	INTERSTATE 85	100	0	56	1	S	57900	35.03845	-81.8301
831	12602225	42	1	85	0	82.542	3	110	0	1	1	12/22/2012 0:00	1	INTERSTATE 85	10	0	22	1	S	57900	35.03866111	-81.83013056

830	13614778	42	1	85	0	82.564	3	110	0	0	0	12/1/2013 0:00	1	INTERSTATE 85	100	10	22	1	S	57900	35.03881111	-81.8298
829	13539656	42	1	85	0	82.567	3	110	0	0	0	5/23/2013 0:00	2	INTERSTATE 85	469	10	23	1	S	57900	35.03881111	-81.82973889
828	13590358	42	1	85	0	82.609	3	110	0	0	0	9/26/2013 0:00	1	INTERSTATE 85	150	0	18	1	S	57900	35.03911944	-81.82908889
827	11000993	42	1	85	0	82.613	3	110	0	0	0	1/10/2011 0:00	4	INTERSTATE 85	20	0	56	1	S	57900	35.03911944	-81.82901111
826	12590105	42	1	85	0	82.634	3	110	0	0	0	11/23/2012 0:00	1	INTERSTATE 85	10	10	22	1	S	57900	35.03925	-81.82868889
825	13563523	42	1	85	0	82.73	3	110	0	0	0	7/26/2013 0:00	1		10	10	22	1	S	57900	35.02331111	-81.87455
824	12526933	42	1	85	0	82.86	3	110	0	0	0	5/2/2012 0:00	1	INTERSTATE 85	186	50	22	1	S	54600	35.04071111	-81.82511944
823	11541031	42	1	85	0	82.871	3	110	0	0	0	8/10/2011 0:00	1	INTERSTATE 85	50	0	46	1	S	54600	35.04078056	-81.82493889
822	13552212	42	1	85	0	82.905	3	110	0	0	0	6/18/2013 0:00	1	INTERSTATE 85	30	10	22	1	S	54600	35.04098889	-81.8244
821	13615341	42	1	85	0	82.952	3	110	0	0	0	12/1/2013 0:00	1	INTERSTATE 85	100	10	22	1	S	54600	35.04113056	-81.82356111
820	13619879	42	1	85	0	82.952	3	110	0	2	1	11/27/2013 0:00	2	INTERSTATE 85	80	10	22	1	S	54600	35.04131111	-81.82366111
819	13514729	42	1	85	0	82.976	3	110	0	0	0	2/26/2013 0:00	2		100	0	56	1	S	54600	35.04166944	-81.82341944
818	13541401	42	1	85	0	83.027	3	110	0	0	0	6/1/2013 0:00	1	INTERSTATE 85	3	0	56	1	S	54600	35.04161111	-81.82236944
817	13520765	42	1	85	0	83.074	3	110	0	0	0	4/2/2013 0:00	1	INTERSTATE 85	83	50	22	1	S	54600	35.04208889	-81.82173056
816	11518702	42	1	85	0	83.098	3	110	0	0	0	5/1/2011 0:00	1	INTERSTATE 85	50	0	56	1	S	54600	35.04208889	-81.82126944
815	13580837	42	1	85	0	83.137	3	110	0	0	0	9/6/2013 0:00	1	INTERSTATE 85	28	10	22	1	S	54600	35.04273056	-81.82025
814	12562956	42	1	85	0	83.141	3	110	0	0	0	9/8/2012 0:00	2	INTERSTATE 85	6	0	56	1	S	54600	35.0428	-81.81998056
813	13580836	42	1	85	0	83.144	3	110	0	0	0	9/6/2013 0:00	1	INTERSTATE 85	25	0	56	1	S	54600	35.0429	-81.81981111
812	11000871	42	1	85	0	83.148	3	110	0	0	0	1/10/2011 0:00	3		10	0	8	1	S	54600	35.043	-81.81958056
811	13538941	42	1	85	0	83.153	3	110	0	0	0	5/23/2013 0:00	2	INTERSTATE 85	21	10	22	1	S	54600	35.0431	-81.81926111
810	12538167	42	1	85	0	83.161	3	110	0	0	0	6/18/2012 0:00	1	INTERSTATE 85	12	50	22	1	S	54600	35.04313889	-81.81868056
809	12506131	42	1	85	0	83.162	3	110	0	0	0	2/6/2012 0:00	1	INTERSTATE 85	18	50	22	1	S	54600	35.0433	-81.81875
808	12569174	42	1	85	0	83.164	3	110	0	2	1	9/28/2012 0:00	1	INTERSTATE 85	11	0	56	1	S	54600	35.04326944	-81.81851944
807	11003315	42	1	85	0	83.169	3	110	0	0	0	1/27/2011 0:00	1	INTERSTATE 85	11	10	22	1	S	54600	35.0435	-81.81828056
806	11590582	42	1	85	0	83.178	3	110	0	0	0	12/24/2011 0:00	1	INTERSTATE 85	5	10	22	1	S	54600	35.0437	-81.81778056
805	13611500	42	1	85	0	83.178	3	110	0	0	0	11/17/2013 0:00	2	INTERSTATE 85	10	50	22	1	S	54600	35.04371944	-81.81773889
804	11546938	42	1	85	0	83.181	3	110	0	0	0	8/23/2011 0:00	1	INTERSTATE 85	4	10	22	1	S	54600	35.04376944	-81.81758889
803	12555540	42	1	85	0	83.182	3	110	0	0	0	8/8/2012 0:00	1	INTERSTATE 85	4	50	22	1	S	54600	35.04378889	-81.81753889
802	13617781	42	1	85	0	83.184	3	110	0	0	0	12/1/2013 0:00	1	INTERSTATE 85	2	10	23	1	S	54600	35.04381944	-81.81738889
801	11520889	42	1	85	0	83.185	3	110	0	0	0	5/11/2011 0:00	1	INTERSTATE 85	3	10	22	1	S	54600	35.04386944	-81.81733056
800	12528713	42	1	85	0	83.187	3	110	0	0	0	4/27/2012 0:00	1		2	41	22	1	S	54600	35.04391944	-81.81723056
799	11515128	42	1	85	0	83.187	3	110	0	1	2	4/9/2011 0:00	1	INTERSTATE 85	2	10	22	1	S	54600	35.04393889	-81.81721944
798	11539168	42	1	85	0	83.188	3	110	0	0	0	8/3/2011 0:00	1	INTERSTATE 85	2	10	22	1	S	54600	35.04395	-81.81716111
797	12505202	42	1	85	0	83.188	3	110	0	0	0	1/28/2012 0:00	1		20	10	22	1	S	54600	35.04263889	-81.81636111
796	13555873	42	1	85	0	83.188	3	9	0	0	0	7/10/2013 0:00	1		10	0	39	1	S	54600	35.04263889	-81.81636111
795	12519765	42	1	85	0	83.189	3	110	0	0	0	4/6/2012 0:00	2	INTERSTATE 85	1	0	56	1	S	54600	35.04381944	-81.81701111
794	11557425	42	1	85	0	83.192	3	110	0	0	0	9/23/2011 0:00	3		2	10	22	1	S	54600	35.04408889	-81.81693056
793	13557921	42	1	85	0	83.193	3	110	0	0	0	7/3/2013 0:00	2	INTERSTATE 85	1	0	51	1	S	54600	35.04408056	-81.81683056
792	12579548	42	1	85	0	83.194	3	110	0	0	0	10/26/2012 0:00	1	INTERSTATE 85	1	10	23	1	S	54600	35.04411111	-81.8168
791	13510060	42	1	85	0	83.194	3	110	0	0	0	2/20/2013 0:00	1	INTERSTATE 85	7	0	51	1	S	54600	35.04408889	-81.81678056
790	13612070	42	1	85	0	83.197	3	110	0	0	0	11/22/2013 0:00	2	INTERSTATE 85	1	0	51	1	S	54600	35.04418056	-81.81663056
789	12528639	42	1	85	0	83.197	3	110	0	0	0	5/13/2012 0:00	2	INTERSTATE 85	10	0	52	1	S	54600	35.04418056	-81.81661944
788	13569006	42	1	85	0	83.199	4	21	0	0	0	8/14/2013 0:00	1	INTERSTATE 85	2	0	56	1	S	54600	35.04423889	-81.81648889
787	12541381	42	1	85	0	83.203	4	21	0	0	0	7/2/2012 0:00	1	INTERSTATE 85	2	10	22	1	S	54600	35.04431111	-81.81621944
786	13511005	42	1	85	0	83.204	3	110	0	0	0	2/19/2013 0:00	1	INTERSTATE 85	5	10	22	1	S	54600	35.04436944	-81.81615
785	12598666	42	1	85	0	83.204	3	110	0	0	0	12/13/2012 0:00	1	INTERSTATE 85	1	10	23	1	S	54600	35.04436111	-81.81616944
784	13515315	42	1	85	0	83.204	4	131	0	0	0	3/8/2013 0:00	1	INTERSTATE 85	400	0	23	1	S	54600	35.04438056	-81.81616111
783	13512316	42	1	85	0	83.204	3	110	0	0	0	2/19/2013 0:00	1	INTERSTATE 85	5	0	56	1	S	54600	35.04436111	-81.81618889
782	13515314	42	1	85	0	83.205	4	131	0	0	0	3/8/2013 0:00	1	INTERSTATE 85	400	50	22	1	S	54600	35.04438056	-81.81615
781	11524232	42	1	85	0	83.205	3	110	0	0	0	5/27/2011 0:00	1	INTERSTATE 85	1	10	22	1	S	54600	35.04438056	-81.81611944
780	12594386	42	1	85	0	83.206	3	110	0	0	0	12/7/2012 0:00	1	INTERSTATE 85	10	0	39	1	S	54600	35.04441111	-81.81606111
779	11562134	42	1	85	0	83.207	3	110	0	0	0	9/23/2011 0:00	2	INTERSTATE 85	2	50	22	1	S	54600	35.04443056	-81.816
778	13623933	42	1	85	0	83.207	4	21	0	0	0	12/22/2013 0:00	2	INTERSTATE 85	2	0	56	1	S	54600	35.04443889	-81.81596944
777	12538340	42	1	85	0	83.207	3	110	0	0	0	6/12/2012 0:00	2	INTERSTATE 85	6	0	56	1	S	54600	35.04441944	-81.81601944
776	13540637	42	1	85	0	83.208	3	110	0	0	0	5/30/2013 0:00	1	INTERSTATE 85	10	0	47	1	S	54600	35.04446111	-81.81593056
775	11542760	42	1	85	0	83.213	4	21	0	0	0	7/24/2011 0:00	1	INTERSTATE 85	1	43	22	1	S	54600	35.04456944	-81.81563889
774	12588723	42	1	85	0	83.213	1	85	0	0	0	11/21/2012 0:00	1	INTERSTATE 85	1	10	22	1	S	54600	35.04458889	-81.81563889
773	12604305	42	1	85	0	83.217	3	110	0	0	0	12/27/2012 0:00	1	INTERSTATE 85		10	22	1	S	54600	35.04466111	-81.81541111
772	12597185	42	1	85	0	83.219	3	110	0	0	0	12/10/2012 0:00	2	RAMP 8526	10	0	46	1	S	54600	35.04481944	-81.8153
771	13569007	42	1	85	0	83.221	4	21	0	0	0	8/16/2013 0:00	1	RAMP 8526	0	50	22	1	S	54600	35.04486944	-81.81523889
770	13505569	42	1	85	0	83.222	4	21	0	1	2	1/25/2013 0:00	5	RAMP 8526	2	10	23	1	S	54600	35.04495	-81.81516111
769	13516474	42	1	85	0	83.227	3	110	0	0	0	3/8/2013 0:00	1	INTERSTATE 85	30	10	23	1	S	54600	35.04491111	-81.81481111
768	12567300	42	1	85	0	83.23	3	110	0	0	0	9/18/2012 0:00	1	INTERSTATE 85	10	10	22	1	S	54600	35.04498889	-81.81456944
767	13514537	42	1	85	0	83.23	6		0	1	1	3/1/2013 0:00	1	INTERSTATE 85	25	0	56	1	S	54600	35.04498889	-81.81461944
766	12583627	42	1	85	0	83.233	3	110	0	0	0	11/8/2012 0:00	1	INTERSTATE 85	10	0	49	1	S	54600	35.04506944	-81.81441111
765	12548026	42	1	85	0	83.254	4	1014	0	0	0	7/20/2012 0:00	1	INTERSTATE 85	10	10	22	1	S	54600	35.04561111	-81.81313056
764	12569175	42	1	85	0	83.264	3	110	0	0	0	9/28/2012 0:00	1	INTERSTATE 85	62	0	56	1	S	54600	35.04568889	-81.81241111
763	11552253	42	1	85	0	83.274	3	110	0	0	0	9/2/2011 0:00	2	INTERSTATE 85	10	0	56	1	S	54600	35.04608056	-81.81196111
762	12607744	42	1	85	0	83.284	3	110	0	0	0	12/27/2012 0:00	1	INTERSTATE 85	2	10	23	1	S	54600	35.04633056	-81.81135
761	11522125	42	1	85	0	83.302	3	110	0	0	0	5/12/2011 0:00	1	INTERSTATE 85	102	0	56	1	S	54600	35.04663056	-81.81011111
760	11001178	42	1	85	0	83.318	3	110	0	0	0	1/10/2011 0:00	4	INTERSTATE 85	35	0	56	1	S	54600	35.04716111	-81.80926111
759	11582151	42	1	85	0	83.319	3	110	0	5	1	11/24/2011 0:00	1	INTERSTATE 85	35	10	22	1	S	54600	35.04718056	-81.80923056
758	11591448	42	1	85	0	83.335	3	110	0	0	0	12/26/2011 0:00	1	INTERSTATE 85	10	50	22	1	S	54600	35.0473	-81.80896111

757	13504161	42	1	85	0	83.348	3	110	0	0	0	1/22/2013 0:00	1	INTERSTATE 85	20	10	22	1	S	54600	35.04738889	-81.80873056
756	12557195	42	1	85	0	83.35	3	110	0	0	0	8/18/2012 0:00	1	INTERSTATE 85	20	0	56	1	S	54600	35.04741111	-81.80871111
755	13525451	42	1	85	0	83.399	3	110	0	0	0	4/7/2013 0:00	1	INTERSTATE 85	10	0	56	1	S	54600	35.04775	-81.80788056
754	11589835	42	1	85	0	83.439	3	110	0	0	0	12/16/2011 0:00	1	INTERSTATE 85	20	0	56	1	S	54600	35.04801944	-81.80716944
753	13572274	42	1	85	0	83.448	3	110	0	1	1	8/18/2013 0:00	2	INTERSTATE 85	21	50	22	1	S	54600	35.04806944	-81.80701944
752	11549131	11	1	85	0	83.506	3	110	0	0	0	8/22/2011 0:00	1		60	0	38	1	S	54600	35.04848056	-81.80606111
751	13567869	11	1	85	0	83.518	3	110	0	0	0	8/1/2013 0:00	1		50	0	52	1	S	54600	35.0486	-81.80588889
750	13606904	11	1	85	0	83.564	5		0	0	0	11/8/2013 0:00	1		30	10	22	1	S	54600	35.04885	-81.80513889
749	13567713	11	1	85	0	83.569	3	110	0	1	1	8/12/2013 0:00	1		100	0	56	1	S	54600	35.04888889	-81.80506111
748	13609108	11	1	85	0	83.591	4	39	0	0	0	11/12/2013 0:00	1		100	50	22	1	S	54600	35.04901944	-81.80471111
747	12541856	11	1	85	0	83.622	4	39	0	0	0	7/7/2012 0:00	1		300	50	22	1	S	54600	35.04921944	-81.80421944
746	12540074	11	1	85	0	83.655	6		0	0	0	6/21/2012 0:00	1		100	43	22	1	S	54600	35.04943056	-81.80371111
745	13523137	11	1	85	0	83.675	3	110	0	0	0	4/4/2013 0:00	2		10	10	22	1	S	54600	35.04965	-81.80345
744	13588824	11	1	85	0	83.732	4	39	0	0	0	9/26/2013 0:00	1		150	50	22	1	S	54600	35.04991944	-81.8025
743	11525488	11	1	85	0	83.734	4	39	0	2	1	5/27/2011 0:00	1	INTERSTATE	150	10	23	1	S	54600	35.04993889	-81.80246944
742	11012655	11	1	85	0	83.749	4	131	0	0	0	4/3/2011 0:00	1		98	50	22	1	S	54600	35.05003056	-81.80223056
741	11539698	11	1	85	0	83.857	4	131	1	4	4	8/5/2011 0:00	1		103	20	56	1	S	54600	35.05076111	-81.80053889
740	13501968	11	1	85	0	84.026	4	131	0	0	0	1/11/2013 0:00	2		63	0	8	1	S	54600	35.05181944	-81.79783889
739	12549066	11	1	85	0	84.294	3	110	0	0	0	7/20/2012 0:00	2		200	10	22	1	S	54600	35.05353889	-81.79361111
738	11561375	11	1	85	0	84.359	4	133	0	0	0	9/30/2011 0:00	1		100	0	56	1	S	54600	35.05396111	-81.79258889
737	13574248	11	1	85	0	84.48	4	131	0	0	0	8/21/2013 0:00	2		17	0	56	1	S	54600	35.05476944	-81.79068056
736	11540660	11	1	85	0	84.534	4	131	0	0	0	8/7/2011 0:00	2		12	10	22	1	S	54600	35.05511111	-81.78983056
735	11541857	11	1	85	0	84.546	4	131	0	0	0	8/7/2011 0:00	2		11	10	22	1	S	54600	35.0552	-81.78965
734	12603158	11	1	85	0	84.589	4	131	0	1	1	12/27/2012 0:00	1		20	10	22	1	S	54600	35.05531111	-81.78886944
733	11552829	11	1	85	0	84.628	3	110	0	0	0	9/2/2011 0:00	1		3	10	22	1	S	54600	35.05555	-81.78823889
732	11557699	11	1	85	0	84.652	4	131	0	0	0	9/23/2011 0:00	2		1	10	22	1	S	54600	35.05586944	-81.78796944
731	11541861	11	1	85	0	84.667	4	131	0	0	0	8/7/2011 0:00	2		1	10	22	1	S	54600	35.05581111	-81.78763056
730	11540656	11	1	85	0	84.679	4	131	0	0	0	8/7/2011 0:00	2		2	10	22	1	S	54600	35.05606111	-81.78753889
729	11514926	11	1	85	0	84.714	4	131	0	0	0	4/3/2011 0:00	1		6	10	22	1	S	54600	35.05626944	-81.787
728	11903443	11	1	85	0	84.745	4	131	0	0	0	1/11/2011 0:00	5		9	0	56	1	S	54600	35.05646944	-81.7865
727	13512916	11	1	85	0	84.803	4	131	0	0	0	2/27/2013 0:00	1		20	0	50	1	S	54600	35.05676111	-81.78553889
726	13624460	11	1	85	0	84.863	4	131	0	0	0	12/21/2013 0:00	1		36	0	56	1	S	54600	35.05723889	-81.78466111
725	12500419	11	1	85	0	85.128	4	131	0	1	2	1/4/2012 0:00	1		90	0	47	1	S	54600	35.05966944	-81.78101944
724	13521349	11	1	85	0	85.141	4	131	0	0	0	4/4/2013 0:00	2		91	0	56	1	S	54600	35.05976944	-81.78081944
723	11904225	11	1	85	0	85.159	4	131	0	0	0	1/17/2011 0:00	1	INTERSTATE	92	0	56	1	S	54600	35.05993056	-81.78056944
722	13502001	11	1	85	0	85.205	4	131	0	0	0	1/11/2013 0:00	2		50	99	23	1	S	54600	35.06031111	-81.77991944
721	12535169	11	1	85	0	85.274	4	131	0	0	0	6/4/2012 0:00	1		90	0	56	1	S	54600	35.0609	-81.77891944
720	11912654	11	1	85	0	85.281	4	131	0	0	0	4/3/2011 0:00	1		122	10	23	1	S	54600	35.06096111	-81.77883056
719	12568611	11	1	85	0	85.361	4	131	0	0	0	9/18/2012 0:00	2		130	0	56	1	S	54600	35.06163889	-81.77768889
718	11001106	11	1	85	0	85.377	4	39	0	0	0	1/10/2011 0:00	5		100	0	56	1	S	54600	35.06178056	-81.77746944
717	11553953	11	1	85	0	85.489	4	39	1	0	4	9/14/2011 0:00	1		110	0	49	1	S	54600	35.06273056	-81.77586111
716	12502512	11	1	85	0	85.601	4	39	0	0	0	1/18/2012 0:00	1		100	43	22	1	S	54600	35.06366944	-81.77423889
715	13534194	11	1	85	0	85.66	4	39	0	0	0	5/9/2013 0:00	1		20	50	22	1	S	54600	35.06438056	-81.77358056
714	12540818	11	1	85	0	85.664	4	39	0	1	2	6/20/2012 0:00	1		80	0	4	1	S	54600	35.06426944	-81.77341111
713	13561316	11	1	85	0	85.677	4	39	0	0	0	7/24/2013 0:00	1		27	50	22	1	S	54600	35.06421944	-81.77306944
712	12511849	11	1	85	0	85.688	4	87	0	0	0	3/5/2012 0:00	1		38	0	1	1	S	54600	35.06443056	-81.77301944
711	12546169	11	1	85	0	85.717	4	39	0	0	0	7/20/2012 0:00	2		25	10	22	1	S	54600	35.06468056	-81.77261111
710	13558637	11	1	85	0	85.791	4	39	0	0	0	7/21/2013 0:00	1		100	0	47	1	S	54600	35.06518056	-81.77143056
709	12510836	11	1	85	0	85.904	4	39	0	0	0	2/24/2012 0:00	1		90	0	56	1	S	54600	35.06628056	-81.76993889
708	11591764	11	1	85	0	86.044	4	39	0	0	0	12/30/2011 0:00	1		100	0	49	1	S	54600	35.06748056	-81.76796111
707	11000996	11	1	85	0	86.051	4	39	0	0	0	1/11/2011 0:00	4		50	50	22	1	S	54600	35.06753889	-81.76786111
706	12570110	11	1	85	0	86.09	4	39	0	0	0	10/2/2012 0:00	1		100	50	22	1	S	54600	35.06788056	-81.76731111
705	11516037	11	1	85	0	86.11	4	39	0	1	1	4/17/2011 0:00	1		50	0	20	1	S	54600	35.06803889	-81.76701944
704	12514449	11	1	85	0	86.144	4	39	0	0	0	3/12/2012 0:00	1		20	10	22	1	S	54600	35.06833056	-81.76653056
703	13516622	11	1	85	0	86.195	4	39	0	0	0	3/12/2013 0:00	1		100	0	56	1	S	54600	35.06876111	-81.7658
702	13521350	11	1	85	0	86.199	4	39	0	0	0	4/4/2013 0:00	2		131	10	22	1	S	54600	35.06866111	-81.76561111
701	13628254	11	1	85	0	86.218	4	131	0	0	0	12/29/2013 0:00	1		156	50	22	1	S	54600	35.06881111	-81.76533056
700	13530911	11	1	85	0	86.267	4	39	0	0	0	4/29/2013 0:00	2		25	0	56	1	S	54600	35.06936944	-81.76476944
699	13575967	11	1	85	0	86.339	4	39	0	0	0	8/28/2013 0:00	1		10	0	56	1	S	54600	35.06998056	-81.76373889
698	11002326	11	1	85	0	86.373	4	39	0	0	0	1/8/2011 0:00	1	INTERSTATE	25	50	22	1	S	54600	35.07026944	-81.76323889
697	13504225	11	1	85	0	86.39	4	39	0	0	0	1/25/2013 0:00	5		20	50	23	1	S	54600	35.04638889	-81.81206111
696	12551737	11	1	85	0	86.433	4	39	0	1	2	7/27/2012 0:00	1		40	10	23	1	S	54600	35.07081944	-81.76243056
695	11901630	11	1	85	0	86.457	4	39	0	0	0	1/10/2011 0:00	4		4	0	49	1	S	54600	35.07103889	-81.76211111
694	13614492	11	1	85	0	86.469	3	105	0	0	0	11/26/2013 0:00	2		1	0	56	1	S	54600	35.07168889	-81.76236111
693	13504154	11	1	85	0	86.49	4	39	0	0	0	1/25/2013 0:00	5		10	10	22	1	S	54600	35.04638889	-81.81206111
692	13535603	11	1	85	0	86.546	3	105	0	0	0	5/14/2013 0:00	1		60	43	18	1	S	54600	35.07236111	-81.76121944
691	13504152	11	1	85	0	86.554	3	105	0	0	0	1/25/2013 0:00	5		1	10	22	1	S	54600	35.07246944	-81.76113889
690	13588502	11	1	85	0	86.578	4	39	0	0	0	9/23/2013 0:00	1		1	0	40	1	S	54600	35.07193056	-81.76023056
689	13584272	11	1	85	0	86.637	4	39	0	0	0	9/17/2013 0:00	1		6	0	38	1	S	53800	35.07233889	-81.75928889
688	12580647	11	1	85	0	86.7	4	39	0	1	1	10/25/2012 0:00	1		30	43	22	1	S	53800	35.07253056	-81.75818056
687	11002696	11	1	85	0	86.747	4	39	0	0	0	1/10/2011 0:00	3		25	10	22	1	S	53800	35.07296944	-81.75746944
686	12508493	11	1	85	0	86.792	4	39	0	0	0	2/19/2012 0:00	2		1	50	22	1	S	53800	35.07301944	-81.75665
685	11557607	11	1	85	0	86.863	4	39	0	0	0	9/23/2011 0:00	2		10	10	22	1	S	53800	35.0731	-81.75538889

684	13560707	11	1	85	0	87.094	4	39	0	0 0	7/26/2013 0:00	1	50	0	20	1	S	53800	35.07373889	-81.75138889
683	12557641	11	1	85	0	87.109	3	105	0	0 0	8/21/2012 0:00	1	10	0	38	1	S	53800	35.07378056	-81.75113056
682	12549847	11	1	85	0	87.112	4	39	0	2 3	7/23/2012 0:00	1	100	0	56	1	S	53800	35.07366111	-81.75105
681	12511095	11	1	85	0	87.279	4	39	0	0 0	3/2/2012 0:00	1	34	0	56	1	S	53800	35.07418056	-81.74816111
680	11514684	11	1	85	0	87.337	4	39	0	0 0	4/7/2011 0:00	1	100	0	56	1	S	53800	35.07431111	-81.74716111
679	13507154	11	1	85	0	87.356	4	39	0	0 0	2/8/2013 0:00	1	60	50	22	1	S	53800	35.07436944	-81.74681944
678	11591763	11	1	85	0	87.362	3	105	0	1 1	12/29/2011 0:00	1	210	10	22	1	S	53800	35.07436944	-81.74671111
677	12590156	11	1	85	0	87.428	4	39	0	0 0	11/21/2012 0:00	1	100	10	22	1	S	53800	35.07448889	-81.74556944
676	12549853	11	1	85	0	87.436	3	105	0	0 0	7/27/2012 0:00	1	100	0	47	1	S	53800	35.07448056	-81.74541944
675	13596744	11	1	85	0	87.761	4	39	0	0 0	10/16/2013 0:00	1	1	0	38	1	S	53800	35.07533056	-81.73978056
674	13596743	11	1	85	0	87.761	4	39	0	0 0	10/16/2013 0:00	1	1	0	38	1	S	53800	35.07531111	-81.73978056
673	12526275	11	1	85	0	87.804	4	39	0	0 0	5/5/2012 0:00	1	100	0	56	1	S	53800	35.07541111	-81.73901944
672	12530187	11	1	85	0	87.806	3	105	0	1 1	5/14/2012 0:00	2	5	0	56	1	S	53800	35.07538889	-81.73898056
671	12511042	11	1	85	0	87.846	4	39	0	0 0	2/29/2012 0:00	2	317	0	51	1	S	53800	35.07551111	-81.73828889
670	12547215	11	1	85	0	87.959	3	105	0	1 2	7/23/2012 0:00	1	120	10	23	1	S	53800	35.07575	-81.73631944
669	11521282	11	1	85	0	88.038	3	105	0	1 1	5/16/2011 0:00	2	100	10	22	1	S	53800	35.07591944	-81.73493889
668	13508092	11	1	85	0	88.048	3	105	0	0 0	2/13/2013 0:00	2	1	0	52	1	S	53800	35.07618889	-81.73483056
667	13544142	11	1	85	0	88.081	3	105	0	0 0	6/12/2013 0:00	1	121	0	56	1	S	53800	35.07586944	-81.73416111
666	12603478	11	1	85	0	88.149	4	39	0	0 0	12/26/2012 0:00	2	50	0	56	1	S	53800	35.07618889	-81.73301111
665	12557857	11	1	85	0	88.225	3	105	0	0 0	8/13/2012 0:00	1	100	0	49	1	S	53800	35.07648056	-81.73171944
664	11528278	11	1	85	0	88.288	3	105	0	0 0	5/16/2011 0:00	1	100	0	49	1	S	53800	35.07686111	-81.73066944
663	12524117	11	1	85	0	88.304	3	105	0	0 0	4/22/2012 0:00	2	80	0	56	1	S	53800	35.07638889	-81.73028056
662	12593405	11	1	85	0	88.451	3	105	0	0 0	11/30/2012 0:00	1	3	10	22	1	S	53800	35.07703056	-81.72778056
661	13530209	11	1	85	0	88.473	3	105	0	0 0	4/28/2013 0:00	2	113	43	22	1	S	53800	35.07696111	-81.72738889
660	13516467	11	1	85	0	88.545	3	105	0	2 1	3/15/2013 0:00	1	150	0	20	1	S	53800	35.07713056	-81.72611944
659	11556478	11	1	85	0	88.583	3	105	0	0 0	9/21/2011 0:00	2	100	0	56	1	S	53800	35.07726111	-81.72546944
658	12509691	11	1	85	0	88.617	3	105	0	1 1	2/20/2012 0:00	5	120	0	43	1	S	53800	35.07738056	-81.72491111
657	13514405	11	1	85	0	88.641	3	105	0	0 0	3/5/2013 0:00	2	343	0	56	1	S	53800	35.07743889	-81.72448889
656	12573030	11	1	85	0	88.644	3	105	0	0 0	10/8/2012 0:00	1	50	0	56	1	S	53800	35.07745	-81.72443889
655	11556507	11	1	85	0	88.657	3	105	0	0 0	9/21/2011 0:00	2	100	0	56	1	S	53800	35.07735	-81.72416944
654	11556484	11	1	85	0	88.674	3	105	0	1 1	9/21/2011 0:00	2	200	0	56	1	S	53800	35.07756111	-81.72393056
653	11517958	11	1	85	0	88.684	5		0	0 0	4/21/2011 0:00	1	62	10	22	1	S	53800	35.07758889	-81.72376111
652	12588831	11	1	85	0	88.763	3	105	0	0 0	11/21/2012 0:00	1	100	10	22	1	S	53800	35.07791111	-81.72241944
651	13588821	11	1	85	0	88.793	4	81	0	0 0	9/25/2013 0:00	1	231	10	22	1	S	53800	35.07808056	-81.72191944
650	13616001	11	1	85	0	88.826	3	105	0	1 2	11/27/2013 0:00	2	100	10	22	1	S	53800	35.07818056	-81.72136944
649	13534367	11	1	85	0	88.836	3	105	0	2 1	5/14/2013 0:00	1	90	0	56	1	S	53800	35.07746944	-81.72091944
648	11580536	11	1	85	0	88.859	3	105	0	0 0	11/28/2011 0:00	2	90	0	51	1	S	53800	35.07835	-81.72081944
647	12506596	11	1	85	0	88.863	3	105	0	0 0	2/9/2012 0:00	1	169	0	46	1	S	53800	35.07833889	-81.72073056
646	12545530	11	1	85	0	88.874	3	105	0	0 0	7/19/2012 0:00	1	80	0	56	1	S	53800	35.07841944	-81.72056111
645	13560127	11	1	85	0	88.9	4	39	0	0 0	7/19/2013 0:00	1	300	10	22	1	S	53800	35.0785	-81.72011944
644	12586677	11	1	85	0	88.934	4	81	0	1 1	11/4/2012 0:00	1	25	43	22	1	S	53800	35.07861944	-81.71953056
643	12511329	11	1	85	0	88.958	3	105	0	1 1	3/3/2012 0:00	2	50	0	56	1	S	53800	35.07873056	-81.71911944
642	11524590	11	1	85	0	89.08	3	105	0	1 1	5/27/2011 0:00	1	50	10	23	1	S	53800	35.07923056	-81.71706111
641	12534615	11	1	85	0	89.18	3	105	0	0 0	5/29/2012 0:00	1	50	10	22	1	S	53800	35.07966111	-81.71538056
640	11514725	11	1	85	0	89.209	3	105	0	0 0	4/10/2011 0:00	1	47	0	38	1	S	53800	35.07976944	-81.71488056
639	12533206	11	1	85	0	89.238	3	105	0	0 0	5/29/2012 0:00	2	15	0	56	1	S	53800	35.07981944	-81.71436944
638	11563809	11	1	85	0	89.283	3	105	0	0 0	10/11/2011 0:00	2	10	0	56	1	S	53800	35.07988056	-81.71356111
637	12520417	11	1	85	0	89.387	3	105	0	0 0	4/8/2012 0:00	1		0	18	1	S	53800	35.08048056	-81.71186944
636	12594225	11	1	85	0	89.422	3	105	0	0 0	11/30/2012 0:00	1	40	0	58	1	S	53800	35.08068056	-81.71131111
635	13585336	11	1	85	0	89.455	3	105	0	1 1	9/22/2013 0:00	1	25	10	22	1	S	53800	35.08081944	-81.71075
634	12598575	11	1	85	0	89.466	4	81	0	0 0	12/17/2012 0:00	2	10	0	56	1	S	53800	35.08083889	-81.71056111
633	12569906	11	1	85	0	89.481	3	105	0	0 0	10/2/2012 0:00	2	6	0	51	1	S	53800	35.08093056	-81.71031944
632	13508747	11	1	85	0	89.495	3	105	0	0 0	2/15/2013 0:00	1	1	50	22	1	S	53800	35.08108056	-81.71011111
631	11557606	11	1	85	0	89.499	3	105	0	0 0	9/20/2011 0:00	1	4	10	22	1	S	53800	35.08116111	-81.71006944
630	11558586	11	1	85	0	89.514	3	105	0	1 1	9/22/2011 0:00	2	1	10	22	1	S	53800	35.08111111	-81.70978889
629	13608984	11	1	85	0	89.517	3	105	0	1 1	11/12/2013 0:00	2	50	10	22	1	S	53800	35.08111944	-81.70973889
628	12569362	11	1	85	0	89.519	3	105	0	0 0	9/25/2012 0:00	1	10	10	22	1	S	53800	35.08113056	-81.7097
627	13570922	11	1	85	0	89.538	3	105	0	0 0	8/16/2013 0:00	1	20	50	22	1	S	53800	35.08123889	-81.70938889
626	12547220	11	1	85	0	89.566	3	105	0	1 1	7/23/2012 0:00	1	28	10	22	1	S	53800	35.08138889	-81.70893056
625	12526826	11	1	85	0	89.76	3	105	0	0 0	5/7/2012 0:00	1	1	50	22	1	S	53800	35.08056111	-81.71913889
624	13563890	11	1	85	0	89.76	3	105	0	0 0	8/2/2013 0:00	1	1	50	22	1	S	53800	35.08443889	-81.70791944
623	11907692	11	1	85	0	89.763	3	105	0	0 0	2/24/2011 0:00	1	1	50	22	1	S	48900	35.08271111	-81.7059
622	13507146	11	1	85	0	89.996	3	105	0	0 0	1/30/2013 0:00	2	10	99	22	1	S	48900	35.0846	-81.70248056
621	12524456	11	1	85	0	90.011	3	105	0	0 0	4/24/2012 0:00	1	25	0	39	1	S	48900	35.08471111	-81.70226111
620	11524266	11	1	85	0	90.024	3	105	0	0 0	5/24/2011 0:00	1	50	10	22	1	S	48900	35.08475	-81.70201111
619	13625343	11	1	85	0	90.081	3	105	0	0 0	12/21/2013 0:00	1	7	43	49	1	S	48900	35.08513889	-81.70113056
618	12557845	11	1	85	0	90.082	3	105	0	1 1	8/21/2012 0:00	2	9	0	51	1	S	48900	35.08531111	-81.70123056
617	13574775	11	1	85	0	90.104	3	105	0	0 0	8/24/2013 0:00	1	50	0	38	1	S	48900	35.08551944	-81.70095
616	12549854	11	1	85	0	90.109	4	81	0	0 0	7/27/2012 0:00	1	40	10	23	1	S	48900	35.08551944	-81.70083889
615	13513384	11	1	85	0	90.12	3	105	0	0 0	2/22/2013 0:00	2	100	0	51	1	S	48900	35.08565	-81.70071111
614	11012106	11	1	85	0	90.205	3	105	0	0 0	3/21/2011 0:00	1	10	0	47	1	S	48900	35.0863	-81.69943889
613	12606015	11	1	85	0	90.26	3	105	0	1 1	12/26/2012 0:00	2	50	41	22	1	S	48900	35.07781111	-81.70333056
612	13505978	11	1	85	0	90.283	3	105	0	1 1	1/25/2013 0:00	5	60	0	56	1	S	48900	35.08693889	-81.69831111

611	13505977	11	1	85	0	90.424	3	105	0	0	0	1/25/2013 0:00	5		75	0	56	1	S	48900	35.08821944	-81.69636111
610	13544115	11	1	85	0	90.454	3	11	0	0	0	6/7/2013 0:00	1		100	41	22	1	S	48900	35.08818889	-81.69568889
609	11012674	11	1	85	0	90.635	3	105	0	0	0	3/27/2011 0:00	2		100	0	49	1	S	48900	35.08991944	-81.69326111
608	12545972	11	1	85	0	90.859	3	105	0	0	0	7/16/2012 0:00	2		1	0	56	1	S	48900	35.09163056	-81.68988056
607	12549855	11	1	85	0	91.062	3	105	0	0	0	7/27/2012 0:00	1		90	10	23	1	S	48900	35.09331944	-81.68695
606	11530238	11	1	85	0	91.078	4	81	0	1	3	6/22/2011 0:00	1		100	43	22	1	S	48900	35.09343889	-81.68671111
605	11585139	11	1	85	0	91.103	3	11	0	0	0	12/11/2011 0:00	1		5	50	22	1	S	48900	35.09365	-81.68635
604	13525446	11	1	85	0	91.108	3	11	0	0	0	4/18/2013 0:00	1		100	0	38	1	S	48900	35.09368889	-81.68628889
603	11533879	11	1	85	0	91.127	3	11	0	0	0	7/3/2011 0:00	2		100	0	56	1	S	48900	35.09381111	-81.68596944
602	13626701	11	1	85	0	91.222	3	11	0	0	0	12/23/2013 0:00	2		80	0	56	1	S	48900	35.09463056	-81.68463056
601	11575085	11	1	85	0	91.223	3	11	0	0	0	11/8/2011 0:00	1		93	43	22	1	S	48900	35.09463056	-81.6846
600	12559942	11	1	85	0	91.337	3	11	0	0	0	8/31/2012 0:00	1		1	10	22	1	S	48900	35.09551944	-81.68288056
599	12601941	11	1	85	0	91.375	3	11	0	0	0	12/26/2012 0:00	1		100	10	22	1	S	48900	35.09568889	-81.68223056
598	11520728	11	1	85	0	91.491	3	11	0	0	0	4/30/2011 0:00	1	INTERSTATE	100	0	51	1	S	48900	35.09648056	-81.68038889
597	13594117	11	1	85	0	91.767	3	11	0	0	0	10/11/2013 0:00	1		23	50	22	1	S	48900	35.0974	-81.67558056
596	13003350	11	1	85	0	91.79	3	11	0	0	0	1/25/2013 0:00	5		38	0	18	1	S	48900	33.0845	-81.70238889
595	11568017	11	1	85	0	91.885	3	11	0	0	0	10/14/2011 0:00	1		10	41	22	1	S	48900	35.09748056	-81.67346944
594	13564557	11	1	85	0	91.905	3	11	0	0	0	7/27/2013 0:00	1		15	50	22	1	S	48900	35.09746944	-81.67311944
593	12555140	11	1	85	0	91.908	3	11	0	0	0	8/16/2012 0:00	1		40	50	22	1	S	48900	35.09758056	-81.67306111
592	11909057	11	1	85	0	92.049	1	11	0	0	0	2/20/2011 0:00	1		10	50	22	1	S	48900	35.09731944	-81.67056111
591	11579791	11	1	85	0	92.054	3	11	0	2	1	11/13/2011 0:00	1		10	43	22	1	S	48900	35.09731944	-81.67048056
590	12553211	11	1	85	0	92.084	3	11	0	0	0	8/7/2012 0:00	2		20	0	56	1	S	48900	35.09731111	-81.66995
589	13588823	11	1	85	0	92.139	3	11	0	1	3	9/25/2013 0:00	1		1	41	22	1	S	48900	35.09721944	-81.66898056
588	13615518	11	1	85	0	92.146	3	11	0	0	0	11/26/2013 0:00	2		50	50	22	1	S	48900	35.09723056	-81.66885
587	12571086	11	1	85	0	92.156	3	11	0	0	0	10/6/2012 0:00	2		2	10	23	1	S	48900	35.09721111	-81.66868056
586	13587501	11	1	85	0	92.156	3	11	0	0	0	9/21/2013 0:00	2		1	0	56	1	S	48900	35.09721111	-81.66868056
585	13532909	11	1	85	0	92.165	3	11	0	0	0	5/2/2013 0:00	2		20	0	52	1	S	48900	35.09731944	-81.66851111
584	12574772	11	1	85	0	92.165	3	11	0	0	0	10/6/2012 0:00	2		1	0	56	1	S	48900	35.0972	-81.66853056
583	11570232	11	1	85	0	92.165	3	11	0	2	2	10/28/2011 0:00	2		1	0	56	1	S	48900	35.09718889	-81.66851944
582	12518206	11	1	85	0	92.17	3	11	0	2	1	3/30/2012 0:00	2		1	50	22	1	S	48900	35.06891944	-81.70213889
581	13561839	11	1	85	0	92.177	3	11	0	0	0	7/27/2013 0:00	1		0	0	56	1	S	48800	35.09716944	-81.66831111
580	12534614	11	1	85	0	92.182	3	11	0	0	0	5/29/2012 0:00	2		50	0	47	1	S	48800	35.09716111	-81.66821944
579	13625072	11	1	85	0	92.188	3	11	0	0	0	12/23/2013 0:00	2			10	22	1	S	48800	35.09715	-81.66811944
578	12595249	11	1	85	0	92.397	3	11	0	0	0	11/30/2012 0:00	1		5	50	22	1	S	48800	35.09688889	-81.66443889
577	13585338	11	1	85	0	92.398	3	150	0	0	0	9/22/2013 0:00	1		10	10	22	1	S	48800	35.09668889	-81.66443889
576	13625393	11	1	85	0	92.418	3	11	0	0	0	12/23/2013 0:00	2		25	10	23	1	S	48800	35.09686111	-81.66406111
575	13594123	11	1	85	0	92.431	3	11	0	0	0	10/11/2013 0:00	1		10	10	22	1	S	48800	35.09685	-81.66383056
574	13517789	11	1	85	0	92.457	3	11	0	0	0	3/24/2013 0:00	2		10	0	56	1	S	48800	35.09678056	-81.66338889
573	12549860	11	1	85	0	92.464	3	11	0	0	0	7/29/2012 0:00	1		10	50	22	1	S	48800	35.09725	-81.66321944
572	11010007	11	1	85	0	92.515	3	11	0	1	1	3/16/2011 0:00	1		13	0	56	1	S	48800	35.09673056	-81.66236944
571	12556960	11	1	85	0	92.55	3	150	0	0	0	8/14/2012 0:00	1		267	50	22	1	S	48800	35.09671944	-81.66175
570	12511470	11	1	85	0	92.608	1	85	0	0	0	2/26/2012 0:00	1		85	10	22	1	S	48800	35.09661111	-81.66073056
569	11905465	11	1	85	0	92.864	3	150	0	0	0	2/9/2011 0:00	1		6	0	56	1	S	48800	35.09666111	-81.65626944
568	12547210	11	1	85	0	93.013	3	150	0	0	0	7/22/2012 0:00	1		151	0	56	1	S	48800	35.09751111	-81.65388056
567	11584890	11	1	85	0	93.084	3	150	0	0	0	12/6/2011 0:00	2		25	99	22	1	S	48800	35.09796111	-81.65275
566	12517117	11	1	85	0	93.155	3	150	0	0	0	3/24/2012 0:00	1		90	43	56	1	S	48800	35.09843056	-81.65163889
565	11571922	11	1	85	0	93.178	3	150	0	0	0	10/29/2011 0:00	1		90	50	22	1	S	48800	35.09858889	-81.65128056
564	11525777	11	1	85	0	93.335	3	150	0	0	0	6/3/2011 0:00	1		65	0	56	1	S	48800	35.09963056	-81.64883056
563	11588782	11	1	85	0	93.358	3	150	0	0	0	12/21/2011 0:00	2		50	0	56	1	S	48800	35.09978056	-81.64845
562	13624447	11	1	85	0	93.364	4	82	0	0	0	12/16/2013 0:00	1		1	10	22	1	S	48800	35.09975	-81.64833056
561	13595895	11	1	85	0	93.378	4	82	0	0	0	10/12/2013 0:00	1		1	0	56	1	S	48800	35.09993889	-81.64816944
560	12576418	11	1	85	0	93.379	4	82	0	0	0	10/19/2012 0:00	1		2	0	46	1	S	48800	35.09993056	-81.64813889
559	11558034	11	1	85	0	93.385	4	82	0	0	0	9/22/2011 0:00	2		100	50	22	1	S	48800	35.09996111	-81.64803056
558	12590524	11	1	85	0	93.397	4	82	0	1	1	11/25/2012 0:00	1		50	10	22	1	S	48800	35.10003889	-81.64783889
557	12557282	11	1	85	0	93.443	3	150	0	0	0	8/12/2012 0:00	1		100	0	38	1	S	48800	35.10035	-81.64711944
556	11561340	11	1	85	0	93.468	4	150	0	0	0	10/3/2011 0:00	1		100	0	38	1	S	48800	35.10051111	-81.64673056
555	12573049	11	1	85	0	93.675	4	82	0	0	0	10/12/2012 0:00	1		1	0	50	1	S	48800	35.10178889	-81.6434
554	13524622	11	1	85	0	93.716	4	82	0	0	0	4/10/2013 0:00	1		100	0	56	1	S	48800	35.10191944	-81.64268889
553	13520838	11	1	85	0	93.779	4	82	0	0	0	3/30/2013 0:00	1		50	50	22	1	S	48800	35.10218056	-81.64161111
552	12506597	11	1	85	0	93.909	4	82	0	1	1	2/9/2012 0:00	1		77	50	22	1	S	48800	35.10241944	-81.63928889
551	13620499	11	1	85	0	94.015	4	82	0	0	0	12/14/2013 0:00	2		10	50	22	1	S	48800	35.10248056	-81.63743056
550	13522919	11	1	85	0	94.026	4	82	0	0	0	4/8/2013 0:00	1		100	10	22	1	S	48800	35.10248889	-81.63723056
549	13504994	11	1	85	0	94.308	4	82	0	0	0	1/28/2013 0:00	1		120	0	56	1	S	48800	35.10266111	-81.63226111
548	11517467	11	1	85	0	94.333	4	82	0	0	0	4/27/2011 0:00	1		50	0	51	1	S	48800	35.10273056	-81.63183056
547	12542607	11	1	85	0	94.376	4	82	0	1	1	6/26/2012 0:00	1		40	50	22	1	S	48800	35.1027	-81.63106111
546	13606894	11	1	85	0	94.39	4	82	0	1	1	11/7/2013 0:00	1		100	50	22	1	S	48800	35.10268056	-81.63081111
545	13567613	11	1	85	0	94.538	4	82	0	0	0	8/12/2013 0:00	1		20	50	22	1	S	48800	35.10278889	-81.62821111
544	11554194	11	1	85	0	94.539	4	82	0	0	0	9/13/2011 0:00	1		25	50	22	1	S	48800	35.10278889	-81.62818056
543	12510222	11	1	85	0	94.555	4	82	0	0	0	2/22/2012 0:00	1		25	50	22	1	S	48800	35.10281111	-81.62791111
542	12520922	11	1	85	0	94.745	4	82	0	0	0	4/9/2012 0:00	1		17	0	1	1	S	48800	35.10271944	-81.62455
541	12590526	11	1	85	0	94.748	3	18	0	0	0	11/25/2012 0:00	1		1	10	22	1	S	48800	35.10388889	-81.62453056
540	12589055	11	1	85	0	94.769	3	18	0	0	0	11/21/2012 0:00	1		1	10	22	1	S	47000	35.10388889	-81.62418889
539	11518416	11	1	85	0	94.962	4	82	0	0	0	5/2/2011 0:00	1		20	0	38	1	S	47000	35.10388056	-81.62111111

538	12597218	11	1	85	0	95.067	4	82	0	0	0	12/8/2012 0:00	1		123	0	38	1	S	47000	35.10443889	-81.6195
537	11568715	11	1	85	0	95.157	4	82	0	2	1	10/20/2011 0:00	1		25	0	8	1	S	47000	35.10495	-81.61801111
536	12588729	11	1	85	0	95.254	4	82	0	0	0	11/9/2012 0:00	1		25	10	22	1	S	47000	35.10551944	-81.61645
535	11579249	11	1	85	0	95.382	1	85	0	1	1	11/10/2011 0:00	1		226	0	51	1	S	47000	35.106	-81.61418889
534	11530714	11	1	85	0	95.394	3	18	0	0	0	7/3/2011 0:00	1		8	0	4	1	S	47000	35.10628056	-81.61411111
533	12561041	11	1	85	0	95.515	3	18	0	2	1	8/31/2012 0:00	1		100	10	23	1	S	47000	35.10701111	-81.61216944
532	11006492	11	1	85	0	95.537	3	18	0	0	0	2/16/2011 0:00	1		75	50	22	1	S	47000	35.10713056	-81.61181111
531	11524181	11	1	85	0	95.747	3	18	0	0	0	5/30/2011 0:00	1		20	41	22	1	S	47000	35.1083	-81.60838056
530	13503458	11	1	85	0	95.75	4	18	0	0	0	1/18/2013 0:00	2		20	0	56	1	S	47000	35.10833056	-81.60833056
529	12535887	11	1	85	0	95.794	3	18	0	0	0	6/11/2012 0:00	2		25	0	46	1	S	47000	35.10856944	-81.60761944
528	11563843	11	1	85	0	95.811	3	18	0	2	1	10/7/2011 0:00	1		30	0	47	1	S	47000	35.10868056	-81.60733889
527	11001023	11	1	85	0	95.84	3	18	0	0	0	1/10/2011 0:00	5		7	0	51	1	S	47000	35.10881944	-81.60686111
526	13516303	11	1	85	0	95.904	3	18	0	0	0	3/15/2013 0:00	1		10	10	22	1	S	47000	35.10911111	-81.606
525	12584471	11	1	85	0	95.916	3	18	0	0	0	11/11/2012 0:00	1		1	50	22	1	S	47000	35.10916111	-81.60588056
524	13562674	11	1	85	0	95.923	3	18	0	0	0	7/26/2013 0:00	1		5	10	22	1	S	47000	35.10925	-81.60583056
523	12571089	11	1	85	0	96.088	4	83	0	2	1	10/8/2012 0:00	1		1	43	22	1	S	47000	35.10981111	-81.60393889
522	12584433	11	1	85	0	96.306	3	18	0	1	1	10/24/2012 0:00	1	OFF RAMP 8544	4	0	12	1	S	47000	35.11056111	-81.6013
521	13616143	11	1	85	0	96.312	3	18	0	0	0	12/1/2013 0:00	1		50	10	22	1	S	47000	35.11065	-81.60123056
520	13616006	11	1	85	0	96.327	3	18	0	0	0	12/1/2013 0:00	1		50	43	22	1	S	47000	35.11038056	-81.60103889
519	11524004	11	1	85	0	96.4	3	18	0	0	0	5/30/2011 0:00	1		20	0	51	1	S	47000	35.11016944	-81.59988889
518	12571022	11	1	85	0	96.422	3	18	0	0	0	9/28/2012 0:00	1		10	10	22	1	S	47000	35.11021111	-81.59941944
517	13524617	11	1	85	0	96.429	3	18	0	1	1	4/6/2013 0:00	1		25	10	22	1	S	47000	35.11023056	-81.59926944
516	12597780	11	1	85	0	96.433	3	18	0	0	0	12/13/2012 0:00	1		40	0	1	1	S	47000	35.11021111	-81.59918056
515	13549651	11	1	85	0	96.46	3	18	0	1	1	6/28/2013 0:00	1		20	42	22	1	S	47000	35.1045	-81.62493889
514	12531478	11	1	85	0	96.608	3	18	0	0	0	5/25/2012 0:00	1		100	0	56	1	S	47000	35.11043889	-81.59551111
513	11002693	11	1	85	0	96.66	3	18	0	0	0	1/7/2011 0:00	1		1	0	49	1	S	47000	35.06781111	-81.70116944
512	12506595	11	1	85	0	96.726	3	18	0	0	0	2/9/2012 0:00	1		25	0	38	1	S	44900	35.11041111	-81.59301944
511	12588727	11	1	85	0	96.752	3	18	0	0	0	11/8/2012 0:00	1		110	0	56	1	S	44900	35.11023889	-81.59248056
510	12592196	11	1	85	0	96.764	3	18	0	0	0	11/21/2012 0:00	1		20	10	23	1	S	44900	35.11046944	-81.59223889
509	11524277	11	1	85	0	96.764	3	18	0	0	0	5/19/2011 0:00	1		100	0	38	1	S	44900	35.11045	-81.59223889
508	12517116	11	1	85	0	96.836	3	18	0	0	0	3/23/2012 0:00	1		90	0	56	1	S	44900	35.11046111	-81.59071944
507	12580657	11	1	85	0	96.854	4	83	0	0	0	11/2/2012 0:00	1		100	0	56	1	S	44900	35.11051111	-81.59033889
506	13539396	11	1	85	0	96.864	2	18	0	0	0	5/30/2013 0:00	1		20	0	56	1	S	44900	35.11051111	-81.59013056
505	13522081	11	1	85	0	96.927	3	18	0	0	0	4/5/2013 0:00	1		63	50	22	1	S	44900	35.11053056	-81.58881111
504	11003448	11	1	85	0	96.95	3	18	0	0	0	1/25/2011 0:00	1		40	0	58	1	S	44900	35.11058056	-81.58833889
503	12600074	11	1	85	0	96.955	3	18	0	0	0	12/21/2012 0:00	2		100	0	56	1	S	44900	35.11051111	-81.58821944
502	11528603	11	1	85	0	96.971	3	18	0	0	0	6/21/2011 0:00	1		40	0	56	1	S	44900	35.11063056	-81.58791944
501	11591717	11	1	85	0	96.971	3	18	0	0	0	12/27/2011 0:00	1		100	0	56	1	S	44900	35.11063056	-81.58791111
500	13615536	11	1	85	0	97.012	3	18	0	0	0	12/1/2013 0:00	1		50	10	21	1	S	44900	35.11078056	-81.58708889
499	12500446	11	1	85	0	97.014	3	18	0	0	0	1/6/2012 0:00	1		100	10	22	1	S	44900	35.11061111	-81.58698889
498	11514686	11	1	85	0	97.018	3	18	0	0	0	4/9/2011 0:00	1		110	0	56	1	S	44900	35.11068889	-81.58693056
497	13608985	11	1	85	0	97.026	3	18	0	0	0	11/9/2013 0:00	1		100	43	22	1	S	44900	35.11065	-81.58673889
496	11904226	11	1	85	0	97.084	3	18	0	0	0	1/18/2011 0:00	1	INTERSTATE	88	50	22	1	S	44900	35.11113889	-81.58568889
495	12537915	11	1	85	0	97.106	3	18	0	0	0	6/24/2012 0:00	1		50	0	56	1	S	44900	35.11113889	-81.58516944
494	12501255	11	1	85	0	97.158	4	83	0	0	0	1/6/2012 0:00	1		350	0	46	1	S	44900	35.11173889	-81.58433889
493	11562952	11	1	85	0	97.169	3	18	0	0	0	10/6/2011 0:00	1		25	0	39	1	S	44900	35.11181111	-81.58415
492	12514813	11	1	85	0	97.278	3	18	0	0	0	3/18/2012 0:00	1		34	0	56	1	S	44900	35.11283056	-81.58261111
491	11581181	11	1	85	0	97.369	3	18	0	0	0	11/27/2011 0:00	1		120	10	22	1	S	44900	35.11376111	-81.58148056
490	13626115	11	1	85	0	97.378	3	18	0	0	0	12/22/2013 0:00	2		40	50	22	1	S	44900	35.11388056	-81.58138889
489	13544674	11	1	85	0	97.383	4	83	0	0	0	6/12/2013 0:00	1	INTERSTATE -85	140	0	51	1	S	44900	35.11391944	-81.58131111
488	13507298	11	1	85	0	97.452	3	18	0	0	0	1/30/2013 0:00	2		30	0	56	1	S	44900	35.11451944	-81.58031944
487	12535164	11	1	85	0	97.535	3	18	0	1	1	5/29/2012 0:00	1		120	0	56	1	S	44900	35.11546111	-81.5794
486	11536078	11	1	85	0	97.607	3	18	0	0	0	7/17/2011 0:00	1		100	50	22	1	S	44900	35.11618889	-81.57848056
485	11560170	11	1	85	0	97.663	4	83	0	0	0	9/27/2011 0:00	1		811	0	38	1	S	44900	35.11681111	-81.57785

Crash Summary

S- 1013 (BUD ARTHUR BRIDGE RD) from MPT 0.000 to MPT 0.900

SPARTANBURG County

01/01/2011 - 12/31/2013 (3.0 years)

Length = 0.900 miles

AADT = 330

Functional Class = Rural -- Local

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	1
PDO Crashes	6
Total Crashes	**7**

Crashes by Manner Of Collision

Rear End	2
Angle	1
Sideswipe	1
Head On	0
Run Off Road	1
Other	2
Total Crashes	**7**

Special Contributing Factors

Animal	0
Bicycle	0
Pedestrian	0

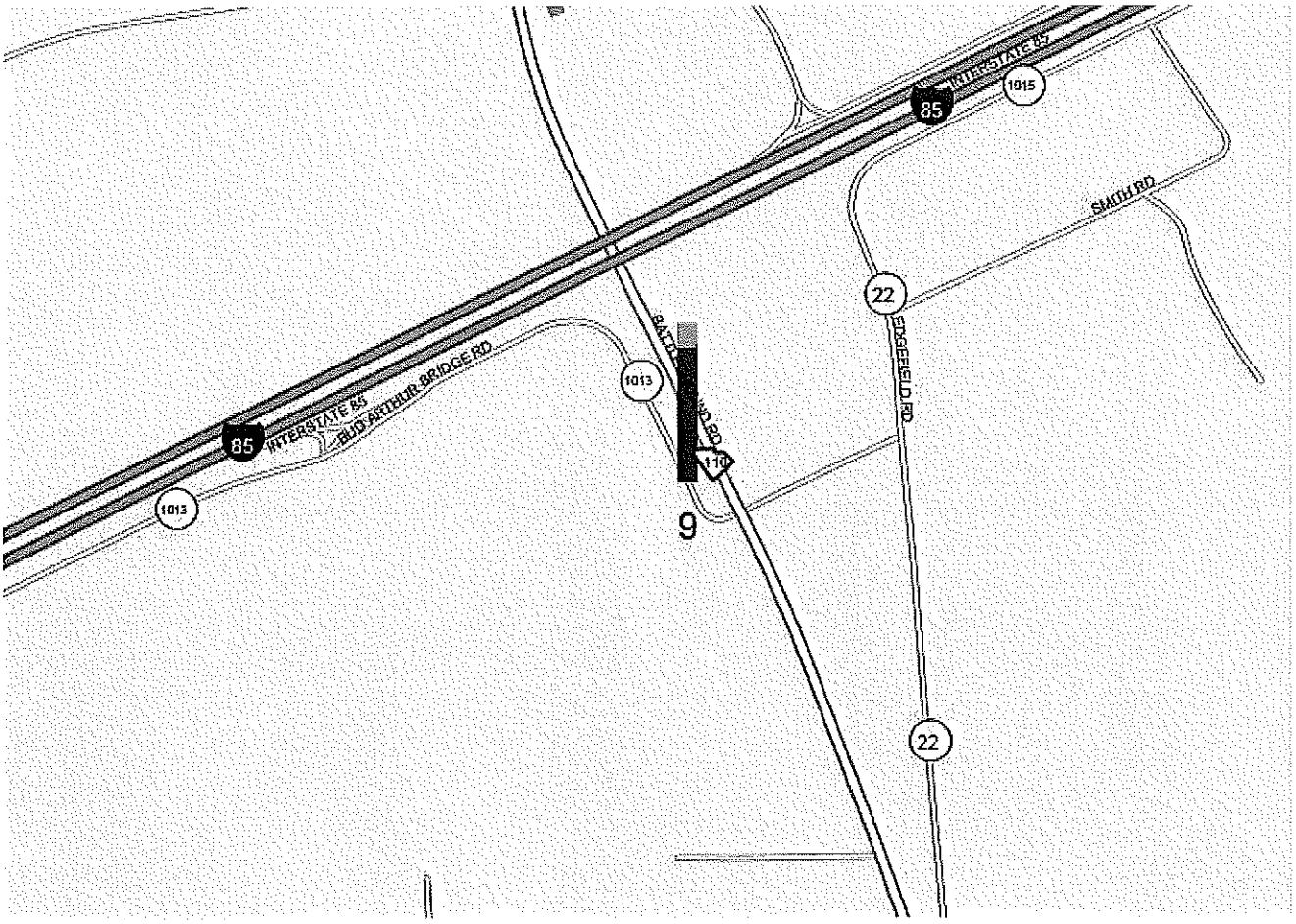
S- 1013 (BUD ARTHUR BRIDGE RD) from MPT 0.000 to MPT 0.900

01/01/2011 - 12/31/2013 (3.0 years)

Length = 0.900 miles AADT = 330

Functional Class = Rural -- Local

fatality
injury
pdo

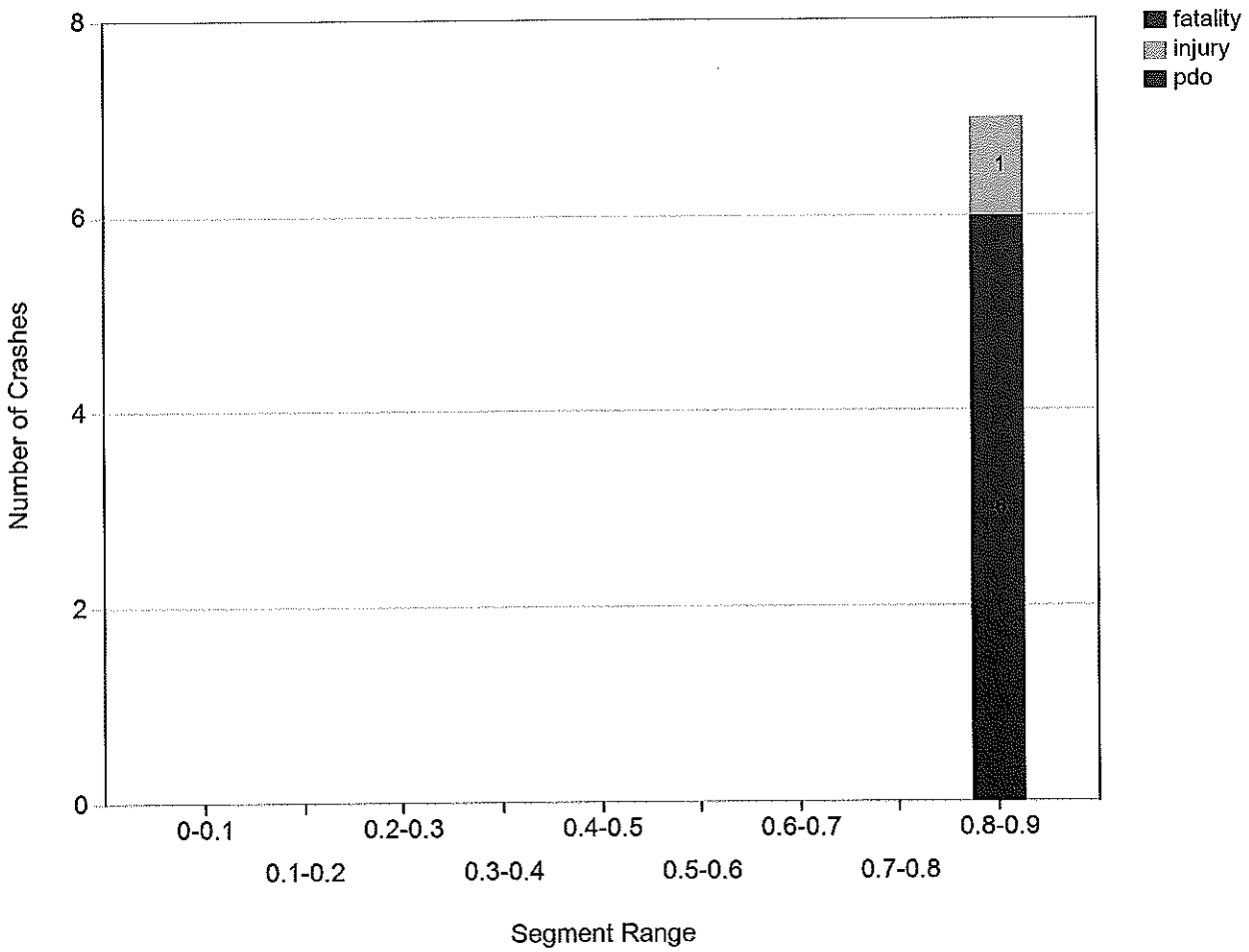


S- 1013 (BUD ARTHUR BRIDGE RD) from MPT 0.000 to MPT 0.900

01/01/2011 - 12/31/2013 (3.0 years)

Length = 0.900 miles AADT = 330

Functional Class = Rural -- Local



Section Crashes

MPT 0.800 to 0.900 (Stack #9)

Total Crashes: 7 Light: 6 Dark: 1 Dry: 7 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 6

1	1	12507526	0.863	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
2	2	13514127	0.879	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
3	3	13539123	0.885	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	ANGLE
4	4	12575630	0.886	INJ0	DARK	DRY	TREE	NO COLLISION W/MV
5	5	13621361	0.895	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR
6	6	11559948	0.896	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	BACKED INTO
7	7	13547919	0.897	INJ0	DAY	DRY	OTHER NONCOLLISION	NO COLLISION W/MV

Crash Summary

SC 110 (BATTLEGROUND RD) from MPT 1.600 to MPT 2.100 (SHA LN)

SPARTANBURG County

01/01/2011 - 12/31/2013 (3.0 years)

Length = 0.500 miles

AADT = 5,796

Functional Class = Urban -- Principal Arterial - Other

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	5
PDO Crashes	12
Total Crashes	**17**

Crashes by Manner Of Collision

Rear End	4
Angle	6
Sideswipe	1
Head On	2
Run Off Road	4
Other	0
Total Crashes	**17**

Special Contributing Factors

Animal	0
Bicycle	0
Pedestrian	0

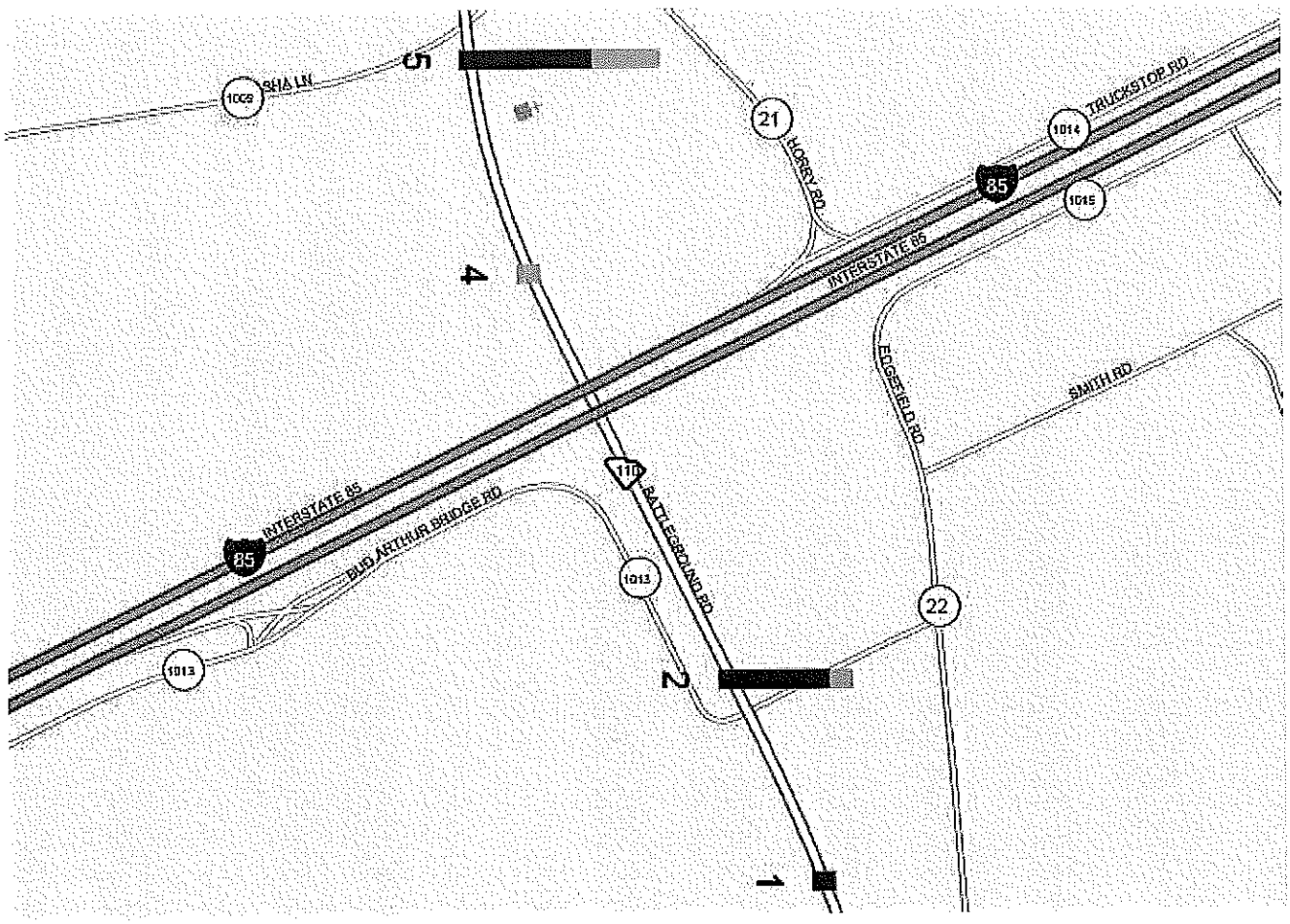
SC 110 (BATTLEGROUND RD) from MPT 1.600 to MPT 2.100 (SHA LN)

01/01/2011 - 12/31/2013 (3.0 years)

Length = 0.500 miles AADT = 5,796

Functional Class = Urban -- Principal Arterial - Other

fatality
injury
pdo

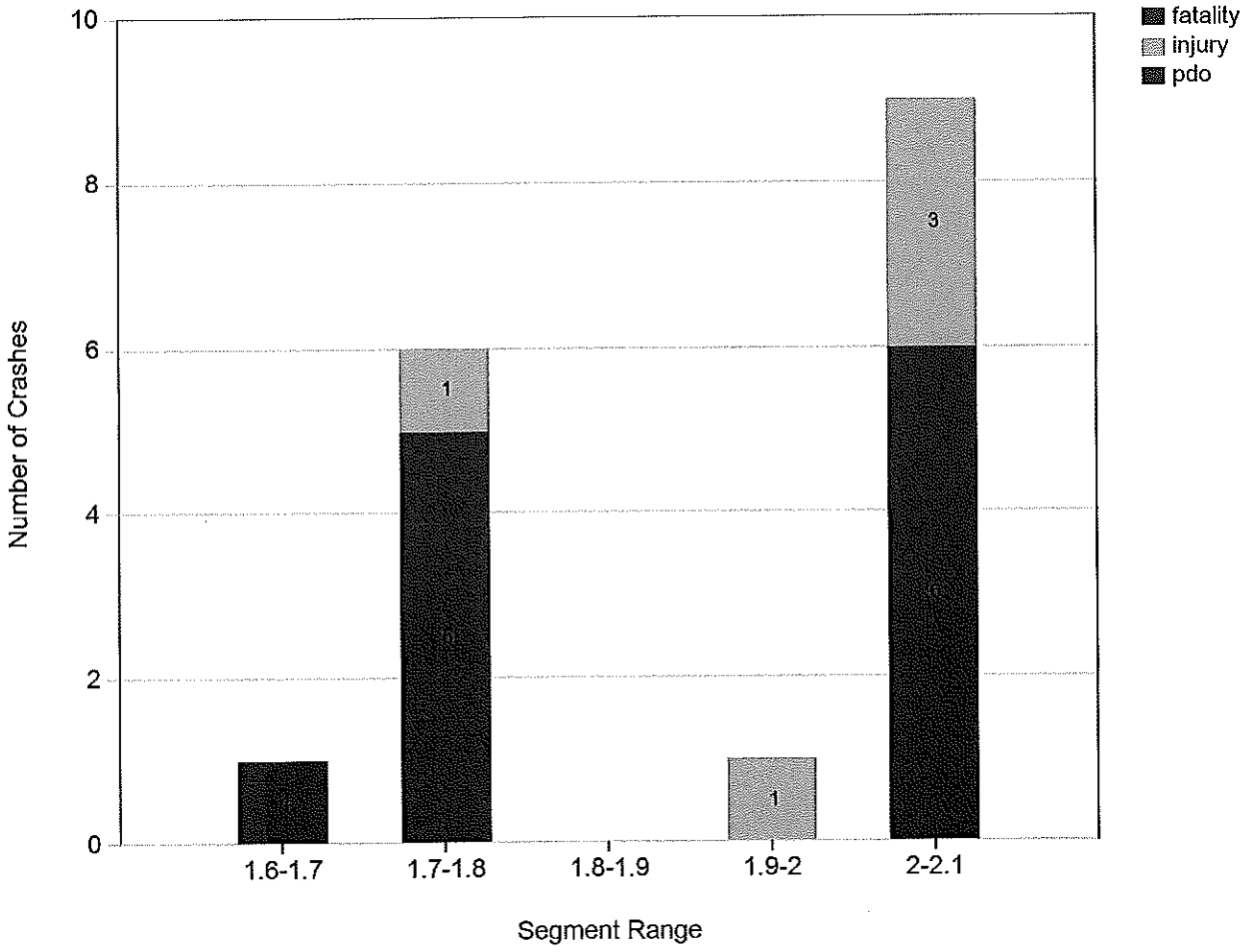


SC 110 (BATTLEGROUND RD) from MPT 1.600 to MPT 2.100 (SHA LN)

01/01/2011 - 12/31/2013 (3.0 years)

Length = 0.500 miles AADT = 5,796

Functional Class = Urban -- Principal Arterial - Other



Section Crashes

MPT 1.600 to 1.700 (Stack #1)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

8	1	11533652	1.666	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 1.700 to 1.800 (Stack #2)

Total Crashes: 6 Light: 5 Dark: 1 Dry: 5 Wet: 1 Fatalities: 0 Injuries: 1 PDO: 5

9	1	12595957	1.727	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
10	2	13588554	1.733	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR
11	3	11518446	1.734	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
12	4	11544845	1.734	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
13	5	13564782	1.734	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
14	6	11588668	1.787	INJ1	DARK	WET	GUARDRAIL FACE	NO COLLISION W/MV

MPT 1.900 to 2.000 (Stack #4)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 0

15	1	12545724	1.970	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	HEAD ON

MPT 2.000 to 2.100 (Stack #5)

Total Crashes: 9 Light: 8 Dark: 1 Dry: 6 Wet: 3 Fatalities: 0 Injuries: 3 PDO: 6

16	1	11533925	2.011	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	HEAD ON
17	2	13559015	2.011	INJ2	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV
18	3	13614346	2.049	INJ0	DAY	DRY	GUARDRAIL END	NO COLLISION W/MV
19	4	11519725	2.053	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
20	5	13513752	2.057	INJ1	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
21	6	11564736	2.059	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
22	7	13587060	2.061	INJ0	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
23	8	13614032	2.070	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
24	9	13556415	2.073	INJ0	DAY	DRY	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV

Phillips Rd.

Google earth feet 1000 meters 400

27 11103751 41 PDO (no lat/long) assume @ intersection
25 11576383 10 PDO
26 12549392 10 PDO
28 13514199 0 18 46 INJ1
driver hit ditch trying to avoid swideswipe opposite direction

Phillips Rd.

Crash Number	Route Type	Route Number	Route AUX	Milepoint	Base Intersection Route	Base Intersection Route Number	ALSB	# of Fatalities	# of Injuries	Max Injury Code	Date	Road Surface	Street Name	BDO	Manner of Collision	First Harmful Event	LAT	LON	REPORT
11103751	5		0		4	21	HORRY RD	0	0	0	9172011	1	PHILLIPS DR	50	41	5	0	0	11103751.pdf
11576383	5		0		4	21	HORRY RD	0	0	0	11102011	1	PHILLIPS DR	0	10	2	35024938	81490116	11576383.pdf
12549392	5		0		4	21	HORRY RD	0	0	0	7282012	1	PHILLIPS DR	0	10	28	35024942	81490113	12549392.pdf
13514199	5		0		4	21	HORRY RD	0	3	1	3052013	1	PHILLIPS DR	23	0	16	35025604	81485522	13514199.pdf

Crash Milepoint Report

Thursday, December 11, 2014

Cherokee County S- 665

MPT>=1.700 AND MPT<=3.700 01/01/2011 - 08/31/2014

OBS	ACCNO	DATE	HARMEVENT	MAC	FA	INJ	PDO	LIGHT	ROAD SRFCE	MPT	BIR	BRN	BRA	ALSB	BDO	SIC	SRN	SRA
29 1	14522621	03/14/2014	MOTOR VEHICLE (I	SIDESWIPE SAME DI	0	1	0	DAYLIGHT	DRY	2.800	S-	39		S GREEN RIVER I	10	L-		
					0	1	0											

Injury 1 crash - turning out of a private drive

Crash Summary

S- 661 (HAMPSHIRE DR) from MPT 1.090 to MPT 1.910 (UNION HWY)

CHEROKEE County

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.820 miles

AADT = 2,125

Functional Class = Urban -- Local

Crashes by Injury Class

Fatality Crashes	1
Injury Crashes	0
PDO Crashes	7
Total Crashes	**8**

Crashes by Manner Of Collision

Rear End	3
Angle	1
Sideswipe	0
Head On	0
Run Off Road	3
Other	1
Total Crashes	**8**

Special Contributing Factors

Animal	0
Bicycle	0
Pedestrian	1

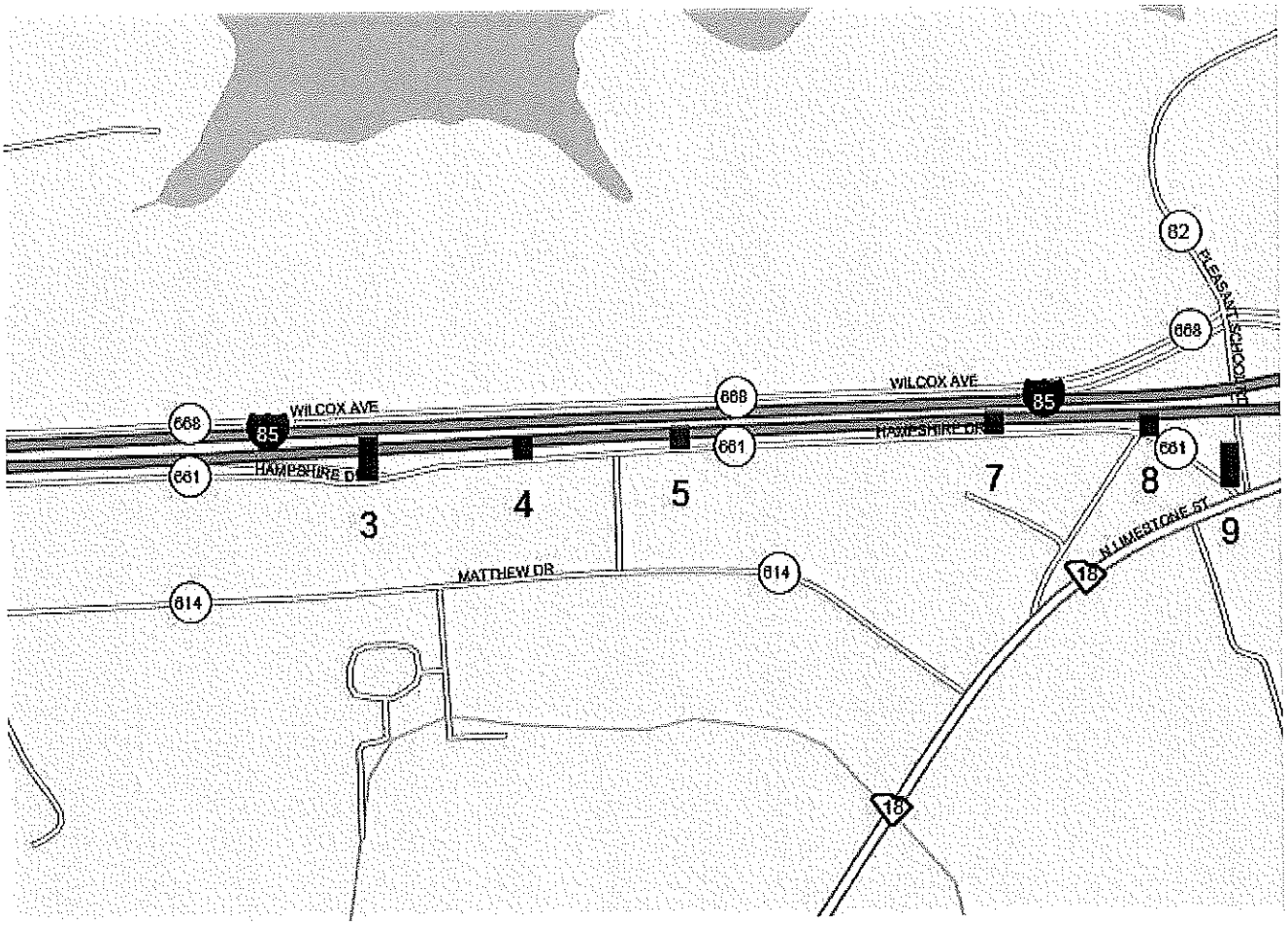
S- 661 (HAMPSHIRE DR) from MPT 1.090 to MPT 1.910 (UNION HWY)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.820 miles AADT = 2,125

Functional Class = Urban -- Local

fatality
injury
pdo

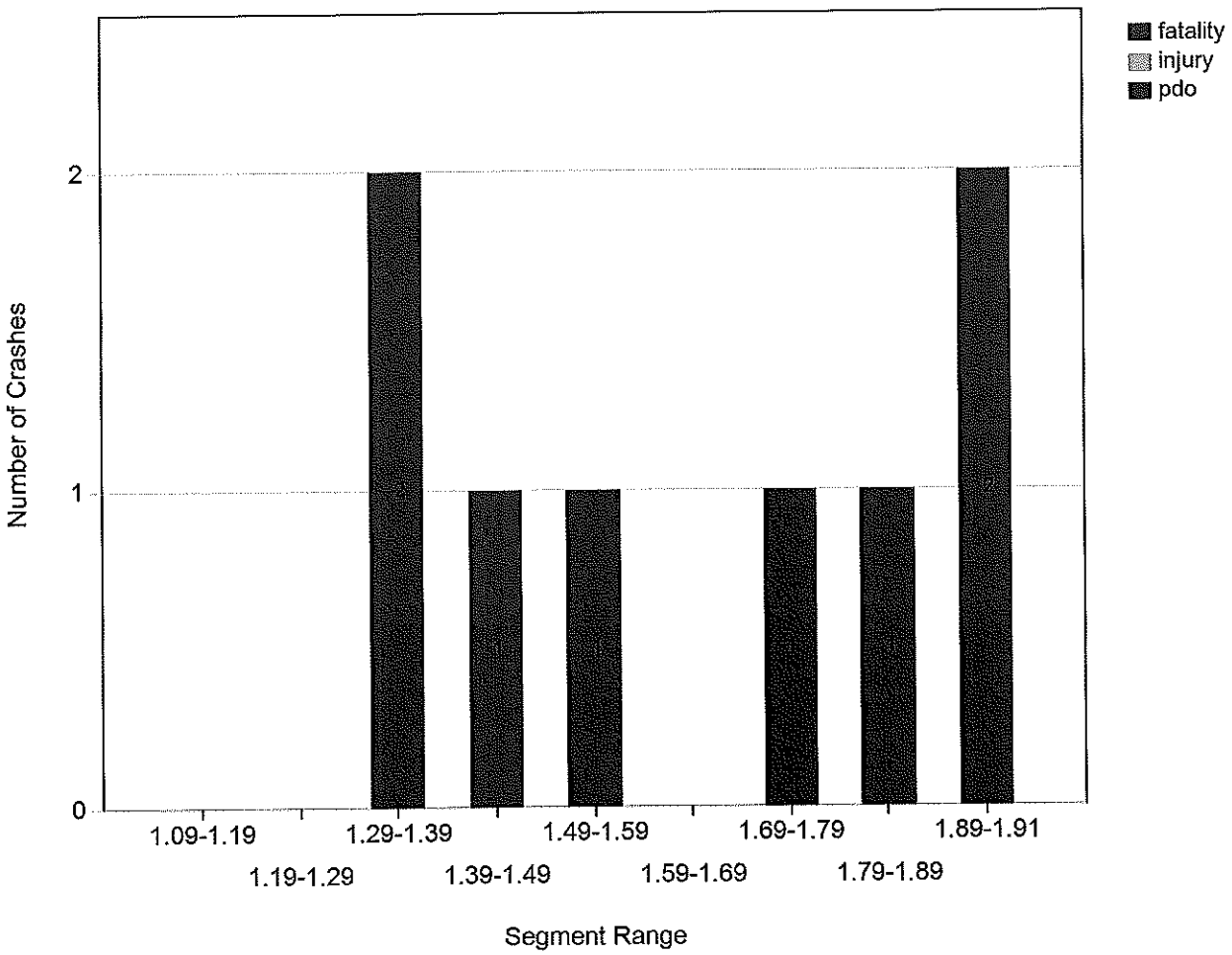


S- 661 (HAMPSHIRE DR) from MPT 1.090 to MPT 1.910 (UNION HWY)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.820 miles AADT = 2,125

Functional Class = Urban -- Local



Section Crashes

MPT 1.290 to 1.390 (Stack #3)

Total Crashes: 2 Light: 1 Dark: 1 Dry: 1 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 2

30	1	13587755	1.335	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
31	2	11549611	1.360	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 1.390 to 1.490 (Stack #4)

Total Crashes: 1 Light: 0 Dark: 1 Dry: 1 Wet: 0 Fatalities: 1 Injuries: 0 PDO: 0

32	1	14516399	1.440	INJ4	DARK	DRY	PEDESTRIAN	NO COLLISION W/MV

MPT 1.490 to 1.590 (Stack #5)

Total Crashes: 1 Light: 0 Dark: 1 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

33	1	13501536	1.502	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 1.690 to 1.790 (Stack #7)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

34	1	13628249	1.690	INJ0	DAY	DRY	UTILITY POLE	NO COLLISION W/MV

MPT 1.790 to 1.890 (Stack #8)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 0 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 1

35	1	13534583	1.847	INJ0	DAY	WET	DITCH	NO COLLISION W/MV

MPT 1.890 to 1.910 (Stack #9)

Total Crashes: 2 Light: 2 Dark: 0 Dry: 2 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 2

36	1	13506002	1.903	INJ0	DAY	DRY	HIGHWAY TRAFFIC SIGN POST	NO COLLISION W/MV
37	2	14536508	1.910	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END

Crash Summary

SC 18 (SHELBY HWY) from MPT 16.890 (BONNER LAKE RD) to MPT 19.610 (CONCORD RD)

CHEROKEE County

01/01/2011 - 08/31/2014 (3.7 years)

Length = 2.720 miles

AADT = 9,691

Functional Class = Rural -- Minor Arterial

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	22
PDO Crashes	63
Total Crashes	**85**

Crashes by Manner Of Collision

Rear End	23
Angle	34
Sideswipe	8
Head On	2
Run Off Road	15
Other	3
Total Crashes	**85**

Special Contributing Factors

Animal	1
Bicycle	0
Pedestrian	0

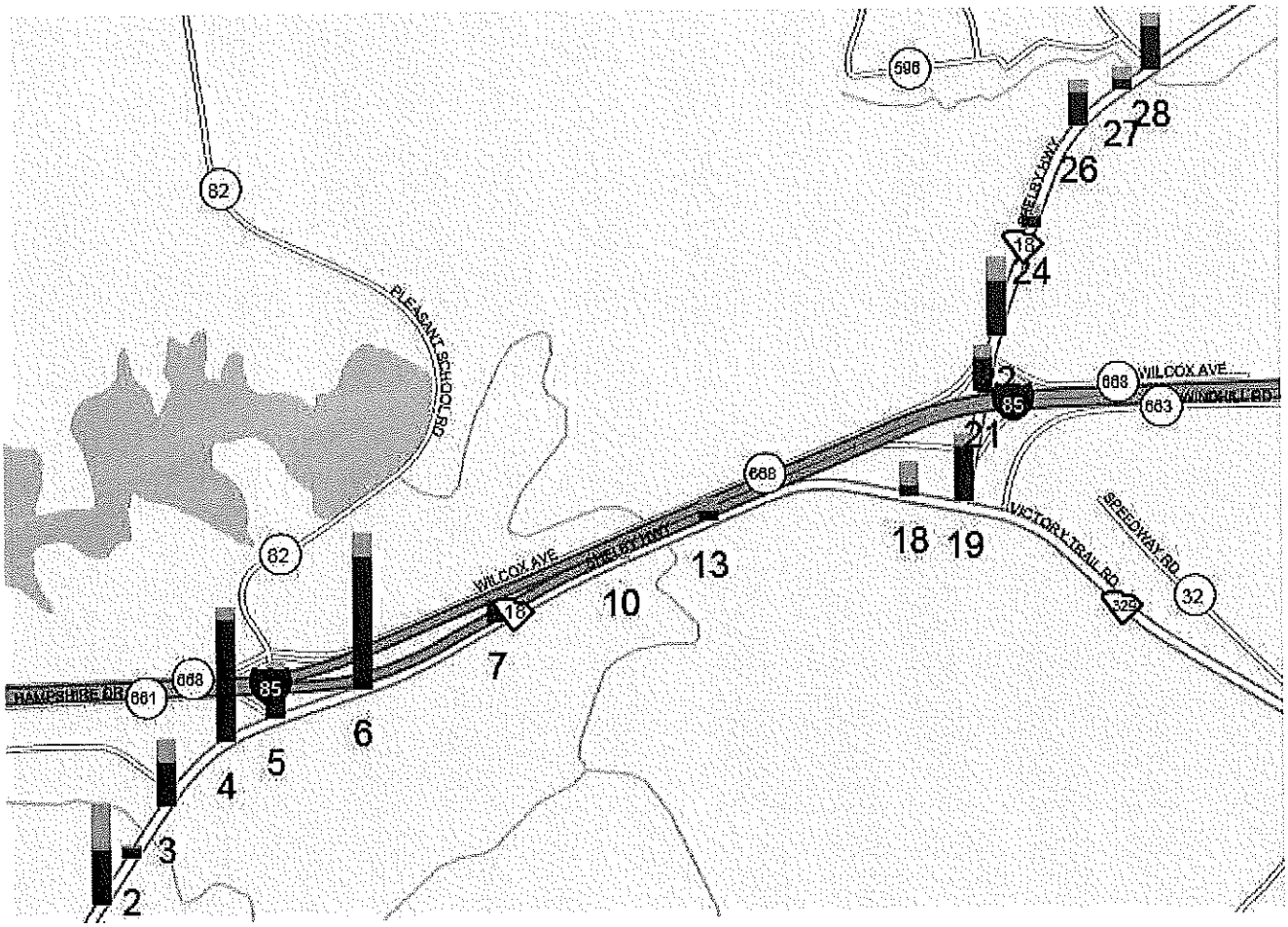
SC 18 (SHELBY HWY) from MPT 16.890 (BONNER LAKE RD) to MPT 19.610 (CONCORD RD)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 2.720 miles AADT = 9,691

Functional Class = Rural -- Minor Arterial

fatality
injury
pdo

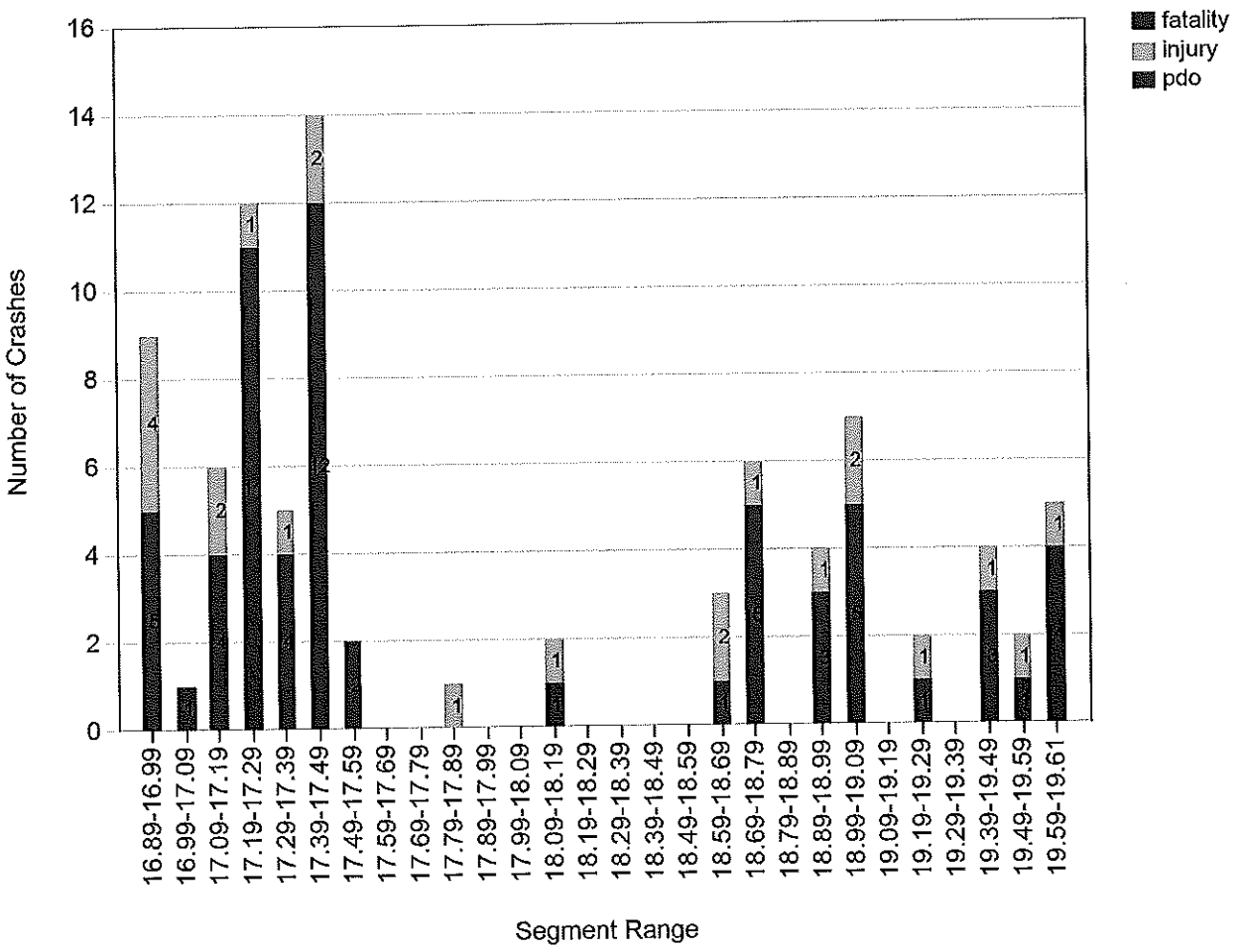


SC 18 (SHELBY HWY) from MPT 16.890 (BONNER LAKE RD) to MPT 19.610 (CONCORD RD)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 2.720 miles AADT = 9,691

Functional Class = Rural -- Minor Arterial



Section Crashes

MPT 16.890 to 16.990 (Stack #1)

Total Crashes: 9 Light: 6 Dark: 3 Dry: 7 Wet: 2 Fatalities: 0 Injuries: 4 PDO: 5

	1	11001022	16.890	INJ0	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
	2	11530195	16.892	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
	3	12507834	16.893	INJ1	DAWN	DRY	MOTOR VEHICLE (IN TRANSPORT)	HEAD ON
	4	12535446	16.896	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
	5	13623325	16.897	INJ0	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
	6	11550613	16.900	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
	7	12567594	16.900	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
	8	13618126	16.901	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
	9	13600605	16.909	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR

MPT 16.990 to 17.090 (Stack #2)

Total Crashes: 1 Light: 0 Dark: 1 Dry: 0 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 1

	1	14512402	17.030	INJ0	DARK	ICE	OVERTURN/ROLLOVER	NO COLLISION W/MV

MPT 17.090 to 17.190 (Stack #3)

Total Crashes: 6 Light: 4 Dark: 2 Dry: 4 Wet: 2 Fatalities: 0 Injuries: 2 PDO: 4

38	1	13583885	17.175	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
39	2	13575105	17.179	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
40	3	14503837	17.180	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR
41	4	11556505	17.181	INJ1	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
42	5	12583020	17.181	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
43	6	11592910	17.185	INJ1	DARK	DRY	ANIMAL (DEER ONLY)	NO COLLISION W/MV

MPT 17.190 to 17.290 (Stack #4)

Total Crashes: 12 Light: 8 Dark: 4 Dry: 10 Wet: 2 Fatalities: 0 Injuries: 1 PDO: 11

44	1	13597312	17.192	INJ0	DAY	DRY	CARGO/EQUIP LOSS OR SHIFT	NO COLLISION W/MV
45	2	14516570	17.201	INJ0	DAWN	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
46	3	13503006	17.223	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
47	4	11517660	17.243	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
48	5	11592002	17.243	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
49	6	13618121	17.243	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR
50	7	14522444	17.243	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
51	8	11002337	17.244	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
52	9	13510487	17.244	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
53	10	11009860	17.245	INJ1	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

Section Crashes

54	11	12535769	17.248	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
55	12	11528279	17.249	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 17.290 to 17.390 (Stack #5)

Total Crashes: 5 Light: 3 Dark: 2 Dry: 5 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 4

56	1	12534990	17.334	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR
57	2	12540539	17.334	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
58	3	11583577	17.356	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
59	4	11547037	17.364	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
60	5	12510838	17.369	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR

MPT 17.390 to 17.490 (Stack #6)

Total Crashes: 14 Light: 9 Dark: 5 Dry: 12 Wet: 2 Fatalities: 0 Injuries: 2 PDO: 12

61	1	11010360	17.400	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	ANGLE
62	2	11542489	17.400	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR
63	3	13551414	17.401	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
64	4	11568015	17.402	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
65	5	12515422	17.402	INJ3	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
66	6	12590170	17.402	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
67	7	13584270	17.402	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
68	8	13551383	17.403	INJ0	DAY	DRY	OTHER (POST, POLE, SUPPORT, ETC)	NO COLLISION W/MV
69	9	12586684	17.404	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
70	10	14554067	17.410	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR
71	11	14562384	17.410	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
72	12	12540063	17.420	INJ3	DARK	DRY	MOTOR VEHICLE (PARKED)	ANGLE
73	13	11584889	17.425	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
74	14	11520285	17.435	INJ0	DAY	WET	MOTOR VEHICLE (STOPPED)	ANGLE

MPT 17.490 to 17.590 (Stack #7)

Total Crashes: 2 Light: 1 Dark: 1 Dry: 1 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 2

	1	11576738	17.503	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
	2	13618152	17.533	INJ0	DARK	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 17.790 to 17.890 (Stack #10)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 0

	1	13503574	17.800	INJ2	DUSK	DRY	TREE	NO COLLISION W/MV

Section Crashes

MPT 18.090 to 18.190 (Stack #13)

Total Crashes: 2 Light: 2 Dark: 0 Dry: 0 Wet: 2 Fatalities: 0 Injuries: 1 PDO: 1

	1	12599633	18.143	INJ3	DAY	WET	EMBANKMENT	NO COLLISION W/MV
	2	11543675	18.158	INJ0	DAY	WET	FENCE	NO COLLISION W/MV

MPT 18.590 to 18.690 (Stack #18)

Total Crashes: 3 Light: 2 Dark: 1 Dry: 3 Wet: 0 Fatalities: 0 Injuries: 2 PDO: 1

86	1	14511174	18.590	INJ2	DAY	ICE	GUARDRAIL FACE	NO COLLISION W/MV
87	2	14547287	18.590	INJ0	DARK	DRY	DITCH	NO COLLISION W/MV
88	3	13539283	18.612	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 18.690 to 18.790 (Stack #19)

Total Crashes: 6 Light: 5 Dark: 1 Dry: 5 Wet: 1 Fatalities: 0 Injuries: 1 PDO: 5

89	1	11518626	18.728	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	HEAD ON
90	2	12557834	18.729	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
91	3	14541139	18.730	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
92	4	13576579	18.731	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
93	5	13502588	18.733	INJ0	DARK	WET	MOTOR VEHICLE (STOPPED)	REAR END
94	6	11012055	18.737	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END

MPT 18.890 to 18.990 (Stack #21)

Total Crashes: 4 Light: 4 Dark: 0 Dry: 3 Wet: 1 Fatalities: 0 Injuries: 1 PDO: 3

95	1	12555117	18.945	INJ1	DAY	WET	GUARDRAIL FACE	NO COLLISION W/MV
96	2	11549148	18.969	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE SAME DIR
97	3	12583821	18.970	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
98	4	12533248	18.989	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END

MPT 18.990 to 19.090 (Stack #22)

Total Crashes: 7 Light: 5 Dark: 2 Dry: 6 Wet: 1 Fatalities: 0 Injuries: 2 PDO: 5

99	1	11577308	18.990	INJ0	DAY	WET	MOTOR VEHICLE (STOPPED)	REAR END
100	2	13505698	19.000	INJ0	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV
101	3	14545901	19.000	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
102	4	12600747	19.005	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
103	5	11523101	19.006	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
104	6	11524144	19.021	INJ0	DARK	DRY	MOTOR VEHICLE (STOPPED)	ANGLE
105	7	13608724	19.057	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

Section Crashes

MPT 19.190 to 19.290 (Stack #24)

Total Crashes: 2 Light: 2 Dark: 0 Dry: 2 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 1

1	11555608	19.193	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
2	12519284	19.282	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 19.390 to 19.490 (Stack #26)

Total Crashes: 4 Light: 3 Dark: 1 Dry: 2 Wet: 2 Fatalities: 0 Injuries: 1 PDO: 3

1	11570113	19.396	INJ0	DAY	WET	MOTOR VEHICLE (STOPPED)	REAR END
2	13608785	19.403	INJ0	DARK	WET	OTHER	NO COLLISION W/MV
3	12505330	19.449	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
4	13590778	19.457	INJ0	DAY	DRY	OTHER (POST, POLE, SUPPORT, ETC)	NO COLLISION W/MV

MPT 19.490 to 19.590 (Stack #27)

Total Crashes: 2 Light: 1 Dark: 1 Dry: 1 Wet: 1 Fatalities: 0 Injuries: 1 PDO: 1

1	12603148	19.541	INJ3	DARK	WET	TREE	NO COLLISION W/MV
2	12531460	19.587	INJ0	DAY	DRY	EMBANKMENT	NO COLLISION W/MV

MPT 19.590 to 19.610 (Stack #28)

Total Crashes: 5 Light: 3 Dark: 2 Dry: 3 Wet: 2 Fatalities: 0 Injuries: 1 PDO: 4

1	13500837	19.598	INJ0	DARK	DRY	DITCH	NO COLLISION W/MV
2	13615537	19.604	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
3	13502585	19.607	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	REAR END
4	11571040	19.610	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV
5	14545916	19.610	INJ1	DARK	WET	EMBANKMENT	NO COLLISION W/MV

Crash Summary

S- 82 (PLEASANT SCHOOL RD) from MPT 4.500 to MPT 5.110 (UNION HWY)

CHEROKEE County

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.610 miles

AADT = 1,270

Functional Class = Rural -- Minor Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	5
PDO Crashes	11
Total Crashes	**16**

Crashes by Manner Of Collision

Rear End	4
Angle	7
Sideswipe	1
Head On	1
Run Off Road	3
Other	0
Total Crashes	**16**

Special Contributing Factors

Animal	0
Bicycle	0
Pedestrian	0

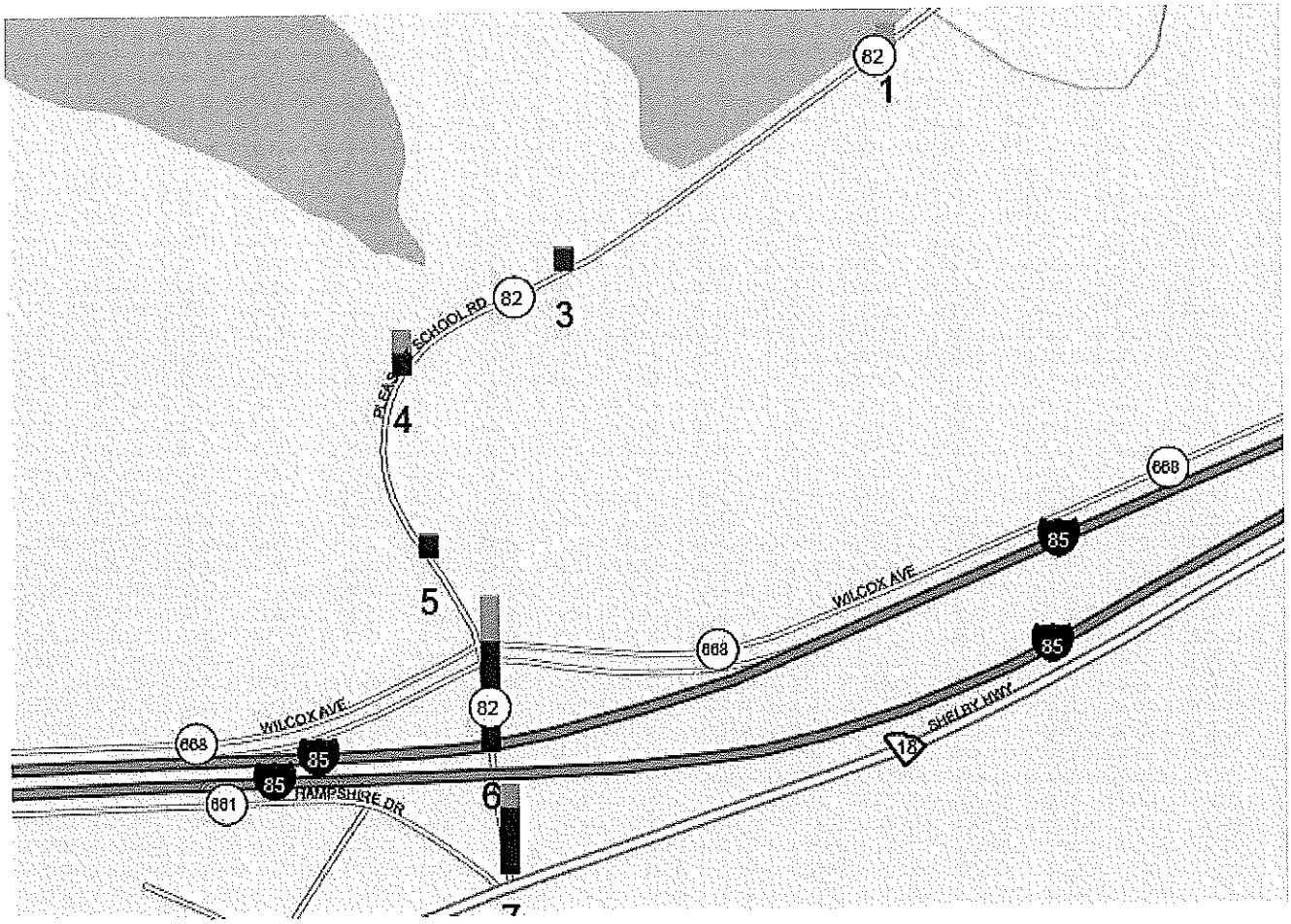
S- 82 (PLEASANT SCHOOL RD) from MPT 4.500 to MPT 5.110 (UNION HWY)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.610 miles AADT = 1,270

Functional Class = Rural -- Minor Collector

fatality
injury
pdo

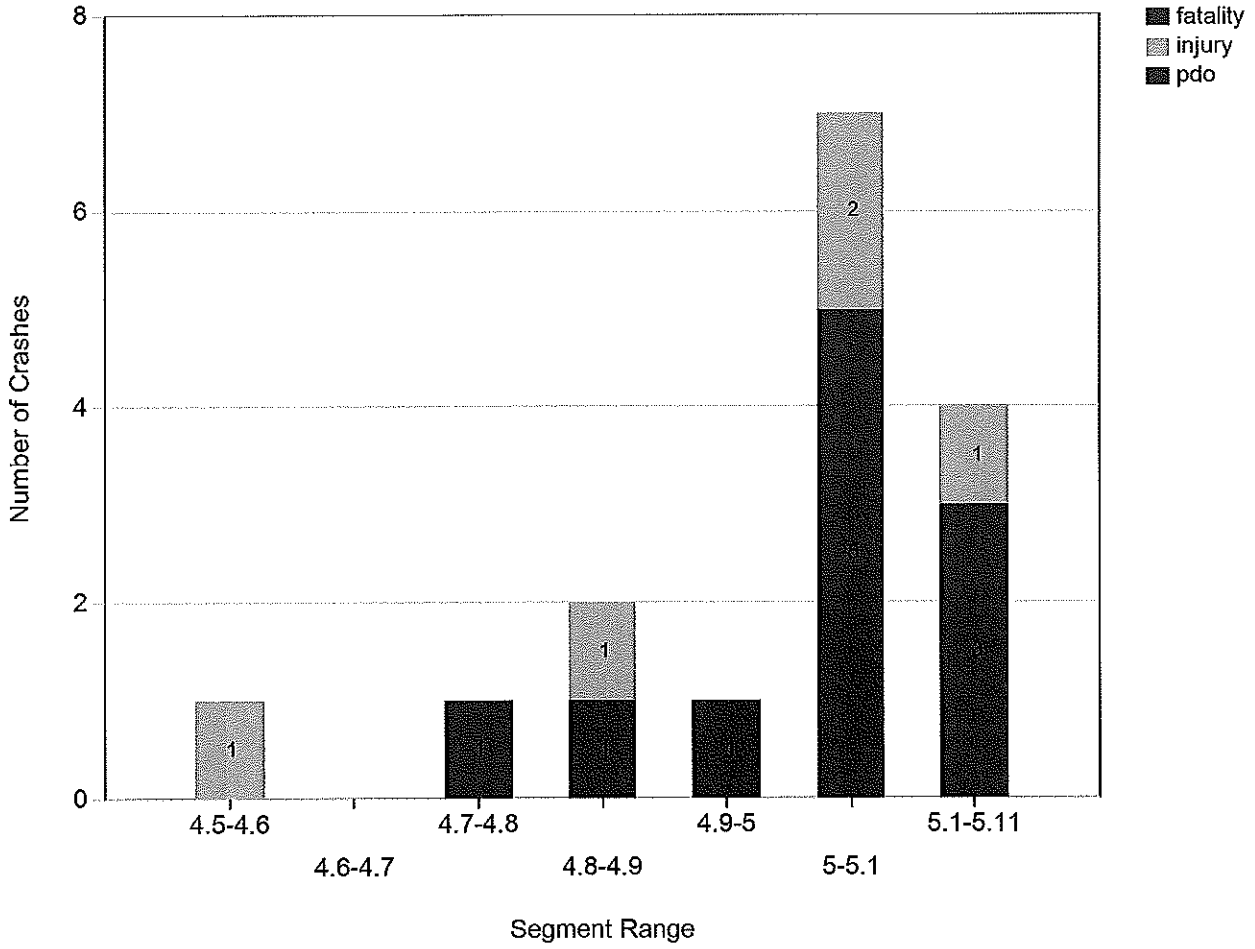


S- 82 (PLEASANT SCHOOL RD) from MPT 4.500 to MPT 5.110 (UNION HWY)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.610 miles AADT = 1,270

Functional Class = Rural -- Minor Collector



Section Crashes

MPT 4.500 to 4.600 (Stack #1)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 0

	1	14508870	4.500	INJ1	DAY	DRY	GUARDRAIL END	NO COLLISION W/MV

MPT 4.700 to 4.800 (Stack #3)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

	1	13520108	4.751	INJ0	DAY	DRY	GUARDRAIL FACE	NO COLLISION W/MV

MPT 4.800 to 4.900 (Stack #4)

Total Crashes: 2 Light: 2 Dark: 0 Dry: 2 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 1

	1	14564851	4.840	INJ1	DAY	DRY	FENCE	NO COLLISION W/MV
	2	12506980	4.853	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	SIDESWIPE SAME DIR

MPT 4.900 to 5.000 (Stack #5)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

	1	13555532	4.994	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 5.000 to 5.100 (Stack #6)

Total Crashes: 7 Light: 6 Dark: 1 Dry: 7 Wet: 0 Fatalities: 0 Injuries: 2 PDO: 5

85	1	11909184	5.000	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
84	2	13599043	5.001	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
83	3	11568714	5.003	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
82	4	12566520	5.005	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	HEAD ON
81	5	13504153	5.007	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
80	6	12590171	5.009	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
79	7	12526240	5.010	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 5.100 to 5.110 (Stack #7)

Total Crashes: 4 Light: 4 Dark: 0 Dry: 4 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 3

78	1	13507311	5.103	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
77	2	12545968	5.104	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
76	3	12577898	5.105	INJ1	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END
75	4	11528287	5.107	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

Crash Summary

S- 668 (WILCOX AVE) from MPT 0.000 (CHEROKEE ST) to MPT 4.580

CHEROKEE County

01/01/2011 - 08/31/2014 (3.7 years)

Length = 4.580 miles

AADT = 3,447

Functional Class = Urban -- Local

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	7
PDO Crashes	17
Total Crashes	**24**

Crashes by Manner Of Collision

Rear End	3
Angle	5
Sideswipe	0
Head On	0
Run Off Road	11
Other	5
Total Crashes	**24**

Special Contributing Factors

Animal	2
Bicycle	0
Pedestrian	0

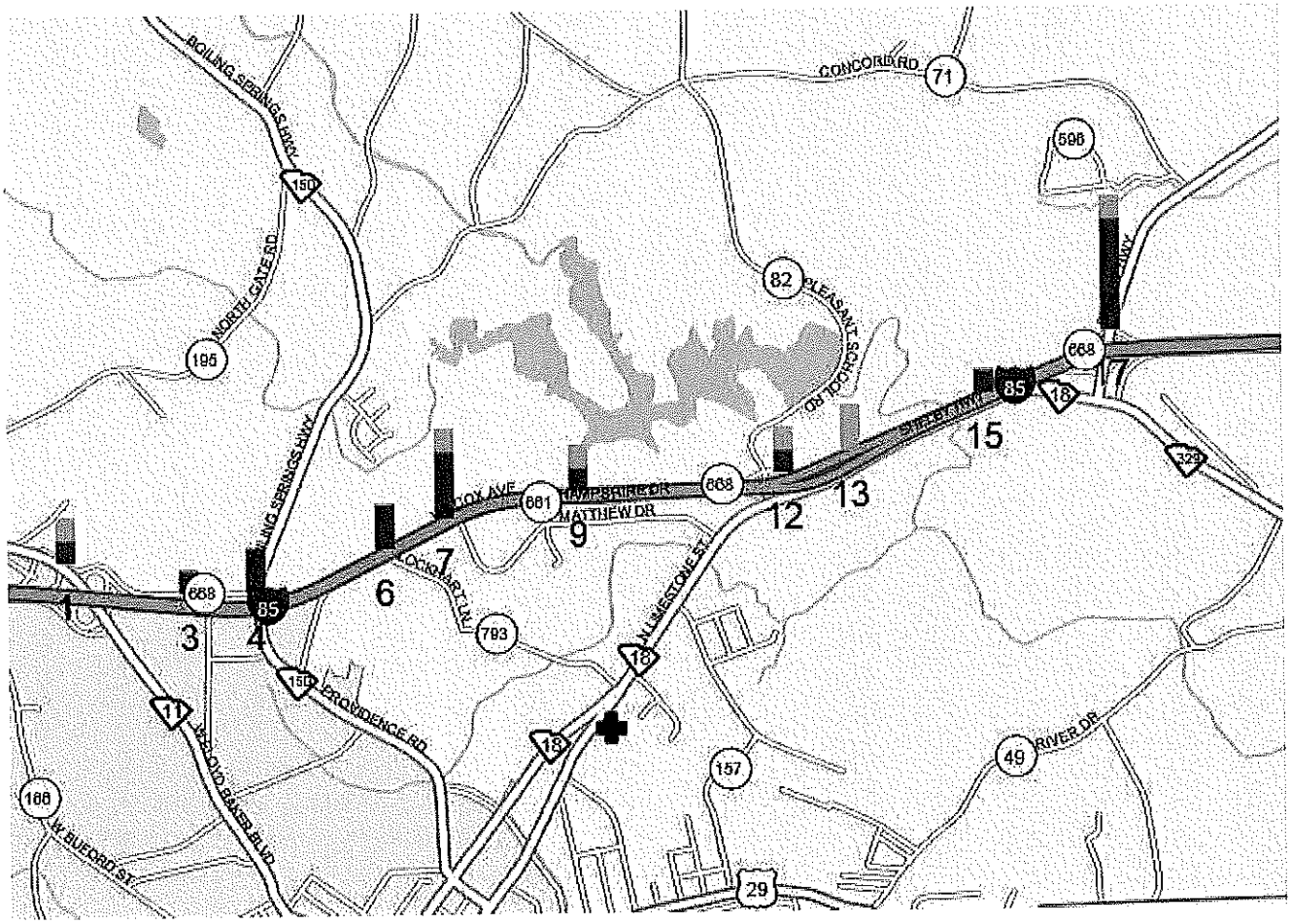
S- 668 (WILCOX AVE) from MPT 0.000 (CHEROKEE ST) to MPT 4.580

01/01/2011 - 08/31/2014 (3.7 years)

Length = 4.580 miles AADT = 3,447

Functional Class = Urban -- Local

fatality
injury
pdo

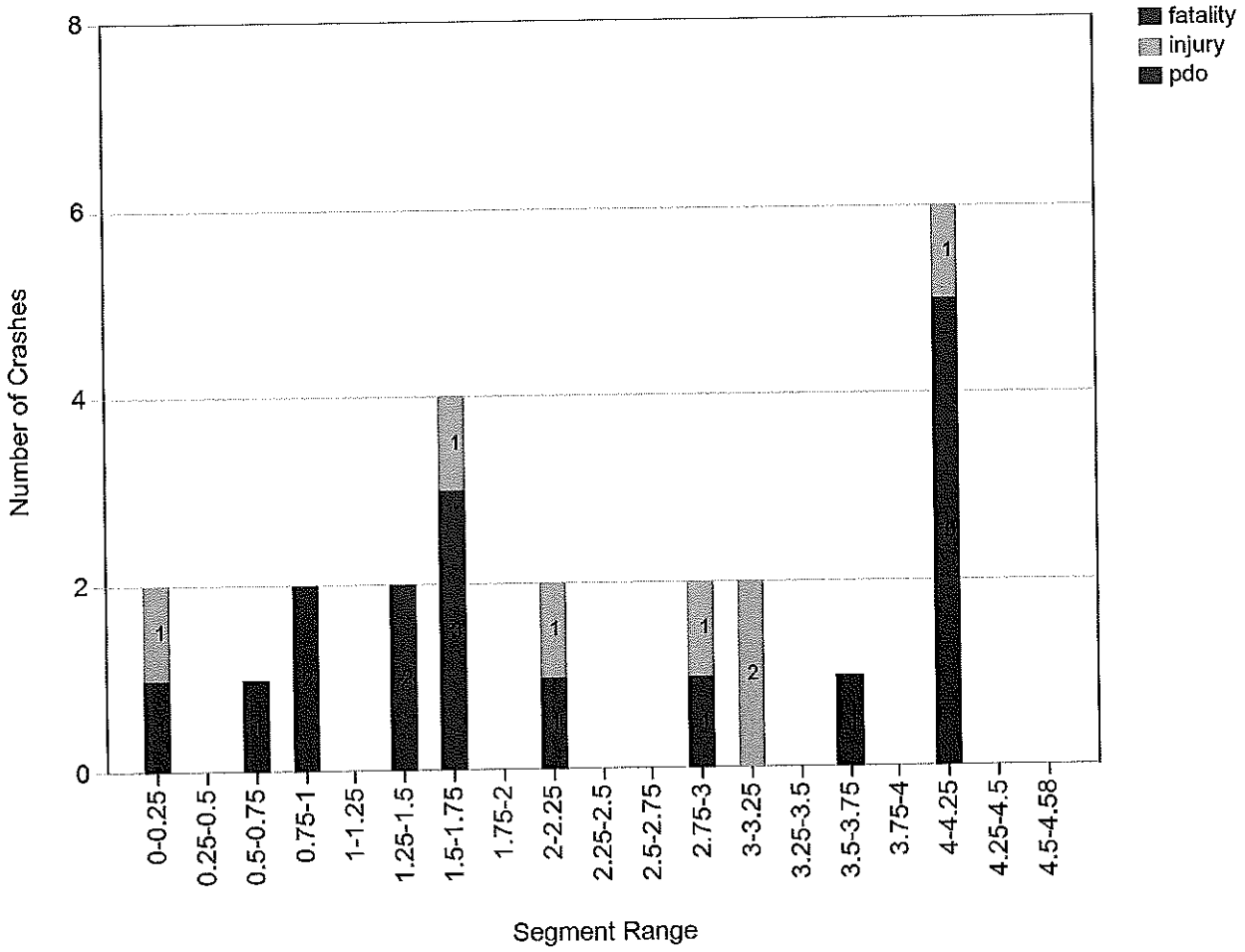


S- 668 (WILCOX AVE) from MPT 0.000 (CHEROKEE ST) to MPT 4.580

01/01/2011 - 08/31/2014 (3.7 years)

Length = 4.580 miles AADT = 3,447

Functional Class = Urban -- Local



Section Crashes

MPT 0.000 to 0.250 (Stack #1)

Total Crashes: 2 Light: 2 Dark: 0 Dry: 2 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 1

1	12037511	0.000	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
2	12520377	0.002	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	BACKED INTO

MPT 0.500 to 0.750 (Stack #3)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

1	13525751	0.610	INJ0	DAY	DRY	EMBANKMENT	NO COLLISION W/MV

MPT 0.750 to 1.000 (Stack #4)

Total Crashes: 2 Light: 2 Dark: 0 Dry: 1 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 2

1	11009058	0.854	INJ0	DAY	WET	EMBANKMENT	NO COLLISION W/MV
2	12511848	0.867	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	REAR END

MPT 1.250 to 1.500 (Stack #6)

Total Crashes: 2 Light: 1 Dark: 1 Dry: 1 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 2

1	14507853	1.380	INJ0	DARK	SNOW	FENCE	NO COLLISION W/MV
2	12540816	1.425	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 1.500 to 1.750 (Stack #7)

Total Crashes: 4 Light: 2 Dark: 2 Dry: 4 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 3

1	13592469	1.550	INJ0	DARK	DRY	ANIMAL (ALL OTHER)	NO COLLISION W/MV
2	11555959	1.567	INJ0	DARK	DRY	EMBANKMENT	NO COLLISION W/MV
3	13505247	1.570	INJ0	DAY	DRY	EMBANKMENT	NO COLLISION W/MV
4	13539289	1.575	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END

MPT 2.000 to 2.250 (Stack #9)

Total Crashes: 2 Light: 2 Dark: 0 Dry: 1 Wet: 1 Fatalities: 0 Injuries: 1 PDO: 1

1	11581018	2.090	INJ0	DAY	DRY	UTILITY POLE	NO COLLISION W/MV
2	13595873	2.119	INJ1	DAY	WET	FENCE	NO COLLISION W/MV

MPT 2.750 to 3.000 (Stack #12)

Total Crashes: 2 Light: 1 Dark: 1 Dry: 2 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 1

86	1	13540873	2.809	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
87	2	13593661	2.985	INJ2	DARK	DRY	ANIMAL (DEER ONLY)	NO COLLISION W/MV

Section Crashes

MPT 3.000 to 3.250 (Stack #13)

Total Crashes: 2 Light: 1 Dark: 1 Dry: 1 Wet: 1 Fatalities: 0 Injuries: 2 PDO: 0

1	13506175	3.030	INJ1	DAY	DRY	FENCE	NO COLLISION W/MV
2	13508873	3.045	INJ1	DARK	WET	OVERTURN/ROLLOVER	NO COLLISION W/MV

MPT 3.500 to 3.750 (Stack #15)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

1	14544748	3.710	INJ0	DAY	DRY	OTHER MOVABLE OBJECT	NO COLLISION W/MV

MPT 4.000 to 4.250 (Stack #17)

Total Crashes: 6 Light: 5 Dark: 1 Dry: 6 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 5

106	1 13553725	4.073	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
107	2 12586314	4.080	INJ0	DAY	DRY	DITCH	NO COLLISION W/MV
108	3 13526155	4.113	INJ0	DAY	DRY	UTILITY POLE	NO COLLISION W/MV
109	4 12534706	4.122	INJ0	DAY	DRY	MOTOR VEHICLE (STOPPED)	ANGLE
110	5 12502521	4.130	INJ0	DARK	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE
111	6 12564017	4.210	INJ0	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	BACKED INTO

Crash Milepoint Report

Thursday, December 11, 2014

Cherokee County S- 614

01/01/2011 - 08/31/2014

	OBS	ACCNO	DATE	HARMEVENT	MAC	FA	INJ	PDO	LIGHT	ROAD SRFCE	MPT	BIR	BRN	BRA	ALSB	BDO	SIC	SRN	SRA
112	1	13507155	02/09/2013	MOTOR VEHICLE (I	ANGLE 1	0	0	1	DAYLIGHT	DRY	0.365	L-			MARTIN LANE	0	SC	18	
113	2	13514414	02/23/2013	MOTOR VEHICLE (I	ANGLE 3	0	0	1	DARK (STR	DRY	0.366	L-			MARTIN LANE	0	S-	518	
						0	0	2											

Both crashes angle crashes - vehicles trying to exit Martin Lane

Crash Summary

SC 329 (VICTORY TRAIL RD) from MPT 6.000 to MPT 6.350 (UNION HWY)

CHEROKEE County

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.350 miles

AADT = 4,300

Functional Class = Rural -- Major Collector

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	2
PDO Crashes	2
Total Crashes	**4**

Crashes by Manner Of Collision

Rear End	1
Angle	2
Sideswipe	0
Head On	0
Run Off Road	1
Other	0
Total Crashes	**4**

Special Contributing Factors

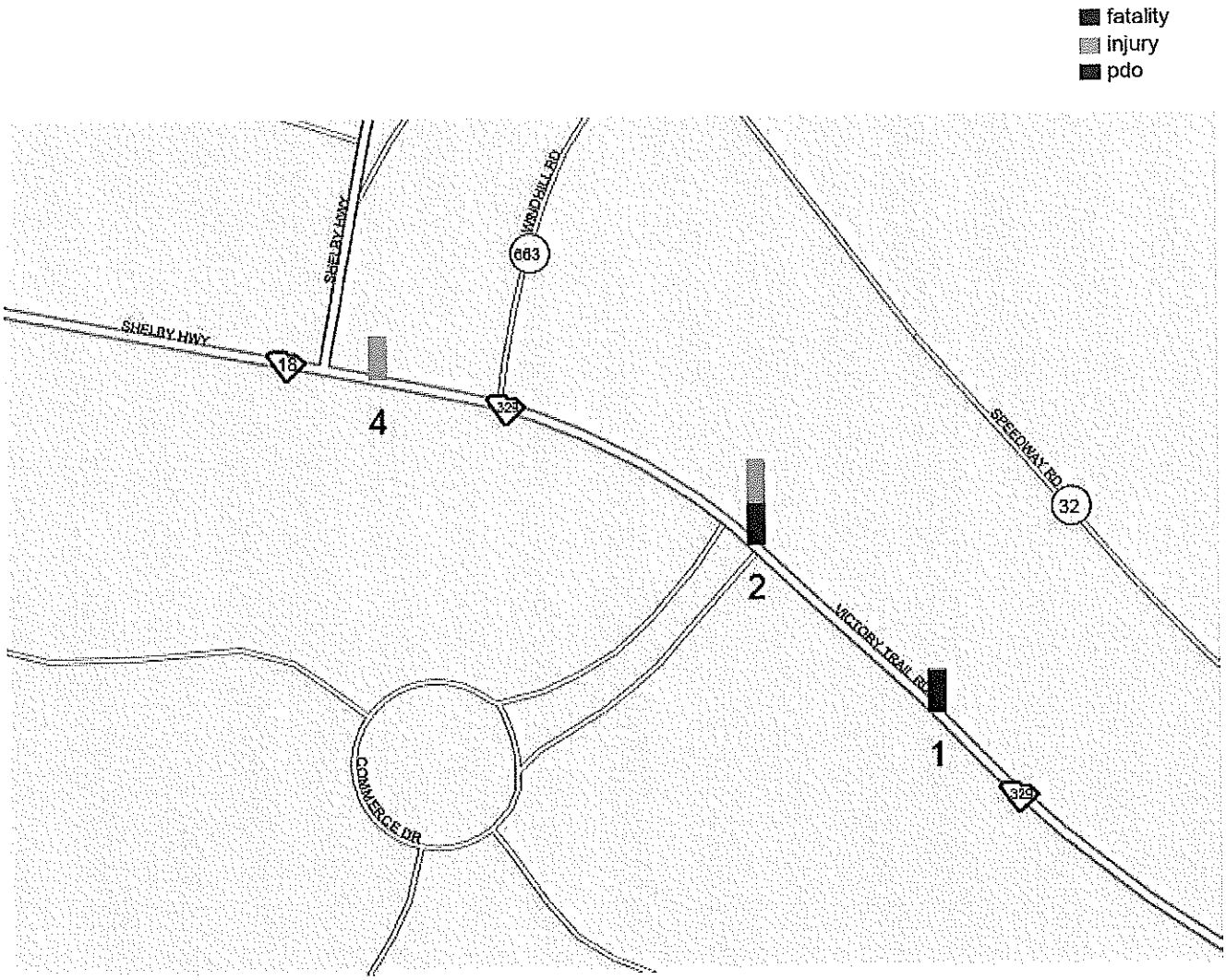
Animal	0
Bicycle	0
Pedestrian	0

SC 329 (VICTORY TRAIL RD) from MPT 6.000 to MPT 6.350 (UNION HWY)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.350 miles AADT = 4,300

Functional Class = Rural -- Major Collector

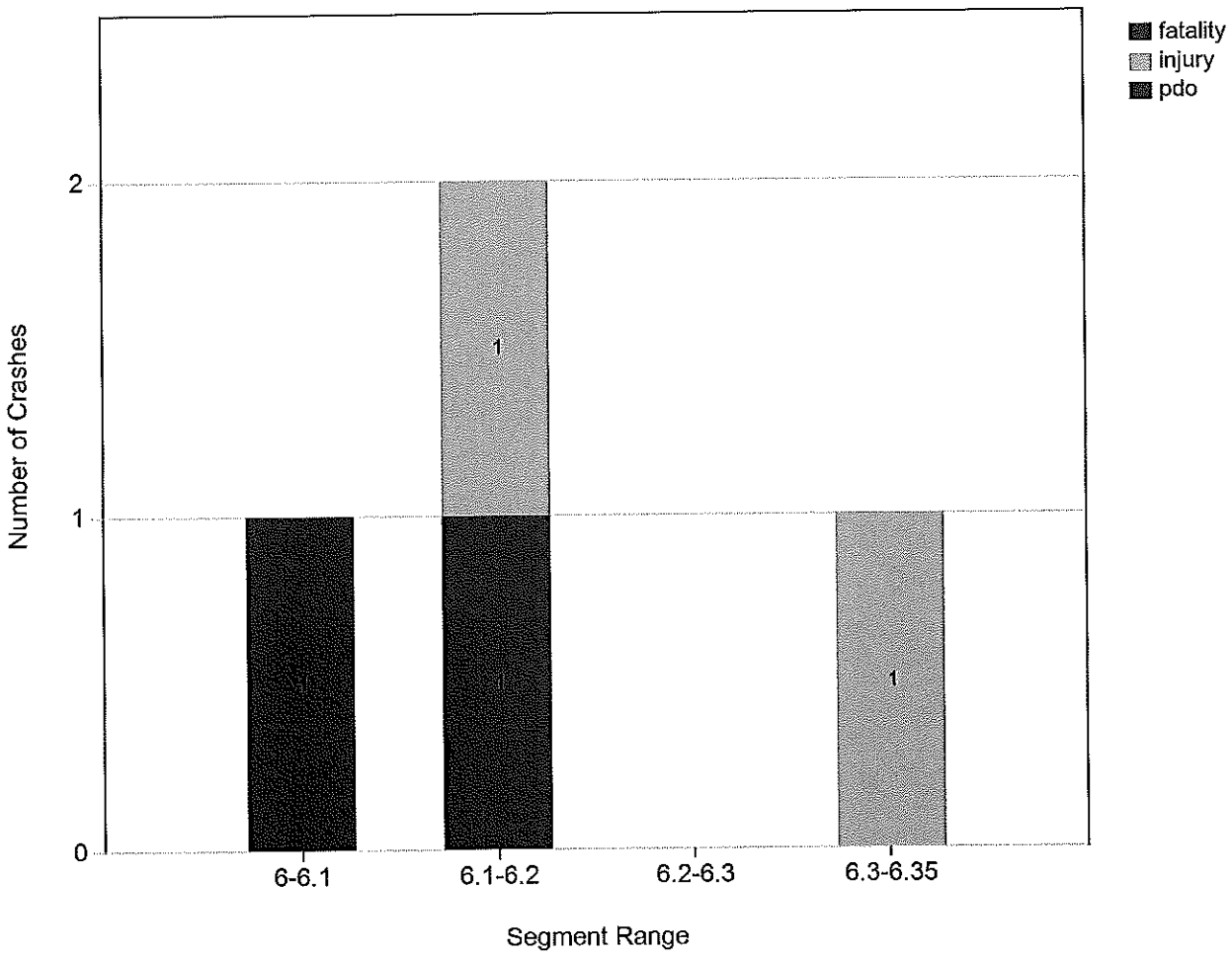


SC 329 (VICTORY TRAIL RD) from MPT 6.000 to MPT 6.350 (UNION HWY)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 0.350 miles AADT = 4,300

Functional Class = Rural -- Major Collector



Section Crashes

MPT 6.000 to 6.100 (Stack #1)

Total Crashes: 1 Light: 0 Dark: 1 Dry: 0 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 1

114	1	11589138	6.074	INJ0	DARK	WET	OVERTURN/ROLLOVER	NO COLLISION W/MV

MPT 6.100 to 6.200 (Stack #2)

Total Crashes: 2 Light: 2 Dark: 0 Dry: 1 Wet: 1 Fatalities: 0 Injuries: 1 PDO: 1

115	1	11532286	6.106	INJ2	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	REAR END
116	2	13618165	6.161	INJ0	DAY	WET	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 6.300 to 6.350 (Stack #4)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 0

117	1	13549654	6.350	INJ1	DAY	DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

Crash Summary

S- 49 (GAFFNEY FERRY RD) from MPT 0.000 (WINDHILL RD) to MPT 3.250 (OLD GEORGIA HWY)

CHEROKEE County

01/01/2011 - 08/31/2014 (3.7 years)

Length = 3.250 miles

AADT = 628

Functional Class = Urban -- Local

Crashes by Injury Class

Fatality Crashes	0
Injury Crashes	2
PDO Crashes	8
Total Crashes	**10**

Crashes by Manner Of Collision

Rear End	0
Angle	2
Sideswipe	2
Head On	0
Run Off Road	4
Other	2
Total Crashes	**10**

Special Contributing Factors

Animal	0
Bicycle	0
Pedestrian	0

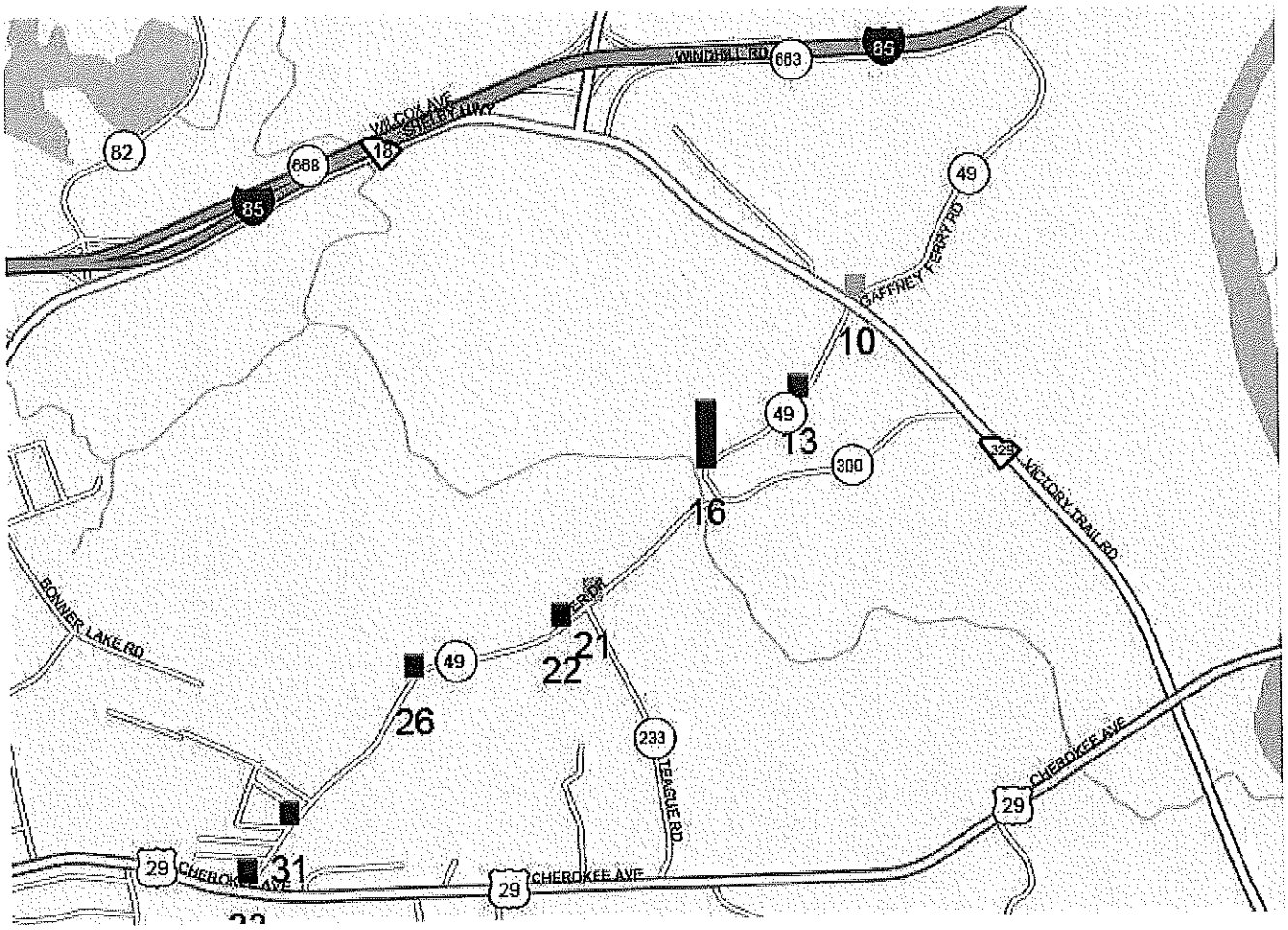
S- 49 (GAFFNEY FERRY RD) from MPT 0.000 (WINDHILL RD) to MPT 3.250 (OLD GEORGIA HWY)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 3.250 miles AADT = 628

Functional Class = Urban -- Local

fatality
injury
pdo

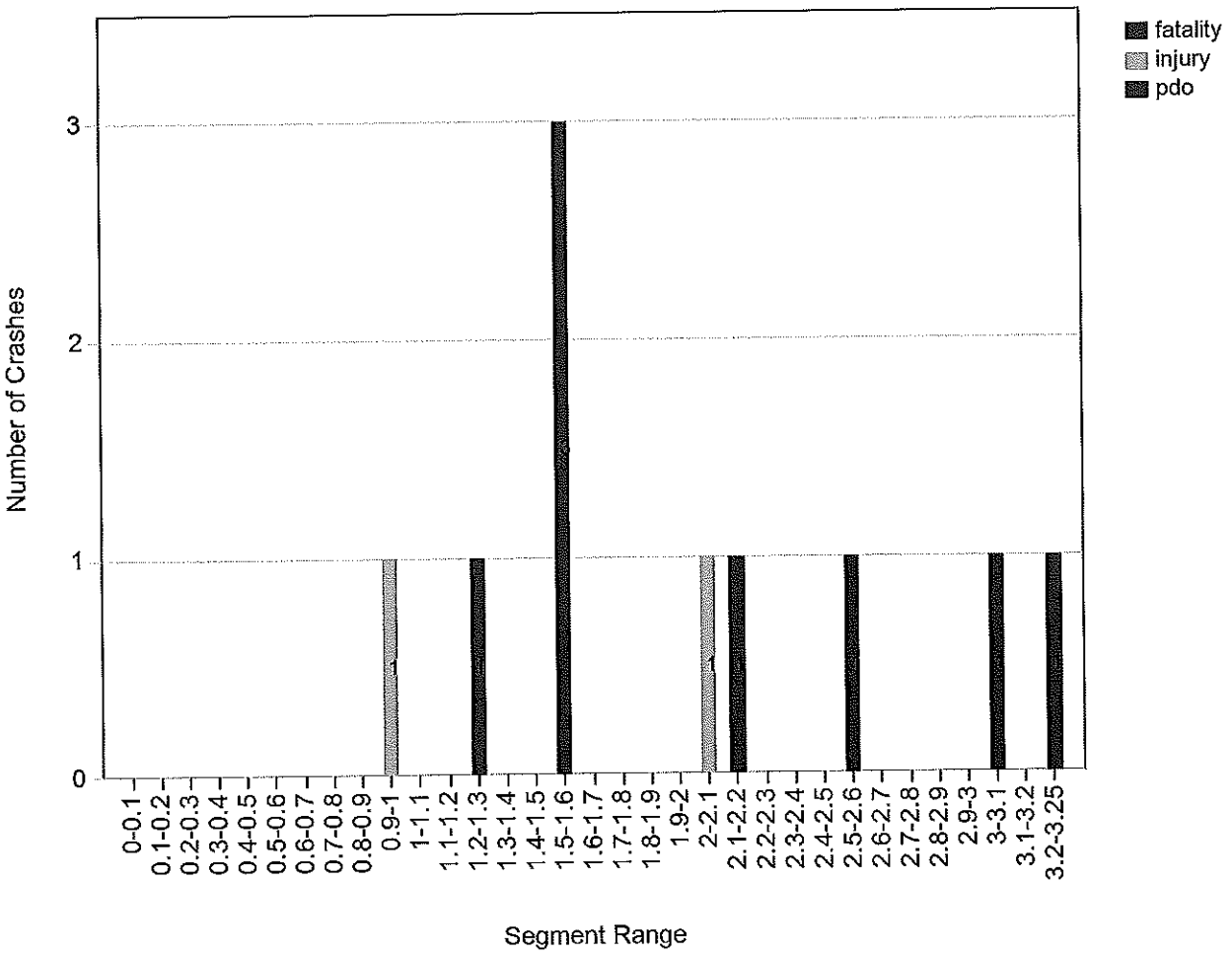


S- 49 (GAFFNEY FERRY RD) from MPT 0.000 (WINDHILL RD) to MPT 3.250 (OLD GEORGIA HWY)

01/01/2011 - 08/31/2014 (3.7 years)

Length = 3.250 miles AADT = 628

Functional Class = Urban -- Local



Section Crashes

MPT 0.900 to 1.000 (Stack #10)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 0

1	11554197	0.974	INJ1	DAY		DRY	MOTOR VEHICLE (STOPPED)	ANGLE

MPT 1.200 to 1.300 (Stack #13)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 0 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 1

1	11528053	1.278	INJ0	DAY		WET	TREE	NO COLLISION W/MV

MPT 1.500 to 1.600 (Stack #16)

Total Crashes: 3 Light: 3 Dark: 0 Dry: 3 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 3

1	13586934	1.535	INJ0	DAY		DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE OPP DIR
2	12518125	1.564	INJ0	DAY		DRY	GUARDRAIL FACE	NO COLLISION W/MV
3	12595247	1.565	INJ0	DAY		DRY	MOTOR VEHICLE (IN TRANSPORT)	SIDESWIPE OPP DIR

MPT 2.000 to 2.100 (Stack #21)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 1 PDO: 0

1	12576400	2.097	INJ1	DAY		DRY	MOTOR VEHICLE (IN TRANSPORT)	ANGLE

MPT 2.100 to 2.200 (Stack #22)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

1	12519542	2.170	INJ0	DAY		DRY	MAIL BOX	NO COLLISION W/MV

MPT 2.500 to 2.600 (Stack #26)

Total Crashes: 1 Light: 0 Dark: 1 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

1	12517114	2.596	INJ0	DARK		DRY	UTILITY POLE	NO COLLISION W/MV

MPT 3.000 to 3.100 (Stack #31)

Total Crashes: 1 Light: 0 Dark: 1 Dry: 0 Wet: 1 Fatalities: 0 Injuries: 0 PDO: 1

1	11552426	3.028	INJ0	DARK		WET	MOTOR VEHICLE (PARKED)	BACKED INTO

MPT 3.200 to 3.250 (Stack #33)

Total Crashes: 1 Light: 1 Dark: 0 Dry: 1 Wet: 0 Fatalities: 0 Injuries: 0 PDO: 1

1	11583956	3.213	INJ0	DAY		DRY	MOTOR VEHICLE (IN TRANSPORT)	BACKED INTO

Appendix F

ATR Stations P-132 and P-14 Traffic Volume Data

100 Highest Hours at Station P-132

Station P-132 (Total - Each Hour, Each Day)											
Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time
1	6103	Sun. 11/30/2014 (2 PM)	26	4983	Tue. 11/25/2014 (5 PM)	51	4783	Fri. 06/20/2014 (4 PM)	76	4685	Sat. 11/29/2014 (6 PM)
2	6068	Sun. 11/30/2014 (1 PM)	27	4965	Sun. 11/30/2014 (11 AM)	52	4768	Fri. 05/23/2014 (3 PM)	77	4678	Fri. 10/10/2014 (3 PM)
3	5965	Sun. 12/01/2013 (2 PM)	28	4949	Sat. 11/29/2014 (1 PM)	53	4765	Fri. 10/03/2014 (4 PM)	78	4670	Sun. 10/19/2014 (5 PM)
4	5909	Sun. 11/30/2014 (3 PM)	29	4933	Fri. 10/10/2014 (5 PM)	54	4757	Fri. 05/23/2014 (5 PM)	79	4668	Sun. 08/03/2014 (3 PM)
5	5719	Sun. 12/01/2013 (5 PM)	30	4931	Fri. 07/18/2014 (4 PM)	55	4744	Mon. 09/01/2014 (3 PM)	80	4667	Sun. 09/21/2014 (4 PM)
6	5717	Sun. 12/01/2013 (1 PM)	31	4916	Fri. 10/24/2014 (5 PM)	56	4744	Fri. 10/03/2014 (5 PM)	81	4667	Sun. 10/26/2014 (5 PM)
7	5697	Sun. 12/01/2013 (3 PM)	32	4908	Thu. 11/27/2014 (11 AM)	57	4739	Fri. 12/27/2013 (1 PM)	82	4661	Sun. 07/27/2014 (3 PM)
8	5675	Sun. 11/30/2014 (12 PM)	33	4898	Fri. 06/13/2014 (7 PM)	58	4738	Fri. 12/27/2013 (3 PM)	83	4658	Sun. 08/03/2014 (4 PM)
9	5672	Sun. 12/01/2013 (4 PM)	34	4892	Sun. 12/01/2013 (11 AM)	59	4737	Sun. 09/28/2014 (5 PM)	84	4657	Sat. 12/28/2013 (12 PM)
10	5670	Sun. 12/01/2013 (6 PM)	35	4886	Sun. 11/30/2014 (5 PM)	60	4731	Sun. 04/20/2014 (5 PM)	85	4656	Fri. 05/23/2014 (6 PM)
11	5659	Sun. 07/06/2014 (4 PM)	36	4882	Sun. 10/26/2014 (6 PM)	61	4728	Sun. 10/12/2014 (5 PM)	86	4654	Sun. 07/20/2014 (6 PM)
12	5626	Sun. 12/01/2013 (12 PM)	37	4876	Fri. 12/27/2013 (2 PM)	62	4725	Fri. 07/25/2014 (5 PM)	87	4652	Fri. 12/27/2013 (4 PM)
13	5450	Sun. 11/30/2014 (4 PM)	38	4874	Fri. 10/17/2014 (5 PM)	63	4724	Thu. 12/26/2013 (1 PM)	88	4645	Sun. 08/03/2014 (5 PM)
14	5361	Sat. 11/29/2014 (3 PM)	39	4868	Tue. 11/25/2014 (3 PM)	64	4721	Fri. 06/27/2014 (4 PM)	89	4645	Fri. 10/10/2014 (6 PM)
15	5312	Sun. 07/06/2014 (3 PM)	40	4837	Fri. 07/18/2014 (5 PM)	65	4705	Sun. 07/20/2014 (4 PM)	90	4641	Sat. 12/28/2013 (1 PM)
16	5279	Sat. 11/29/2014 (4 PM)	41	4832	Thu. 12/26/2013 (3 PM)	66	4697	Sat. 12/21/2013 (6 PM)	91	4636	Fri. 10/10/2014 (4 PM)
17	5266	Tue. 11/25/2014 (4 PM)	42	4830	Sat. 12/21/2013 (1 PM)	67	4694	Thu. 12/26/2013 (2 PM)	92	4631	Sat. 12/28/2013 (2 PM)
18	5184	Sun. 07/06/2014 (5 PM)	43	4821	Sun. 04/20/2014 (7 PM)	68	4694	Fri. 08/29/2014 (3 PM)	93	4631	Sat. 12/28/2013 (3 PM)
19	5142	Sun. 07/06/2014 (7 PM)	44	4818	Mon. 09/01/2014 (4 PM)	69	4693	Mon. 09/01/2014 (5 PM)	94	4629	Sun. 07/27/2014 (4 PM)
20	5126	Sun. 11/30/2014 (7 PM)	45	4807	Sun. 06/15/2014 (4 PM)	70	4692	Mon. 12/23/2013 (3 PM)	95	4629	Fri. 08/01/2014 (4 PM)
21	5116	Wed. 11/26/2014 (5 PM)	46	4806	Sat. 11/29/2014 (5 PM)	71	4692	Fri. 07/25/2014 (3 PM)	96	4623	Fri. 06/06/2014 (4 PM)
22	5109	Sat. 11/29/2014 (2 PM)	47	4802	Fri. 08/29/2014 (5 PM)	72	4691	Thu. 07/03/2014 (6 PM)	97	4615	Fri. 06/20/2014 (3 PM)
23	5070	Sat. 12/21/2013 (12 PM)	48	4792	Fri. 08/29/2014 (4 PM)	73	4690	Fri. 08/29/2014 (2 PM)	98	4611	Sat. 11/29/2014 (12 PM)
24	5017	Sun. 07/06/2014 (6 PM)	49	4790	Sun. 04/20/2014 (6 PM)	74	4689	Sun. 07/27/2014 (5 PM)	99	4608	Fri. 10/24/2014 (6 PM)
25	5008	Sun. 07/06/2014 (2 PM)	50	4785	Fri. 05/23/2014 (4 PM)	75	4685	Sat. 12/21/2013 (2 PM)	100	4604	Sun. 08/17/2014 (4 PM)

100 Highest AM Peak Period Hours at Station P-132

Station P-132 (Total - AM Peak Period [7:00 - 10:00 AM], Each Day)											
Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time
1	3328	Wed. 11/26/2014 (9 AM)	26	2822	Fri. 07/25/2014 (9 AM)	51	2753	Mon. 08/25/2014 (8 AM)	76	2704	Mon. 08/11/2014 (8 AM)
2	3099	Fri. 05/23/2014 (9 AM)	27	2816	Wed. 06/25/2014 (9 AM)	52	2750	Sat. 05/24/2014 (9 AM)	77	2703	Wed. 07/23/2014 (9 AM)
3	2970	Mon. 07/07/2014 (9 AM)	28	2813	Thu. 08/07/2014 (9 AM)	53	2746	Fri. 04/04/2014 (9 AM)	78	2702	Mon. 06/02/2014 (8 AM)
4	2925	Thu. 06/26/2014 (9 AM)	29	2807	Mon. 06/16/2014 (9 AM)	54	2746	Fri. 07/25/2014 (8 AM)	79	2702	Wed. 06/18/2014 (9 AM)
5	2921	Thu. 07/24/2014 (9 AM)	30	2806	Mon. 07/07/2014 (8 AM)	55	2745	Mon. 11/24/2014 (8 AM)	80	2701	Mon. 08/04/2014 (9 AM)
6	2916	Fri. 06/13/2014 (9 AM)	31	2806	Fri. 08/08/2014 (9 AM)	56	2739	Mon. 04/28/2014 (8 AM)	81	2700	Fri. 04/25/2014 (9 AM)
7	2905	Mon. 09/22/2014 (9 AM)	32	2805	Tue. 05/27/2014 (8 AM)	57	2738	Tue. 09/02/2014 (8 AM)	82	2699	Fri. 05/23/2014 (8 AM)
8	2900	Fri. 06/27/2014 (9 AM)	33	2805	Mon. 06/23/2014 (8 AM)	58	2737	Mon. 07/28/2014 (8 AM)	83	2698	Tue. 07/08/2014 (9 AM)
9	2881	Mon. 07/28/2014 (9 AM)	34	2798	Fri. 08/15/2014 (9 AM)	59	2736	Wed. 08/06/2014 (9 AM)	84	2698	Mon. 11/03/2014 (8 AM)
10	2869	Thu. 07/03/2014 (9 AM)	35	2793	Thu. 06/12/2014 (9 AM)	60	2736	Thu. 08/14/2014 (9 AM)	85	2697	Mon. 08/04/2014 (8 AM)
11	2865	Thu. 08/28/2014 (8 AM)	36	2787	Mon. 04/21/2014 (8 AM)	61	2733	Thu. 11/13/2014 (9 AM)	86	2691	Thu. 06/19/2014 (8 AM)
12	2864	Tue. 07/29/2014 (9 AM)	37	2785	Mon. 06/09/2014 (9 AM)	62	2733	Wed. 11/26/2014 (8 AM)	87	2687	Thu. 05/22/2014 (8 AM)
13	2861	Tue. 11/25/2014 (9 AM)	38	2782	Mon. 10/27/2014 (8 AM)	63	2728	Thu. 05/01/2014 (9 AM)	88	2686	Wed. 08/13/2014 (9 AM)
14	2858	Thu. 07/31/2014 (9 AM)	39	2778	Mon. 11/10/2014 (8 AM)	64	2727	Thu. 05/22/2014 (9 AM)	89	2685	Tue. 05/27/2014 (9 AM)
15	2856	Mon. 05/12/2014 (8 AM)	40	2771	Sat. 12/21/2013 (9 AM)	65	2726	Mon. 07/14/2014 (8 AM)	90	2682	Mon. 06/09/2014 (8 AM)
16	2856	Thu. 07/10/2014 (9 AM)	41	2770	Fri. 05/09/2014 (9 AM)	66	2726	Mon. 07/14/2014 (9 AM)	91	2682	Tue. 07/01/2014 (9 AM)
17	2853	Fri. 07/18/2014 (9 AM)	42	2769	Mon. 04/28/2014 (9 AM)	67	2724	Mon. 12/02/2013 (8 AM)	92	2681	Thu. 10/23/2014 (9 AM)
18	2849	Mon. 04/21/2014 (9 AM)	43	2769	Mon. 08/18/2014 (8 AM)	68	2723	Wed. 04/23/2014 (9 AM)	93	2680	Wed. 07/16/2014 (9 AM)
19	2841	Mon. 06/23/2014 (9 AM)	44	2767	Fri. 06/20/2014 (9 AM)	69	2719	Fri. 10/10/2014 (9 AM)	94	2679	Mon. 11/24/2014 (9 AM)
20	2836	Fri. 05/16/2014 (9 AM)	45	2764	Mon. 05/05/2014 (8 AM)	70	2715	Thu. 08/28/2014 (9 AM)	95	2678	Mon. 04/14/2014 (9 AM)
21	2830	Thu. 06/19/2014 (9 AM)	46	2763	Tue. 08/12/2014 (9 AM)	71	2715	Fri. 09/12/2014 (9 AM)	96	2677	Thu. 06/05/2014 (9 AM)
22	2829	Mon. 06/16/2014 (8 AM)	47	2759	Mon. 05/12/2014 (9 AM)	72	2713	Thu. 07/17/2014 (9 AM)	97	2676	Tue. 11/11/2014 (9 AM)
23	2828	Mon. 08/18/2014 (9 AM)	48	2758	Mon. 10/13/2014 (9 AM)	73	2708	Wed. 05/21/2014 (9 AM)	98	2673	Mon. 05/19/2014 (8 AM)
24	2827	Thu. 04/03/2014 (9 AM)	49	2757	Fri. 05/02/2014 (9 AM)	74	2707	Thu. 05/01/2014 (8 AM)	99	2668	Wed. 05/28/2014 (8 AM)
25	2822	Wed. 07/02/2014 (9 AM)	50	2757	Fri. 08/29/2014 (9 AM)	75	2705	Mon. 08/11/2014 (9 AM)	100	2666	Tue. 05/20/2014 (9 AM)

I-85 ATR Station
P-132
Northbound Volumes

			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2013	12	1	490	371	282	267	311	407	600	993	1272	1949	2644	2979
2013	12	2	416	256	278	260	368	672	999	1373	1247	1647	1425	1500
2013	12	3	350	277	254	283	368	555	871	1271	1124	1235	1208	1327
2013	12	4	344	293	286	259	355	546	802	1202	1120	1144	1138	1183
2013	12	5	351	320	280	281	354	539	830	1168	1157	1207	1186	1134
2013	12	6	406	304	282	272	356	511	805	1156	1104	1188	1195	1426
2013	12	7	339	272	260	229	247	293	419	664	833	998	1182	1306
2013	12	8	272	185	152	112	109	158	230	333	411	674	861	1093
2013	12	9	248	202	182	202	273	556	889	1221	1070	1179	1220	1195
2013	12	10	401	272	245	239	354	525	811	1123	1126	1143	1099	1199
2013	12	11	332	267	238	255	364	572	850	1203	1146	1239	1172	1248
2013	12	12	362	319	299	252	377	568	837	1224	1162	1299	1272	1327
2013	12	13	403	319	288	282	346	545	793	1089	1112	1255	1319	1506
2013	12	14	409	299	259	228	237	334	490	629	818	1134	1297	1415
2013	12	15	214	169	145	124	142	171	257	396	556	874	1175	1411
2013	12	16	261	215	235	248	322	600	937	1279	1179	1275	1343	1342
2013	12	17	342	264	270	267	374	553	850	1256	1038	1192	1155	1264
2013	12	18	352	271	284	295	360	586	905	1179	1168	1228	1343	1299
2013	12	19	365	313	285	290	370	558	892	1230	1201	1370	1323	1402
2013	12	20	426	378	307	321	430	587	859	1255	1263	1476	1281	1849
2013	12	21	600	443	399	367	397	519	730	1058	1346	1894	2152	2438
2013	12	22	363	282	238	224	228	286	440	608	899	1549	1932	1917
2013	12	23	347	249	240	230	276	528	706	1039	1033	1374	1561	1811
2013	12	24	413	370	304	261	333	388	443	642	828	1095	1389	1549
2013	12	25	224	175	132	98	110	132	191	289	483	734	994	1344
2013	12	26	244	206	181	166	226	468	702	932	1158	1504	1911	2075
2013	12	27	369	296	279	273	325	505	714	895	1180	1493	1852	2111
2013	12	28	436	313	250	283	279	357	492	727	989	1439	1879	2186
2013	12	29	286	252	191	162	175	222	314	478	772	1043	1416	1825
2013	12	30	352	227	177	199	269	526	737	978	1093	1376	1473	1743
2013	12	31	351	299	265	243	323	462	609	781	796	989	1144	1257

I-85 ATR Station
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Northbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2013	12	1	2903	3010	2722	2895	2721	2775	1743	1971	2258	1174	805	579	38121
2013	12	2	1579	1688	1759	1772	1692	1586	1175	953	696	719	563	499	25122
2013	12	3	1235	1422	1553	1575	1505	1659	1145	745	682	705	616	464	22429
2013	12	4	1239	1392	1557	1636	1595	1635	1227	905	729	639	519	423	22168
2013	12	5	1350	1442	1568	1612	1781	1760	1279	981	846	707	562	511	23206
2013	12	6	1511	1743	1765	1925	1888	1880	1561	1152	863	880	661	546	25380
2013	12	7	1423	1509	1614	1544	1562	1441	1131	915	742	643	423	447	20436
2013	12	8	1245	1378	1421	1573	1267	1642	1238	1072	816	610	407	377	17636
2013	12	9	1192	1312	1375	1480	1425	1429	1152	805	695	604	381	472	20759
2013	12	10	1220	1505	1475	1512	1519	1548	1174	883	681	712	582	428	21776
2013	12	11	1361	1443	1551	1694	1803	1614	1337	1015	743	676	572	419	23114
2013	12	12	1480	1588	1757	1831	1952	1821	1444	1148	910	832	675	525	25261
2013	12	13	1622	1710	2026	2159	2154	2018	1712	1410	1130	953	762	655	27568
2013	12	14	1322	1469	1581	1457	1392	1369	1121	886	727	655	533	433	20494
2013	12	15	1716	1845	1777	1795	1778	1660	1521	1291	1143	862	654	469	22145
2013	12	16	1354	1424	1599	1644	1673	1620	1190	904	727	639	544	471	23025
2013	12	17	1377	1464	1590	1698	1666	1656	1250	966	763	651	642	436	22984
2013	12	18	1381	1668	1692	1724	1777	1720	1242	1011	760	772	609	535	24161
2013	12	19	1548	1626	1888	1955	1861	1816	1380	1160	958	866	773	596	26026
2013	12	20	1786	2075	2227	2122	2213	2292	2275	1705	1433	1228	929	852	31569
2013	12	21	2352	2317	1861	1888	2394	2706	1884	1450	1160	916	702	569	32542
2013	12	22	1848	1551	2248	1834	1833	1743	1481	1299	910	727	549	428	25417
2013	12	23	1883	2155	2136	2182	1990	1974	1641	1230	879	1157	855	633	28109
2013	12	24	1708	1830	1806	1721	1529	1339	1145	1018	845	706	543	336	22541
2013	12	25	1346	1343	1413	1374	1384	1372	1240	1212	996	768	571	379	18304
2013	12	26	2326	2346	2477	2259	2016	1845	1802	1237	1083	843	724	503	29234
2013	12	27	2200	2425	2440	2391	2235	2095	1685	1382	1164	876	748	615	30548
2013	12	28	2180	2380	2230	2153	2108	1628	1647	1324	1033	777	555	419	28064
2013	12	29	2045	2195	2061	2242	2133	2013	1555	1521	1489	1100	746	472	26708
2013	12	30	1863	1964	2065	2007	1918	1758	1357	1151	862	792	615	449	25951
2013	12	31	1467	1566	1606	1780	1760	1485	1265	888	752	543	399	262	21292

I-85 ATR Station
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Northbound Volumes

			Hour											
Year	Month	Day		1	2	3	4	5	6	7	8	9	10	11	12
2014	1	1		220	233	161	163	147	166	233	391	470	685	914	1250
2014	1	2		281	201	201	181	274	526	780	1092	1084	1225	1306	1454
2014	1	3		338	297	254	253	300	467	665	929	938	1104	1268	1389
2014	1	4		379	317	267	237	252	318	391	664	779	1163	1360	1552
2014	1	5		309	222	162	133	148	211	267	405	551	832	1088	1307
2014	1	6		263	178	163	189	292	509	891	1115	1059	1112	1054	1104
2014	1	7		305	252	256	207	310	415	659	955	883	1013	1043	1048
2014	1	8		295	230	265	206	317	508	764	1098	1016	1093	1057	1121
2014	1	9		315	261	235	258	317	522	764	1109	1064	1136	1071	1133
2014	1	10		345	270	294	235	315	432	712	1043	1021	1012	1062	1168
2014	1	11		316	250	246	215	236	226	321	519	726	865	1001	1088
2014	1	12		249	177	146	126	109	148	265	399	639	1110	1495	1250
2014	1	13		225	205	172	183	289	611	897	1270	1119	1161	1181	1159
2014	1	14		327	259	230	246	309	494	813	1167	949	1167	1087	1102
2014	1	15		332	260	236	256	313	533	826	1171	1129	1061	1081	1094
2014	1	16		327	294	234	260	320	535	804	1115	1085	1110	1087	1154
2014	1	17		334	280	260	273	345	497	794	1080	1107	1202	1200	1340
2014	1	18		409	305	242	220	202	282	411	618	788	1019	1254	1405
2014	1	19		214	178	143	110	130	157	191	329	409	634	902	1151
2014	1	20		285	196	186	182	275	541	904	1016	1127	1317	1371	1423
2014	1	21		327	276	231	260	316	558	824	1187	1224	1141	1145	1130
2014	1	22		290	231	236	231	305	477	765	1165	1083	1091	1084	1082
2014	1	23		275	244	248	230	327	550	776	1081	1066	1066	1142	1098
2014	1	24		352	288	234	251	299	444	708	1044	1018	1113	1093	1244
2014	1	25		328	260	209	206	202	245	344	593	755	964	1102	1204
2014	1	26		234	168	139	106	129	137	225	334	459	665	915	1091
2014	1	27		253	183	192	167	311	554	906	1202	1144	1063	1196	1176
2014	1	28		287	256	244	238	315	544	790	1137	1045	1062	984	1127
2014	1	29		80	74	57	67	83	153	235	344	342	383	462	550
2014	1	30		123	115	99	112	174	328	551	826	784	914	915	1070
2014	1	31		328	271	261	222	311	514	802	1080	1033	1130	1235	1300

I-85 ATR Station
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Northbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	1	1	1531	1764	1827	1901	1699	1511	1273	1083	802	679	517	366	19986
2014	1	2	1535	1659	1673	1674	1630	1581	1133	1000	766	671	561	475	22963
2014	1	3	1509	1617	1794	1849	1835	1758	1428	1108	875	876	627	516	23994
2014	1	4	1522	1717	1695	1753	1727	1524	1295	1056	828	707	570	444	22517
2014	1	5	1482	1745	1807	1813	1687	1667	1291	1187	917	633	515	375	20754
2014	1	6	1118	1301	1298	1434	1425	1350	1074	794	601	541	404	412	19681
2014	1	7	1122	1186	1236	1401	1364	1454	1079	792	569	567	443	391	18950
2014	1	8	1114	1303	1408	1518	1483	1447	1143	881	652	630	526	441	20516
2014	1	9	1251	1309	1503	1604	1627	1614	999	1168	649	678	594	486	21667
2014	1	10	1314	1417	1722	1767	1725	1321	1745	1139	854	721	637	502	22773
2014	1	11	1106	1145	1305	1270	1086	1107	1056	919	727	619	493	315	17157
2014	1	12	1309	1308	1397	1421	1528	1350	1288	1164	913	627	504	326	19248
2014	1	13	1205	1293	1367	1460	1450	1446	1110	868	602	586	527	403	20789
2014	1	14	1123	1267	1420	1533	1564	1519	1149	832	621	622	537	396	20733
2014	1	15	1249	1259	1405	1603	1567	1519	1136	833	641	596	525	417	21042
2014	1	16	1276	1419	1569	1668	1502	1837	1500	1067	788	697	619	474	22741
2014	1	17	1514	1494	1831	2025	2357	2145	1785	1423	1167	1082	887	628	27050
2014	1	18	1359	1447	1492	1456	1418	1356	1108	952	767	625	483	336	19954
2014	1	19	1252	1377	1535	1543	1555	1456	1238	1109	854	678	520	419	18084
2014	1	20	1682	1742	1926	2027	1920	1857	1389	957	878	821	611	489	25122
2014	1	21	1157	1321	1474	1599	1587	1521	1164	855	591	582	458	380	21308
2014	1	22	1211	1224	1399	1558	1624	1577	1155	827	640	586	502	390	20733
2014	1	23	1235	1343	1502	1695	1641	1644	1267	983	809	653	521	431	21827
2014	1	24	1408	1579	1755	1942	1908	1883	1402	1185	906	842	653	529	24080
2014	1	25	1230	1213	1258	1310	1277	1212	980	844	726	621	475	373	17931
2014	1	26	1281	1491	1650	1789	1787	1712	1473	1093	1188	726	523	340	19655
2014	1	27	1185	1182	1310	1478	1367	1375	1143	758	578	610	491	405	20229
2014	1	28	1206	1321	1395	1248	1004	649	440	457	359	182	179	129	16598
2014	1	29	595	653	735	910	837	823	592	493	332	289	263	179	9531
2014	1	30	1153	1402	1578	1669	1588	1640	1388	1038	810	692	531	479	19979
2014	1	31	1466	1723	1948	1883	2037	1863	1620	1313	1004	843	710	598	25495

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	2	1	337	279	234	229	221	316	451	630	771	1047	1177	1303
2014	2	2	247	162	155	139	130	142	241	306	493	612	847	1011
2014	2	3	299	193	182	193	280	604	892	1252	1058	1197	1166	1165
2014	2	4	317	272	247	249	313	572	807	1116	1129	1147	1088	1142
2014	2	5	289	240	243	240	310	548	804	1108	926	1190	1049	1106
2014	2	6	275	241	317	280	346	539	797	1160	1124	1182	1125	1145
2014	2	7	346	284	243	260	323	472	727	1054	1067	1103	1153	1302
2014	2	8	355	266	249	210	225	303	409	577	790	981	1172	1271
2014	2	9	243	190	158	111	111	144	244	321	457	680	875	1070
2014	2	10	248	176	166	164	302	580	926	1199	1219	1287	1149	1208
2014	2	11	361	287	257	260	306	502	636	847	749	864	937	1022
2014	2	12	217	154	160	116	155	188	222	296	301	339	423	312
2014	2	13	32	23	25	19	29	37	58	58	91	97	180	189
2014	2	14	120	132	93	126	125	184	319	450	519	870	897	1072
2014	2	15	352	254	230	210	233	306	402	604	732	1057	1272	1419
2014	2	16	249	166	133	143	121	153	232	374	443	720	806	1084
2014	2	17	318	231	204	193	325	590	963	1247	1221	1426	1359	1487
2014	2	18	363	260	260	274	335	541	916	1306	1172	1187	1128	1240
2014	2	19	322	290	273	255	337	576	857	1242	1160	1254	1184	1296
2014	2	20	329	265	276	249	320	562	893	1190	1150	1206	1208	1288
2014	2	21	409	322	273	267	360	571	762	982	1079	1285	1345	1458
2014	2	22	411	296	284	251	248	342	468	775	909	1238	1358	1413
2014	2	23	325	184	280	184	139	171	266	444	605	960	1171	1448
2014	2	24	342	210	202	221	327	621	970	1250	1297	1348	1230	1295
2014	2	25	342	313	241	229	364	519	859	1250	1170	1222	1154	1188
2014	2	26	457	310	282	277	342	552	838	1211	1262	1216	1114	1205
2014	2	27	338	286	269	253	338	563	868	1264	1193	1220	1203	1244
2014	2	28	403	323	327	286	345	545	811	1159	1207	1285	1378	1582

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	2	1	1274	1261	1313	1339	1338	1253	1036	914	738	659	507	347	18974
2014	2	2	1207	1301	1519	1655	1558	1515	1067	864	668	524	552	415	17330
2014	2	3	1351	1381	1475	1467	1444	1424	1057	805	600	593	500	435	21013
2014	2	4	1211	1249	1353	1438	1482	1465	1095	745	646	544	530	422	20579
2014	2	5	1252	1376	1420	1579	1635	1498	1258	981	672	632	524	395	21275
2014	2	6	1255	1466	1612	1719	1786	1763	1340	1036	805	711	660	463	23147
2014	2	7	1419	1723	1863	1983	1776	2068	1649	1292	977	843	733	554	25214
2014	2	8	1221	1246	1251	1346	1389	1367	1128	948	818	641	594	369	19126
2014	2	9	1330	1385	1592	1719	1819	1778	1552	1334	1035	704	560	396	19808
2014	2	10	1306	1371	1456	1523	1389	1474	1277	1069	774	697	609	475	22044
2014	2	11	949	998	996	1098	1055	865	747	564	411	399	315	282	15707
2014	2	12	243	213	201	193	152	123	107	72	47	55	36	45	4370
2014	2	13	282	345	463	535	540	447	501	388	288	223	226	202	5278
2014	2	14	1286	1459	1589	1765	1651	1521	1189	1105	858	767	657	546	19300
2014	2	15	1315	1351	1403	1286	1305	1251	1125	894	744	633	474	383	19235
2014	2	16	1228	1377	1491	1589	1721	1723	1521	1317	995	841	675	445	19547
2014	2	17	1553	1653	1698	1902	1698	1790	1305	1059	819	744	571	456	24812
2014	2	18	1274	1458	1590	1614	1592	1497	1183	1038	760	686	568	491	22733
2014	2	19	1339	1478	1502	1762	1783	1613	1328	975	777	635	573	465	23276
2014	2	20	1426	1582	1721	1870	1661	1952	1411	1148	933	840	685	623	24788
2014	2	21	1594	1753	2055	2118	2167	1805	2060	1362	1128	1078	806	640	27679
2014	2	22	1377	1381	1517	1527	1469	1505	1276	1123	954	840	608	435	22005
2014	2	23	1642	1822	1958	2085	2268	2107	1421	1654	1023	1070	807	470	24504
2014	2	24	1389	1503	1538	1561	1573	1573	1151	869	776	716	547	463	22972
2014	2	25	1251	1414	1587	1652	1545	1480	1144	960	760	643	445	434	22166
2014	2	26	1308	1490	1497	1673	1678	1673	1301	970	754	683	567	448	23108
2014	2	27	1326	1587	1729	1855	1913	1850	1472	1157	944	808	752	606	25038
2014	2	28	1652	1839	2158	2231	2222	2213	1880	1550	1307	1083	575	694	29055

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	3	1	528	639	334	242	285	348	491	785	966	1226	1395	1487
2014	3	2	331	199	179	122	148	190	223	420	595	880	1110	1356
2014	3	3	350	211	209	195	274	642	949	1241	1108	1173	1119	1200
2014	3	4	349	259	243	226	302	548	803	1221	1230	1190	1181	1120
2014	3	5	302	279	267	253	314	602	874	1156	1104	1231	1300	1216
2014	3	6	379	351	396	454	393	602	901	1283	1182	1223	1300	1222
2014	3	7	335	297	287	296	333	470	666	1053	918	1120	1300	1308
2014	3	8	429	306	268	254	271	360	531	803	993	1297	1327	1422
2014	3	9	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	10	357	226	171	205	324	581	979	1264	1192	1302	1304	1367
2014	3	11	359	358	245	250	340	545	802	1122	1267	1303	1213	1182
2014	3	12	391	314	284	256	338	598	857	1194	1126	1197	1130	1166
2014	3	13	377	292	294	274	325	577	864	1221	1201	1291	1346	1277
2014	3	14	480	325	291	306	355	516	797	1219	1164	1329	1365	1474
2014	3	15	462	354	295	234	271	325	480	781	1008	1228	1466	1525
2014	3	16	324	251	175	142	144	189	241	401	581	820	1070	1345
2014	3	17	320	251	188	201	307	578	905	1172	1126	1198	1195	1217
2014	3	18	310	253	257	276	333	529	857	1244	1124	1239	1127	1221
2014	3	19	359	271	249	254	334	567	835	1182	1159	1236	1184	1290
2014	3	20	380	292	287	266	330	583	837	1276	1244	1236	1289	1267
2014	3	21	405	340	318	286	329	513	794	1186	1137	1441	1389	1554
2014	3	22	416	334	286	240	253	335	516	731	831	1221	1430	1490
2014	3	23	383	219	196	173	161	199	294	442	614	903	1183	1442
2014	3	24	358	229	174	222	332	625	991	1317	1193	1285	1304	1343
2014	3	25	306	298	262	264	356	548	803	1158	1135	1168	1108	1142
2014	3	26	341	262	262	273	313	564	846	1185	1204	1247	1162	1250
2014	3	27	325	290	263	256	326	541	839	1165	1223	1284	1184	1230
2014	3	28	399	345	310	318	355	547	791	1159	1154	1304	1383	1545
2014	3	29	427	325	259	234	261	304	405	707	881	1181	1377	1426
2014	3	30	302	192	157	145	148	182	278	451	591	942	1189	1464
2014	3	31	334	248	221	188	321	637	988	1321	1143	1328	888	1610

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	3	1	1463	1533	1412	1530	1529	1625	1463	1255	1040	873	677	563	23689
2014	3	2	1498	1693	1814	2064	2089	2078	1818	1648	1339	914	661	427	23796
2014	3	3	1297	1319	1355	1408	1395	1436	1073	660	880	606	480	240	20820
2014	3	4	1302	1403	1453	1588	1578	1495	1229	893	706	664	541	462	21986
2014	3	5	1342	1402	1522	1727	1627	1735	1248	1023	769	686	633	487	23099
2014	3	6	1437	1576	1728	1842	1825	1717	1264	958	792	722	661	518	24726
2014	3	7	1521	1748	2007	1974	2298	1736	1993	1376	1119	966	763	543	26427
2014	3	8	1447	1534	1488	1605	1549	1421	1303	1124	1035	791	617	407	22582
2014	3	9	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	10	1400	1506	1538	1687	1674	1608	1224	933	746	757	562	452	23359
2014	3	11	1306	1365	1507	1605	1599	1721	1295	950	795	708	566	464	22867
2014	3	12	1237	1441	1615	1715	1668	1634	1256	942	812	749	594	480	22994
2014	3	13	1404	1509	1739	2020	1897	1793	1432	1164	970	784	749	748	25548
2014	3	14	1716	1887	2231	2382	2387	2267	1858	1484	1158	1065	814	713	29583
2014	3	15	1509	1521	1590	1579	1577	1615	1469	1286	1154	987	720	477	23913
2014	3	16	1631	1845	1923	2033	1929	1918	1732	1393	1102	857	648	444	23138
2014	3	17	1335	1438	1513	1546	1516	1467	1206	863	653	604	524	463	21786
2014	3	18	1298	1361	1582	1666	1571	1597	1226	886	750	729	524	407	22367
2014	3	19	1345	1477	1488	1746	1630	1657	1282	995	808	722	582	433	23085
2014	3	20	1418	1586	1683	1803	1761	1730	1390	1338	924	879	737	561	25097
2014	3	21	1659	1834	1946	2118	2232	2020	1816	1417	1149	1038	864	670	28455
2014	3	22	1477	1425	1526	1615	1587	1551	1304	1161	1132	897	794	625	23177
2014	3	23	1669	1800	2043	2305	2157	2066	1789	1649	1221	985	693	506	25092
2014	3	24	1444	1464	1640	1626	1642	1589	1261	917	759	712	563	508	23498
2014	3	25	1273	1297	1493	1552	1497	1515	1150	912	705	670	546	450	21608
2014	3	26	1310	1478	1655	1694	1681	1648	1284	965	777	769	613	486	23269
2014	3	27	1269	1608	1982	1819	1837	1671	1416	1242	942	861	793	613	24979
2014	3	28	1734	1945	2009	2121	2183	1983	1799	1510	1157	947	806	612	28416
2014	3	29	1475	1565	1526	1512	1414	1488	1197	1044	914	707	674	472	21775
2014	3	30	1669	1813	1918	2135	2216	2044	1834	1283	1571	1052	727	520	24823
2014	3	31	1673	1579	1592	1673	1610	1608	1272	995	792	761	632	494	23908

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	4	1	355	288	276	299	303	534	871	1197	1147	1258	1209	1365
2014	4	2	371	277	283	268	319	583	863	1265	1124	1273	1315	1306
2014	4	3	320	318	269	289	354	564	947	1253	1428	1386	1346	1388
2014	4	4	402	337	337	326	357	557	892	1385	1390	1461	1536	1634
2014	4	5	443	342	263	251	268	423	597	997	1472	1580	1740	1720
2014	4	6	442	234	169	149	177	180	315	476	696	1019	1283	1500
2014	4	7	327	232	191	178	281	573	822	1184	986	1175	1272	1162
2014	4	8	327	279	277	251	330	534	853	1287	1207	1258	1230	1208
2014	4	9	361	269	267	270	358	569	887	1275	1177	1324	1304	1362
2014	4	10	386	313	284	272	343	547	913	1200	1165	1333	1387	1475
2014	4	11	391	323	324	314	359	594	869	1287	1132	1574	1561	1641
2014	4	12	425	323	292	248	288	360	555	900	1188	1460	1538	1681
2014	4	13	443	274	194	155	153	207	277	478	784	1111	1420	1591
2014	4	14	330	253	196	184	296	640	990	1223	1320	1382	1318	1532
2014	4	15	347	276	261	231	318	525	797	1137	1082	1191	1231	1291
2014	4	16	392	305	276	265	318	571	816	1179	1248	1465	1412	1417
2014	4	17	417	295	283	316	348	570	894	1238	1266	1542	1490	1613
2014	4	18	453	348	351	305	374	457	638	939	1124	1547	1653	1762
2014	4	19	415	299	255	257	235	293	393	603	846	1166	1284	1546
2014	4	20	292	217	164	115	146	167	275	457	677	948	1218	1536
2014	4	21	420	237	237	216	348	706	1048	1423	1406	1620	1656	1650
2014	4	22	402	310	266	279	361	558	929	1260	1131	1406	1297	1221
2014	4	23	334	276	238	277	370	551	890	1067	1382	1304	1261	1268
2014	4	24	360	268	289	242	370	546	871	1287	1167	1492	1278	1388
2014	4	25	393	363	435	338	410	550	822	1238	1286	1372	1416	1514
2014	4	26	425	371	298	264	295	353	519	842	1049	1311	1446	1442
2014	4	27	379	238	180	162	131	239	278	442	666	1029	1392	1602
2014	4	28	348	265	191	229	315	645	1065	1399	1397	1450	1407	1399
2014	4	29	364	297	273	258	302	534	805	1112	1122	1087	1139	1113
2014	4	30	324	261	239	239	316	561	787	1148	1099	1128	1213	1152

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	4	1	1376	1417	1603	1629	1645	1573	1277	970	703	775	568	504	23142
2014	4	2	1385	1534	1663	1706	1752	1668	1278	959	776	731	676	524	23899
2014	4	3	1563	1727	1822	1867	1821	1845	1370	1187	886	929	773	562	26214
2014	4	4	1847	2028	2179	2111	2156	2146	1930	1557	1366	1106	792	629	30461
2014	4	5	1612	1591	1624	1709	1633	1526	1439	1262	1113	886	664	476	25631
2014	4	6	1692	1858	2218	2359	2415	2257	1779	2241	1653	1017	731	451	27311
2014	4	7	1432	1350	1561	1625	1738	1625	1199	954	704	619	525	428	22143
2014	4	8	1102	1844	1664	1597	1605	1600	1271	1059	831	712	627	501	23454
2014	4	9	1345	1472	1484	1739	2044	1725	1375	979	839	789	643	478	24335
2014	4	10	1555	1760	1797	1909	1880	1943	1454	1159	951	855	748	565	26194
2014	4	11	1731	1992	2262	2176	2161	2129	1729	1442	1207	1003	857	636	29694
2014	4	12	1523	1517	1498	1583	1560	1544	1274	1145	1033	924	625	510	23994
2014	4	13	1729	1883	2107	2213	2095	2088	1840	1712	1320	1144	749	482	26449
2014	4	14	1623	1614	1635	1740	1552	1503	1247	1078	802	669	556	500	24183
2014	4	15	1338	1511	1589	1666	1632	1655	1191	940	829	751	660	523	22972
2014	4	16	1533	1733	1792	1865	2086	1774	1524	1087	798	523	959	679	26017
2014	4	17	1695	1875	2033	2146	2145	2187	1781	1306	1099	1086	920	699	29244
2014	4	18	1841	2076	2232	2309	2256	2090	1798	1509	1068	984	947	716	29777
2014	4	19	1585	1623	1510	1674	1645	1524	1351	1157	962	812	637	467	22539
2014	4	20	1719	1764	2044	2339	2530	2629	2645	2283	1794	1241	980	610	28790
2014	4	21	1590	1709	2240	2102	1885	1715	1449	1105	864	817	645	510	27598
2014	4	22	1276	1496	1733	1670	1783	1647	1239	1033	806	712	572	477	23864
2014	4	23	1404	1535	1618	1763	1416	1904	1467	1090	771	706	711	598	24201
2014	4	24	1521	1633	1817	1873	1879	2015	1611	1203	1020	971	624	510	26235
2014	4	25	1668	1866	2126	2160	2203	2099	1694	1389	1137	1077	818	659	29033
2014	4	26	1379	1670	1577	1733	1692	1572	1283	1135	1005	816	659	579	23715
2014	4	27	1799	1945	1997	1692	2394	2146	2338	1884	1388	1111	746	510	26688
2014	4	28	1522	1636	1670	1662	1776	1681	1287	1057	814	792	556	469	25032
2014	4	29	1217	1322	1441	1495	1525	1633	1236	949	733	641	530	401	21529
2014	4	30	1300	1358	1391	1713	1643	1684	1218	970	744	702	627	490	22307

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	5	1	354	291	274	304	372	594	856	1373	1303	1339	1356	1431
2014	5	2	457	345	313	287	334	554	853	1261	1338	1363	1478	1588
2014	5	3	440	332	334	269	287	347	548	892	1188	1524	1572	1635
2014	5	4	437	256	176	144	140	161	276	498	750	1119	1391	1728
2014	5	5	441	256	214	210	335	647	1040	1405	1132	1631	1430	1379
2014	5	6	366	335	259	278	334	513	934	1234	1173	1329	1275	1264
2014	5	7	363	322	305	293	311	552	901	1299	1134	1365	1303	1329
2014	5	8	451	307	297	288	365	562	925	1338	1298	1406	1378	1443
2014	5	9	500	366	330	317	385	563	917	1324	1354	1575	1511	1667
2014	5	10	545	375	322	254	308	358	542	848	1237	1680	1616	1702
2014	5	11	382	263	196	139	158	211	287	461	701	1095	1443	1688
2014	5	12	392	270	239	217	331	646	1126	1446	1333	1605	1528	1545
2014	5	13	497	322	278	273	390	580	940	1335	1175	1399	1264	1324
2014	5	14	402	325	270	307	388	541	986	1282	1264	1301	1344	1371
2014	5	15	364	317	205	258	371	614	909	1237	1190	1397	1257	1322
2014	5	16	416	347	329	317	406	591	876	1206	1368	1420	1479	1656
2014	5	17	432	354	301	259	309	324	542	844	1167	1425	1529	1652
2014	5	18	407	215	166	124	131	198	272	472	705	982	1261	1585
2014	5	19	384	232	227	210	345	653	1036	1404	1073	1787	1452	1467
2014	5	20	389	296	279	276	390	599	908	1258	1206	1301	1298	1293
2014	5	21	355	313	291	291	362	559	961	1320	1319	1369	1251	1278
2014	5	22	267	437	385	386	407	632	942	1343	1320	1443	1457	1508
2014	5	23	472	441	346	384	413	638	901	1303	1471	1604	1584	1778
2014	5	24	570	409	370	323	329	412	593	882	1253	1547	1661	1798
2014	5	25	364	237	192	181	166	219	282	427	791	1213	1517	1769
2014	5	26	419	301	237	221	236	326	477	725	917	1250	1579	1892
2014	5	27	421	260	229	251	318	699	1049	1425	1278	1813	1594	1477
2014	5	28	372	297	335	323	365	628	935	1365	1275	1371	1332	1359
2014	5	29	428	302	306	307	376	628	944	1323	1289	1380	1383	1397
2014	5	30	415	362	328	329	391	600	840	1237	1265	1413	1487	1611
2014	5	31	465	354	275	280	285	370	489	834	1064	1502	1547	1584

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	5	1	1463	1676	1839	1910	1868	1851	1451	1138	891	940	684	634	26192
2014	5	2	1754	1954	2136	2219	2326	2201	1923	1600	1293	1136	917	730	30360
2014	5	3	1619	1604	1634	1529	1586	1407	1306	1123	987	874	677	552	24266
2014	5	4	1915	1892	2268	2219	2112	2110	1667	1700	1358	1053	763	517	26650
2014	5	5	1526	1510	1649	1768	1963	1688	1296	1029	710	717	601	489	25066
2014	5	6	1352	1420	1486	1653	1810	1505	1409	1132	794	809	664	514	23842
2014	5	7	1493	1520	1773	1831	1800	1592	1270	1037	795	710	666	652	24616
2014	5	8	1511	1617	2019	2111	1875	1723	1647	1329	1035	978	835	651	27389
2014	5	9	1875	2131	2305	2323	2226	2123	2175	1772	1284	1216	1059	801	32099
2014	5	10	1684	1685	1725	1728	1481	1606	1507	1219	1021	865	642	521	25471
2014	5	11	1868	1932	2011	2228	2360	2357	2046	1700	1629	1275	873	581	27884
2014	5	12	1464	1577	1756	1842	1774	1801	1304	1039	828	815	606	521	26005
2014	5	13	1416	1432	1751	1717	1742	1616	1321	980	742	755	704	574	24527
2014	5	14	1398	1553	1662	1997	1819	1747	1358	996	776	788	682	547	25104
2014	5	15	1591	1722	1835	1991	1963	1842	1464	1134	939	907	739	581	26149
2014	5	16	1755	1978	2230	2345	2238	2154	1870	1528	1249	1148	897	674	30477
2014	5	17	1704	1792	1665	1791	1775	1536	1279	1075	1000	884	626	481	24746
2014	5	18	1869	1994	2243	2192	2291	2155	1694	1656	1324	1026	735	496	26193
2014	5	19	1540	1542	1699	1951	1735	1612	1447	1157	797	792	645	563	25750
2014	5	20	1381	1384	1597	1710	1743	1617	1261	1086	769	756	645	519	23961
2014	5	21	1338	1631	1783	1764	1880	1688	1039	1332	862	759	626	339	24710
2014	5	22	1684	1803	1923	1980	2054	1924	1629	1230	1048	1023	819	706	28350
2014	5	23	1870	2064	2249	2348	2255	2206	1956	1695	1442	1273	1116	835	32644
2014	5	24	1786	1860	1604	1690	1575	1413	1283	1262	1021	803	650	593	25687
2014	5	25	1915	1936	1954	1946	1975	1813	1542	1451	1045	856	721	536	25048
2014	5	26	2131	2253	2392	2473	2370	2103	1929	1501	1599	1198	928	604	30061
2014	5	27	1690	1705	1737	1767	1733	1600	1275	990	854	841	622	542	26170
2014	5	28	1329	1608	1670	1719	1622	1829	1304	1154	836	760	602	590	24980
2014	5	29	1445	1625	1921	1998	1972	1735	1317	1343	907	893	744	593	26556
2014	5	30	1771	1888	2168	2124	1942	1911	1756	1288	1147	1052	781	687	28793
2014	5	31	1518	1552	1575	1531	1477	1413	1289	1173	979	845	696	578	23675

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2014	6	1	313	223	191	162	178	206	321	555	726	1049	1329	1447
2014	6	2	345	257	200	166	333	671	1048	1301	1287	1375	1404	1460
2014	6	3	374	274	253	251	349	556	940	1184	1148	1315	1248	1294
2014	6	4	398	320	252	268	382	578	967	1266	1070	1432	1333	1270
2014	6	5	360	301	312	321	376	610	1019	1259	1358	1441	1357	1442
2014	6	6	465	339	337	309	402	569	892	1236	1272	1525	1502	1721
2014	6	7	455	323	283	256	306	385	563	900	1206	1460	1653	1635
2014	6	8	404	238	204	195	173	220	340	491	720	990	1392	1725
2014	6	9	370	256	213	247	324	687	1083	1295	1395	1468	1478	1470
2014	6	10	341	291	282	287	337	593	1005	1299	1312	1321	1366	1335
2014	6	11	403	298	309	274	360	591	931	1322	1296	1441	1383	1345
2014	6	12	389	334	327	304	388	650	1001	1326	1356	1420	1475	1501
2014	6	13	481	378	308	368	409	636	964	1245	1400	1537	1648	1815
2014	6	14	554	348	342	303	323	387	605	932	1177	1452	1655	1787
2014	6	15	335	225	206	178	140	211	344	519	775	1227	1453	1700
2014	6	16	400	274	246	250	358	688	1102	1391	1350	1564	1545	1561
2014	6	17	345	311	282	318	387	631	955	1248	1319	1396	1407	1402
2014	6	18	388	364	296	281	376	588	951	1212	1266	1376	1416	1419
2014	6	19	409	342	316	351	356	577	1034	1344	1407	1490	1491	1469
2014	6	20	459	392	341	304	383	584	822	1284	1302	1652	1672	1799
2014	6	21	493	361	297	275	306	357	548	873	1166	1499	1678	1649
2014	6	22	358	265	197	196	147	204	289	548	763	1124	1392	1692
2014	6	23	372	298	234	237	335	657	1034	1392	1379	1480	1499	1543
2014	6	24	405	298	300	258	337	605	938	1248	1287	1403	1352	1332
2014	6	25	357	297	287	306	363	617	984	1258	1360	1356	1360	1449
2014	6	26	444	371	316	316	404	667	1005	1294	1447	1472	1345	1444
2014	6	27	559	425	361	379	371	596	952	1320	1479	1560	1733	1753
2014	6	28	518	369	334	289	309	392	573	952	1162	1558	1769	1818
2014	6	29	376	235	199	166	182	218	379	551	1162	2243	2338	2251
2014	6	30	349	263	223	247	341	651	1033	1244	1284	1438	1481	1520

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	6	1	1605	1922	2224	2245	2147	2033	1795	1580	1218	962	704	466	25601
2014	6	2	1465	1537	1626	1651	1558	1561	1199	1039	737	679	618	491	24008
2014	6	3	1358	1484	1566	1648	1681	1802	1275	973	779	776	649	507	23684
2014	6	4	1445	1632	1793	1864	1855	1819	1408	1089	858	753	599	533	25184
2014	6	5	1538	1792	1837	2032	1973	1852	1460	1237	1029	869	721	599	27095
2014	6	6	1847	2075	2147	2474	2149	2102	1744	1502	1154	1146	917	701	30527
2014	6	7	1497	1587	1632	1524	1550	1548	1208	1025	944	839	723	565	24067
2014	6	8	1837	1931	1933	2423	2172	2098	1987	1601	1311	910	729	526	26550
2014	6	9	1535	1639	1762	1649	1688	1556	1413	1000	767	728	603	502	25128
2014	6	10	1402	1572	1625	1695	1833	1703	1321	958	812	717	638	566	24611
2014	6	11	1453	1638	1715	1854	1821	1696	1454	1142	866	812	684	572	25660
2014	6	12	1645	1799	1873	2033	2268	2004	1302	1239	1453	1023	881	615	28606
2014	6	13	1952	2161	2196	1415	1797	2010	2774	2303	1555	1233	894	775	32254
2014	6	14	1776	1864	1896	1646	1934	1696	1441	1194	1068	887	701	590	26558
2014	6	15	1843	2044	2242	2339	2280	2124	1912	1744	1430	1114	820	512	27717
2014	6	16	1586	1692	1698	1867	1617	1602	1346	1041	814	748	647	508	25895
2014	6	17	1439	1585	1600	1719	1741	1669	1187	1072	813	764	625	533	24748
2014	6	18	1479	1632	1690	1948	1835	1772	1377	1145	937	826	705	587	25866
2014	6	19	1651	1830	1998	2161	2032	1903	1517	1381	986	937	886	663	28531
2014	6	20	1906	2149	2332	2460	2264	2095	1870	1567	1320	1104	1007	1006	32074
2014	6	21	1695	1714	1731	1691	1655	1444	1241	1127	955	757	660	500	24672
2014	6	22	1906	2020	2188	2234	2184	2138	1835	1558	1321	1181	777	530	27047
2014	6	23	1548	1604	1720	1818	1707	1633	1417	1098	908	719	610	533	25775
2014	6	24	1431	1530	1735	1726	1661	1741	1259	1077	829	773	708	550	24783
2014	6	25	1508	1612	1685	1949	1844	1843	1288	1197	971	794	785	605	26075
2014	6	26	1501	1687	1996	2269	2145	1921	1509	1358	1094	936	799	757	28497
2014	6	27	1916	2139	2298	2477	2338	1341	2098	1899	1285	1180	943	698	32100
2014	6	28	1678	1836	1836	1843	1785	1497	1311	1217	1038	885	791	535	26295
2014	6	29	2156	2190	2312	2295	2156	2024	1822	1582	1237	1018	765	494	30351
2014	6	30	1558	1703	1730	1837	1689	1738	1332	1064	805	758	669	578	25535

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Year	Month	Day	Hour 1	2	3	4	5	6	7	8	9	10	11	12
2014	7	1	386	320	343	322	349	627	883	1235	1302	1419	1393	1461
2014	7	2	413	344	325	292	387	615	919	1227	1374	1465	1496	1545
2014	7	3	500	406	360	381	447	659	911	1200	1336	1577	1706	1764
2014	7	4	670	570	426	367	356	449	583	750	991	1263	1668	1669
2014	7	5	338	217	161	147	138	220	323	491	811	1100	1286	1493
2014	7	6	397	299	258	187	175	241	347	638	833	1260	1704	2049
2014	7	7	480	357	290	276	398	703	1092	1409	1464	1583	1639	1752
2014	7	8	440	303	339	320	383	619	1025	1291	1254	1360	1342	1372
2014	7	9	398	316	325	339	347	616	1041	1235	1246	1382	1372	1460
2014	7	10	415	357	301	321	379	655	948	1344	1413	1422	1509	1594
2014	7	11	490	376	309	315	403	515	826	920	1216	1741	1837	1676
2014	7	12	489	374	314	269	279	370	548	830	1068	1496	1655	1806
2014	7	13	425	379	218	167	121	214	368	543	729	1129	1502	1739
2014	7	14	361	263	207	216	349	679	1012	1334	1337	1460	1437	1464
2014	7	15	413	307	274	290	359	596	959	1244	1270	1315	1446	1369
2014	7	16	386	306	312	327	384	639	965	1253	1384	1469	1378	1431
2014	7	17	441	309	317	358	388	586	994	1304	1305	1470	1520	1600
2014	7	18	444	320	130	644	376	600	846	1201	1409	1537	1460	1923
2014	7	19	732	352	317	247	253	357	499	781	987	1464	1575	1738
2014	7	20	323	228	175	175	161	189	313	467	713	1048	1369	1691
2014	7	21	362	261	228	237	336	677	1013	1243	1231	1383	1345	1473
2014	7	22	368	333	269	273	330	596	912	1181	1182	1338	1319	1328
2014	7	23	574	302	244	330	392	582	890	1278	1294	1357	1343	1404
2014	7	24	373	333	277	312	388	574	958	1179	1446	1461	1481	1523
2014	7	25	462	369	324	332	378	617	941	1195	1369	1563	1668	1825
2014	7	26	488	326	305	270	288	384	495	789	1102	1479	1665	1724
2014	7	27	433	308	239	211	186	237	296	544	695	1146	1385	1708
2014	7	28	399	326	215	248	344	662	1036	1316	1431	1664	1607	1583
2014	7	29	446	326	285	297	368	579	915	1284	1264	1349	1460	1362
2014	7	30	415	324	290	299	341	569	927	1282	1259	1251	1358	1574
2014	7	31	391	349	310	326	392	607	967	1184	1296	1497	1474	1614

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	7	1	1540	1689	1830	1839	1779	1547	1237	1245	1045	838	737	640	26006
2014	7	2	1625	1749	1982	2055	1941	1840	1572	1185	1078	995	890	700	28014
2014	7	3	1939	2056	2216	2181	2011	2323	1860	1852	1541	1473	1431	936	33066
2014	7	4	1688	1638	1666	1545	1336	1141	951	783	686	600	510	537	22843
2014	7	5	1624	1647	1673	1690	1663	1495	1377	1277	1047	868	755	469	22310
2014	7	6	2285	2583	2819	2957	2510	2543	2867	2210	1520	1310	1062	666	33720
2014	7	7	1779	1857	1935	1914	1995	1824	1466	1166	994	813	669	602	28457
2014	7	8	1531	1598	1719	1789	1715	1755	1338	1061	858	855	643	521	25431
2014	7	9	1532	1640	1810	1950	1792	1767	1560	1129	949	822	734	639	26401
2014	7	10	1635	1857	1924	1941	1992	1921	1690	1201	952	885	807	782	28245
2014	7	11	1677	2020	2200	2270	2299	2037	1826	1575	1149	1086	1001	744	30508
2014	7	12	1688	1803	1826	1895	1729	1602	1377	1308	1000	886	747	491	25850
2014	7	13	1907	2101	2223	2275	2199	2073	1875	1617	1353	1036	819	589	27601
2014	7	14	1572	1631	1718	1769	1699	1658	1423	1138	797	790	637	526	25477
2014	7	15	1545	1639	1651	1768	1718	1763	1359	1006	798	746	687	515	25037
2014	7	16	1640	1742	1979	2036	2060	1949	1576	1269	916	849	724	569	27543
2014	7	17	1688	1739	2049	2000	2080	2068	1623	1295	1005	940	814	679	28572
2014	7	18	1910	2066	2174	2412	2353	2151	1832	1443	1152	1012	855	759	31009
2014	7	19	1422	1550	1819	2267	2013	1556	1377	1137	978	818	647	489	25375
2014	7	20	1879	2010	2268	2313	2192	2525	2011	1654	1311	1076	737	514	27342
2014	7	21	1567	1726	1723	1726	1667	1767	1340	1041	874	778	647	523	25168
2014	7	22	1493	1541	1675	1869	1909	1785	1341	1023	843	745	642	334	24629
2014	7	23	1455	1663	1822	1927	1906	1879	1398	1046	915	849	664	577	26091
2014	7	24	1615	1804	1957	2032	1969	1962	1523	1263	1095	901	819	673	27918
2014	7	25	2043	2256	2453	2174	2492	2148	2003	1553	1279	1198	985	708	32335
2014	7	26	1694	1717	1811	1768	1739	1652	1469	1220	1186	1192	868	573	26204
2014	7	27	1968	2164	2439	2479	2506	2392	2198	1850	1487	1135	782	554	29342
2014	7	28	1650	1721	1882	1765	1842	1740	1387	1097	839	768	653	605	26780
2014	7	29	1554	1735	1719	1898	1789	1733	1428	1124	828	708	650	598	25699
2014	7	30	1531	1737	1774	1857	1952	1729	1442	1104	833	663	682	665	25858
2014	7	31	1751	1791	2049	2070	1954	1963	1534	1294	1025	800	799	666	28103

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Year	Month	Day	Hour 1	2	3	4	5	6	7	8	9	10	11	12
2014	8	1	473	364	317	325	399	556	831	1233	1331	1426	1495	1751
2014	8	2	517	344	300	299	289	347	501	729	984	1381	1626	1778
2014	8	3	342	271	181	157	164	169	280	509	701	1107	1351	1672
2014	8	4	428	281	231	250	349	657	1032	1283	1315	1524	1517	1571
2014	8	5	439	319	276	276	357	581	893	1235	1233	1329	1360	1285
2014	8	6	376	344	295	303	331	589	897	1204	1286	1398	1418	1431
2014	8	7	458	323	268	293	385	630	911	1271	1335	1438	1496	1523
2014	8	8	514	369	336	291	390	562	780	1216	1260	1445	1663	1735
2014	8	9	453	346	300	294	276	359	455	739	970	1401	1586	1664
2014	8	10	333	269	200	165	162	197	257	440	698	995	1381	1670
2014	8	11	371	261	245	210	338	664	1000	1329	1362	1453	1490	1585
2014	8	12	456	379	272	281	366	615	919	1193	1286	1334	1317	1343
2014	8	13	427	319	305	318	351	584	882	1198	1278	1469	1460	1486
2014	8	14	424	320	294	310	380	635	884	1223	1320	1492	1390	1494
2014	8	15	484	380	333	331	395	567	816	1191	1318	1520	1579	1666
2014	8	16	506	424	316	283	284	387	510	830	1237	1454	1715	1624
2014	8	17	434	319	196	163	156	180	321	532	735	1183	1461	1733
2014	8	18	371	289	268	266	343	667	1043	1356	1351	1422	1459	1563
2014	8	19	398	305	294	270	360	620	939	1164	1219	1333	1270	1387
2014	8	20	391	349	259	295	368	572	975	1328	1288	1321	1255	1220
2014	8	21	378	304	247	314	354	631	920	1290	1277	1368	1387	1422
2014	8	22	453	354	302	291	389	574	912	1271	1243	1400	1440	1526
2014	8	23	468	332	316	270	295	355	474	842	1030	1362	1520	1539
2014	8	24	360	248	170	159	132	207	270	459	670	941	1275	1496
2014	8	25	292	243	189	214	329	653	1033	1349	1292	1408	1290	1285
2014	8	26	351	266	248	276	328	630	894	1203	1203	1245	1199	1193
2014	8	27	364	323	287	256	350	606	928	1241	1209	1368	1289	1210
2014	8	28	360	332	296	326	367	616	699	1481	1286	1425	1296	1426
2014	8	29	462	388	391	339	433	642	888	1232	1214	1425	1527	1615
2014	8	30	644	471	367	313	313	317	647	839	1092	1492	1604	1798
2014	8	31	464	267	236	143	123	187	243	409	586	906	1287	1576

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	8	1	1900	2179	2237	2402	2283	2168	1895	1393	1354	1330	923	738	31303
2014	8	2	2017	2138	2248	2162	2061	1785	1512	1436	1099	980	781	553	27867
2014	8	3	1905	2127	2184	2333	2489	2343	2088	1795	1432	1098	805	501	28004
2014	8	4	1626	1807	1840	1788	1798	1803	1408	1105	810	763	687	618	26491
2014	8	5	1515	1624	1700	1743	1755	1670	1437	1077	916	735	678	563	24996
2014	8	6	1580	1771	1772	1961	1849	1879	1417	1151	874	752	697	578	26153
2014	8	7	1688	1820	1974	1984	1957	1732	1707	1296	1014	935	749	603	27790
2014	8	8	1755	1855	2112	2109	2288	2525	2008	1290	1210	1090	917	680	30400
2014	8	9	1748	1674	1646	1714	1682	1437	1273	1097	1010	774	739	478	24115
2014	8	10	1846	2015	2376	2472	2359	2236	1871	1737	1422	982	882	557	27522
2014	8	11	1694	1663	1848	1879	1741	1675	1299	1004	797	754	634	540	25836
2014	8	12	1534	1675	1644	1853	1907	2000	1401	1098	826	765	705	544	25713
2014	8	13	1499	1697	1802	1936	2002	1769	1431	1089	856	802	706	618	26284
2014	8	14	1610	1814	1951	2085	1967	1997	1611	1202	985	903	780	620	27691
2014	8	15	1749	2007	2177	2255	2245	2167	1872	1558	1309	1171	992	768	30850
2014	8	16	1509	1661	1881	1808	1803	1520	1652	1437	1205	931	813	554	26344
2014	8	17	1964	2092	2273	2474	2549	2474	2200	1730	1263	1093	767	514	28806
2014	8	18	1597	1647	1829	1834	1752	1676	1171	1152	840	727	588	498	25709
2014	8	19	1427	1593	1597	1585	1904	1680	1344	947	805	684	641	516	24282
2014	8	20	1434	1640	1738	1622	1709	1282	1482	1431	767	813	665	550	24754
2014	8	21	1479	1724	1733	2032	2090	1791	1414	1145	956	861	696	589	26402
2014	8	22	1742	1854	2159	2265	2384	2085	1751	1687	1246	1076	893	709	30006
2014	8	23	1541	1556	1645	1602	1524	1531	1271	1111	1011	802	630	495	23522
2014	8	24	1619	1755	2019	2132	2082	1902	1776	1541	1207	898	642	419	24379
2014	8	25	1411	1428	1565	1541	1582	1559	1267	933	787	676	579	544	23449
2014	8	26	1320	1446	1547	1638	1644	1556	1173	977	746	676	694	521	22974
2014	8	27	1279	1512	1662	1702	1731	1640	1320	1028	820	773	634	553	24085
2014	8	28	1457	1618	1726	1953	1967	1840	1477	1106	901	978	805	727	26465
2014	8	29	1769	2183	2174	2421	2437	2011	2160	1766	1501	1454	1253	950	32635
2014	8	30	1674	1696	1644	1595	1559	1441	1212	1084	845	816	690	567	24720
2014	8	31	1820	1832	1921	1922	1815	1767	1608	1385	1109	936	689	664	23895

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Year	Month	Day	Hour 1	2	3	4	5	6	7	8	9	10	11	12
2014	9	1	434	493	273	191	275	308	410	603	785	1129	1564	1997
2014	9	2	416	250	199	231	339	669	1058	1354	1251	1330	1369	1331
2014	9	3	350	296	321	254	374	638	914	1184	1232	1274	1258	1220
2014	9	4	403	249	290	292	405	613	944	1231	1201	1312	1219	1303
2014	9	5	350	347	307	291	327	552	867	1156	1081	1306	1318	1443
2014	9	6	395	395	321	267	241	336	439	775	907	1160	1306	1474
2014	9	7	318	191	159	114	131	151	270	402	569	861	1119	1403
2014	9	8	278	215	197	196	325	632	1004	1329	1214	1261	1230	1271
2014	9	9	329	263	273	284	328	573	828	1250	1164	1214	1112	1197
2014	9	10	340	274	278	321	333	561	833	1145	1306	1241	1227	1288
2014	9	11	349	387	277	273	383	601	921	1246	1181	1226	1257	1235
2014	9	12	429	337	306	320	345	548	739	1048	1384	1332	1403	1528
2014	9	13	396	351	257	219	248	313	518	767	924	1230	1366	1517
2014	9	14	310	222	153	136	121	162	258	426	671	1069	1466	1593
2014	9	15	304	229	200	216	311	621	994	1270	1254	1274	1255	1309
2014	9	16	327	269	281	285	328	560	913	1164	1184	1151	1157	1213
2014	9	17	370	298	293	280	299	588	981	1246	1161	1210	1224	1235
2014	9	18	0	0	0	0	0	0	0	0	0	0	0	0
2014	9	19	399	333	289	303	405	600	861	1234	1206	1320	1489	1591
2014	9	20	381	369	263	248	300	337	547	825	1048	1430	1490	1539
2014	9	21	426	243	190	157	142	187	216	455	608	901	1245	1663
2014	9	22	308	273	209	214	288	669	1019	1078	1494	1362	1226	1334
2014	9	23	326	299	246	261	350	543	865	1200	1212	1126	1114	1202
2014	9	24	352	272	264	294	342	620	890	1277	1169	1208	1253	1163
2014	9	25	364	296	240	304	366	592	886	1211	1227	1284	1205	1377
2014	9	26	407	325	282	320	373	561	789	1152	1283	1279	1382	1449
2014	9	27	424	307	272	220	255	354	491	815	999	1284	1335	1324
2014	9	28	714	467	292	162	131	186	285	483	788	1195	1629	1991
2014	9	29	349	231	220	244	360	701	961	1310	1312	1284	1179	1380
2014	9	30	351	276	263	264	334	610	902	1261	1229	1304	1146	1129

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	9	1	2311	2498	2770	2781	2660	2422	2160	1749	1429	1139	786	547	31714
2014	9	2	1543	1622	1672	1635	1679	1570	1164	856	842	757	646	540	24323
2014	9	3	1335	1406	1572	1709	1455	1662	1315	950	791	653	535	545	23243
2014	9	4	1440	1515	1707	1700	1752	1789	1316	1105	848	843	643	555	24675
2014	9	5	1477	1763	1952	2014	2004	1906	1683	1344	1051	955	845	699	27038
2014	9	6	1405	1463	1395	1432	1613	1488	1467	1212	952	740	629	601	22413
2014	9	7	1491	1584	1890	1940	1838	1903	1675	1499	1242	863	666	385	22664
2014	9	8	1315	1435	1496	1538	1503	1475	1168	955	731	660	524	447	22399
2014	9	9	1167	1355	1489	1582	1600	1512	1205	949	740	670	528	489	22101
2014	9	10	1362	1413	1636	1586	1654	1695	1299	1036	772	718	624	384	23326
2014	9	11	1338	1562	1689	1891	1812	1812	1495	1145	912	790	740	526	25048
2014	9	12	1738	1927	2187	2307	2145	1822	1836	1627	1142	1011	867	575	28903
2014	9	13	1461	1526	1472	1499	1457	1324	1143	1014	830	775	600	449	21656
2014	9	14	1550	1717	1898	1962	1980	1818	1685	1519	1229	888	664	471	23968
2014	9	15	1391	1418	1513	1631	1617	1550	1172	901	740	624	570	455	22819
2014	9	16	1231	1352	1524	1610	1750	1699	1205	1013	766	633	575	469	22659
2014	9	17	1284	1405	1658	1729	1726	1689	1330	1009	781	716	604	425	23541
2014	9	18	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	9	19	1793	1898	2235	2413	2117	2093	2012	1531	1196	1016	916	677	29927
2014	9	20	1510	1464	1504	1374	1384	1394	1302	1118	929	864	672	508	22800
2014	9	21	1927	2159	2410	2647	2394	1885	1730	1709	1435	1535	772	466	27502
2014	9	22	1474	1476	1595	1468	1511	1578	1216	920	736	713	585	413	23159
2014	9	23	1221	1359	1615	1596	1627	1627	1226	1004	764	679	553	450	22465
2014	9	24	1298	1554	1588	1761	1729	1583	1390	970	813	715	612	432	23549
2014	9	25	1374	1609	1763	1876	1821	1656	1575	1233	972	897	695	563	25386
2014	9	26	1728	1878	2085	2180	2118	2125	1750	1529	1267	984	779	601	28626
2014	9	27	1523	1584	1527	1593	1526	1388	1232	1088	1046	951	733	748	23019
2014	9	28	2240	2269	2314	2476	2483	2381	1888	1727	1318	987	663	462	29531
2014	9	29	1511	1701	1878	1884	1763	1587	1061	1113	815	728	526	448	24546
2014	9	30	1286	1397	1541	1613	1566	1586	1312	974	750	682	621	485	22882

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	10	1	385	274	266	255	379	600	862	1235	1155	1243	1235	1284
2014	10	2	351	277	301	321	385	605	971	1188	1232	1301	1286	1343
2014	10	3	535	361	291	293	375	553	860	1231	1194	1293	1380	1493
2014	10	4	402	317	284	228	245	340	488	794	1026	1316	1490	1550
2014	10	5	496	259	168	120	116	194	300	556	886	1367	1933	2096
2014	10	6	0	0	0	0	0	0	0	0	0	0	0	0
2014	10	7	220	20	289	253	317	128	161	1266	1298	1222	1231	1216
2014	10	8	345	277	255	258	349	586	890	1204	1162	1313	1219	1265
2014	10	9	341	301	258	294	354	605	880	1211	1210	1351	1287	1255
2014	10	10	420	347	310	319	379	590	874	1209	1287	1435	1416	1781
2014	10	11	473	400	284	267	268	347	448	698	1095	1387	1606	1658
2014	10	12	353	186	162	137	159	162	282	434	665	1113	1405	1748
2014	10	13	336	254	236	213	342	688	1010	1295	1389	1528	1593	1660
2014	10	14	442	304	277	250	345	598	864	1300	1172	1164	1151	1170
2014	10	15	331	273	280	269	344	625	885	1188	1294	1239	1317	1285
2014	10	16	335	298	259	279	361	662	978	1265	1283	1405	1353	1489
2014	10	17	395	342	298	308	417	559	883	1229	1185	1338	1545	1608
2014	10	18	477	327	260	257	261	386	465	755	973	1316	1400	1522
2014	10	19	306	218	169	124	136	170	266	471	667	996	1309	1599
2014	10	20	428	292	262	267	337	666	1007	1286	1253	1190	1357	1538
2014	10	21	349	285	255	237	375	604	930	1247	1172	1211	1183	1213
2014	10	22	339	333	286	285	345	571	877	1083	1183	1275	1292	1237
2014	10	23	335	294	271	273	350	606	897	1253	1285	1334	1320	1396
2014	10	24	424	344	346	290	351	581	760	916	938	1069	1628	2212
2014	10	25	465	368	238	241	241	331	476	748	1080	1344	1433	1508
2014	10	26	567	411	222	139	137	184	318	511	761	1400	2025	2062
2014	10	27	343	236	187	208	312	694	968	1363	1212	1311	1356	1421
2014	10	28	330	290	200	298	350	604	888	1236	1181	1191	1164	1171
2014	10	29	345	293	282	250	319	599	920	1254	989	1231	1301	1235
2014	10	30	342	290	260	233	361	626	855	1233	1192	1270	1245	1302
2014	10	31	421	371	298	290	361	570	795	1078	1146	1235	1288	1613

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	10	1	1332	1493	1576	1603	1773	1659	1305	946	874	779	628	446	23587
2014	10	2	1494	1630	1795	1787	1792	1732	1392	1503	969	759	637	598	25649
2014	10	3	1526	1129	2159	2530	2382	2121	1776	1511	1302	1064	830	676	28865
2014	10	4	1421	1417	1455	1556	1479	1541	1551	1296	1389	1406	1071	713	24775
2014	10	5	2202	2162	2429	2408	2270	2275	2009	1623	1233	1042	729	482	29355
2014	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	10	7	1291	1487	1610	1590	1690	1639	1215	988	822	681	619	486	21739
2014	10	8	1337	1604	1708	1689	1748	1638	1249	1222	915	655	637	483	24008
2014	10	9	1427	1620	1831	1950	1927	1910	1502	1217	1031	981	742	622	26107
2014	10	10	1914	2102	2265	2320	2381	2253	2018	1614	1242	1123	1064	721	31384
2014	10	11	1567	1708	1628	1663	1559	1456	1307	1187	1159	1275	1076	680	25196
2014	10	12	2150	2224	2120	2265	2684	2251	1966	1600	1355	1014	736	524	27695
2014	10	13	1729	1757	1930	1939	1894	1732	1402	1080	815	771	635	512	26740
2014	10	14	1266	1506	1573	1608	1547	1412	1147	942	658	626	609	523	22454
2014	10	15	1484	1542	1728	1731	1802	1820	1440	1046	856	710	697	535	24721
2014	10	16	1648	1750	1969	2090	2009	1873	1500	1168	985	866	823	579	27227
2014	10	17	1800	2068	1969	2270	2600	2104	1858	1744	1204	1047	899	771	30441
2014	10	18	1429	1479	1598	1645	1791	1744	1559	1323	1103	872	729	449	24120
2014	10	19	1917	1898	2166	2283	2428	2288	2024	1730	1433	1152	799	573	27122
2014	10	20	1607	1741	1743	1802	1735	1648	1391	1010	791	713	576	416	25056
2014	10	21	1240	1416	1597	1615	1659	1586	1304	979	762	705	612	525	23061
2014	10	22	1404	1424	1656	1802	1714	1621	1386	1018	785	702	596	526	23740
2014	10	23	1521	1673	1210	1360	2348	2246	1751	1345	982	912	735	573	26270
2014	10	24	1766	2038	2056	2160	2635	2251	2223	1612	1160	1124	1028	885	30797
2014	10	25	1535	1523	1504	1595	1693	1778	1464	1323	1016	835	906	735	24380
2014	10	26	2006	2116	2364	2329	2411	2279	1959	1684	1316	1018	712	509	29440
2014	10	27	1555	1573	1637	1598	1631	1619	1268	990	696	709	568	477	23932
2014	10	28	1293	1469	1456	1710	1645	1632	1231	983	775	719	541	462	22819
2014	10	29	1301	1436	1675	1698	1882	1728	1357	1096	819	708	600	510	23828
2014	10	30	1450	1682	1767	1970	2193	2061	1674	1394	1010	814	735	509	26468
2014	10	31	1711	2026	2173	2317	2240	2100	1619	1259	1030	794	735	657	28127

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	11	1	411	296	280	238	227	282	440	702	786	1064	1260	1462
2014	11	2	284	201	161	102	202	144	290	484	695	968	1211	1446
2014	11	3	254	220	169	179	318	638	1002	1305	1322	1260	1314	1351
2014	11	4	327	259	236	266	368	591	909	1165	1175	1212	1233	1229
2014	11	5	348	283	252	294	335	598	918	1287	1206	1211	1148	1191
2014	11	6	307	287	262	280	363	619	911	1278	1291	1324	1322	1309
2014	11	7	359	319	270	289	343	600	888	1199	1095	1359	1335	1465
2014	11	8	437	275	223	237	284	353	520	838	963	1298	1521	1472
2014	11	9	251	181	128	112	134	190	279	419	612	921	1176	1420
2014	11	10	302	207	177	167	310	665	1050	1330	1290	1392	1248	1370
2014	11	11	357	252	257	281	372	578	919	1230	1272	1279	1223	1145
2014	11	12	308	267	266	254	366	598	990	1251	1193	1251	1178	1274
2014	11	13	340	268	251	284	357	581	961	1273	1316	1298	1318	1284
2014	11	14	421	290	293	328	379	566	873	1212	1248	1333	1424	1551
2014	11	15	438	297	232	236	223	365	511	788	1060	1341	1418	1451
2014	11	16	246	213	176	144	146	188	259	439	673	1117	1596	1700
2014	11	17	248	175	166	198	297	612	933	1222	1035	1357	1138	1287
2014	11	18	338	247	263	251	378	587	906	1239	1124	1228	1175	1219
2014	11	19	352	261	252	287	341	580	922	1195	1143	1152	1166	1152
2014	11	20	324	277	272	270	382	617	963	1236	1202	1364	1239	1256
2014	11	21	378	295	315	307	379	599	913	1201	1201	1433	1371	1527
2014	11	22	502	337	289	269	313	386	618	996	1177	1647	1669	1903
2014	11	23	317	220	186	126	150	221	278	508	696	1096	1371	1707
2014	11	24	292	242	197	232	328	638	996	1348	1327	1406	1471	1513
2014	11	25	353	314	308	341	397	656	917	1180	1398	1867	1818	1908
2014	11	26	600	502	396	414	524	731	993	1281	1573	1929	1923	1801
2014	11	27	618	452	395	343	327	402	460	717	1132	1775	2237	2426
2014	11	28	300	226	185	177	221	289	404	651	828	1092	1396	1620
2014	11	29	318	245	213	204	201	338	490	771	1108	1505	2070	2031
2014	11	30	476	373	295	296	325	469	623	942	1361	1940	2661	2889

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	11	1	1347	1342	1407	1349	1313	1285	1164	1008	842	665	546	390	20106
2014	11	2	1555	1856	1993	1922	1970	2000	1799	1603	1160	909	576	449	23980
2014	11	3	1417	1446	1563	1599	1630	1616	1184	924	708	656	518	469	23062
2014	11	4	1308	1416	1541	1732	1600	1547	1206	900	763	684	523	453	22643
2014	11	5	1296	1391	1661	1674	1766	1806	1312	983	708	632	546	482	23328
2014	11	6	1545	1722	1896	1925	1858	1740	1370	1133	821	749	690	515	25517
2014	11	7	1772	1986	2157	2264	2239	2222	1811	1376	1181	1008	921	653	29111
2014	11	8	1337	1471	1382	1419	1425	1415	1127	963	756	641	487	348	21192
2014	11	9	1568	1713	1872	2140	2079	2052	1888	1635	1196	928	597	438	23929
2014	11	10	1427	1529	1563	1652	1606	1664	1209	965	716	660	559	475	23533
2014	11	11	1311	1394	1795	1820	1717	1695	1309	996	825	662	587	456	23732
2014	11	12	1303	1506	1604	1659	1949	1617	1270	988	715	679	537	478	23501
2014	11	13	1354	1536	1627	1936	1980	1881	1404	1130	884	705	686	536	25190
2014	11	14	1564	1951	2101	2272	2330	2063	1841	1448	1113	1037	837	710	29185
2014	11	15	1343	1392	1538	1460	1418	1500	1351	1113	935	759	537	401	22107
2014	11	16	1650	1779	1887	2084	2107	1988	1679	1385	1074	797	579	382	24288
2014	11	17	1309	1443	1444	1601	1581	1517	1142	908	579	656	562	432	21842
2014	11	18	1229	1347	1497	1592	1627	1574	1102	1051	691	641	536	424	22266
2014	11	19	1296	1515	1579	1703	1675	1535	1345	958	762	662	590	497	22920
2014	11	20	1352	1619	1754	1879	1871	1805	1379	1113	913	748	661	569	25065
2014	11	21	1654	1916	2165	2209	2208	2084	1842	1584	1268	1032	915	840	29636
2014	11	22	1770	1739	1718	1729	1649	1489	1399	1317	1216	1183	766	498	26579
2014	11	23	1783	1851	2029	1836	2007	1728	1667	1096	1184	869	607	419	23952
2014	11	24	1722	1778	1921	1883	1863	1746	1363	965	944	768	746	550	26239
2014	11	25	2102	2479	2646	2925	2632	2404	2017	1909	1434	1440	1205	841	35491
2014	11	26	1525	1110	1105	2193	2465	2374	2112	1818	1612	1569	1152	885	32587
2014	11	27	1850	1410	1187	1250	1252	1381	1233	1245	1135	883	633	461	25204
2014	11	28	1838	1940	2059	1955	1831	1732	1435	1124	939	716	566	451	23975
2014	11	29	2348	2555	2567	2661	2460	2461	2356	2021	1729	1239	861	674	33426
2014	11	30	3119	3057	3004	2719	2554	2223	2703	2400	1738	1272	950	683	39072

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2013	12	1	429	279	252	234	213	322	463	696	1036	1669	2248	2647
2013	12	2	542	322	288	337	377	613	1097	1351	1387	1488	1556	1604
2013	12	3	351	320	231	268	297	564	945	1227	1315	1376	1362	1402
2013	12	4	380	301	263	266	361	576	943	1128	1173	1253	1470	1370
2013	12	5	346	254	266	280	333	557	913	1222	1134	1253	1266	1446
2013	12	6	378	302	258	326	336	591	930	1167	1198	1273	1474	1557
2013	12	7	378	263	254	226	251	360	526	627	934	1168	1272	1437
2013	12	8	650	357	143	177	124	182	260	353	576	845	1211	1352
2013	12	9	191	180	196	188	260	500	940	1214	1126	1167	1227	1343
2013	12	10	307	265	228	253	296	527	909	1130	1093	1271	1362	1328
2013	12	11	319	249	273	280	322	557	952	1154	1247	1312	1393	1345
2013	12	12	340	268	270	282	313	533	1010	1247	1216	1396	1480	1494
2013	12	13	345	317	289	277	356	588	909	1155	1280	1307	1549	1641
2013	12	14	362	296	262	262	249	346	501	658	938	1287	1478	1490
2013	12	15	283	183	131	123	111	170	251	387	588	830	1133	1370
2013	12	16	245	185	178	221	259	547	1038	1227	1281	1392	1353	1441
2013	12	17	355	265	261	258	302	524	1013	1233	1220	1249	1443	1160
2013	12	18	313	292	261	289	336	562	1001	1263	1250	1336	1404	1465
2013	12	19	385	320	285	288	370	575	964	1240	1269	1390	1609	1576
2013	12	20	438	336	321	372	407	611	993	1237	1324	1518	1756	1914
2013	12	21	514	414	439	345	396	511	781	936	1425	1957	2374	2632
2013	12	22	443	272	223	207	197	255	425	537	800	1174	1696	1933
2013	12	23	303	257	208	233	279	428	741	1009	1219	1379	1812	2099
2013	12	24	446	373	289	271	316	394	530	678	953	1280	1605	1853
2013	12	25	217	173	124	90	93	135	205	326	494	787	1044	1379
2013	12	26	206	175	148	157	248	411	757	919	1143	1534	2058	2403
2013	12	27	353	341	310	272	345	468	798	994	1163	1483	1998	2440
2013	12	28	438	348	275	284	292	348	535	684	1032	1480	2093	2471
2013	12	29	309	284	166	166	185	209	341	578	876	1074	1598	1916
2013	12	30	271	248	207	222	244	457	796	1038	1097	1326	1609	1965
2013	12	31	378	300	252	268	309	468	682	836	951	1126	1403	1739

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2013	12	1	2814	2955	2975	2777	2998	2895	2677	2257	1539	1137	882	655	37049
2013	12	2	1549	1541	1539	1776	1703	1617	1211	1043	769	592	562	416	25280
2013	12	3	1359	1334	1423	1482	1548	1568	1107	848	718	575	458	344	22422
2013	12	4	1368	1349	1356	1455	1539	1392	1144	860	670	585	503	355	22060
2013	12	5	1369	1390	1549	1581	1673	1471	1246	900	748	684	507	391	22779
2013	12	6	1622	1635	1755	1814	1839	1785	1523	902	1188	881	662	488	25884
2013	12	7	1336	1245	1311	1289	1321	1254	1110	815	698	634	534	561	19804
2013	12	8	1485	1365	1413	1380	1345	1275	1072	794	628	537	453	241	18218
2013	12	9	1193	1150	1313	1337	1441	1341	1072	818	633	511	504	391	20236
2013	12	10	1223	1312	1417	1532	1573	1071	1104	1147	727	568	501	367	21511
2013	12	11	1342	1398	1508	1525	1514	1494	1298	937	728	577	480	438	22642
2013	12	12	1430	1502	1559	1715	1731	1635	1242	1080	851	690	585	413	24282
2013	12	13	1657	1767	1781	1989	2049	1854	1591	1237	1124	829	691	548	27130
2013	12	14	1479	1321	1432	1444	1546	1222	986	755	782	613	617	412	20738
2013	12	15	1568	1691	1639	1536	1627	1506	1348	1113	1188	973	572	360	20681
2013	12	16	1359	1391	1374	1564	1540	1425	1177	812	698	575	513	385	22180
2013	12	17	1547	1343	1415	1549	1602	1514	1191	950	781	675	565	414	22829
2013	12	18	1398	1459	1587	1628	1696	1399	1284	1094	814	661	563	445	23800
2013	12	19	1570	1602	1696	1786	1878	1721	1348	1093	934	721	634	496	25750
2013	12	20	1879	2093	2222	2275	2262	1584	1915	1934	1495	1093	973	704	31656
2013	12	21	2478	2368	2377	2041	2179	1991	1446	1142	1135	924	1006	611	32422
2013	12	22	1987	1979	1950	1946	1868	1662	1439	1780	1049	805	583	420	25630
2013	12	23	2050	1723	2556	2109	2058	1296	2002	1163	974	920	877	581	28276
2013	12	24	1807	1822	1769	1718	1491	1294	1015	939	845	638	598	359	23283
2013	12	25	1410	1469	1522	1454	1438	1371	1229	1053	966	764	572	340	18655
2013	12	26	2398	2348	2355	2217	2088	1836	1487	1122	1022	850	699	479	29060
2013	12	27	2539	2451	2298	2261	2271	2038	1745	1442	1223	916	847	550	31546
2013	12	28	2461	2251	2401	2427	2164	1961	1634	1328	1156	825	631	437	29956
2013	12	29	2123	2261	2166	2146	2068	1850	1550	1274	1000	782	601	419	25942
2013	12	30	1979	1952	1888	2055	1994	1723	1472	1144	878	763	601	451	26380
2013	12	31	1736	1753	1755	1754	1584	1299	1205	826	629	445	303	270	22271

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	1	1	230	273	211	162	146	164	260	281	459	655	952	1172
2014	1	2	274	206	168	197	265	510	859	1020	1152	1247	1478	1560
2014	1	3	362	320	266	290	335	490	776	988	1062	1181	1342	1546
2014	1	4	414	270	245	216	245	369	481	570	824	1080	1408	1601
2014	1	5	425	283	173	137	147	167	282	333	520	864	1090	1342
2014	1	6	263	264	187	221	243	505	914	1179	1115	1293	1342	1346
2014	1	7	291	251	224	263	272	404	747	993	1063	1234	1210	1160
2014	1	8	287	280	236	223	280	509	839	1115	1116	1232	1199	1261
2014	1	9	333	234	283	250	329	494	857	1218	1232	1270	1238	1241
2014	1	10	318	258	262	296	312	495	809	1040	1127	1204	1340	1486
2014	1	11	367	240	186	196	203	308	398	522	705	938	1132	1167
2014	1	12	247	165	116	110	109	148	236	296	475	698	861	1040
2014	1	13	201	186	187	193	291	541	1032	1293	1242	1254	1298	1303
2014	1	14	326	210	242	222	317	494	891	1242	1168	1239	1323	1231
2014	1	15	312	249	249	293	289	514	899	1204	1221	1167	1236	1242
2014	1	16	310	276	240	261	321	570	918	1177	1159	1262	1316	1319
2014	1	17	360	300	278	294	331	545	961	1175	1235	1345	1545	1714
2014	1	18	410	281	204	236	253	342	464	651	959	1163	1566	1566
2014	1	19	256	187	134	121	102	129	236	284	433	701	956	1146
2014	1	20	258	185	179	187	257	472	919	1160	1309	1278	1595	1711
2014	1	21	345	244	230	256	318	493	1015	1305	1319	1300	1279	1272
2014	1	22	255	246	225	241	281	504	826	1107	1202	1176	1172	1157
2014	1	23	289	249	241	274	324	473	900	1264	1285	1196	1234	1247
2014	1	24	372	266	173	360	296	476	854	1107	1207	1162	1310	1491
2014	1	25	368	250	231	206	213	304	507	704	798	1086	1258	1363
2014	1	26	208	161	126	112	83	143	231	266	433	690	895	1073
2014	1	27	256	191	156	192	274	536	968	1269	1232	1250	1231	1250
2014	1	28	286	244	193	261	325	479	862	1158	1206	1240	1051	1096
2014	1	29	131	99	78	108	110	195	337	404	498	548	655	787
2014	1	30	183	140	137	150	227	380	669	890	1060	1191	1246	1323
2014	1	31	276	265	244	272	301	529	844	1147	1182	1254	1360	1550

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	1	1	1378	1382	1464	1515	1490	1371	1226	986	762	609	442	332	17922
2014	1	2	1563	1504	1675	1708	1739	1463	1274	991	791	662	531	384	23221
2014	1	3	1611	1662	1688	1768	1851	1520	1830	1172	896	707	519	455	24637
2014	1	4	1580	1591	1617	1664	1662	1526	1368	1067	858	661	574	404	22295
2014	1	5	1676	1819	1949	1936	1905	1646	1345	1037	660	754	547	456	21493
2014	1	6	1403	1349	1417	1516	1490	1441	1145	826	665	506	408	342	21380
2014	1	7	1204	1272	1354	1398	1493	1352	1020	869	662	514	485	389	20124
2014	1	8	1176	1252	1279	1394	1556	1396	999	887	659	498	431	341	20445
2014	1	9	1343	1258	1422	1532	1727	1563	1245	852	638	561	492	390	22002
2014	1	10	1398	1568	1599	1627	1784	1605	1427	1055	812	646	490	432	23390
2014	1	11	1111	1104	1119	1115	1104	1041	872	749	578	501	415	282	16353
2014	1	12	1159	1257	1309	1341	1562	2086	1672	1206	787	637	495	317	18329
2014	1	13	1186	1238	1286	1241	1385	1411	1153	768	616	486	426	318	20535
2014	1	14	1244	1167	1302	1382	1440	1337	1057	703	608	502	497	396	20540
2014	1	15	1246	1218	1414	1479	1597	1396	1119	771	636	541	432	419	21143
2014	1	16	1312	1320	1509	1702	1722	1662	1325	991	839	662	507	391	23071
2014	1	17	1722	1776	1975	2052	1890	1842	1418	1680	1137	885	661	473	27594
2014	1	18	1388	1399	1376	1308	1339	1208	1031	866	677	582	478	501	20248
2014	1	19	1270	1340	1469	1485	1508	1433	1178	1056	801	654	522	408	17809
2014	1	20	1722	1735	1700	1803	1740	1669	1101	1263	810	610	493	368	24524
2014	1	21	1222	1290	1352	1397	1490	1386	1051	716	585	492	393	303	21053
2014	1	22	1223	1194	1305	1291	1485	1401	1076	798	620	545	504	362	20196
2014	1	23	1271	1285	1488	1520	1672	1573	1247	974	706	529	399	414	22054
2014	1	24	1606	1695	1703	1835	1872	1786	1687	1193	902	705	547	425	25030
2014	1	25	1240	1332	1266	1233	1274	1227	1031	774	647	562	522	307	18703
2014	1	26	1269	1414	1525	1508	1571	1414	1295	963	786	511	475	348	17500
2014	1	27	1236	1281	1221	1207	1390	1363	1108	707	609	521	401	360	20209
2014	1	28	1159	1251	1242	1264	1083	652	476	517	307	267	224	153	16996
2014	1	29	785	772	847	846	900	789	545	415	362	302	246	242	11001
2014	1	30	1300	1397	1314	1442	1507	1413	1235	882	728	564	463	319	20160
2014	1	31	1523	1614	1696	1739	1901	1748	1641	1222	1016	724	511	437	24996

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	2	1	342	243	244	243	246	310	504	639	862	1154	1260	1430
2014	2	2	224	141	122	125	95	136	254	315	459	674	816	1096
2014	2	3	215	180	137	188	261	500	1026	1264	1206	1231	1347	1342
2014	2	4	298	256	237	220	325	492	826	1208	1254	1296	1244	1278
2014	2	5	334	262	242	277	309	549	900	1093	1247	1294	1303	1285
2014	2	6	315	278	236	258	324	501	949	1219	1205	1267	1325	1231
2014	2	7	343	265	267	291	350	553	899	1147	1194	1224	1403	1587
2014	2	8	391	269	218	207	214	330	534	688	842	1067	1334	1327
2014	2	9	253	154	129	116	107	171	208	337	501	683	949	1278
2014	2	10	209	194	186	196	290	537	1007	1330	1235	1281	1337	1333
2014	2	11	313	243	224	232	293	445	792	848	950	923	890	965
2014	2	12	173	161	152	146	145	200	286	323	346	370	376	373
2014	2	13	34	34	36	37	19	48	62	70	105	121	158	211
2014	2	14	181	121	86	102	118	174	273	380	527	754	1110	1431
2014	2	15	357	292	259	226	240	399	562	626	875	1213	1370	1474
2014	2	16	271	196	163	137	112	184	262	334	522	709	1016	1187
2014	2	17	248	200	193	177	294	560	978	1339	1299	1355	1492	1578
2014	2	18	348	272	256	258	342	564	941	1316	1313	1303	1519	1382
2014	2	19	315	236	249	275	349	550	997	1202	1238	1308	1341	1442
2014	2	20	319	300	286	294	328	563	980	1279	1273	1293	1466	1535
2014	2	21	350	317	279	306	383	582	924	1135	1215	1339	1638	1822
2014	2	22	388	323	264	273	243	361	628	847	1207	1502	1692	1791
2014	2	23	295	212	139	109	119	156	263	370	574	870	1121	1358
2014	2	24	274	207	180	198	308	604	1059	1327	1319	1438	1392	1393
2014	2	25	288	265	255	239	356	559	910	1324	1291	1429	1321	1361
2014	2	26	310	244	280	274	332	571	931	1239	1281	1390	1322	1358
2014	2	27	326	287	229	305	380	594	966	1243	1214	1292	1468	1549
2014	2	28	387	315	324	336	403	650	908	1201	1235	1419	1576	1728

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	2	1	1277	1303	1273	1304	1369	1212	1029	811	669	552	393	278	18947
2014	2	2	1213	1320	1388	1459	1380	1267	897	706	530	519	487	350	15973
2014	2	3	1312	1193	1272	1275	1438	1313	1090	753	599	501	442	359	20444
2014	2	4	1277	1197	1299	1422	1418	1322	993	792	652	519	444	362	20631
2014	2	5	1260	1340	1423	1396	1432	1471	1119	831	646	527	470	352	21362
2014	2	6	1354	1331	1454	1574	1633	1551	1298	945	769	638	526	388	22569
2014	2	7	1622	1656	1798	1873	1953	1814	1536	1197	937	763	634	390	25696
2014	2	8	1333	1300	1308	1362	1344	1274	1023	798	700	539	598	338	19338
2014	2	9	1431	1445	1560	1656	1693	1652	1323	1043	842	591	439	310	18871
2014	2	10	1258	1334	1299	1388	1463	1305	1107	773	638	595	436	376	21107
2014	2	11	1010	896	884	878	915	800	592	452	395	300	295	201	14736
2014	2	12	331	197	201	229	169	146	107	86	47	53	49	60	4726
2014	2	13	233	368	509	464	486	482	409	330	242	226	155	176	5015
2014	2	14	1631	1796	1912	1932	1822	1726	1433	1067	782	632	508	528	21026
2014	2	15	1456	1471	1314	1352	1384	1288	1116	862	700	598	500	354	20288
2014	2	16	1269	1408	1447	1629	1673	1578	1348	1072	872	650	484	327	18850
2014	2	17	1558	1588	1563	1711	1809	1648	1290	877	796	617	468	396	24034
2014	2	18	1320	1339	1437	1486	1599	1522	1238	850	716	589	478	356	22744
2014	2	19	1350	1461	1560	1529	1631	1505	1173	898	637	666	522	376	22810
2014	2	20	1483	1497	1649	1757	2007	1757	1447	1162	859	689	604	436	25263
2014	2	21	1900	1846	1996	2177	2151	1964	1860	1695	1280	815	767	521	29262
2014	2	22	1578	1502	1489	1473	1500	1367	1183	939	746	661	601	362	22920
2014	2	23	1570	1657	1799	1758	1867	1858	1538	1240	1006	708	570	458	21615
2014	2	24	1369	1362	1396	1415	1339	1439	1186	842	678	544	453	351	22073
2014	2	25	1290	1271	1468	1487	1581	1501	1231	853	680	574	474	388	22396
2014	2	26	1282	1351	1458	1477	1628	1443	1273	956	733	606	457	425	22621
2014	2	27	1468	1471	1554	1713	1732	1646	1352	1161	874	751	542	447	24564
2014	2	28	1676	1705	2067	1968	2139	2044	1961	1536	1331	1009	691	572	29181

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	3	1	455	296	311	310	337	426	653	811	1048	1300	1581	1729
2014	3	2	346	250	219	193	189	222	357	455	672	1000	1435	1703
2014	3	3	291	223	245	234	331	573	1029	1304	1279	1387	1266	1540
2014	3	4	387	226	218	226	305	493	895	1184	1154	1274	1191	1278
2014	3	5	328	299	234	262	346	608	949	1280	1330	1382	1305	1486
2014	3	6	338	267	268	278	349	569	946	1257	1342	1353	1448	1467
2014	3	7	343	296	246	235	295	480	759	1022	1053	1161	1354	1482
2014	3	8	439	341	312	359	356	512	656	805	1083	1369	1649	1797
2014	3	9	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	10	284	234	206	196	289	584	1045	1326	1340	1349	1337	1354
2014	3	11	357	283	251	247	346	556	923	1215	1294	1277	1384	1421
2014	3	12	324	282	245	287	344	548	897	1121	1224	1355	1419	1527
2014	3	13	351	289	272	283	387	564	958	1172	1313	1385	1342	1528
2014	3	14	363	316	312	322	353	517	945	1223	1344	1412	1628	1768
2014	3	15	448	360	327	290	309	379	555	727	1019	1301	1551	1636
2014	3	16	314	254	197	128	157	186	256	336	552	771	1126	1406
2014	3	17	294	245	190	200	287	558	950	1279	1220	1338	1292	1374
2014	3	18	283	262	253	238	318	505	864	1130	1199	1291	1295	1324
2014	3	19	317	271	256	241	305	567	913	1206	1243	1338	1356	1355
2014	3	20	336	315	266	276	367	583	951	1206	1336	1407	1509	1563
2014	3	21	372	338	276	318	368	619	891	1210	1337	1521	1621	1747
2014	3	22	457	324	267	266	242	394	568	766	1075	1318	1551	1602
2014	3	23	295	163	145	134	112	178	252	395	582	827	1156	1475
2014	3	24	269	240	193	211	289	580	1020	1272	1306	1369	1374	1431
2014	3	25	338	282	228	283	348	541	905	1240	1301	1303	1225	1319
2014	3	26	318	296	261	237	341	538	879	1222	1296	1349	1337	1385
2014	3	27	326	293	249	291	363	527	894	1235	1351	1408	1454	1502
2014	3	28	360	298	245	354	360	612	917	1213	1237	1322	1616	1769
2014	3	29	387	300	311	240	299	362	560	703	985	1280	1478	1705
2014	3	30	314	190	157	126	116	191	295	407	661	1011	1227	1497
2014	3	31	271	247	174	198	307	576	1003	1338	1295	1354	1418	1384

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	3	1	1545	1479	1447	1478	1515	1448	1296	1090	908	733	564	418	23178
2014	3	2	1963	2244	2142	2084	1995	1975	1640	1390	1136	841	597	390	25438
2014	3	3	1396	1313	1311	1399	1351	1323	1113	707	551	426	400	178	21170
2014	3	4	1307	1242	1319	1468	1522	1416	1148	796	725	537	501	309	21121
2014	3	5	1359	1481	1464	1582	1561	1409	1293	887	839	619	571	399	23273
2014	3	6	1435	1485	1514	1729	1797	1536	1344	1005	920	738	555	436	24376
2014	3	7	1625	1823	2018	2013	2100	1997	1651	1564	1214	834	769	568	26902
2014	3	8	1617	1635	1582	1635	1514	1409	1215	968	805	627	513	365	23563
2014	3	9	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	10	1298	1353	1406	1447	1584	1467	1236	914	740	626	517	411	22543
2014	3	11	1316	1350	1420	1498	1531	1563	1197	930	723	638	555	406	22681
2014	3	12	1467	1397	1578	1481	1672	1609	1261	901	767	621	536	439	23302
2014	3	13	1455	1565	1669	1726	1842	1748	1509	1177	858	794	594	493	25274
2014	3	14	1919	1832	2047	2113	2214	2086	1889	1476	1153	929	664	560	29385
2014	3	15	1486	1596	1453	1569	1484	1450	1206	1016	845	744	595	464	22810
2014	3	16	1596	1734	1814	1761	1793	1663	2064	1341	1078	738	552	376	22193
2014	3	17	1317	1321	1274	1427	1476	1298	1090	825	653	533	568	335	21344
2014	3	18	1323	1386	1355	1486	1627	1470	1170	826	729	571	485	396	21786
2014	3	19	1342	1384	1459	1599	1595	1504	1293	976	752	656	528	396	22852
2014	3	20	1577	1621	1739	1915	1895	1668	1523	1075	931	753	547	470	25829
2014	3	21	1780	1812	2016	2111	2163	2075	1828	1646	1201	936	684	466	29336
2014	3	22	1463	1497	1408	1566	1563	1438	1340	1030	930	744	639	430	22878
2014	3	23	1544	1651	1868	1984	2059	1927	1549	1275	1038	784	566	442	22401
2014	3	24	1382	1325	1411	1429	1585	1573	1194	911	720	611	615	411	22721
2014	3	25	1276	1233	1311	1404	1629	1510	1108	837	644	598	488	378	21729
2014	3	26	1339	1384	1510	1593	1581	1550	1327	949	761	642	579	434	23108
2014	3	27	1470	1533	1551	1728	1771	1722	1563	1138	891	781	617	460	25118
2014	3	28	1722	1953	1965	2016	2082	2029	1849	1530	1260	914	697	452	28772
2014	3	29	1593	1586	1457	1359	1439	1355	1104	911	740	711	543	406	21814
2014	3	30	1604	1782	1856	1810	1928	1910	1686	1305	1130	932	621	440	23196
2014	3	31	1399	1348	1395	1513	1560	1471	1173	899	684	668	522	408	22605

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	4	1	352	255	275	242	343	562	939	1189	1330	1356	1369	1331
2014	4	2	345	300	230	299	381	586	970	1273	1332	1364	1413	1387
2014	4	3	388	342	304	294	366	601	991	1261	1399	1424	1552	1564
2014	4	4	407	324	272	321	361	654	902	1215	1356	1488	1651	1819
2014	4	5	454	348	245	253	280	435	671	915	1114	1372	1673	1642
2014	4	6	325	239	155	113	124	186	300	417	628	914	1335	1521
2014	4	7	290	215	191	208	305	516	940	1210	1120	1080	1348	1448
2014	4	8	322	287	252	277	349	562	951	1245	1279	1463	1403	1482
2014	4	9	328	272	285	286	345	554	949	1259	1413	1367	1451	1478
2014	4	10	387	314	280	299	377	553	962	1211	1436	1395	1329	1477
2014	4	11	412	285	324	349	425	589	977	1207	1366	1575	1796	1881
2014	4	12	560	394	286	283	328	473	693	1024	1297	1657	1895	2040
2014	4	13	564	285	226	173	164	219	378	501	753	1105	1524	1809
2014	4	14	327	249	209	241	362	599	1044	1334	1358	1412	1471	1640
2014	4	15	367	264	252	256	340	541	904	1209	1250	1385	1376	1436
2014	4	16	317	283	276	300	347	538	957	1307	1346	1456	1504	1539
2014	4	17	433	328	305	317	394	550	1005	1352	1391	1549	1718	1853
2014	4	18	502	406	311	355	378	577	838	1164	1406	1749	2164	2299
2014	4	19	404	326	243	243	223	333	463	640	818	1303	1447	1499
2014	4	20	362	219	139	131	124	177	295	376	634	956	1236	1532
2014	4	21	285	224	198	222	318	652	1155	1364	1443	1511	1694	1684
2014	4	22	328	297	276	286	314	553	963	1316	1382	1447	1446	1335
2014	4	23	344	269	263	291	319	549	1007	1327	1341	1391	1452	1492
2014	4	24	401	266	258	276	348	599	1016	1281	1384	1204	1856	1549
2014	4	25	500	359	278	333	401	624	983	1287	1414	1591	1824	1902
2014	4	26	434	319	240	262	254	384	635	878	1125	1387	1533	1594
2014	4	27	384	242	177	155	154	183	348	457	694	942	1343	1492
2014	4	28	262	211	202	228	295	620	1060	1340	1372	1422	1437	1477
2014	4	29	359	277	251	272	330	539	953	1263	1309	1195	1305	1307
2014	4	30	329	257	246	259	333	538	879	1179	1298	1281	1303	1310

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	4	1	1287	1425	1353	1482	1561	1437	1234	895	721	600	559	412	22509
2014	4	2	1459	1394	1497	1187	1150	1810	1574	886	766	633	527	454	23217
2014	4	3	1690	1640	1839	1910	1901	1923	1696	1369	966	753	604	442	27219
2014	4	4	1862	1925	1993	2191	2143	2036	1852	1493	1390	942	801	522	29920
2014	4	5	1477	1596	1620	1701	1766	1737	1483	1188	965	779	614	454	24782
2014	4	6	1692	1799	1943	1942	1932	1788	1575	1402	1072	749	590	454	23195
2014	4	7	1358	1321	1357	1413	1432	1439	1161	872	733	663	491	423	21534
2014	4	8	1385	1438	1509	1574	1657	1620	1283	935	777	622	562	437	23671
2014	4	9	1307	1407	1550	1704	1802	1578	1331	1007	827	604	565	454	24123
2014	4	10	1358	1843	1806	1829	1908	1811	1500	1226	1000	836	661	555	26353
2014	4	11	1914	2113	2116	2383	2276	2246	2174	1961	1477	1093	808	623	32370
2014	4	12	1983	1861	1893	1814	1835	1701	1483	1305	1141	1027	790	652	28415
2014	4	13	2027	2032	2218	2241	2251	2222	2006	1532	1240	970	674	436	27550
2014	4	14	1498	1509	1449	1484	1607	1529	1295	932	777	666	547	398	23937
2014	4	15	1393	1469	1413	1449	1496	1459	1310	953	811	645	505	435	22918
2014	4	16	1502	1513	1642	1788	1859	1750	1512	1148	930	793	642	510	25759
2014	4	17	1798	1856	1999	2058	2189	1919	1761	1503	1589	1172	980	666	30685
2014	4	18	2174	2257	2191	2172	2194	1965	1795	1491	1041	823	704	541	31497
2014	4	19	1622	1548	1533	1471	1366	1355	1166	895	750	624	554	383	21209
2014	4	20	1571	1649	1788	1926	2201	2161	2176	1712	1367	934	746	433	24845
2014	4	21	1611	1663	1628	1585	1690	1618	1309	981	797	631	560	416	25239
2014	4	22	1374	1382	1457	1506	1634	1517	1203	894	715	653	504	379	23161
2014	4	23	1472	1402	1458	1528	1648	1654	1245	1037	803	627	536	465	23920
2014	4	24	1580	1565	1661	1871	1865	1711	1305	1286	927	831	634	566	26240
2014	4	25	2018	2019	2062	2175	2266	1996	1905	1445	1132	925	650	557	30646
2014	4	26	1503	1534	1468	1447	1371	1475	1305	1074	924	810	788	645	23389
2014	4	27	1714	1764	1823	1902	1961	1812	1671	1417	1182	904	618	392	23731
2014	4	28	1387	1292	1429	1484	1553	1528	1172	840	702	578	608	443	22942
2014	4	29	1323	1271	1301	1418	1478	1496	1147	811	644	544	461	347	21601
2014	4	30	1387	1325	1564	1602	1666	1479	1316	943	751	568	496	440	22749

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	5	1	375	308	283	275	348	654	1019	1334	1425	1455	1587	1559
2014	5	2	443	312	289	329	403	573	993	1224	1419	1553	1765	1880
2014	5	3	428	349	267	274	269	385	640	928	1167	1340	1536	1511
2014	5	4	340	257	202	141	137	199	300	408	653	936	1185	1391
2014	5	5	447	310	215	170	295	618	1139	1359	1343	1332	1542	1558
2014	5	6	380	315	280	278	327	567	985	1255	1273	1478	1381	1426
2014	5	7	375	285	252	260	352	554	964	1276	1306	1395	1422	1443
2014	5	8	415	331	281	296	370	581	1039	1302	1361	1418	1706	1671
2014	5	9	445	374	343	355	405	634	1064	1331	1416	1693	1839	2037
2014	5	10	499	358	278	288	302	390	661	811	1099	1496	1589	1753
2014	5	11	304	244	148	135	112	147	297	454	668	1074	1461	1681
2014	5	12	329	256	202	255	341	602	1181	1410	1426	1519	1644	1652
2014	5	13	346	313	282	317	346	586	943	1276	1316	1541	1485	1490
2014	5	14	364	300	290	287	357	572	1037	1316	1357	1394	1499	1509
2014	5	15	423	340	282	294	358	556	950	1096	1343	1420	1615	1651
2014	5	16	417	355	336	346	379	570	1054	1316	1468	1644	1880	1980
2014	5	17	557	346	301	273	281	405	694	847	1158	1322	1592	1549
2014	5	18	580	597	345	167	143	175	316	457	772	1084	1267	1661
2014	5	19	290	247	194	246	306	607	1167	1269	1382	1432	1555	1503
2014	5	20	386	300	276	269	358	589	1008	1379	1460	1380	1469	1487
2014	5	21	351	288	274	303	365	623	994	1295	1389	1408	1444	1570
2014	5	22	393	305	294	356	409	596	1100	1344	1407	1548	1699	1711
2014	5	23	559	446	367	394	507	767	1071	1396	1628	1820	2211	2310
2014	5	24	584	412	368	310	374	500	732	1041	1497	1817	2050	2055
2014	5	25	346	192	170	145	133	152	327	450	676	955	1260	1375
2014	5	26	718	502	203	156	195	275	489	758	965	1222	1503	1939
2014	5	27	343	240	190	209	330	593	1111	1380	1407	1503	1621	1592
2014	5	28	386	315	260	294	340	533	991	1303	1355	1462	1436	1555
2014	5	29	383	316	310	271	365	609	1070	1263	1342	1378	1618	1534
2014	5	30	505	522	327	321	433	606	975	1211	1371	1452	1649	1761
2014	5	31	417	315	280	279	303	400	698	1001	1089	1432	1541	1611

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	5	1	1514	1617	1655	1780	1935	1527	1654	1264	979	767	652	449	26415
2014	5	2	1902	2080	2223	2155	2213	1964	1893	1890	1312	979	749	561	31104
2014	5	3	1406	1382	1454	1457	1453	1403	1274	1120	888	786	632	496	22845
2014	5	4	1639	1675	1786	1836	1892	1796	1700	1524	1153	868	689	555	23262
2014	5	5	1408	1510	1467	1548	1528	1559	1263	940	691	592	532	497	23863
2014	5	6	1357	1466	1469	1562	1618	1325	1471	1052	786	638	562	423	23674
2014	5	7	1498	1561	1589	1726	1743	1719	1332	968	856	668	567	433	24544
2014	5	8	1716	1805	1966	1989	1991	1837	1628	1381	1006	852	703	574	28219
2014	5	9	2071	2003	2275	2166	2053	2074	1978	1649	1434	991	777	608	32015
2014	5	10	1719	1627	1672	1604	1530	1557	1527	1094	928	821	672	501	24776
2014	5	11	1850	1845	2043	2049	2188	2011	2009	1733	1352	1108	723	445	26081
2014	5	12	1671	1602	1592	1719	1776	1639	1431	1024	809	701	559	380	25720
2014	5	13	1430	1405	1525	1558	1594	1383	1123	1313	771	709	511	420	23983
2014	5	14	1478	1496	1536	1646	1733	1543	1401	1017	828	620	605	450	24635
2014	5	15	1615	1705	1715	1782	1739	1644	1378	1173	852	759	723	478	25891
2014	5	16	1967	2014	2070	2103	2162	2086	2041	1644	1296	952	845	657	31582
2014	5	17	1458	1576	1580	1537	1479	1411	1295	998	880	837	735	535	23646
2014	5	18	1814	1867	1902	2034	1936	1942	1677	1361	1113	902	635	372	25119
2014	5	19	1535	1479	1504	1610	1685	1551	1377	1060	799	691	555	456	24500
2014	5	20	1260	1562	1433	1558	1696	1543	1304	915	764	622	532	466	24016
2014	5	21	1558	1509	1504	1610	1852	1598	1212	1299	883	765	622	490	25206
2014	5	22	1838	1795	1868	1987	2024	1933	1675	1359	1149	922	766	653	29131
2014	5	23	2348	2421	2519	2437	2502	2450	2323	2199	1641	1246	1011	779	37352
2014	5	24	1874	1662	1670	1593	1474	1331	1335	1087	944	791	661	527	26689
2014	5	25	1473	1492	1450	1377	1396	1366	1231	1065	888	765	668	688	20040
2014	5	26	1815	1839	1859	1811	1961	1708	1577	1348	1063	895	727	449	25977
2014	5	27	1473	1530	1509	1613	1697	1682	1421	969	835	650	528	422	24848
2014	5	28	1389	1481	1539	1542	1702	1603	1349	1038	746	628	602	464	24313
2014	5	29	1465	1490	1714	1715	1808	1636	1556	1076	866	703	521	524	25533
2014	5	30	1839	1876	2002	2110	1982	1478	2137	1921	1211	850	713	567	29819
2014	5	31	1532	1579	1540	1495	1522	1433	1273	1081	924	799	632	527	23703

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	6	1	365	254	206	145	125	208	372	506	679	995	1228	1415
2014	6	2	272	211	190	203	319	664	1101	1401	1262	1449	1404	1496
2014	6	3	326	287	253	253	326	538	1069	1300	1372	1437	1450	1468
2014	6	4	371	298	275	262	338	542	1006	1293	1324	1431	1373	1458
2014	6	5	351	302	292	299	379	569	1005	1286	1319	1408	1406	1782
2014	6	6	450	343	290	313	380	559	991	1250	1308	1445	1720	1896
2014	6	7	427	335	280	251	281	390	682	838	1099	1287	1493	1661
2014	6	8	375	251	195	148	127	167	376	487	663	947	1251	1499
2014	6	9	324	282	221	252	344	624	1157	1387	1390	1438	1552	1504
2014	6	10	363	322	265	294	325	576	1030	1274	1273	1381	1430	1501
2014	6	11	376	303	279	286	344	564	1017	1322	1304	1465	1447	1445
2014	6	12	434	346	272	307	353	581	988	1249	1437	1608	1593	1661
2014	6	13	469	397	325	331	358	574	1022	1276	1516	1622	1898	2043
2014	6	14	470	389	299	310	326	441	658	972	1214	1548	1837	1787
2014	6	15	503	305	211	176	174	209	355	552	814	1238	1679	2068
2014	6	16	438	310	218	251	371	635	1189	1438	1457	1685	1700	1780
2014	6	17	358	288	277	304	330	572	1038	1362	1345	1486	1559	1541
2014	6	18	387	287	287	324	331	645	1027	1286	1436	1466	1501	1643
2014	6	19	366	349	290	298	358	614	1067	1347	1423	1502	1503	1694
2014	6	20	432	381	338	315	396	629	1030	1270	1465	1614	1862	1988
2014	6	21	486	357	324	280	324	447	671	929	1214	1467	1635	1854
2014	6	22	442	288	200	169	171	201	364	500	725	1028	1404	1722
2014	6	23	365	265	221	239	343	652	1167	1413	1462	1549	1603	1662
2014	6	24	367	353	257	269	362	586	962	1287	1305	1440	1506	1537
2014	6	25	393	300	276	269	385	592	972	1359	1456	1475	1540	1551
2014	6	26	405	374	282	319	407	601	1043	1321	1478	1599	1633	1724
2014	6	27	482	355	321	334	412	621	961	1225	1421	1607	1866	2017
2014	6	28	492	412	300	297	329	451	717	945	1233	1504	1763	1946
2014	6	29	382	276	210	166	159	233	368	513	751	1016	1391	1674
2014	6	30	501	267	225	259	338	687	1127	1392	1363	1429	1608	1688

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	6	1	1635	1786	1776	1775	1865	1731	1675	1308	1031	908	648	443	23079
2014	6	2	1446	1384	1411	1438	1603	1588	1261	905	762	701	557	410	23438
2014	6	3	1330	1398	1445	1492	1676	1530	1227	1081	812	610	527	435	23642
2014	6	4	1381	1473	1551	1500	1623	1539	1232	1074	753	673	562	414	23746
2014	6	5	1443	1628	1724	1758	1902	1757	1389	1186	961	737	643	493	26019
2014	6	6	1819	1811	2061	2149	2057	1965	1836	1628	1184	933	819	600	29807
2014	6	7	1533	1542	1593	1595	1488	1446	1308	1125	952	831	734	562	23733
2014	6	8	1639	1874	2137	2000	2102	2015	1817	1384	1109	862	672	421	24518
2014	6	9	1536	1549	1517	1462	1687	1591	1382	1022	852	661	575	431	24740
2014	6	10	1432	1428	1471	1550	1552	1586	1351	1090	891	654	556	513	24108
2014	6	11	1196	796	1992	2126	1624	1543	1426	1208	906	745	610	494	24818
2014	6	12	1671	1627	1694	1797	1802	1851	1608	1326	1134	862	724	575	27500
2014	6	13	1966	2081	2151	2066	2157	1804	2124	1642	1231	1047	857	637	31594
2014	6	14	1856	1211	2121	1760	1780	1550	1482	1197	1075	925	807	724	26739
2014	6	15	2130	2268	2262	2468	2315	2239	2022	1648	1360	1100	1009	636	29741
2014	6	16	1669	1745	1693	1701	1723	1588	1410	1050	826	659	587	461	26584
2014	6	17	1456	1500	1515	1574	1721	1592	1361	1005	820	700	590	445	24739
2014	6	18	1522	1556	1573	1689	1738	1747	1142	1242	869	655	575	511	25439
2014	6	19	1830	1733	1879	1943	1648	1662	1895	1442	979	772	628	580	27802
2014	6	20	2040	2004	2283	2323	2120	2200	2333	1652	1220	948	797	552	32192
2014	6	21	1704	1635	1707	1579	1585	1490	1295	1077	1034	795	664	529	25082
2014	6	22	1902	2034	2220	2291	2290	2015	1888	1462	1152	1075	812	565	26920
2014	6	23	1644	1567	1572	1647	1725	1614	1420	1045	873	669	636	477	25830
2014	6	24	1523	1564	1562	1587	1687	1455	1325	1095	940	670	600	457	24696
2014	6	25	1464	1630	1636	1625	1775	1657	1506	1180	904	724	609	483	25761
2014	6	26	1679	1704	1860	1850	1970	1741	1634	1275	1091	851	661	491	27993
2014	6	27	2045	2178	2215	2244	2219	2095	2053	1522	1357	1109	795	670	32124
2014	6	28	1730	1833	1784	1789	1670	1564	1440	1130	952	924	740	523	26468
2014	6	29	1855	1947	2077	2188	2231	2069	2009	1803	1758	1456	1365	1071	28968
2014	6	30	1591	1554	1665	1607	1617	1603	1599	1153	896	720	650	478	26017

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	7	1	433	344	263	339	384	557	1031	1222	1380	1492	1619	1687
2014	7	2	420	340	297	327	395	574	963	1316	1448	1491	1489	1566
2014	7	3	507	451	371	378	437	649	1036	1236	1533	1670	2045	2221
2014	7	4	663	570	437	417	446	500	724	986	1211	1650	2029	2125
2014	7	5	390	241	147	136	167	224	398	539	807	1084	1384	1472
2014	7	6	413	295	182	178	160	212	372	497	739	1134	1673	2112
2014	7	7	420	327	302	280	347	727	1154	1397	1506	1554	1741	1833
2014	7	8	439	299	271	304	325	612	939	1348	1444	1556	1524	1560
2014	7	9	379	320	286	269	383	590	1002	1256	1396	1398	1508	1596
2014	7	10	434	305	295	264	391	568	1083	1262	1443	1545	1567	1791
2014	7	11	463	348	327	317	362	619	988	1299	1350	1510	1716	2013
2014	7	12	494	362	276	280	274	449	645	868	1196	1386	1645	1686
2014	7	13	509	288	232	168	175	204	334	443	729	1003	1409	1748
2014	7	14	352	267	203	239	314	641	1226	1392	1389	1472	1566	1609
2014	7	15	392	308	265	288	354	563	1013	1300	1319	1511	1521	1542
2014	7	16	399	306	285	254	389	580	983	1268	1296	1426	1533	1570
2014	7	17	465	348	274	317	369	573	1050	1297	1408	1521	1577	1719
2014	7	18	519	380	320	340	351	574	1035	1333	1444	1576	1927	2027
2014	7	19	470	342	289	290	336	397	632	781	1083	1447	1716	1791
2014	7	20	437	208	357	180	152	205	320	437	708	1008	1420	1789
2014	7	21	388	269	235	246	313	635	1147	1402	1233	960	1300	2229
2014	7	22	382	299	267	262	353	592	924	1233	1397	1492	1499	1432
2014	7	23	548	346	274	299	341	586	994	1281	1409	1501	1559	1643
2014	7	24	575	332	305	338	414	576	1004	1325	1475	1496	1665	1762
2014	7	25	453	359	347	377	398	483	780	1551	1453	1638	2016	2092
2014	7	26	651	421	331	334	329	444	632	991	1266	1591	1821	1981
2014	7	27	484	299	179	182	176	199	334	481	716	1044	1470	1706
2014	7	28	376	279	215	227	344	657	1104	1421	1450	1515	1610	1609
2014	7	29	385	285	297	286	347	584	932	1355	1600	1543	1584	1594
2014	7	30	380	334	294	312	333	596	947	1271	1300	1420	1549	1625
2014	7	31	398	304	306	366	400	581	1009	1316	1562	1517	1586	1787

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	7	1	1629	1633	1589	1623	1628	1443	1492	1205	927	741	627	502	25790
2014	7	2	1846	1603	1667	1848	1883	1775	1733	1508	1122	887	796	516	27810
2014	7	3	2207	2345	2383	2324	2323	2368	2156	2376	1662	1273	1053	879	35883
2014	7	4	1974	1709	1560	1432	1237	1056	857	757	722	525	541	458	24586
2014	7	5	1545	1606	1553	1518	1504	1410	1237	1090	959	821	753	555	21540
2014	7	6	2142	2425	2493	2702	2674	2474	2275	1678	1649	1261	936	611	31287
2014	7	7	1753	1771	1806	1802	1882	1831	1506	1114	991	822	625	535	28026
2014	7	8	1527	1531	1596	1651	1745	1447	1402	1309	929	710	638	444	25550
2014	7	9	1555	1630	1633	1733	1814	1561	1322	1377	982	774	635	525	25924
2014	7	10	1667	1799	1820	1979	1991	1973	1622	1248	1040	696	634	534	27951
2014	7	11	1972	1891	2088	2243	1094	2397	2064	1612	1242	960	817	581	30273
2014	7	12	1704	1702	1665	1714	1604	1503	1392	1144	932	792	715	560	24988
2014	7	13	1981	2059	2065	2073	1923	1829	1785	1505	1170	909	729	507	25777
2014	7	14	1632	1495	1619	1698	1727	1607	1482	1074	889	693	631	439	25656
2014	7	15	1663	1630	1643	1708	1681	1594	1272	1023	847	685	579	513	25214
2014	7	16	1450	1588	1737	1714	1650	1780	1510	1190	925	741	665	568	25807
2014	7	17	1709	1725	1868	1850	1978	1420	1644	1689	1104	837	707	590	28039
2014	7	18	2165	2362	1642	2519	2484	2086	2097	1805	1394	921	816	611	32728
2014	7	19	1732	1670	1580	1608	1639	1435	1388	1092	1012	846	651	556	24783
2014	7	20	1943	2072	2059	2392	2246	2129	1943	1554	1303	965	756	511	27094
2014	7	21	1676	1581	1524	1576	1634	1718	1350	1095	825	711	608	488	25143
2014	7	22	1478	1480	1479	1552	1659	1691	1255	1052	851	661	576	559	24425
2014	7	23	1648	1663	1712	1684	1792	1656	1423	1125	935	662	649	540	26270
2014	7	24	1752	1811	1868	1889	2007	1963	1589	1339	1024	896	722	570	28697
2014	7	25	2128	2195	2239	2185	2233	2073	1919	1658	1411	1065	844	699	32596
2014	7	26	1967	1898	1885	1939	1847	1779	1496	1092	1084	841	684	641	27945
2014	7	27	2004	2193	2222	2150	2183	2048	1840	1498	1326	1008	695	637	27074
2014	7	28	1618	1576	1646	1670	1724	1764	1381	1101	958	776	762	591	26374
2014	7	29	1536	1553	1546	1660	1784	1595	1511	1073	912	680	647	501	25790
2014	7	30	1510	1602	1683	1759	1784	1654	1538	1065	882	818	642	474	25772
2014	7	31	1750	1764	1813	1843	1749	1924	1765	1298	1119	826	790	535	28308

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	8	1	489	372	325	326	393	585	873	1067	1325	1636	2003	2171
2014	8	2	484	380	337	297	314	436	619	860	1214	1605	1853	1961
2014	8	3	421	293	224	171	164	181	343	495	823	1174	1712	2042
2014	8	4	429	290	225	251	312	629	1103	1414	1386	1419	1610	1590
2014	8	5	419	314	273	268	392	541	1019	1311	1391	1433	1479	1503
2014	8	6	373	255	295	268	352	595	951	1295	1450	1482	1615	1585
2014	8	7	406	342	285	278	366	557	1028	1285	1478	1573	1657	1723
2014	8	8	488	370	346	319	395	617	941	1312	1546	1584	1963	2124
2014	8	9	723	382	294	291	308	407	633	822	1020	1351	1681	1884
2014	8	10	406	251	200	169	164	203	320	430	629	944	1327	1624
2014	8	11	335	223	258	228	333	610	1058	1375	1343	1514	1574	1665
2014	8	12	358	313	285	283	359	561	935	1348	1477	1470	1485	1470
2014	8	13	554	378	325	302	349	575	931	1356	1408	1443	1502	1599
2014	8	14	473	318	312	345	375	631	1046	1330	1416	1509	1616	1617
2014	8	15	552	386	315	353	387	583	935	1401	1480	1677	2003	2153
2014	8	16	480	327	309	260	298	398	711	988	1296	1702	1844	2018
2014	8	17	489	250	182	188	160	212	311	550	765	1044	1464	1685
2014	8	18	512	345	231	254	324	604	1079	1413	1477	1428	1498	1543
2014	8	19	359	308	270	276	361	533	922	1351	1420	1510	1455	1498
2014	8	20	403	315	300	318	361	568	991	1287	1312	1454	1456	1496
2014	8	21	381	306	285	333	373	567	936	1316	1375	1365	1494	1498
2014	8	22	398	368	340	321	396	553	931	1301	1313	1473	1548	1736
2014	8	23	562	368	279	253	285	406	541	763	1096	1402	1519	1679
2014	8	24	284	256	169	207	155	191	282	400	600	954	1271	1505
2014	8	25	280	211	230	210	298	630	1041	1404	1310	1309	1451	1422
2014	8	26	358	283	292	262	394	530	967	1312	1375	1428	1342	1344
2014	8	27	351	291	303	276	378	566	948	1334	1379	1397	1437	1484
2014	8	28	403	297	272	320	403	655	1042	1384	1429	1501	1520	1924
2014	8	29	516	390	350	424	437	657	1029	1355	1543	1758	1997	2009
2014	8	30	717	470	387	344	359	479	712	1042	1414	1906	2141	2180
2014	8	31	402	320	199	143	115	173	293	387	616	886	1148	1478

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2014	8	1	2141	2176	2203	2227	2282	2146	1966	1603	1245	1044	902	739	32239
2014	8	2	1985	1975	1858	1877	1764	1615	1523	1236	1058	1090	1285	887	28513
2014	8	3	2172	1992	2484	2325	2156	2052	1783	1555	1314	957	703	645	28181
2014	8	4	1614	1573	1615	1609	1680	1676	1399	1004	1026	757	598	508	25717
2014	8	5	1543	1498	1688	1592	1703	1561	1393	1075	892	668	609	478	25043
2014	8	6	1537	1563	1646	1668	1865	1655	1408	1077	895	705	642	600	25777
2014	8	7	1673	1787	1829	1913	2054	1908	1552	1510	1051	810	745	555	28365
2014	8	8	2116	2158	2201	2068	2179	2028	1958	1569	1347	994	900	867	32390
2014	8	9	1794	1726	1671	1691	1704	1536	1452	1146	978	871	789	584	25738
2014	8	10	1387	2406	2160	2128	2109	1989	1851	1454	1168	825	678	472	25294
2014	8	11	1685	1639	1611	1668	1791	1622	1446	1105	865	657	629	419	25653
2014	8	12	1509	1523	1609	1551	1647	1656	1324	1008	869	758	621	492	24911
2014	8	13	1661	1673	1643	1730	1763	1741	1501	1203	905	809	609	480	26440
2014	8	14	1704	1695	1791	1983	1936	1821	1444	1649	1085	899	731	548	28274
2014	8	15	1942	2073	2250	2295	2160	2172	1979	1818	1578	1202	892	591	33177
2014	8	16	1831	1741	1667	1715	1613	1661	1395	1183	946	961	881	656	26881
2014	8	17	2008	2033	1973	2130	2025	2048	1820	1517	1217	943	797	635	26446
2014	8	18	1567	1489	1569	1649	1680	1632	1302	953	832	646	551	475	25053
2014	8	19	1360	1398	1498	1644	1647	1608	1275	981	793	626	520	503	24116
2014	8	20	1470	1448	1524	1609	1827	1680	1313	939	767	632	559	431	24460
2014	8	21	1454	1583	1673	1794	1776	1716	1565	1142	880	796	589	495	25692
2014	8	22	1818	1795	2007	2068	1973	2030	1887	1451	1106	902	990	673	29378
2014	8	23	1573	1532	1488	1456	1509	1393	1259	1080	855	695	744	649	23386
2014	8	24	1651	1775	1875	1897	1870	1870	1744	1377	1085	817	580	435	23250
2014	8	25	1406	1375	1437	1392	1625	1560	1207	894	754	619	544	412	23021
2014	8	26	1278	1378	1437	1484	1646	1559	1261	971	734	680	579	409	23303
2014	8	27	1428	1487	1503	1640	1688	1675	1351	1063	865	696	587	423	24550
2014	8	28	1761	1672	1482	2289	2084	1759	1613	1452	1071	854	766	592	28545
2014	8	29	2687	2507	2520	2371	2365	2586	2403	2340	1826	1358	1018	757	37203
2014	8	30	1782	1706	1627	1459	1435	1223	1122	950	862	718	586	472	26093
2014	8	31	1523	1540	1475	1576	1516	1467	1301	1117	936	810	593	494	20508

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	9	1	313	252	177	174	167	227	426	566	717	1020	1431	1693
2014	9	2	312	220	188	230	337	617	1032	1384	1329	1391	1502	1388
2014	9	3	326	302	262	273	348	572	930	1343	1267	1353	1406	1404
2014	9	4	349	215	321	283	351	607	977	1202	1328	1471	1341	1467
2014	9	5	384	323	313	281	394	576	904	1213	1321	1395	1555	1693
2014	9	6	508	368	263	255	292	421	611	1048	1328	1435	1498	1553
2014	9	7	356	231	181	147	120	173	295	413	640	900	1134	1293
2014	9	8	271	256	169	243	333	605	1039	1331	1329	1290	1308	1366
2014	9	9	335	289	256	301	331	573	925	1209	1272	1371	1407	1276
2014	9	10	323	272	275	257	384	574	927	1309	1299	1302	1286	1316
2014	9	11	355	258	262	306	386	592	934	1220	1399	1379	1399	1419
2014	9	12	394	324	301	328	397	613	922	1217	1331	1385	1570	1731
2014	9	13	415	318	271	224	227	370	536	765	1003	1240	1411	1489
2014	9	14	352	259	144	133	132	159	268	365	589	881	1197	1361
2014	9	15	279	214	165	210	283	641	1080	1388	1361	1537	1464	1491
2014	9	16	320	270	252	277	335	574	933	1374	1386	1361	1299	1282
2014	9	17	465	298	257	289	351	580	901	1289	1376	1417	1417	1408
2014	9	18	0	0	0	0	0	0	0	0	0	0	0	0
2014	9	19	434	331	338	304	361	580	872	1213	1362	1522	1770	1896
2014	9	20	465	365	298	254	278	397	598	857	1088	1396	1487	1440
2014	9	21	387	321	226	164	134	162	317	388	603	958	1252	1582
2014	9	22	686	586	242	210	300	575	1059	1409	1411	1428	1504	1516
2014	9	23	341	268	275	285	341	568	915	1252	1323	1286	1352	1369
2014	9	24	299	278	247	272	347	558	911	1220	1313	1324	1514	1379
2014	9	25	383	283	288	314	423	643	1049	1277	1267	1758	1725	1641
2014	9	26	403	316	318	303	403	628	943	1229	1287	1551	1726	1971
2014	9	27	428	393	283	268	286	409	636	923	1218	1391	1769	2039
2014	9	28	398	372	183	130	107	176	279	403	675	953	1244	1589
2014	9	29	429	359	191	216	293	569	1040	1319	1331	1356	1401	1430
2014	9	30	330	278	263	282	312	563	864	1271	1319	1392	1432	1384

I-85 ATR Station
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Southbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	9	1	1829	1900	1974	2037	2033	1893	1745	1456	1171	950	667	395	25213
2014	9	2	1455	1404	1379	1413	1505	1479	1223	916	770	654	520	420	23068
2014	9	3	1361	1284	1451	1467	1659	1577	1169	874	691	602	536	417	22874
2014	9	4	1442	1441	1488	1650	1718	1711	1301	1032	810	649	578	447	24179
2014	9	5	1726	1761	1829	1948	2158	2026	1772	1623	1114	912	771	599	28591
2014	9	6	1439	1413	1315	1275	1309	1313	1208	894	797	695	626	442	22306
2014	9	7	1462	1612	1600	1711	1677	1760	1561	1268	1007	746	560	357	21204
2014	9	8	1348	1366	1382	1420	1577	1566	1235	853	696	545	531	374	22433
2014	9	9	1236	1315	1323	1426	1619	1322	1294	1032	732	545	492	406	22287
2014	9	10	1253	1354	1460	1529	1594	1613	1296	902	761	644	512	419	22861
2014	9	11	1426	1430	1629	1670	1797	1645	1162	1254	905	705	563	612	24707
2014	9	12	1765	1966	1925	1888	1924	2100	1821	1461	1093	901	718	562	28637
2014	9	13	1272	1348	1465	1397	1332	1283	1189	973	816	587	521	450	20902
2014	9	14	1620	1697	1691	2029	2116	1959	2448	1614	1164	828	596	414	24016
2014	9	15	1399	1404	1388	1415	1501	1504	1316	863	716	579	514	392	23104
2014	9	16	1398	1314	1439	1404	1659	1521	1241	912	733	592	516	420	22812
2014	9	17	1416	1421	1497	1643	1602	1612	1282	963	781	656	527	411	23859
2014	9	18	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	9	19	1923	2035	2202	2130	2209	2063	2044	1621	1350	903	815	635	30913
2014	9	20	1357	1329	1434	1555	1590	1598	1438	1331	981	690	594	457	23277
2014	9	21	1648	1729	1903	2020	1953	1792	1807	1540	1258	826	688	503	24161
2014	9	22	1549	1501	1419	1544	1578	1513	1267	821	835	614	489	347	24403
2014	9	23	1305	1350	1372	1458	1455	1493	1270	881	759	611	483	386	22398
2014	9	24	1378	1414	1530	1541	1614	1569	1258	941	815	640	547	418	23327
2014	9	25	1611	1650	1747	1867	1949	1867	1425	1332	977	804	613	468	27361
2014	9	26	2036	2086	2185	2332	2396	2299	2071	1635	1507	946	823	677	32071
2014	9	27	1803	1873	1702	1655	1516	1414	1245	1006	844	706	625	508	24940
2014	9	28	1718	1760	1871	1747	2254	1945	1744	1425	1117	846	622	390	23948
2014	9	29	1431	1293	1510	1423	1555	1550	1240	858	734	567	500	397	22992
2014	9	30	1375	1332	1435	1501	1724	1511	1129	1052	829	673	512	379	23142

I-85 ATR Station
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Southbound Volumes

			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	10	1	318	310	293	277	322	593	908	1352	1254	1371	1435	1487
2014	10	2	376	286	301	264	391	601	926	1302	1391	1444	1450	1576
2014	10	3	395	299	292	337	368	607	866	1313	1339	1524	1812	1954
2014	10	4	423	333	266	271	252	410	562	880	1327	1816	2149	2119
2014	10	5	364	296	177	122	125	164	238	389	636	912	1146	1563
2014	10	6	0	0	0	0	0	0	0	0	0	0	0	0
2014	10	7	346	274	232	293	352	572	901	1320	1334	1425	1437	1375
2014	10	8	352	268	251	278	342	554	906	1314	1253	1281	1468	1397
2014	10	9	362	277	281	290	363	575	920	1271	1388	1305	1528	1494
2014	10	10	391	345	327	374	413	634	885	1204	1432	1596	1901	2050
2014	10	11	568	410	296	274	323	367	582	956	1442	1836	2017	2030
2014	10	12	581	698	304	169	163	174	261	441	651	1060	1382	1838
2014	10	13	330	264	161	219	295	561	1020	1302	1369	1478	1534	1653
2014	10	14	342	274	265	270	342	548	875	1252	1401	1355	1373	1320
2014	10	15	349	263	251	279	347	551	937	1324	1332	1426	1447	1543
2014	10	16	363	287	293	326	377	567	947	1371	1193	1668	1583	1655
2014	10	17	399	314	278	300	363	580	916	1303	1445	1608	1835	2044
2014	10	18	535	458	309	289	294	402	646	867	1226	1473	1720	1862
2014	10	19	442	364	431	206	173	173	321	417	694	997	1331	1798
2014	10	20	297	272	206	235	293	591	1045	1342	1375	1441	1610	1495
2014	10	21	325	264	248	281	353	559	907	1293	1352	1340	1399	1313
2014	10	22	316	272	269	275	336	548	956	1293	1258	1377	1389	1445
2014	10	23	336	259	267	315	373	539	948	1268	1396	1446	1524	1629
2014	10	24	389	315	287	301	388	584	953	1246	1492	1542	1688	1925
2014	10	25	563	459	285	251	250	410	533	763	1171	1549	1884	2004
2014	10	26	458	368	378	190	143	204	295	404	620	944	1342	1610
2014	10	27	350	341	179	203	315	572	1034	1419	1347	1487	1510	1594
2014	10	28	319	284	256	263	343	546	917	1341	1369	1404	1493	1430
2014	10	29	326	275	250	294	334	537	911	1253	1310	1353	1365	1409
2014	10	30	326	307	261	299	383	549	956	1207	1394	1353	1391	1569
2014	10	31	659	485	296	331	364	574	883	1194	1295	1425	1728	1940

I-85 ATR Station
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Southbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	10	1	1386	1403	1544	1548	1625	1656	1316	917	776	634	500	417	23642
2014	10	2	1516	1617	1688	1781	1790	1694	1484	1174	961	734	656	486	25889
2014	10	3	2027	1954	1902	2235	2362	2257	2232	1906	1388	1056	789	567	31781
2014	10	4	1657	1558	1526	1602	1536	1379	1315	1111	895	690	546	417	25040
2014	10	5	1632	1797	1886	1826	1367	2314	2525	1610	1245	896	633	385	24248
2014	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	10	7	1374	1330	1392	1501	1685	1582	1196	893	746	586	446	419	23011
2014	10	8	1400	1415	1387	1546	1641	1544	1265	1044	857	651	515	406	23335
2014	10	9	1588	1660	1813	1863	1989	1720	1569	1130	1115	784	676	533	26494
2014	10	10	2209	2177	2413	2316	2552	2392	2244	1928	1595	1050	1086	683	34197
2014	10	11	1786	1665	1507	1484	1348	1431	1290	1011	876	715	599	540	25353
2014	10	12	1897	1912	1882	1980	2044	1928	1875	1376	1118	818	636	434	25622
2014	10	13	1686	1670	1703	1589	1825	1739	1389	1108	814	610	577	434	25330
2014	10	14	1419	1389	1473	1566	1602	1475	1270	903	768	545	515	407	22949
2014	10	15	1578	1506	1625	1661	1658	1653	1329	999	825	671	525	484	24563
2014	10	16	1637	1749	1837	1871	1864	1879	1562	1295	1084	828	644	503	27383
2014	10	17	1975	1971	2113	2267	2274	2092	1923	1730	1394	915	800	638	31477
2014	10	18	1591	1500	1434	1448	1491	1411	1236	978	895	592	680	456	23793
2014	10	19	1912	2026	2157	2226	2242	2121	1961	1610	1225	917	727	453	26924
2014	10	20	1530	1508	1470	1620	1657	1624	1299	938	801	617	487	381	24134
2014	10	21	1408	1445	1467	1580	1677	1592	1264	898	692	667	505	359	23188
2014	10	22	1395	1496	1572	1633	1800	1640	1190	1068	838	662	545	413	23986
2014	10	23	1598	1623	1785	1851	2046	1817	1535	1231	1013	773	679	496	26747
2014	10	24	2093	2232	2298	2421	2281	2357	2045	1807	1344	974	1037	630	32629
2014	10	25	1864	1705	1639	1586	1607	1476	1320	1180	971	766	526	509	25271
2014	10	26	1773	1823	2119	2267	2256	2603	2120	1724	1297	862	707	426	26933
2014	10	27	1590	1427	1531	1574	1655	1562	1183	1022	713	545	482	375	24010
2014	10	28	1407	1394	1437	1539	1719	1559	1285	960	762	575	537	362	23501
2014	10	29	1392	1369	1495	1606	1737	1591	1241	986	764	629	545	458	23430
2014	10	30	1445	1574	1672	1711	1873	1729	1283	1191	1099	761	630	512	25475
2014	10	31	1975	1937	2023	2048	1800	1942	1851	1136	929	789	669	489	28762

I-85 ATR Station
P-132
Southbound Volumes

			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	11	1	418	345	271	273	288	380	471	656	899	1160	1327	1550
2014	11	2	319	290	142	104	248	203	300	413	716	1054	1357	1515
2014	11	3	242	199	166	219	304	616	1076	1393	1302	1368	1473	1485
2014	11	4	273	257	238	274	345	564	926	1242	1346	1413	1415	1452
2014	11	5	338	292	264	265	342	609	1009	1307	1353	1387	1417	1337
2014	11	6	366	274	262	274	377	565	950	1290	1279	1363	1424	1479
2014	11	7	397	449	324	334	369	560	901	1287	1340	1487	1733	1881
2014	11	8	452	342	240	257	317	358	594	750	1083	1337	1460	1517
2014	11	9	340	191	137	131	136	171	287	416	609	945	1239	1479
2014	11	10	250	195	176	196	309	559	1110	1448	1361	1449	1491	1498
2014	11	11	330	249	227	241	350	578	966	1382	1404	1439	1443	1480
2014	11	12	283	262	261	247	347	590	992	1346	1329	1411	1389	1334
2014	11	13	315	274	276	273	391	568	934	1364	1417	1424	1451	1524
2014	11	14	336	278	304	279	382	590	911	1249	1337	1330	1593	1707
2014	11	15	427	275	267	225	278	424	571	737	1067	1393	1570	1479
2014	11	16	255	192	134	147	127	188	252	403	571	825	1110	1408
2014	11	17	244	186	179	201	311	577	1014	1253	1237	1413	1282	1462
2014	11	18	344	288	245	253	351	540	949	1329	1356	1284	1313	1356
2014	11	19	294	270	242	236	347	538	952	1291	1238	1198	1513	1447
2014	11	20	343	263	242	263	351	570	960	1279	1309	1380	1451	1507
2014	11	21	359	326	281	341	402	595	931	1297	1369	1506	1582	1765
2014	11	22	502	343	261	275	317	425	600	853	1324	1723	2044	2031
2014	11	23	292	221	164	172	187	215	283	392	653	915	1151	1316
2014	11	24	339	211	178	229	314	582	992	1397	1352	1478	1546	1548
2014	11	25	426	355	322	316	402	564	956	1355	1463	1562	1732	1996
2014	11	26	607	475	431	471	568	800	1101	1452	1755	2164	2367	2341
2014	11	27	635	516	415	393	393	488	681	888	1394	2008	2671	1713
2014	11	28	253	203	169	149	222	321	531	678	986	1329	1758	2126
2014	11	29	366	237	215	184	252	356	746	1188	1413	1724	2103	2580
2014	11	30	457	351	266	242	243	381	494	762	1166	1767	2304	2786

I-85 ATR Station
P-132
Southbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	11	1	1411	1475	1406	1452	1277	1172	1092	913	743	600	552	407	20538
2014	11	2	1577	1709	1846	1920	1965	1814	1839	1359	1000	727	575	324	23316
2014	11	3	1422	1427	1435	1549	1669	1448	1271	903	707	564	481	343	23062
2014	11	4	1402	1464	1582	1659	1817	1671	1303	1123	796	642	508	368	24080
2014	11	5	1397	1359	1469	1479	1621	1612	1154	876	687	590	765	391	23320
2014	11	6	1562	1544	1685	1695	1787	1643	1285	1174	898	640	578	470	24864
2014	11	7	1984	1950	1989	2238	2048	1983	2092	1919	1390	816	747	662	30880
2014	11	8	1476	1488	1471	1460	1519	1385	1229	978	819	644	558	469	22203
2014	11	9	1506	1802	1836	1911	1948	1968	1618	1292	1030	702	513	353	22560
2014	11	10	1477	1431	1533	1462	1609	1553	1183	902	709	553	468	362	23284
2014	11	11	1387	1437	1493	1485	1585	1546	1267	860	720	584	468	339	23260
2014	11	12	1336	1425	1534	1542	1601	1546	1218	867	686	565	466	414	22991
2014	11	13	1460	1531	1661	1664	1782	1756	1319	1052	836	665	544	417	24898
2014	11	14	1865	1825	2041	2217	2063	2088	1896	1538	1265	763	727	595	29179
2014	11	15	1509	1544	1342	1433	1531	1417	1262	984	838	640	509	333	22055
2014	11	16	1543	1760	1769	1920	2033	2195	2205	1480	1014	707	523	345	23106
2014	11	17	1332	1384	1408	1458	1493	1421	1146	847	660	579	490	347	21924
2014	11	18	1369	1356	1410	1478	1532	1472	1181	794	650	548	470	383	22251
2014	11	19	1360	1375	1620	1537	1582	1444	1265	946	673	600	505	372	22845
2014	11	20	1526	1529	1567	1738	1776	1734	1332	1097	893	646	568	435	24759
2014	11	21	1810	1932	2016	2128	2174	2095	1910	1695	1328	904	807	667	30220
2014	11	22	1756	1713	1662	1571	1630	1627	1363	996	830	743	587	436	25612
2014	11	23	1514	1606	1527	1627	1663	1561	1402	1084	694	741	476	343	20199
2014	11	24	1425	1668	1487	1611	1619	1595	1332	988	868	584	630	461	24434
2014	11	25	2111	2067	2222	2341	2351	2193	1733	1965	2104	1472	1022	840	33870
2014	11	26	2137	2368	2144	2251	2651	2225	2412	2441	1880	882	1533	865	38321
2014	11	27	2428	1448	1285	1320	1391	1385	1227	1186	971	753	546	391	26526
2014	11	28	2267	2226	2339	2365	2237	2008	1754	1411	1176	932	728	499	28667
2014	11	29	2601	2554	2794	2618	2346	2224	1894	1249	1645	1120	805	607	33821
2014	11	30	2949	3046	2905	2731	2332	1064	2423	2103	1678	1144	897	594	35085

100 Highest Hours at Station P-14

Station P-14 (Total - Each Hour, Each Day)											
Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time
1	6352	Sun. 11/30/2014 (1 PM)	26	5433	Wed. 11/26/2014 (5 PM)	51	5246	Mon. 09/01/2014 (3 PM)	76	5134	Fri. 11/28/2014 (3 PM)
2	6195	Sun. 12/01/2013 (4 PM)	27	5427	Fri. 10/10/2014 (5 PM)	52	5246	Mon. 09/01/2014 (4 PM)	77	5133	Sun. 09/21/2014 (4 PM)
3	6133	Sun. 12/01/2013 (1 PM)	28	5426	Fri. 12/27/2013 (2 PM)	53	5246	Mon. 09/01/2014 (3 PM)	78	5131	Fri. 08/01/2014 (4 PM)
4	6055	Sun. 12/01/2013 (2 PM)	29	5424	Thu. 12/26/2013 (3 PM)	54	5242	Fri. 05/23/2014 (4 PM)	79	5130	Fri. 08/01/2014 (3 PM)
5	5995	Sun. 11/30/2014 (12 PM)	30	5419	Fri. 12/27/2013 (3 PM)	55	5242	Fri. 10/17/2014 (5 PM)	80	5127	Fri. 10/03/2014 (4 PM)
6	5933	Sun. 11/30/2014 (2 PM)	31	5418	Tue. 11/25/2014 (3 PM)	56	5242	Sun. 02/02/2014 (6 PM)	81	5127	Thu. 10/23/2014 (5 PM)
7	5904	Sun. 12/01/2013 (3 PM)	32	5400	Fri. 08/29/2014 (5 PM)	57	5241	Fri. 12/20/2013 (3 PM)	82	5125	Fri. 08/15/2014 (5 PM)
8	5890	Sun. 12/01/2013 (6 PM)	33	5396	Fri. 06/20/2014 (4 PM)	58	5241	Sat. 12/21/2013 (5 PM)	83	5120	Fri. 04/11/2014 (4 PM)
9	5827	Sun. 07/06/2014 (3 PM)	34	5372	Sat. 12/21/2013 (6 PM)	59	5225	Thu. 12/26/2013 (2 PM)	84	5119	Fri. 04/11/2014 (5 PM)
10	5825	Sun. 12/01/2013 (5 PM)	35	5371	Sun. 07/06/2014 (7 PM)	60	5216	Fri. 07/25/2014 (3 PM)	85	5117	Fri. 08/29/2014 (7 PM)
11	5784	Sun. 07/06/2014 (4 PM)	36	5364	Wed. 11/26/2014 (3 PM)	61	5205	Sat. 12/21/2013 (2 PM)	86	5112	Sun. 10/26/2014 (6 PM)
12	5706	Sun. 12/01/2013 (12 PM)	37	5349	Sun. 12/01/2013 (7 PM)	62	5205	Fri. 08/15/2014 (4 PM)	87	5104	Sun. 12/01/2013 (11 AM)
13	5702	Tue. 11/25/2014 (4 PM)	38	5349	Fri. 07/18/2014 (5 PM)	63	5204	Sun. 08/03/2014 (4 PM)	88	5100	Fri. 08/15/2014 (6 PM)
14	5676	Sat. 11/29/2014 (3 PM)	39	5349	Sat. 11/29/2014 (5 PM)	64	5199	Sun. 11/30/2014 (11 AM)	89	5100	Fri. 11/07/2014 (4 PM)
15	5661	Sat. 11/29/2014 (4 PM)	40	5331	Sun. 11/30/2014 (5 PM)	65	5197	Fri. 10/24/2014 (6 PM)	90	5099	Sun. 04/20/2014 (7 PM)
16	5629	Sun. 11/30/2014 (4 PM)	41	5327	Sat. 11/29/2014 (1 PM)	66	5196	Mon. 12/23/2013 (3 PM)	91	5099	Sun. 06/15/2014 (4 PM)
17	5550	Sat. 11/29/2014 (2 PM)	42	5318	Sun. 07/06/2014 (2 PM)	67	5188	Fri. 05/23/2014 (6 PM)	92	5097	Sun. 11/30/2014 (7 PM)
18	5482	Tue. 11/25/2014 (5 PM)	43	5317	Fri. 10/03/2014 (5 PM)	68	5178	Fri. 06/27/2014 (4 PM)	93	5090	Sun. 07/27/2014 (4 PM)
19	5476	Fri. 10/24/2014 (5 PM)	44	5300	Fri. 10/24/2014 (4 PM)	69	5178	Wed. 01/29/2014 (2 PM)	94	5090	Fri. 09/26/2014 (4 PM)
20	5472	Sun. 07/06/2014 (5 PM)	45	5279	Fri. 12/27/2013 (4 PM)	70	5162	Fri. 05/23/2014 (3 PM)	95	5090	Wed. 11/26/2014 (12 PM)
21	5454	Sat. 12/21/2013 (1 PM)	46	5274	Fri. 10/10/2014 (6 PM)	71	5153	Thu. 12/26/2013 (1 PM)	96	5086	Fri. 05/23/2014 (5 PM)
22	5453	Wed. 11/26/2014 (2 PM)	47	5269	Fri. 12/27/2013 (1 PM)	72	5147	Fri. 10/10/2014 (3 PM)	97	5081	Fri. 06/13/2014 (7 PM)
23	5450	Sun. 07/06/2014 (6 PM)	48	5267	Fri. 07/18/2014 (4 PM)	73	5146	Fri. 05/09/2014 (3 PM)	98	5081	Fri. 08/01/2014 (6 PM)
24	5449	Sun. 11/30/2014 (3 PM)	49	5260	Fri. 10/17/2014 (4 PM)	74	5136	Fri. 07/11/2014 (4 PM)	99	5075	Thu. 07/03/2014 (3 PM)
25	5441	Sat. 12/21/2013 (12 PM)	50	5256	Tue. 11/25/2014 (6 PM)	75	5134	Sun. 08/17/2014 (4 PM)	100	5072	Sun. 10/12/2014 (5 PM)

100 Highest AM Peak Period Hours at Station P-14

Station P-14 (Total - AM Peak Period [7:00 - 10:00 AM], Each Day)											
Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time	Highest Hour	Total Volume	Day-Date-Time
1	3796	Wed. 11/26/2014 (9 AM)	26	3405	Fri. 06/13/2014 (9 AM)	51	3348	Thu. 08/07/2014 (9 AM)	76	3321	Tue. 02/25/2014 (8 AM)
2	3607	Mon. 10/27/2014 (8 AM)	27	3405	Thu. 11/13/2014 (8 AM)	52	3346	Mon. 02/24/2014 (8 AM)	77	3318	Wed. 05/21/2014 (8 AM)
3	3574	Mon. 04/21/2014 (8 AM)	28	3398	Mon. 07/28/2014 (8 AM)	53	3345	Mon. 04/21/2014 (9 AM)	78	3317	Tue. 10/21/2014 (8 AM)
4	3568	Mon. 08/18/2014 (8 AM)	29	3397	Thu. 05/01/2014 (8 AM)	54	3345	Thu. 05/29/2014 (8 AM)	79	3313	Thu. 11/06/2014 (8 AM)
5	3533	Mon. 05/12/2014 (8 AM)	30	3397	Mon. 08/11/2014 (8 AM)	55	3344	Mon. 06/09/2014 (8 AM)	80	3311	Tue. 10/14/2014 (8 AM)
6	3526	Mon. 12/02/2013 (8 AM)	31	3395	Thu. 06/26/2014 (9 AM)	56	3344	Thu. 08/14/2014 (8 AM)	81	3307	Tue. 06/17/2014 (8 AM)
7	3519	Mon. 11/03/2014 (8 AM)	32	3395	Wed. 11/12/2014 (8 AM)	57	3342	Mon. 07/14/2014 (8 AM)	82	3304	Thu. 04/03/2014 (9 AM)
8	3505	Fri. 05/23/2014 (9 AM)	33	3389	Tue. 05/20/2014 (8 AM)	58	3338	Thu. 06/19/2014 (9 AM)	83	3304	Fri. 08/29/2014 (9 AM)
9	3487	Tue. 09/02/2014 (8 AM)	34	3386	Mon. 09/29/2014 (8 AM)	59	3337	Wed. 05/28/2014 (8 AM)	84	3301	Fri. 05/16/2014 (9 AM)
10	3487	Mon. 09/15/2014 (8 AM)	35	3380	Thu. 05/08/2014 (8 AM)	60	3336	Tue. 05/27/2014 (8 AM)	85	3301	Tue. 09/23/2014 (8 AM)
11	3481	Mon. 09/08/2014 (8 AM)	36	3378	Mon. 05/19/2014 (8 AM)	61	3335	Tue. 05/13/2014 (8 AM)	86	3300	Wed. 09/17/2014 (8 AM)
12	3471	Mon. 11/10/2014 (8 AM)	37	3378	Thu. 07/10/2014 (9 AM)	62	3335	Fri. 08/29/2014 (8 AM)	87	3300	Wed. 09/17/2014 (8 AM)
13	3467	Mon. 08/25/2014 (8 AM)	38	3376	Thu. 07/24/2014 (9 AM)	63	3335	Tue. 05/13/2014 (8 AM)	88	3299	Thu. 04/24/2014 (8 AM)
14	3443	Wed. 11/05/2014 (8 AM)	39	3376	Wed. 10/01/2014 (8 AM)	64	3333	Fri. 07/18/2014 (9 AM)	89	3298	Thu. 10/02/2014 (8 AM)
15	3439	Mon. 07/07/2014 (9 AM)	40	3376	Mon. 10/13/2014 (8 AM)	65	3332	Tue. 09/16/2014 (8 AM)	90	3297	Thu. 02/20/2014 (8 AM)
16	3437	Mon. 05/05/2014 (8 AM)	41	3369	Thu. 05/22/2014 (8 AM)	66	3330	Mon. 06/02/2014 (8 AM)	91	3296	Tue. 11/11/2014 (8 AM)
17	3437	Mon. 11/24/2014 (8 AM)	42	3368	Tue. 11/25/2014 (9 AM)	67	3327	Tue. 04/22/2014 (8 AM)	92	3294	Tue. 05/27/2014 (9 AM)
18	3434	Mon. 06/23/2014 (8 AM)	43	3363	Mon. 03/24/2014 (8 AM)	68	3327	Tue. 10/07/2014 (8 AM)	93	3294	Fri. 08/15/2014 (8 AM)
19	3431	Mon. 06/16/2014 (8 AM)	44	3363	Fri. 05/23/2014 (8 AM)	69	3327	Tue. 04/22/2014 (8 AM)	94	3293	Thu. 07/03/2014 (9 AM)
20	3428	Mon. 04/28/2014 (8 AM)	45	3363	Mon. 03/24/2014 (8 AM)	70	3326	Mon. 08/18/2014 (9 AM)	95	3293	Thu. 09/25/2014 (8 AM)
21	3423	Thu. 08/21/2014 (8 AM)	46	3358	Mon. 07/07/2014 (8 AM)	71	3325	Fri. 06/27/2014 (9 AM)	96	3290	Tue. 02/18/2014 (8 AM)
22	3416	Mon. 10/20/2014 (8 AM)	47	3357	Mon. 07/28/2014 (9 AM)	72	3324	Tue. 11/18/2014 (8 AM)	97	3290	Tue. 09/30/2014 (8 AM)
23	3408	Fri. 08/15/2014 (9 AM)	48	3351	Mon. 08/04/2014 (8 AM)	73	3323	Fri. 05/09/2014 (8 AM)	98	3289	Mon. 02/10/2014 (8 AM)
24	3408	Wed. 08/20/2014 (8 AM)	49	3351	Mon. 08/04/2014 (8 AM)	74	3323	Wed. 09/24/2014 (8 AM)	99	3288	Wed. 06/11/2014 (8 AM)
25	3408	Mon. 09/22/2014 (9 AM)	50	3351	Mon. 08/04/2014 (8 AM)	75	3322	Mon. 06/23/2014 (9 AM)	100	3287	Wed. 09/10/2014 (8 AM)

I-85 ATR Station
P-14
Northbound Volumes

			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2013	12	1	568	403	314	282	330	452	691	1046	1433	2087	2950	3185
2013	12	2	433	254	288	287	386	684	1165	1820	1502	1911	1683	1724
2013	12	3	338	293	256	317	361	622	990	1632	1530	1520	1505	1534
2013	12	4	380	296	287	303	360	579	982	1531	1454	1412	1398	1446
2013	12	5	377	329	290	306	371	577	967	1542	1455	1494	1415	1492
2013	12	6	450	300	315	310	379	568	954	1551	1416	1461	1480	1730
2013	12	7	396	296	292	224	265	348	490	847	996	1221	1431	1601
2013	12	8	293	205	161	129	136	187	268	463	526	763	1060	1432
2013	12	9	260	225	192	230	301	595	1062	1563	1444	1394	1465	1396
2013	12	10	405	276	259	239	360	548	949	1500	1481	1415	1356	1417
2013	12	11	366	275	252	283	371	616	955	1557	1499	1451	1454	1485
2013	12	12	427	306	302	280	386	603	968	1539	1492	1569	1603	1641
2013	12	13	416	311	310	283	372	597	973	1433	1394	1614	1696	1882
2013	12	14	452	321	246	239	258	370	566	749	991	1335	1538	1730
2013	12	15	251	185	157	153	148	197	319	435	641	1043	1418	1730
2013	12	16	295	216	261	265	341	648	1049	1631	1483	1610	1605	1623
2013	12	17	372	264	274	298	378	582	1007	1521	1420	1448	1466	1563
2013	12	18	368	299	276	310	388	612	1107	1439	1464	1494	1635	1630
2013	12	19	379	321	278	319	386	633	1039	1528	1519	1643	1613	1726
2013	12	20	427	366	324	334	448	644	1033	1536	1576	1658	1557	2313
2013	12	21	597	450	425	343	408	589	882	1147	1545	2212	2534	2696
2013	12	22	424	296	266	232	250	325	466	709	1079	1745	2116	2119
2013	12	23	351	258	266	265	298	554	793	1216	1319	1676	1935	2231
2013	12	24	458	357	305	307	337	438	537	788	1061	1327	1763	1862
2013	12	25	260	177	146	96	113	147	199	336	528	814	1150	1440
2013	12	26	249	211	168	171	266	497	793	1088	1346	1748	2205	2487
2013	12	27	410	318	255	286	343	552	789	1100	1444	1739	2094	2465
2013	12	28	445	329	286	275	300	401	577	801	1137	1581	2191	2493
2013	12	29	335	272	217	205	217	229	375	544	860	1185	1609	2093
2013	12	30	346	236	199	233	296	592	794	1162	1397	1630	1767	2005
2013	12	31	378	301	269	272	316	491	704	913	1054	1218	1437	1562

I-85 ATR Station
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Northbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2013	12	1	3182	3093	2934	3036	2704	2962	2437	2213	1698	1141	809	567	40517
2013	12	2	1833	1922	1986	1985	1979	1915	1475	989	795	762	582	560	28920
2013	12	3	1545	1575	1732	1825	1828	1947	1427	894	816	755	691	492	26425
2013	12	4	1473	1613	1762	1845	1880	1914	1494	1026	796	669	576	467	25943
2013	12	5	1679	1631	1761	1868	2051	2087	1488	1150	930	775	629	532	27196
2013	12	6	1732	1979	2039	2139	2179	2116	1810	1259	1021	865	731	557	29341
2013	12	7	1693	1761	1790	1750	1752	1583	1326	1039	798	664	532	473	23568
2013	12	8	1530	1606	1757	1560	1553	1605	1322	1127	854	597	459	415	20008
2013	12	9	1421	1492	1535	1750	1726	1746	1387	886	874	605	447	572	24568
2013	12	10	1482	1739	1690	1731	1809	1862	1404	990	861	790	618	471	25652
2013	12	11	1592	1649	1797	1970	2071	1966	1531	1156	844	743	638	448	26969
2013	12	12	1726	1855	1993	2140	2225	2157	1620	1315	1000	916	733	567	29363
2013	12	13	1956	2058	2261	2515	2413	2280	1984	1655	1232	1016	891	687	32229
2013	12	14	1651	1738	1765	1702	1656	1460	1271	1033	822	698	579	462	23632
2013	12	15	2066	2161	2061	1984	1926	1818	1699	1377	1214	907	675	458	25023
2013	12	16	1627	1688	1765	1875	1927	1871	1381	1034	783	677	631	500	26786
2013	12	17	1639	1648	1774	2020	1898	1963	1544	1125	850	734	706	471	26965
2013	12	18	1728	1804	1917	1993	2001	2051	1405	1237	882	839	732	523	28134
2013	12	19	1799	1894	2092	2272	2131	2201	1712	1357	1006	944	869	607	30268
2013	12	20	2090	2277	2552	2188	2296	2800	2425	1888	1566	1287	1034	901	35520
2013	12	21	2722	2569	2027	2229	2697	2943	1979	1576	1233	964	739	604	36110
2013	12	22	2143	1967	2342	2009	1963	1782	1573	1278	973	761	592	458	27868
2013	12	23	2266	2435	2524	2393	2420	2256	1925	1332	1006	1343	886	637	32585
2013	12	24	2030	2098	2044	1853	1762	1483	1311	1044	818	782	575	386	25726
2013	12	25	1495	1446	1529	1524	1469	1482	1298	1242	1030	791	581	416	19709
2013	12	26	2626	2579	2744	2440	2113	2110	1942	1363	1105	891	771	526	32439
2013	12	27	2587	2706	2756	2650	2394	2369	1830	1494	1212	991	916	653	34353
2013	12	28	2470	2517	2393	2348	2179	1785	1778	1319	1035	877	613	420	30550
2013	12	29	2284	2454	2184	2463	2272	2034	1617	1601	1535	1090	756	458	28889
2013	12	30	2178	2146	2321	2223	2113	1955	1585	1166	946	930	709	482	29411
2013	12	31	1758	1845	1798	2059	1917	1678	1402	951	815	615	435	274	24462

I-85 ATR Station
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Northbound Volumes

			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	1	1	248	260	187	199	156	209	263	393	548	771	1134	1500
2014	1	2	302	214	198	218	306	559	902	1357	1339	1407	1515	1710
2014	1	3	367	282	252	270	321	532	778	1175	1179	1369	1427	1651
2014	1	4	374	323	256	245	279	342	451	749	923	1334	1643	1751
2014	1	5	305	219	199	139	163	220	311	452	647	929	1239	1435
2014	1	6	283	197	164	220	313	554	1009	1475	1333	1244	1303	1304
2014	1	7	340	245	254	226	311	442	745	1165	1123	1268	1253	1295
2014	1	8	325	250	250	241	326	524	887	1376	1304	1299	1304	1296
2014	1	9	314	262	261	259	334	525	856	1481	1352	1330	1358	1372
2014	1	10	354	282	296	238	331	491	893	1392	1278	1222	1264	1422
2014	1	11	346	282	249	235	220	288	408	648	911	1039	1155	1261
2014	1	12	275	183	158	140	124	162	305	476	740	1303	1521	1422
2014	1	13	272	203	183	207	302	652	1058	1608	1409	1383	1352	1359
2014	1	14	355	239	251	263	329	541	919	1485	1324	1444	1277	1310
2014	1	15	344	275	248	262	335	601	923	1548	1509	1287	1287	1355
2014	1	16	352	280	261	266	339	565	910	1528	1397	1364	1322	1401
2014	1	17	362	281	260	292	349	552	904	1455	1422	1420	1384	1680
2014	1	18	414	332	253	249	242	323	474	743	952	1209	1475	1674
2014	1	19	231	201	152	140	136	183	244	381	499	747	1068	1329
2014	1	20	291	236	196	205	296	606	974	1280	1447	1561	1663	1755
2014	1	21	325	282	245	289	317	604	1001	1541	1473	1339	1328	1340
2014	1	22	293	231	233	239	310	530	939	1486	1383	1318	1283	1287
2014	1	23	295	246	245	255	349	562	902	1450	1387	1318	1345	1355
2014	1	24	357	274	236	277	327	499	826	1428	1328	1279	1318	1511
2014	1	25	356	277	237	196	214	293	451	770	928	1127	1337	1439
2014	1	26	236	183	183	140	136	156	259	382	515	795	1102	1255
2014	1	27	267	201	188	209	360	620	1028	1625	1460	1266	1408	1355
2014	1	28	305	266	247	255	329	577	919	1504	1375	1257	1240	1402
2014	1	29	104	72	59	67	105	176	301	435	491	535	602	700
2014	1	30	137	104	107	137	183	400	706	1047	1092	1128	1205	1284
2014	1	31	358	297	279	255	346	568	894	1490	1379	1355	1469	1598

I-85 ATR Station
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Northbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	1	1	1741	1902	1978	2014	1759	1601	1347	1090	853	658	546	358	21715
2014	1	2	1766	1853	1831	1893	1857	1857	1388	1088	795	729	602	485	26171
2014	1	3	1805	1846	2080	2036	2078	1982	1645	1206	1002	892	678	536	27389
2014	1	4	1764	1939	1891	1934	1865	1717	1398	1201	884	811	580	537	25191
2014	1	5	1797	1971	1918	1919	1825	1694	1366	1250	950	633	522	366	22469
2014	1	6	1328	1510	1518	1737	1630	1694	1289	876	677	557	475	430	23120
2014	1	7	1361	1327	1421	1601	1596	1739	1290	871	669	639	477	416	22074
2014	1	8	1441	1424	1629	1726	1747	1818	1377	928	738	689	593	504	23996
2014	1	9	1461	1507	1691	1832	1856	1954	1311	1181	703	806	631	501	25138
2014	1	10	1589	1378	1860	1936	1965	1396	2049	1205	906	777	688	514	25726
2014	1	11	1316	1353	1517	1385	1281	1322	1235	995	752	673	485	363	19719
2014	1	12	1565	1554	1595	1586	1623	1554	1463	1211	923	659	537	321	21400
2014	1	13	1450	1449	1639	1731	1727	1863	1338	1012	668	675	547	431	24518
2014	1	14	1365	1503	1720	1726	1794	1843	1376	954	767	755	567	430	24537
2014	1	15	1462	1443	1622	1809	1826	1787	1320	964	744	669	566	430	24616
2014	1	16	1516	1635	1745	1882	1726	2218	1701	1195	898	791	645	489	26426
2014	1	17	1822	1519	1813	2401	2533	2349	2142	1584	1284	1114	873	650	30445
2014	1	18	1670	1678	1690	1648	1630	1430	1239	1030	828	663	530	369	22745
2014	1	19	1532	1752	1715	1653	1670	1479	1324	1135	908	701	551	430	20161
2014	1	20	1892	2017	2139	2147	2116	2086	1479	1047	964	855	658	505	28415
2014	1	21	1395	1541	1647	1854	1817	1783	1310	953	738	689	500	426	24737
2014	1	22	1418	1454	1605	1766	1886	1901	1398	899	764	642	523	430	24218
2014	1	23	1437	1588	1741	1886	1918	1911	1466	1112	861	744	572	495	25440
2014	1	24	1611	1832	1948	2095	2155	2104	1691	1276	940	941	831	534	27618
2014	1	25	1426	1358	1376	1443	1457	1427	1143	962	796	636	520	442	20611
2014	1	26	1611	1714	1879	1940	1869	1819	1550	1148	1210	742	529	361	21714
2014	1	27	1372	1370	1534	1695	1641	1685	1309	898	670	684	542	432	23819
2014	1	28	1372	1513	1499	1388	1191	755	594	544	322	209	196	149	19408
2014	1	29	690	791	889	986	993	985	738	541	396	340	278	215	11489
2014	1	30	1453	1669	1800	1813	1885	1934	1631	1113	979	717	622	523	23669
2014	1	31	1786	1968	2109	2240	2292	2090	1928	1484	1088	931	778	597	29579

I-85 ATR Station
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Northbound Volumes

			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	2	1	378	289	262	240	251	345	521	751	977	1243	1392	1527
2014	2	2	245	177	171	158	142	153	271	398	542	748	981	1231
2014	2	3	308	197	197	204	327	605	1051	1641	1362	1467	1352	1341
2014	2	4	319	276	249	267	325	602	971	1480	1452	1412	1302	1354
2014	2	5	307	264	227	283	341	566	941	1467	1295	1381	1312	1353
2014	2	6	290	251	345	292	358	568	979	1590	1500	1387	1328	1416
2014	2	7	370	281	238	262	351	538	848	1456	1414	1330	1417	1544
2014	2	8	422	283	245	235	236	341	482	714	945	1171	1412	1543
2014	2	9	261	220	163	156	115	176	266	387	533	802	1025	1281
2014	2	10	242	183	189	190	326	620	1032	1636	1539	1515	1315	1460
2014	2	11	356	302	267	263	355	500	813	1107	1008	1048	1112	1196
2014	2	12	205	230	171	120	155	201	287	347	377	434	407	322
2014	2	13	46	22	23	27	26	35	67	71	108	103	210	252
2014	2	14	142	139	104	139	153	272	452	593	794	1124	1224	1394
2014	2	15	382	283	235	261	240	361	488	764	887	1169	1538	1661
2014	2	16	244	195	163	195	165	181	271	464	540	831	1020	1351
2014	2	17	356	222	210	229	337	640	1081	1641	1534	1597	1685	1759
2014	2	18	345	273	294	288	363	594	1085	1672	1538	1418	1403	1451
2014	2	19	355	330	257	275	378	622	989	1614	1504	1462	1432	1518
2014	2	20	351	298	257	281	372	623	1004	1645	1476	1569	1486	1542
2014	2	21	407	310	295	304	372	626	914	1377	1417	1501	1583	1769
2014	2	22	436	303	295	239	285	409	527	862	1140	1437	1661	1738
2014	2	23	346	177	362	194	164	218	302	493	711	1073	1354	1665
2014	2	24	339	197	229	242	353	653	1134	1691	1582	1553	1468	1511
2014	2	25	355	296	261	244	360	600	1009	1670	1510	1433	1403	1411
2014	2	26	501	309	276	283	353	583	1007	1638	1576	1371	1447	1430
2014	2	27	348	289	278	280	356	623	1036	1660	1473	1511	1447	1439
2014	2	28	399	339	305	302	376	623	945	1550	1543	1501	1626	1815

I-85 ATR Station
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Northbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	2	1	1594	1521	1466	1559	1506	1422	1221	1048	817	732	558	415	22035
2014	2	2	1408	1647	1695	1803	1638	1556	1170	912	720	566	623	438	19393
2014	2	3	1600	1579	1704	1685	1702	1771	1300	893	697	679	589	479	24730
2014	2	4	1428	1414	1571	1774	1675	1763	1290	892	707	651	573	480	24227
2014	2	5	1466	1576	1665	1836	1780	1849	1458	1108	755	679	608	432	24949
2014	2	6	1484	1663	1861	1898	2080	2082	1543	1180	905	815	679	527	27021
2014	2	7	1692	1936	2135	2153	2064	2324	1857	1410	1051	984	828	566	29049
2014	2	8	1454	1548	1532	1595	1579	1551	1308	1069	920	762	687	431	22465
2014	2	9	1674	1643	1772	1942	1913	1805	1629	1383	1064	755	563	435	21963
2014	2	10	1581	1520	1701	1780	1609	1793	1485	1276	835	796	642	523	25788
2014	2	11	1092	1111	1129	1303	1182	999	829	589	454	412	357	302	18086
2014	2	12	246	245	204	177	174	114	111	64	71	63	49	41	4815
2014	2	13	334	422	567	630	653	546	577	407	324	261	227	211	6149
2014	2	14	1597	1761	1855	1940	2037	1812	1521	1334	1035	904	758	613	23697
2014	2	15	1625	1636	1606	1534	1556	1403	1336	1096	866	717	520	465	22629
2014	2	16	1552	1703	1796	1809	1879	1864	1608	1401	1048	911	690	453	22334
2014	2	17	1832	1850	1876	2134	1991	2097	1539	1159	907	858	702	484	28720
2014	2	18	1568	1731	1749	1858	1846	1748	1481	1177	840	772	628	510	26632
2014	2	19	1542	1659	1591	2061	2019	1986	1545	1122	890	737	633	489	27010
2014	2	20	1666	1788	1899	1861	2077	2143	1696	1270	982	913	790	672	28661
2014	2	21	1855	2016	2388	2355	2409	2084	2195	1578	1210	1124	900	629	31618
2014	2	22	1642	1708	1708	1797	1653	1706	1470	1240	1060	911	688	520	25435
2014	2	23	1941	2175	2213	2370	2342	2177	1892	1573	1291	1298	710	475	27516
2014	2	24	1648	1619	1729	1863	1834	1854	1383	1012	873	741	615	498	26621
2014	2	25	1553	1569	1761	1840	1780	1701	1461	1089	844	676	593	524	25943
2014	2	26	1557	1700	1712	1869	1969	2023	1547	1079	842	759	638	514	26983
2014	2	27	1630	1774	1906	2155	2171	2177	1691	1295	1056	924	754	650	28923
2014	2	28	1975	2165	2411	2470	2420	2496	2137	1701	1387	1078	632	763	32959

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	3	1	575	657	311	269	318	372	556	902	1112	1424	1766	1838
2014	3	2	310	233	185	161	165	199	281	479	671	1017	1347	1707
2014	3	3	336	228	215	225	324	670	1058	1639	1445	1433	1360	1467
2014	3	4	305	258	235	242	350	576	985	1639	1504	1447	1355	1404
2014	3	5	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	6	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	7	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	8	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	9	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	10	343	241	196	232	328	667	1046	1652	1460	1465	1604	1605
2014	3	11	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	12	480	294	283	278	376	638	982	1533	1481	1374	1366	1427
2014	3	13	406	302	314	282	349	636	968	1579	1521	1478	1581	1579
2014	3	14	468	344	307	300	397	576	930	1520	1466	1535	1632	1782
2014	3	15	533	358	301	257	292	326	595	921	1163	1400	1772	1843
2014	3	16	397	247	215	175	162	202	279	460	649	977	1243	1535
2014	3	17	326	262	194	223	329	637	1001	1574	1443	1421	1459	1458
2014	3	18	321	261	268	286	350	575	1026	1499	1523	1479	1412	1514
2014	3	19	367	279	277	270	363	611	959	1577	1475	1479	1372	1520
2014	3	20	427	295	296	296	355	617	966	1666	1592	1489	1490	1559
2014	3	21	427	358	332	293	358	597	962	1586	1492	1653	1641	1830
2014	3	22	464	334	305	238	278	389	614	865	1035	1435	1714	1773
2014	3	23	405	278	199	206	189	234	350	496	718	1020	1326	1700
2014	3	24	367	235	180	249	333	695	1081	1745	1492	1507	1550	1572
2014	3	25	357	302	260	270	374	576	977	1544	1473	1387	1327	1397
2014	3	26	375	255	271	281	337	614	975	1573	1568	1431	1418	1472
2014	3	27	376	294	280	280	336	588	959	1566	1507	1493	1462	1475
2014	3	28	427	340	345	341	374	579	909	1573	1416	1594	1648	1877
2014	3	29	439	321	286	272	280	333	494	871	1046	1300	1699	1732
2014	3	30	344	249	186	183	165	211	325	496	657	1052	1347	1746
2014	3	31	0	0	0	0	0	0	0	0	0	0	0	0

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	3	1	1775	1841	1770	1838	1764	1822	1629	1377	1130	918	725	641	27330
2014	3	2	1914	2065	2153	2272	2125	2160	1908	1567	1258	913	644	438	26172
2014	3	3	1475	1480	1566	1663	1669	1828	1248	848	908	651	518	426	24680
2014	3	4	1528	1583	1661	1781	1889	1863	1429	1006	804	733	555	525	25657
2014	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	8	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	9	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	10	1623	1712	1932	1905	1939	1460	1032	875	783	591	486	394	25571
2014	3	11	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	12	1471	1694	1824	1904	1903	1948	1487	1036	896	865	623	490	26653
2014	3	13	1640	1723	1964	2227	2148	2055	1738	1252	1113	904	863	772	29394
2014	3	14	1965	2171	2469	2624	2551	2533	2115	1671	1287	1151	866	734	33394
2014	3	15	1782	1859	1850	1856	1759	1841	1631	1407	1233	1041	771	528	27319
2014	3	16	1888	2171	2143	2140	2060	2054	1803	1454	1188	908	681	472	25503
2014	3	17	1561	1586	1652	1759	1731	1790	1445	991	783	667	556	495	25343
2014	3	18	1474	1626	1756	1863	1858	1931	1428	970	903	777	553	475	26128
2014	3	19	1570	1644	1757	1987	1906	2051	1568	1142	944	836	624	522	27100
2014	3	20	1647	1746	1833	2090	2012	2091	1726	1479	1060	980	812	588	29112
2014	3	21	1932	2007	2280	2361	2465	2284	2065	1556	1268	1146	892	706	32491
2014	3	22	1776	1813	1821	1880	1791	1745	1539	1326	1222	969	735	718	26779
2014	3	23	1881	2221	2369	2398	2252	2164	1873	1725	1295	1014	706	520	27539
2014	3	24	1652	1654	1820	1897	1951	2022	1547	1046	779	779	620	528	27301
2014	3	25	1460	1485	1637	1829	1803	1860	1421	1041	779	724	569	531	25383
2014	3	26	1547	1755	1833	1925	1896	2067	1597	1116	909	813	642	517	27187
2014	3	27	1546	1932	2141	2105	2112	2062	1753	1335	1040	940	814	668	29064
2014	3	28	1962	2113	2236	2313	2467	2236	2088	1609	1283	1022	877	681	32310
2014	3	29	1703	1802	1749	1690	1586	1659	1336	1245	953	837	760	483	24876
2014	3	30	2009	2134	2225	2328	2232	2119	2007	995	1799	986	770	525	27090
2014	3	31	0	0	0	0	0	0	0	0	0	0	0	0	0

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	4	1	394	312	293	283	335	603	998	1605	1528	1505	1441	1621
2014	4	2	397	282	291	285	376	607	1018	1647	1441	1509	1525	1574
2014	4	3	361	338	260	324	376	624	1079	1681	1712	1633	1588	1671
2014	4	4	460	356	347	345	367	641	1075	1723	1712	1685	1797	1965
2014	4	5	488	342	296	275	318	436	673	1187	1559	1756	1984	2008
2014	4	6	340	248	180	184	178	219	365	555	821	1139	1469	1709
2014	4	7	321	246	213	209	299	605	931	1528	1268	1394	1455	1387
2014	4	8	366	292	287	268	330	606	987	1663	1569	1453	1508	1261
2014	4	9	376	259	297	291	363	613	1026	1616	1504	1562	1560	1612
2014	4	10	420	327	295	311	366	606	980	1553	1444	1604	1595	1701
2014	4	11	439	325	349	328	405	623	994	1625	1373	1914	1756	1872
2014	4	12	458	342	314	264	320	405	611	1044	1348	1624	1713	1931
2014	4	13	352	254	212	163	188	218	292	571	837	1229	1550	1835
2014	4	14	365	279	206	214	324	721	1093	1576	1595	1592	1636	1762
2014	4	15	359	283	258	252	354	581	938	1419	1405	1461	1493	1508
2014	4	16	411	326	286	293	354	611	953	1463	1660	1684	1684	1607
2014	4	17	412	292	292	330	387	643	990	1560	1609	1771	1754	1820
2014	4	18	476	368	346	328	371	500	735	1172	1436	1736	1909	2070
2014	4	19	456	302	278	267	288	318	456	664	957	1299	1539	1861
2014	4	20	328	217	174	123	158	190	331	473	744	1116	1436	1746
2014	4	21	450	237	244	235	360	774	1135	1818	1734	1770	1903	1796
2014	4	22	433	315	276	285	391	625	1064	1686	1422	1710	1523	1446
2014	4	23	361	267	263	292	379	631	986	1540	1709	1498	1489	1487
2014	4	24	396	292	302	276	395	616	992	1703	1515	1682	1567	1585
2014	4	25	442	410	450	357	432	565	993	1615	1539	1671	1634	1751
2014	4	26	468	374	309	265	315	407	579	998	1280	1517	1642	1678
2014	4	27	360	248	216	187	160	238	333	484	769	1205	1612	1780
2014	4	28	380	255	235	250	334	693	1176	1769	1716	1628	1607	1614
2014	4	29	391	302	298	256	330	595	956	1535	1420	1333	1377	1350
2014	4	30	359	274	268	251	350	592	913	1522	1389	1364	1386	1415

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	4	1	1596	1651	1773	1882	1924	1951	1566	1059	814	811	638	549	27132
2014	4	2	1665	1699	1919	1897	2004	2086	1511	1145	873	907	690	580	27928
2014	4	3	1899	1881	1987	2112	2121	2183	1728	1354	994	1030	824	602	30362
2014	4	4	2101	2204	2291	2399	2300	2470	2162	1722	1446	1138	818	706	34230
2014	4	5	1901	1889	1804	1925	1785	1758	1645	1435	1202	952	709	503	28830
2014	4	6	1996	2309	2391	2603	2440	2268	1879	2408	1569	989	716	502	29477
2014	4	7	1553	1541	1748	1884	1945	1909	1472	976	763	672	572	469	25360
2014	4	8	1018	2090	1774	1787	1942	1973	1542	1078	846	819	683	572	26714
2014	4	9	1524	1662	1681	2042	2239	1991	1603	1139	945	887	697	529	28018
2014	4	10	1793	1890	1953	2156	2198	2228	1692	1364	1046	954	802	585	29863
2014	4	11	1961	2348	2385	2455	2416	2387	1995	1634	1268	1098	928	660	33538
2014	4	12	1780	1764	1677	1669	1707	1622	1493	1275	1146	916	671	532	26626
2014	4	13	1974	2224	2316	2331	2190	2217	1864	1795	1399	1144	783	471	28409
2014	4	14	1818	1767	1799	1925	1849	1788	1534	1163	849	686	640	514	27695
2014	4	15	1601	1644	1812	1911	1931	1966	1435	1098	893	824	727	557	26710
2014	4	16	1959	1802	1987	2184	2231	2101	1796	1268	818	606	1144	701	29929
2014	4	17	2017	2049	2215	2371	2468	2448	2042	1439	1166	1210	938	707	32930
2014	4	18	2174	2329	2411	2614	2454	2307	2012	1529	1196	997	1074	696	33240
2014	4	19	1935	1859	1764	1873	1768	1662	1561	1276	1066	832	666	515	25462
2014	4	20	2051	2062	2253	2523	2603	2667	2655	2251	1783	1214	972	613	30683
2014	4	21	1828	1895	2419	2310	2136	2148	1678	1198	990	858	709	556	31181
2014	4	22	1541	1756	1957	1930	1970	1861	1591	1181	880	829	619	520	27811
2014	4	23	1652	1695	1862	1920	1673	2324	1707	1162	912	780	793	626	28008
2014	4	24	1791	1803	1989	2115	2198	2343	1863	1362	1122	990	651	539	30087
2014	4	25	2035	2068	2282	2422	2471	2308	1844	1517	1249	1048	898	707	32708
2014	4	26	1706	1853	1802	1898	1800	1732	1443	1258	1044	855	731	563	26517
2014	4	27	2176	2292	2054	1910	2538	2249	2363	1892	1342	1168	784	549	28909
2014	4	28	1773	1767	1846	1894	2042	1981	1538	1202	900	772	620	517	28509
2014	4	29	1452	1508	1596	1707	1766	1974	1463	1036	824	676	552	440	25137
2014	4	30	1505	1559	1597	1988	1858	2035	1484	1067	901	784	657	526	26044

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	5	1	361	301	304	323	379	637	1013	1752	1576	1601	1539	1701
2014	5	2	476	356	345	304	379	660	986	1648	1645	1571	1742	1906
2014	5	3	495	347	333	302	329	390	642	1144	1419	1737	1750	1876
2014	5	4	404	275	204	162	167	193	353	551	851	1177	1534	1957
2014	5	5	469	264	225	242	395	669	1185	1741	1482	1809	1601	1647
2014	5	6	402	326	301	308	351	569	1061	1555	1543	1555	1528	1483
2014	5	7	390	339	321	290	340	623	1059	1619	1482	1576	1563	1603
2014	5	8	438	324	330	285	391	592	1071	1741	1635	1590	1647	1743
2014	5	9	517	364	345	350	443	598	1028	1705	1632	1714	1807	1965
2014	5	10	568	395	307	289	297	393	620	1055	1398	1817	1883	2050
2014	5	11	427	289	211	184	186	227	301	542	813	1252	1706	2009
2014	5	12	404	280	251	237	348	716	1248	1797	1627	1849	1713	1771
2014	5	13	532	328	281	276	422	608	1060	1729	1450	1595	1491	1466
2014	5	14	395	325	273	348	384	592	1159	1675	1656	1462	1563	1635
2014	5	15	403	309	210	294	411	655	1054	1618	1495	1574	1530	1628
2014	5	16	451	355	338	336	395	658	1009	1638	1605	1617	1702	1924
2014	5	17	448	353	335	256	310	375	665	1007	1345	1603	1781	1943
2014	5	18	347	244	183	161	173	204	330	530	755	1106	1400	1802
2014	5	19	399	235	216	255	369	693	1152	1721	1377	2015	1659	1720
2014	5	20	392	309	277	303	404	616	1029	1709	1527	1463	1580	1551
2014	5	21	372	329	311	311	392	608	1059	1700	1692	1562	1467	1563
2014	5	22	346	494	385	382	433	660	1085	1667	1655	1669	1676	1719
2014	5	23	504	409	397	357	435	672	1071	1697	1750	1820	1871	1970
2014	5	24	566	442	361	365	354	407	696	1090	1367	1782	1952	2014
2014	5	25	344	250	222	186	196	205	337	537	864	1408	1639	2017
2014	5	26	427	280	233	237	245	343	514	875	1068	1434	1831	2215
2014	5	27	406	253	246	263	374	757	1196	1645	1792	1978	1721	1756
2014	5	28	397	328	366	341	405	691	1067	1738	1611	1592	1557	1570
2014	5	29	448	351	317	338	395	645	1050	1726	1645	1568	1639	1668
2014	5	30	467	355	338	353	414	646	974	1609	1565	1602	1669	1865
2014	5	31	496	370	308	317	299	391	623	1000	1228	1663	1785	1779

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	5	1	1744	1901	2068	2156	2165	2203	1645	1310	1113	1005	776	663	30236
2014	5	2	2000	2238	2305	2482	2552	2466	2265	1680	1408	1216	943	726	34299
2014	5	3	1743	1800	1766	1762	1727	1656	1504	1304	1121	1023	689	550	27409
2014	5	4	2175	2314	2449	2383	2254	2137	1809	1796	1447	1101	780	544	29017
2014	5	5	1705	1663	1796	2013	2229	1978	1505	1100	857	800	636	527	28538
2014	5	6	1554	1621	1636	1859	2074	1807	1774	1180	914	891	709	542	27543
2014	5	7	1642	1724	1946	2032	2020	2023	1592	1217	940	814	754	748	28657
2014	5	8	1756	1875	2215	2265	2146	2167	1848	1448	1089	1141	873	679	31289
2014	5	9	2163	2359	2574	2531	2477	2422	2267	1954	1324	1288	1077	871	35775
2014	5	10	1961	1922	1969	1919	1675	1971	1652	1329	1139	925	733	620	28887
2014	5	11	2207	2170	2236	2407	2422	2460	1952	1752	1657	1283	847	580	30120
2014	5	12	1620	1750	1929	2007	1982	2146	1497	1150	885	822	634	596	29259
2014	5	13	1677	1656	1922	1889	1957	1953	1506	1128	933	818	770	650	28097
2014	5	14	1623	1745	1907	2125	2056	2079	1574	1089	847	816	747	522	28597
2014	5	15	1843	1842	2008	2220	2117	2108	1661	1277	1029	969	776	632	29663
2014	5	16	2043	2180	2389	2490	2498	2418	2135	1622	1355	1225	906	707	33996
2014	5	17	2038	2001	1873	1970	1830	1712	1483	1289	1000	881	699	523	27720
2014	5	18	2225	2340	2426	2339	2380	2224	1716	1789	1307	1040	754	518	28293
2014	5	19	1735	1662	1839	2136	1925	1976	1650	1185	911	825	679	555	28889
2014	5	20	1554	1600	1776	1935	2019	1971	1585	1083	856	841	671	575	27626
2014	5	21	1561	1889	1858	2019	2095	1876	1363	1501	933	857	647	351	28316
2014	5	22	1963	1915	2118	2185	2342	2262	1860	1378	1091	1063	912	738	31998
2014	5	23	2147	2312	2361	2567	2469	2387	2209	1802	1521	1404	1071	837	36040
2014	5	24	2040	1996	1777	1827	1665	1528	1486	1327	1051	898	739	512	28242
2014	5	25	2200	2141	2112	2068	1980	1911	1546	1454	1110	892	741	548	26908
2014	5	26	2376	2479	2578	2341	2400	2105	1990	1579	1513	1189	874	607	31733
2014	5	27	1840	1855	1861	2001	1967	1990	1426	1146	871	817	654	587	29402
2014	5	28	1625	1745	1879	1790	1901	2106	1623	1216	911	812	709	611	28591
2014	5	29	1639	1837	2028	2168	2134	2081	1610	1469	1015	1006	753	607	30137
2014	5	30	2039	2148	2386	2295	2199	2233	2015	1433	1210	1141	764	685	32405
2014	5	31	1823	1760	1830	1693	1695	1588	1476	1332	1062	879	673	528	26598

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	6	1	362	233	196	202	204	256	382	607	844	1168	1479	1645
2014	6	2	384	237	204	202	362	715	1129	1703	1634	1537	1613	1700
2014	6	3	409	276	270	288	372	594	1036	1615	1470	1617	1443	1521
2014	6	4	399	334	277	292	382	642	1088	1570	1372	1687	1525	1540
2014	6	5	368	341	337	323	375	662	1131	1566	1712	1639	1559	1663
2014	6	6	474	337	348	334	409	633	1042	1574	1572	1701	1728	2067
2014	6	7	474	364	318	290	317	422	642	1062	1331	1652	1850	1848
2014	6	8	375	277	235	224	187	254	372	574	792	1145	1598	1940
2014	6	9	375	284	240	265	334	751	1188	1632	1713	1698	1690	1697
2014	6	10	403	297	294	299	370	656	1111	1595	1603	1555	1567	1512
2014	6	11	462	329	310	279	399	651	1065	1651	1623	1697	1597	1605
2014	6	12	429	358	336	325	453	676	1089	1659	1663	1666	1690	1713
2014	6	13	504	385	331	393	420	652	1068	1566	1703	1730	1918	2093
2014	6	14	565	362	345	302	336	447	641	1119	1273	1658	1947	1987
2014	6	15	368	259	228	222	185	243	380	589	880	1356	1670	1981
2014	6	16	413	296	266	273	389	760	1216	1666	1606	1828	1685	1753
2014	6	17	369	329	314	329	398	694	1080	1664	1615	1647	1580	1610
2014	6	18	457	372	306	312	386	655	1104	1559	1557	1626	1607	1694
2014	6	19	449	382	326	354	360	699	1132	1741	1761	1709	1681	1746
2014	6	20	507	402	338	335	451	607	924	1616	1649	1900	1874	2101
2014	6	21	491	394	307	320	328	403	657	1048	1386	1696	1902	1937
2014	6	22	406	283	222	218	209	220	357	613	932	1224	1587	1897
2014	6	23	383	306	255	247	364	703	1198	1723	1689	1627	1700	1756
2014	6	24	425	317	301	310	367	654	1047	1649	1598	1608	1570	1565
2014	6	25	394	335	318	298	365	693	1081	1655	1700	1559	1554	1717
2014	6	26	470	379	342	352	436	721	1133	1620	1796	1668	1555	1695
2014	6	27	544	436	369	382	419	679	1049	1633	1781	1805	1944	2077
2014	6	28	543	410	354	310	349	426	634	1110	1339	1686	2006	2077
2014	6	29	377	281	201	209	204	259	412	622	1328	2390	2440	2313
2014	6	30	392	268	247	270	349	710	1134	1508	1582	1653	1731	1696

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	6	1	1927	2209	2507	2233	2294	2163	1831	1549	1253	973	705	514	27736
2014	6	2	1634	1716	1824	1831	1763	1871	1457	1124	833	725	690	530	27418
2014	6	3	1566	1644	1728	1880	1957	2104	1602	1112	884	770	646	545	27349
2014	6	4	1660	1817	1940	2066	2099	2057	1629	1202	952	836	647	569	28582
2014	6	5	1809	1931	2005	2225	2258	2224	1717	1408	1062	967	778	627	30687
2014	6	6	2052	2333	2416	2555	2429	2335	1991	1660	1252	1268	951	753	34214
2014	6	7	1762	1830	1718	1754	1757	1733	1403	1155	981	912	742	519	26836
2014	6	8	2093	2252	2271	2431	2268	2162	1997	1693	1310	948	739	547	28684
2014	6	9	1731	1727	1850	1835	1925	1883	1571	1088	835	822	635	532	28301
2014	6	10	1603	1751	1851	1915	2030	2062	1552	1058	885	741	710	596	28016
2014	6	11	1712	1779	1965	2038	2016	2062	1657	1245	985	872	754	584	29337
2014	6	12	1928	1903	2046	2272	2453	2407	1295	1644	1373	1032	872	668	31950
2014	6	13	2160	2434	2197	1368	1674	2272	2813	2342	1448	1283	942	861	34557
2014	6	14	2117	2016	2102	1783	2125	1832	1629	1326	1104	921	741	575	29253
2014	6	15	2186	2238	2474	2481	2310	2246	1941	1810	1463	1069	831	548	29958
2014	6	16	1808	1880	1836	2046	1937	1915	1612	1086	881	840	687	517	29196
2014	6	17	1756	1677	1777	1916	1953	1990	1433	1179	888	803	709	562	28272
2014	6	18	1710	1804	1884	2162	2047	2058	1628	1272	980	848	794	612	29434
2014	6	19	1854	2017	2167	2333	2199	2289	1809	1476	1076	1048	890	652	32150
2014	6	20	2174	2394	2552	2726	2549	2503	2264	1839	1417	1237	1028	710	36097
2014	6	21	1945	1866	1860	1831	1806	1692	1390	1220	1016	855	704	535	27589
2014	6	22	2262	2317	2428	2352	2219	2179	1880	1605	1402	1136	781	542	29271
2014	6	23	1802	1727	1863	2049	1993	1963	1662	1213	917	758	692	554	29144
2014	6	24	1640	1759	1890	1930	1998	2023	1428	1214	912	785	703	574	28267
2014	6	25	1755	1842	1864	2197	2093	2108	1663	1286	998	894	836	635	29840
2014	6	26	1741	1845	2323	2537	2291	2247	1798	1461	1155	1055	880	816	32316
2014	6	27	2209	2406	2471	2670	2496	1257	2434	1863	1355	1255	975	742	35251
2014	6	28	1999	2009	2036	2077	1973	1701	1537	1368	1122	920	781	550	29317
2014	6	29	2344	2455	2489	2424	2262	2040	1912	1590	1270	1037	745	513	32117
2014	6	30	1799	1893	1932	1950	1962	2047	1486	1115	940	817	722	586	28789

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	7	1	421	353	350	338	373	704	1011	1513	1637	1615	1672	1669
2014	7	2	432	363	347	311	403	670	1035	1565	1676	1699	1753	1825
2014	7	3	515	400	402	381	470	736	1092	1471	1680	1748	1952	2100
2014	7	4	729	557	407	350	393	476	650	863	1075	1492	1833	1904
2014	7	5	340	227	198	184	160	253	372	584	890	1224	1516	1739
2014	7	6	434	298	241	209	222	264	416	715	953	1444	1905	2341
2014	7	7	492	367	307	297	407	802	1268	1650	1786	1767	1815	1953
2014	7	8	457	322	390	318	402	652	1124	1537	1610	1658	1529	1665
2014	7	9	429	311	345	374	349	700	1136	1545	1643	1568	1554	1749
2014	7	10	431	369	307	338	420	687	1080	1688	1757	1561	1782	1855
2014	7	11	502	400	322	355	418	534	919	1196	1513	2271	1883	1898
2014	7	12	543	373	321	286	309	402	603	992	1274	1672	1949	2042
2014	7	13	390	269	220	179	175	247	411	590	830	1282	1637	1974
2014	7	14	380	268	224	257	368	765	1130	1672	1631	1699	1577	1665
2014	7	15	459	314	295	330	351	682	1066	1626	1604	1605	1654	1571
2014	7	16	434	317	352	346	402	706	1096	1610	1725	1610	1656	1756
2014	7	17	468	332	353	388	401	661	1118	1592	1689	1691	1718	1918
2014	7	18	451	293	41	731	392	663	967	1511	1739	1747	1852	2182
2014	7	19	725	406	304	266	300	386	640	975	1246	1626	1847	2062
2014	7	20	340	247	196	210	189	232	336	529	795	1169	1555	1896
2014	7	21	377	271	258	272	366	750	1127	1599	1525	1652	1496	1750
2014	7	22	416	324	280	300	371	627	1041	1550	1515	1549	1542	1679
2014	7	23	703	290	255	376	390	632	1005	1594	1591	1540	1563	1645
2014	7	24	400	337	322	342	411	649	1083	1541	1783	1655	1683	1824
2014	7	25	483	403	341	346	421	680	1061	1537	1654	1838	1932	2125
2014	7	26	527	323	344	312	296	432	626	871	1327	1668	1843	2009
2014	7	27	393	280	257	265	231	257	379	577	824	1278	1533	1938
2014	7	28	439	306	250	269	355	758	1165	1635	1784	1864	1869	1748
2014	7	29	445	325	326	317	390	611	1054	1608	1548	1670	1594	1612
2014	7	30	426	308	323	331	373	634	1047	1644	1518	1479	1608	1860
2014	7	31	444	359	352	331	449	633	1086	1568	1565	1659	1751	1836

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	7	1	1824	1822	1985	2030	1965	1907	1433	1459	1138	893	783	670	29565
2014	7	2	1810	1992	2096	2287	2195	2139	1763	1332	1117	1072	936	743	31561
2014	7	3	2050	2397	2361	2468	2243	2581	1937	2018	1684	1524	1290	936	36436
2014	7	4	1812	1821	1663	1609	1333	1217	960	816	720	574	656	671	24581
2014	7	5	1793	1825	1881	1799	1775	1591	1493	1379	1029	925	819	476	24472
2014	7	6	2557	2834	3092	2930	2519	2655	2907	2018	1574	1299	1041	663	35531
2014	7	7	1969	1999	2061	2130	2205	2082	1692	1277	1063	894	738	637	31658
2014	7	8	1667	1724	1925	2004	1956	2075	1634	1181	981	907	660	530	28908
2014	7	9	1745	1798	2063	2109	2001	2153	1767	1228	1015	924	767	662	29935
2014	7	10	1848	2030	2079	2133	2239	2385	1849	1298	1042	957	920	785	31840
2014	7	11	1899	2298	2289	2579	2505	2247	2160	1728	1235	1153	1073	752	34129
2014	7	12	1945	2084	2042	1988	1881	1832	1606	1444	1070	978	720	575	28931
2014	7	13	2198	2360	2416	2356	2306	2110	1970	1666	1392	1045	814	575	29412
2014	7	14	1795	1808	1928	1981	1916	1932	1603	1220	859	877	690	545	28790
2014	7	15	1813	1778	1879	2028	1974	2062	1540	1108	841	856	722	563	28721
2014	7	16	1893	1960	2141	2287	2281	2235	1852	1367	1025	897	765	593	31306
2014	7	17	1905	1943	2211	2304	2385	2353	1867	1416	1123	1014	840	673	32363
2014	7	18	2186	2260	2450	2691	2537	2469	1987	1673	1202	1054	842	807	34727
2014	7	19	1219	1825	1938	2397	2046	1684	1548	1275	1020	868	628	495	27726
2014	7	20	2197	2359	2466	2348	2472	2516	2015	1643	1416	1051	776	544	29497
2014	7	21	1711	1841	1881	1857	1931	2056	1558	1170	942	817	676	568	28451
2014	7	22	1675	1715	1871	2114	2126	1997	1622	1150	918	825	615	326	28148
2014	7	23	1666	1886	1982	2165	2175	2131	1604	1183	1027	880	744	580	29607
2014	7	24	1904	1996	2157	2234	2262	2246	1740	1417	1112	1005	868	691	31662
2014	7	25	2312	2476	2630	2285	2310	2247	2260	1658	1347	1280	1003	736	35365
2014	7	26	1967	1944	1953	2012	1989	1843	1571	1461	1255	1241	763	560	29137
2014	7	27	2219	2512	2641	2690	2461	2436	2223	1909	1476	1113	799	533	31224
2014	7	28	1842	1922	2054	1950	2036	2024	1676	1187	882	848	703	696	30262
2014	7	29	1852	1846	1921	2074	2039	2139	1686	1189	944	868	791	661	29510
2014	7	30	1798	1932	2002	2102	2188	2055	1687	1217	932	761	787	652	29664
2014	7	31	1960	2018	2101	2228	1991	2251	1824	1341	1085	896	850	691	31269

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	8	1	452	376	352	358	397	609	1020	1552	1631	1684	1767	2127
2014	8	2	517	369	331	335	315	373	583	892	1215	1562	1993	2289
2014	8	3	373	267	200	219	210	201	337	555	822	1272	1545	2014
2014	8	4	438	292	238	281	410	694	1197	1634	1689	1692	1751	1714
2014	8	5	450	334	298	310	382	627	1013	1566	1529	1584	1634	1602
2014	8	6	422	348	321	318	362	635	1031	1519	1553	1678	1640	1712
2014	8	7	450	345	293	328	432	656	1065	1570	1688	1695	1683	1851
2014	8	8	535	389	344	318	417	618	978	1541	1615	1660	1915	2054
2014	8	9	496	374	306	307	323	410	548	873	1136	1604	1899	1959
2014	8	10	351	320	229	192	197	210	298	508	798	1183	1518	1896
2014	8	11	394	270	266	242	379	724	1137	1649	1727	1721	1769	1882
2014	8	12	465	403	302	296	404	678	1013	1635	1601	1540	1586	1602
2014	8	13	454	349	317	329	376	633	1019	1579	1651	1745	1710	1682
2014	8	14	434	349	291	336	416	672	1017	1680	1704	1650	1638	1726
2014	8	15	492	366	346	362	420	603	991	1624	1736	1772	1852	1985
2014	8	16	530	418	337	286	320	418	595	1061	1333	1659	1990	1957
2014	8	17	368	282	198	173	221	222	379	594	829	1313	1641	1996
2014	8	18	402	299	269	293	369	699	1229	1809	1628	1663	1724	1776
2014	8	19	414	322	287	301	393	657	1109	1532	1647	1565	1518	1664
2014	8	20	419	337	296	355	382	618	1121	1716	1580	1537	1448	1465
2014	8	21	414	293	290	341	374	664	1086	1778	1606	1612	1609	1637
2014	8	22	457	336	323	333	424	663	1105	1624	1615	1626	1678	1883
2014	8	23	465	383	328	305	315	409	617	993	1272	1588	1720	1815
2014	8	24	365	253	202	198	191	256	333	550	780	1076	1427	1690
2014	8	25	311	250	197	238	342	746	1179	1708	1623	1640	1500	1496
2014	8	26	360	257	252	282	370	660	1040	1608	1524	1486	1460	1401
2014	8	27	398	328	268	304	353	637	1057	1675	1511	1630	1431	1417
2014	8	28	401	336	301	344	383	660	1102	1587	1611	1671	1521	1685
2014	8	29	471	409	362	380	498	661	1065	1657	1565	1668	1746	1967
2014	8	30	693	460	353	342	324	334	780	1050	1336	1647	1923	2010
2014	8	31	474	285	242	159	183	219	283	483	691	1082	1492	1908

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	8	1	2262	2409	2550	2623	2507	2459	2161	1465	1538	1286	942	807	35334
2014	8	2	2313	2408	2455	2394	2214	1895	1736	1423	1162	957	756	569	31056
2014	8	3	2276	2572	2360	2562	2574	2368	2124	1816	1453	1117	777	525	30539
2014	8	4	1850	2000	2007	2009	2065	2138	1577	1184	859	852	688	638	29897
2014	8	5	1776	1792	1885	1914	2039	2039	1670	1187	950	820	681	589	28671
2014	8	6	1868	1965	1975	2092	2121	2213	1698	1224	901	835	761	641	29833
2014	8	7	1954	2001	2125	2229	2165	2010	1990	1437	1120	984	783	719	31573
2014	8	8	2120	1987	2327	2263	2624	2688	2155	1540	1288	1126	962	704	34168
2014	8	9	1973	1956	1867	2029	1879	1659	1488	1352	1007	712	690	534	27381
2014	8	10	2106	2450	2621	2543	2484	2320	1924	1831	1362	1002	963	552	29858
2014	8	11	1837	1915	2035	2098	1992	2033	1535	1109	891	830	689	600	29724
2014	8	12	1720	1781	1795	2150	2163	2292	1687	1222	917	833	751	548	29384
2014	8	13	1777	1908	1961	2158	2207	2146	1741	1190	938	827	739	640	30076
2014	8	14	1866	2019	2268	2222	2364	2315	1779	1319	1056	954	834	647	31556
2014	8	15	2053	2296	2412	2535	2553	2462	2052	1844	1414	1308	1053	790	35321
2014	8	16	1790	2022	2158	2083	1990	1833	1871	1654	1222	1002	786	554	29869
2014	8	17	2305	2540	2647	2668	2691	2455	2233	1782	1341	1145	784	526	31333
2014	8	18	1830	1876	1973	2079	2033	1983	1465	1246	923	776	599	519	29462
2014	8	19	1665	1744	1820	1710	2115	2112	1607	1081	916	756	682	535	28152
2014	8	20	1731	1850	1876	1903	1860	1582	1925	1430	966	856	647	541	28441
2014	8	21	1736	1923	1902	2144	2335	2079	1660	1307	1066	934	741	596	30127
2014	8	22	1998	2138	2336	2551	2578	2342	2045	1777	1345	1184	886	788	34035
2014	8	23	1810	1829	1804	1808	1776	1710	1410	1237	1076	859	605	484	26618
2014	8	24	1881	2078	2153	2351	2107	2014	1820	1563	1271	908	639	464	26570
2014	8	25	1585	1643	1726	1852	1912	1921	1506	1069	867	752	677	540	27280
2014	8	26	1525	1650	1725	1836	1891	1913	1494	1074	866	822	641	540	26677
2014	8	27	1576	1699	1837	1935	2014	2139	1506	1163	976	811	714	551	27930
2014	8	28	1652	1803	1989	2188	2205	2143	1635	1207	1072	1105	959	730	30290
2014	8	29	2058	2434	2396	2541	2551	2041	2823	1987	1615	1472	1267	919	36553
2014	8	30	1904	1937	1798	1816	1682	1503	1332	1201	959	873	755	609	27621
2014	8	31	2049	2187	2153	2107	1935	1890	1753	1421	1217	949	766	632	26560

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Northbound Volumes

			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	9	1	407	305	259	216	320	304	484	661	934	1325	1890	2292
2014	9	2	401	270	233	241	371	728	1214	1736	1623	1567	1531	1612
2014	9	3	353	326	315	281	404	685	1071	1578	1605	1550	1461	1511
2014	9	4	388	266	303	316	450	640	1110	1665	1574	1461	1400	1555
2014	9	5	412	334	317	309	361	613	1019	1578	1410	1581	1575	1664
2014	9	6	450	421	297	246	283	363	565	933	1096	1420	1587	1870
2014	9	7	354	222	187	172	192	175	330	460	692	976	1314	1579
2014	9	8	304	250	229	216	363	673	1136	1749	1549	1460	1445	1451
2014	9	9	374	288	281	303	373	630	1027	1587	1528	1396	1356	1399
2014	9	10	372	284	292	304	365	600	941	1575	1665	1491	1453	1495
2014	9	11	409	419	304	303	399	656	1068	1622	1463	1518	1466	1448
2014	9	12	482	330	301	362	392	585	850	1580	1637	1591	1596	1817
2014	9	13	399	340	301	243	255	374	624	914	1133	1340	1664	1712
2014	9	14	330	242	182	175	164	190	294	500	774	1237	1570	1717
2014	9	15	331	234	218	212	346	681	1127	1701	1590	1507	1531	1491
2014	9	16	359	301	280	301	349	638	1102	1581	1505	1396	1370	1386
2014	9	17	382	327	315	296	331	628	1135	1650	1512	1432	1418	1476
2014	9	18	0	0	0	0	0	0	0	0	0	0	0	0
2014	9	19	447	323	309	332	428	655	1067	1656	1572	1571	1722	1891
2014	9	20	454	360	291	276	311	430	641	983	1180	1592	1653	1833
2014	9	21	336	262	209	174	185	216	282	489	749	1116	1415	1997
2014	9	22	329	269	214	238	315	723	1147	1475	1835	1508	1458	1563
2014	9	23	354	321	276	285	344	623	1057	1632	1480	1378	1313	1451
2014	9	24	372	295	277	302	399	657	1113	1726	1503	1446	1434	1468
2014	9	25	374	306	257	325	396	651	981	1616	1546	1456	1514	1532
2014	9	26	437	311	328	332	399	632	934	1555	1496	1551	1673	1802
2014	9	27	450	341	279	237	276	404	597	1006	1185	1465	1699	1636
2014	9	28	734	580	286	217	182	233	330	582	892	1358	1826	2265
2014	9	29	354	241	247	259	393	760	1123	1735	1595	1479	1439	1675
2014	9	30	395	302	280	264	350	692	1100	1642	1618	1451	1383	1372

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	9	1	2587	2794	3002	2918	2624	2494	2198	1807	1415	1080	820	555	33691
2014	9	2	1758	1750	1838	1890	1863	1898	1296	1049	946	810	718	536	27879
2014	9	3	1574	1610	1785	1855	1762	1950	1430	1105	855	694	589	605	26954
2014	9	4	1600	1692	1852	1925	2026	2223	1573	1219	928	889	662	571	28288
2014	9	5	1789	1993	2171	2238	2194	2174	1947	1430	1211	1036	1109	728	31193
2014	9	6	1746	1636	1547	1569	1713	1687	1714	1304	1006	781	645	530	25409
2014	9	7	1767	1895	2013	2157	1729	2308	1683	1518	1255	887	656	396	24917
2014	9	8	1540	1524	1716	1744	1759	1872	1339	1057	834	726	579	486	26001
2014	9	9	1388	1546	1714	1840	1866	1933	1380	1064	857	697	571	499	25897
2014	9	10	1571	1623	1798	1860	1934	2056	1447	1149	904	804	636	433	27052
2014	9	11	1606	1718	1981	2094	2097	2112	1766	1317	1014	886	746	530	28942
2014	9	12	1977	2182	2391	2570	2334	2105	2195	1776	1260	1039	846	636	32834
2014	9	13	1733	1756	1664	1726	1577	1507	1389	1178	910	808	628	483	24658
2014	9	14	1777	2020	2185	2119	2153	1972	1808	1586	1231	912	704	491	26333
2014	9	15	1560	1600	1671	1896	1840	1880	1401	998	821	679	589	491	26395
2014	9	16	1494	1519	1711	1874	1983	1952	1425	1161	836	727	626	514	26390
2014	9	17	1501	1645	1879	1934	2064	1974	1590	1174	910	764	575	506	27418
2014	9	18	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	9	19	2034	2113	2515	2625	2380	2518	2455	1725	1281	1138	956	650	34363
2014	9	20	1791	1749	1777	1622	1705	1777	1505	1303	1022	852	730	486	26323
2014	9	21	2251	2500	2692	2728	2379	1864	1891	1752	1537	1570	691	496	29781
2014	9	22	1694	1675	1720	1765	1849	1932	1469	1029	833	759	603	468	26870
2014	9	23	1431	1595	1779	1836	1916	1954	1486	1087	850	719	569	482	26218
2014	9	24	1593	1675	1833	1988	2099	2001	1574	1088	892	779	611	498	27623
2014	9	25	1661	1838	1947	2152	2104	2172	1758	1385	1064	919	719	554	29227
2014	9	26	1999	2176	2340	2495	2333	2289	1958	1705	1282	1136	916	656	32735
2014	9	27	1832	1797	1825	1839	1731	1596	1495	1252	1122	1039	764	823	26690
2014	9	28	2476	2495	2698	2599	2566	2369	2044	1655	1397	980	680	488	31932
2014	9	29	1714	1950	2063	2077	1976	1975	1298	1171	957	734	583	468	28266
2014	9	30	1534	1631	1752	1797	1871	1899	1551	1119	808	755	660	514	26740

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	10	1	384	276	287	320	383	667	1017	1646	1490	1452	1448	1472
2014	10	2	366	302	342	307	401	656	1071	1659	1496	1542	1483	1621
2014	10	3	571	339	284	311	396	624	1035	1644	1535	1563	1644	1749
2014	10	4	408	339	285	228	270	397	584	955	1163	1534	1733	1880
2014	10	5	403	240	169	171	174	230	358	616	993	1549	2119	2322
2014	10	6	0	0	0	0	0	0	0	0	0	0	0	0
2014	10	7	336	267	292	283	372	652	1012	1660	1540	1425	1468	1433
2014	10	8	382	295	256	278	372	660	1097	1640	1477	1509	1432	1507
2014	10	9	361	326	278	300	408	615	1080	1608	1557	1543	1542	1562
2014	10	10	449	371	299	346	416	650	1019	1588	1621	1681	1680	2068
2014	10	11	578	410	319	287	288	429	552	879	1198	1564	1819	1969
2014	10	12	345	269	184	176	210	198	348	476	753	1327	1672	1991
2014	10	13	380	260	234	256	372	721	1203	1723	1659	1803	1835	1964
2014	10	14	448	306	271	270	354	658	1069	1705	1436	1424	1402	1367
2014	10	15	370	282	289	279	401	650	1110	1596	1612	1530	1541	1594
2014	10	16	383	337	275	278	402	705	1138	1700	1615	1600	1606	1748
2014	10	17	423	339	308	329	419	666	1067	1652	1533	1666	1780	1941
2014	10	18	524	301	279	293	279	449	585	913	1121	1426	1678	1780
2014	10	19	337	253	173	143	181	206	329	509	754	1128	1476	1809
2014	10	20	439	284	268	268	366	749	1156	1690	1490	1482	1633	1774
2014	10	21	359	281	271	265	378	635	1107	1665	1496	1462	1405	1444
2014	10	22	417	297	280	320	354	627	1081	1393	1593	1576	1441	1492
2014	10	23	355	294	322	277	362	662	1069	1645	1591	1599	1570	1622
2014	10	24	450	348	362	328	389	656	830	1165	1212	1319	2181	2332
2014	10	25	500	338	273	259	294	405	574	925	1293	1503	1668	1833
2014	10	26	612	454	229	202	187	231	369	569	924	1572	2126	2226
2014	10	27	352	225	218	222	344	746	1198	1783	1509	1523	1605	1652
2014	10	28	359	298	276	287	377	655	1038	1627	1447	1441	1394	1427
2014	10	29	372	322	269	274	366	649	1072	1642	1227	1577	1470	1448
2014	10	30	373	306	266	256	386	663	1025	1639	1531	1513	1486	1543
2014	10	31	0	0	0	0	0	0	0	0	0	0	0	0

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	10	1	1623	1655	1661	1884	2145	2035	1545	1071	929	846	638	486	27360
2014	10	2	1751	1774	1976	2015	2081	1999	1732	1570	1061	839	718	637	29399
2014	10	3	1665	1225	2325	2619	2654	2340	2050	1655	1387	1087	870	625	32197
2014	10	4	1711	1700	1733	1779	1819	1867	1772	1564	1536	1420	956	699	28332
2014	10	5	2436	2601	2590	2507	2546	2310	2061	1666	1295	1063	712	451	31582
2014	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	10	7	1567	1652	1801	1834	1938	1936	1488	1141	909	781	625	535	26947
2014	10	8	1625	1733	1816	1988	2059	1922	1516	1436	944	784	629	514	27871
2014	10	9	1671	1849	2026	2178	2253	2135	1772	1325	1106	986	740	646	29867
2014	10	10	2230	2324	2455	2547	2592	2486	2235	1642	1389	1234	1152	664	35138
2014	10	11	1856	1931	1836	1806	1685	1605	1561	1275	1322	1362	1076	688	28295
2014	10	12	2519	2430	2201	2503	2862	2362	1973	1661	1363	1046	756	545	30170
2014	10	13	1929	1950	2065	2155	2186	2155	1553	1168	862	847	654	577	30511
2014	10	14	1412	1688	1708	1802	1815	1738	1389	1034	737	789	609	557	25988
2014	10	15	1703	1713	1909	1999	2178	2169	1639	1130	912	842	741	541	28730
2014	10	16	1850	1996	2141	2247	2303	2233	1856	1294	1048	934	832	573	31094
2014	10	17	2085	2299	2104	2625	2707	2421	1750	2050	1254	1141	1024	799	34382
2014	10	18	1739	1950	1821	1874	2062	1772	1785	1431	1117	903	784	495	27361
2014	10	19	2122	2197	2409	2487	2525	2397	2053	1786	1477	1160	807	599	29317
2014	10	20	1880	1899	1894	2009	1992	2025	1646	1092	836	791	607	506	28776
2014	10	21	1476	1612	1772	1862	1925	1938	1545	1103	858	787	650	548	26844
2014	10	22	1626	1616	1831	2036	2013	1985	1644	1095	884	794	658	572	27625
2014	10	23	1757	1834	1163	1631	2784	2542	2020	1429	1049	918	751	583	29829
2014	10	24	2125	2312	2192	2591	2812	2551	2344	1709	1245	1239	1083	747	34522
2014	10	25	1794	1855	1725	1844	2036	1958	1669	1470	1093	930	768	720	27727
2014	10	26	2331	2415	2588	2493	2505	2350	2012	1729	1448	1028	685	529	31814
2014	10	27	1704	1679	1786	1814	1888	1960	1517	1066	779	734	628	518	27450
2014	10	28	1543	1585	1755	1849	1991	1894	1460	1117	848	750	579	513	26510
2014	10	29	1548	1659	1834	1988	2175	2021	1653	1185	872	764	677	497	27561
2014	10	30	1646	1887	2044	2196	2484	2433	1991	1551	1064	911	773	504	30471
2014	10	31	0	0	0	0	0	0	0	0	0	0	0	0	0

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	11	1	400	278	315	262	267	353	544	835	938	1301	1496	1653
2014	11	2	356	229	194	139	263	207	331	504	805	1092	1427	1706
2014	11	3	265	235	168	234	324	676	1132	1764	1617	1488	1537	1590
2014	11	4	343	266	262	290	380	643	1054	1543	1486	1465	1473	1524
2014	11	5	358	286	275	278	388	648	1039	1717	1545	1444	1394	1436
2014	11	6	345	286	292	311	382	671	1033	1674	1606	1523	1559	1537
2014	11	7	411	338	265	325	375	658	1016	1551	1465	1536	1553	1830
2014	11	8	425	288	280	265	299	399	589	960	1176	1581	1807	1723
2014	11	9	265	211	155	136	181	229	301	471	706	1054	1342	1684
2014	11	10	306	210	195	212	325	745	1209	1679	1605	1672	1487	1573
2014	11	11	377	268	272	306	383	635	1048	1600	1582	1515	1418	1411
2014	11	12	301	301	276	288	376	649	1143	1720	1515	1515	1394	1549
2014	11	13	383	273	266	321	346	626	1077	1729	1624	1508	1538	1536
2014	11	14	437	304	326	323	390	625	1002	1628	1593	1537	1702	1800
2014	11	15	468	323	268	235	260	428	581	945	1252	1534	1835	1831
2014	11	16	282	223	199	175	178	229	286	459	809	1277	1767	1927
2014	11	17	274	196	193	214	324	672	1022	1604	1337	1637	1348	1527
2014	11	18	336	271	277	277	385	662	1046	1636	1478	1443	1416	1401
2014	11	19	368	272	280	323	354	621	1006	1582	1492	1407	1394	1437
2014	11	20	360	312	302	264	400	681	1056	1603	1571	1629	1487	1523
2014	11	21	423	302	336	331	392	669	1026	1623	1545	1641	1660	1828
2014	11	22	510	356	325	309	320	477	707	1154	1420	1775	1995	2161
2014	11	23	315	264	212	184	183	254	312	563	814	1292	1547	2017
2014	11	24	314	239	225	252	345	708	1177	1726	1680	1668	1713	1777
2014	11	25	381	321	333	343	374	754	1003	1573	1763	2172	2005	2178
2014	11	26	610	490	408	464	528	792	1102	1592	1909	2192	2364	2483
2014	11	27	666	437	404	373	357	423	504	806	1259	1909	2481	2566
2014	11	28	436	322	214	206	239	395	545	814	1068	1399	1735	2084
2014	11	29	358	242	241	223	224	403	590	850	1264	1734	2299	2299
2014	11	30	519	369	331	324	357	533	682	1053	1480	2166	2927	3246

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	11	1	1565	1641	1663	1587	1531	1487	1291	1145	900	739	542	410	23143
2014	11	2	1785	2266	2171	2215	2029	2241	1853	1670	1203	909	575	459	26629
2014	11	3	1672	1583	1817	1846	1980	1898	1481	1071	757	769	586	492	26982
2014	11	4	1535	1598	1754	1934	1934	1882	1442	1026	875	735	581	524	26549
2014	11	5	1509	1600	1809	1961	2003	2114	1616	1064	803	718	602	491	27098
2014	11	6	1772	1907	2044	2173	2115	2060	1694	1255	930	849	769	573	29360
2014	11	7	2076	2173	2425	2592	2413	2438	2107	1627	1232	1061	841	703	33011
2014	11	8	1590	1731	1660	1770	1661	1579	1348	1087	862	626	558	406	24670
2014	11	9	1881	2023	2168	2238	2191	2109	2030	1633	1267	939	620	492	26326
2014	11	10	1615	1662	1774	1862	1901	1992	1394	1073	801	716	608	555	27171
2014	11	11	1525	1617	2060	2029	2004	1987	1661	1130	867	744	650	496	27585
2014	11	12	1589	1677	1834	1962	2179	2027	1575	1037	834	758	571	534	27604
2014	11	13	1573	1749	1922	2290	2220	2203	1654	1304	913	782	776	538	29151
2014	11	14	1803	2273	2364	2547	2541	2332	2131	1565	1219	1104	923	771	33240
2014	11	15	1668	1733	1662	1698	1551	1782	1555	1248	1034	759	554	424	25628
2014	11	16	1911	2028	2145	2302	2197	2085	1788	1459	1189	831	613	400	26759
2014	11	17	1482	1607	1651	1843	1802	1820	1458	978	697	772	604	487	25549
2014	11	18	1534	1534	1695	1812	1929	1939	1442	1105	805	724	599	460	26206
2014	11	19	1553	1672	1760	1904	1934	1968	1630	1102	845	743	649	527	26823
2014	11	20	1615	1825	1998	2106	2181	2166	1649	1258	1012	859	728	576	29161
2014	11	21	1986	2118	2405	2454	2382	2400	2173	1735	1333	1100	1021	869	33752
2014	11	22	1996	2019	1995	1955	1899	1735	1601	1494	1312	1219	786	553	30073
2014	11	23	1947	2121	2082	1964	2122	1890	1722	1271	1217	903	629	460	26285
2014	11	24	1998	2031	2022	2164	2142	2133	1642	1034	1101	825	776	583	30275
2014	11	25	2343	2744	2926	3070	2851	2583	2301	1978	1556	1526	1190	855	39123
2014	11	26	2578	2713	2519	2065	2778	2405	2380	1879	1712	1558	1198	882	39601
2014	11	27	1919	1551	1282	1403	1500	1577	1502	1448	1298	1066	882	624	28237
2014	11	28	2169	2454	2369	2213	2065	1876	1638	1237	1018	814	614	488	28412
2014	11	29	2685	2789	2827	2721	2680	2618	2515	2090	1744	1268	863	677	36204
2014	11	30	3282	3057	3063	2919	2725	2612	2667	2220	1692	1314	968	699	41205

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2013	12	1	444	333	256	256	250	332	531	696	1043	1678	2154	2521
2013	12	2	559	360	297	352	400	693	1307	1706	1554	1600	1792	1742
2013	12	3	405	319	260	278	343	697	1195	1573	1496	1484	1551	1511
2013	12	4	378	309	308	272	386	723	1197	1489	1376	1399	1608	1527
2013	12	5	343	260	281	296	402	646	1138	1561	1364	1399	1454	1557
2013	12	6	395	308	297	322	389	661	1126	1493	1411	1385	1645	1646
2013	12	7	374	298	256	254	262	422	616	734	1010	1205	1410	1573
2013	12	8	656	415	173	171	165	191	307	366	611	927	1169	1413
2013	12	9	200	172	229	180	314	572	1172	1490	1353	1292	1386	1496
2013	12	10	314	270	246	288	329	636	1108	1436	1293	1368	1529	1487
2013	12	11	346	261	283	283	355	633	1148	1509	1394	1445	1536	1540
2013	12	12	353	291	295	284	352	629	1200	1492	1452	1510	1682	1653
2013	12	13	372	328	301	301	394	683	1071	1470	1459	1468	1752	1782
2013	12	14	428	306	293	260	280	399	583	753	932	1368	1580	1590
2013	12	15	326	221	149	132	128	166	290	432	617	901	1133	1374
2013	12	16	253	204	198	210	309	610	1265	1566	1394	1535	1539	1621
2013	12	17	361	297	263	284	347	624	1175	1545	1388	1405	1565	1422
2013	12	18	344	306	290	273	379	678	1194	1524	1409	1523	1594	1653
2013	12	19	387	310	329	304	391	671	1142	1536	1467	1510	1778	1772
2013	12	20	443	352	339	367	470	686	1199	1535	1453	1571	1905	2062
2013	12	21	544	424	450	389	399	567	834	1062	1376	1959	2467	2745
2013	12	22	465	305	250	233	243	286	450	591	805	1255	1628	2054
2013	12	23	331	280	225	242	308	537	899	1222	1301	1553	1921	2308
2013	12	24	457	383	325	298	340	454	594	829	988	1288	1726	1995
2013	12	25	273	203	129	105	98	153	200	348	544	789	1068	1413
2013	12	26	250	180	159	186	256	456	888	1045	1236	1632	2115	2547
2013	12	27	377	326	339	308	394	552	898	1213	1282	1633	2108	2463
2013	12	28	510	376	341	322	363	400	627	756	1079	1529	2038	2453
2013	12	29	355	296	181	159	225	238	353	608	889	1156	1555	1881
2013	12	30	301	253	234	219	306	527	970	1244	1274	1448	1644	2079
2013	12	31	387	340	247	285	343	508	812	1030	1065	1212	1473	1903

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2013	12	1	2951	2962	2970	3159	3121	2928	2912	2850	1709	1233	992	665	38946
2013	12	2	1837	1776	1853	2042	1955	2084	1437	1256	865	752	604	445	29268
2013	12	3	1597	1580	1730	1747	1827	2017	1359	978	913	754	564	409	26587
2013	12	4	1565	1615	1671	1668	1837	1901	1337	1027	817	711	596	399	26116
2013	12	5	1612	1597	1834	1864	1990	1952	1449	1128	917	776	582	438	26840
2013	12	6	1839	1902	2080	2192	2110	2224	1787	1175	1286	1128	808	554	30163
2013	12	7	1530	1494	1567	1632	1642	1609	1385	999	879	758	628	539	23076
2013	12	8	1578	1579	1701	1686	1570	1592	1292	1058	686	594	483	293	20676
2013	12	9	1429	1421	1517	1616	1724	1760	1321	1021	747	593	571	430	24006
2013	12	10	1444	1567	1705	1853	1901	1629	1365	1237	899	691	589	387	25571
2013	12	11	1564	1646	1798	1741	1899	1944	1569	1157	831	719	529	465	26595
2013	12	12	1642	1728	1941	1948	2128	2165	1596	1330	1004	819	664	461	28619
2013	12	13	1943	2073	2177	2331	2362	2394	2004	1548	1279	1111	804	613	32020
2013	12	14	1663	1555	1695	1767	1836	1711	1350	1015	1014	798	731	457	24364
2013	12	15	1688	1762	2042	1949	2066	1888	1697	1340	1210	1109	607	412	23639
2013	12	16	1594	1661	1731	1905	1806	1868	1436	1057	828	677	553	430	26250
2013	12	17	1641	1678	1683	1877	1924	1962	1470	1151	927	855	638	461	26943
2013	12	18	1662	1714	1913	1867	2041	1923	1479	1289	1023	789	639	516	28022
2013	12	19	1754	1846	2028	2165	2203	2234	1622	1355	1105	878	738	552	30077
2013	12	20	2161	2393	2689	2526	2522	2119	2138	2159	1820	1365	1076	782	36132
2013	12	21	2732	2636	2700	2508	2544	2429	1897	1438	1377	1188	1065	729	36459
2013	12	22	2074	2264	2185	2233	2116	2034	1499	2066	1191	898	675	447	28247
2013	12	23	2383	2196	2672	2579	2431	1898	2221	1455	1179	992	948	649	32730
2013	12	24	2047	2049	2109	1958	1788	1523	1260	1031	1025	822	661	441	26391
2013	12	25	1551	1575	1592	1601	1572	1480	1429	1227	1072	892	678	417	20409
2013	12	26	2527	2646	2680	2627	2488	2255	1756	1412	1184	979	782	543	32829
2013	12	27	2682	2720	2663	2629	2606	2452	2220	1794	1453	1082	948	689	35831
2013	12	28	2591	2501	2563	2705	2452	2323	2015	1565	1351	1008	746	495	33109
2013	12	29	2164	2471	2398	2407	2336	2157	1819	1478	1076	858	658	461	28179
2013	12	30	2148	2187	2191	2394	2333	2132	1803	1360	1024	869	677	479	30096
2013	12	31	1956	1966	2025	2079	1898	1587	1479	1009	715	577	411	326	25633

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	1	1	281	296	242	171	163	181	261	313	457	648	936	1234
2014	1	2	273	219	186	199	296	622	1049	1243	1297	1360	1569	1685
2014	1	3	344	326	293	278	373	612	973	1212	1203	1319	1501	1686
2014	1	4	417	296	259	237	298	409	587	626	843	1103	1449	1673
2014	1	5	457	305	200	135	166	204	318	369	509	916	1159	1357
2014	1	6	277	284	208	211	282	584	1139	1435	1292	1385	1473	1526
2014	1	7	304	251	226	285	292	522	913	1209	1185	1386	1345	1272
2014	1	8	305	275	264	243	321	610	1043	1434	1317	1329	1367	1418
2014	1	9	318	257	287	262	352	597	1046	1448	1399	1380	1333	1475
2014	1	10	332	271	268	288	350	601	977	1330	1271	1333	1430	1564
2014	1	11	401	251	222	224	241	391	486	580	758	1000	1225	1254
2014	1	12	302	186	128	122	130	180	279	343	519	825	908	1112
2014	1	13	235	192	186	204	325	644	1149	1642	1460	1368	1433	1480
2014	1	14	314	226	242	241	362	590	1091	1546	1401	1327	1441	1398
2014	1	15	304	283	261	293	323	632	1061	1549	1449	1346	1338	1442
2014	1	16	325	268	251	275	379	675	1088	1475	1383	1355	1534	1495
2014	1	17	361	298	300	271	398	654	1122	1472	1394	1454	1736	1858
2014	1	18	455	306	238	242	326	389	548	728	974	1180	1420	1746
2014	1	19	326	176	155	116	126	141	285	335	437	815	983	1118
2014	1	20	287	182	192	192	281	520	1006	1362	1391	1365	1647	1895
2014	1	21	339	264	247	273	345	623	1205	1677	1502	1425	1425	1443
2014	1	22	250	247	234	255	309	625	1028	1461	1359	1301	1335	1347
2014	1	23	310	256	243	276	347	609	1103	1542	1471	1343	1438	1390
2014	1	24	367	264	177	359	359	547	1017	1387	1369	1324	1436	1622
2014	1	25	395	257	232	220	237	391	551	718	898	1130	1287	1544
2014	1	26	264	183	135	108	107	156	276	327	485	782	964	1080
2014	1	27	271	204	154	208	302	638	1150	1556	1418	1407	1421	1356
2014	1	28	302	255	199	268	361	615	1066	1498	1341	1341	1270	1253
2014	1	29	147	110	85	110	117	234	415	453	587	655	789	807
2014	1	30	224	133	140	144	256	503	819	1131	1296	1317	1467	1464
2014	1	31	294	240	253	287	331	623	1045	1472	1417	1416	1537	1694

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	1	1	1437	1446	1545	1580	1679	1636	1403	1161	882	697	519	368	19536
2014	1	2	1740	1773	1922	1959	1951	1864	1492	1175	883	782	566	463	26568
2014	1	3	1824	1880	2048	2128	2182	1786	2038	1434	1032	843	670	514	28499
2014	1	4	1734	1671	1758	1939	2017	1792	1669	1264	1037	747	670	488	24983
2014	1	5	1639	1893	2109	2174	2074	1906	1623	1247	757	837	598	491	23443
2014	1	6	1561	1578	1704	1767	1762	1849	1375	983	728	580	473	351	24807
2014	1	7	1372	1462	1563	1631	1827	1701	1293	985	777	598	554	406	23359
2014	1	8	1399	1391	1592	1657	1754	1878	1241	1054	756	563	533	354	24098
2014	1	9	1464	1523	1657	1814	1985	1983	1448	1046	730	669	553	408	25434
2014	1	10	1539	1771	1883	1886	1969	2029	1705	1313	920	764	586	515	26895
2014	1	11	1253	1209	1410	1307	1309	1231	1151	917	706	629	522	345	19022
2014	1	12	1258	1364	1565	1548	1721	2226	1973	1386	903	707	552	357	20594
2014	1	13	1414	1431	1604	1481	1622	1792	1386	1034	802	555	506	336	24281
2014	1	14	1383	1405	1573	1658	1739	1752	1300	885	726	599	568	449	24216
2014	1	15	1425	1454	1624	1767	1825	1781	1272	955	761	603	518	439	24705
2014	1	16	1471	1577	1719	1964	1983	2057	1536	1200	942	772	588	442	26754
2014	1	17	1973	1453	1328	1099	1212	2065	2035	1733	1399	1204	820	569	28208
2014	1	18	1579	1631	1723	1600	1612	1498	1309	1036	825	703	603	550	23221
2014	1	19	1364	1378	1649	1702	1743	1671	1458	1211	929	747	606	444	19915
2014	1	20	1861	1955	2104	2079	2021	2090	1412	1361	994	728	571	397	27893
2014	1	21	1392	1485	1556	1699	1739	1775	1332	891	691	566	454	325	24673
2014	1	22	1410	1395	1587	1603	1647	1752	1326	951	790	652	635	377	23876
2014	1	23	1484	1576	1754	1755	1922	1972	1519	1140	849	662	463	450	25874
2014	1	24	1776	1904	1987	2111	2195	2279	2008	1442	1031	862	627	498	28948
2014	1	25	1434	1554	1502	1453	1571	1520	1298	917	780	691	626	379	21585
2014	1	26	1359	1488	1722	1723	1761	1649	1552	1230	873	596	527	377	19724
2014	1	27	1469	1482	1549	1506	1604	1720	1350	916	682	656	482	371	23872
2014	1	28	1303	1419	1496	1475	1293	962	551	586	341	317	241	175	19928
2014	1	29	884	876	984	1025	1057	1057	726	529	404	356	295	275	12977
2014	1	30	1503	1578	1648	1762	1754	1878	1482	1056	840	675	541	376	23987
2014	1	31	1695	1840	1941	2068	2197	2182	1938	1407	1239	933	645	490	29184

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	2	1	351	283	245	241	286	409	595	714	900	1258	1338	1514
2014	2	2	271	155	134	145	136	164	310	371	485	801	869	1191
2014	2	3	246	194	160	192	306	599	1142	1591	1356	1393	1548	1481
2014	2	4	307	289	234	235	349	615	1071	1569	1460	1464	1324	1386
2014	2	5	329	278	261	291	344	657	1119	1462	1372	1447	1524	1488
2014	2	6	328	270	269	253	387	607	1152	1527	1409	1378	1513	1361
2014	2	7	337	300	277	308	394	609	1086	1430	1313	1364	1566	1807
2014	2	8	405	277	234	226	240	412	616	796	932	1120	1416	1471
2014	2	9	293	173	150	125	142	193	264	389	538	803	958	1296
2014	2	10	231	184	182	208	329	612	1229	1653	1416	1433	1503	1551
2014	2	11	319	268	237	242	359	574	951	1183	1031	967	1016	1054
2014	2	12	186	170	144	148	184	236	373	393	358	393	427	359
2014	2	13	42	34	29	45	31	62	67	85	104	134	169	234
2014	2	14	176	136	80	99	154	243	446	618	768	1034	1282	1662
2014	2	15	390	329	260	239	279	474	674	733	932	1289	1489	1704
2014	2	16	294	233	157	150	159	250	351	381	563	834	1051	1262
2014	2	17	258	215	183	204	320	638	1156	1628	1459	1504	1595	1688
2014	2	18	344	287	275	270	373	654	1185	1618	1489	1457	1673	1515
2014	2	19	356	245	247	275	367	660	1224	1616	1438	1439	1514	1614
2014	2	20	328	295	274	306	375	640	1190	1652	1451	1469	1623	1646
2014	2	21	354	319	309	324	422	693	1088	1418	1419	1487	1761	1991
2014	2	22	405	353	280	281	292	429	721	961	1290	1628	1783	1854
2014	2	23	320	244	148	124	138	174	317	410	588	1017	1169	1405
2014	2	24	297	221	188	222	344	683	1247	1655	1458	1579	1575	1618
2014	2	25	274	276	256	247	384	665	1160	1651	1508	1501	1445	1488
2014	2	26	326	242	310	278	372	654	1200	1558	1454	1570	1522	1497
2014	2	27	364	306	234	300	434	679	1193	1532	1441	1421	1586	1709
2014	2	28	394	321	336	349	451	721	1135	1522	1415	1561	1737	1850

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	2	1	1451	1499	1549	1632	1636	1524	1302	1057	804	688	489	357	22122
2014	2	2	1331	1426	1619	1647	1601	1489	1101	830	616	590	552	423	18257
2014	2	3	1511	1439	1512	1592	1666	1751	1334	992	716	606	501	377	24205
2014	2	4	1469	1465	1528	1674	1694	1769	1219	973	744	654	533	388	24413
2014	2	5	1417	1514	1669	1643	1769	1820	1427	1003	796	588	560	408	25186
2014	2	6	1556	1523	1680	1826	1924	1971	1557	1193	903	774	608	421	26390
2014	2	7	1858	1953	2156	2195	2210	2283	1899	1422	1114	892	723	483	29979
2014	2	8	1463	1557	1556	1702	1692	1613	1331	1034	852	674	680	408	22707
2014	2	9	1447	1576	1715	1812	2007	1959	1592	1231	941	693	508	325	21130
2014	2	10	1444	1554	1601	1690	1737	1665	1337	941	757	679	513	382	24831
2014	2	11	1118	1041	1077	1024	1062	977	763	541	439	380	327	238	17188
2014	2	12	356	251	198	223	206	147	147	94	62	65	49	61	5230
2014	2	13	256	397	612	535	582	570	494	401	264	261	194	184	5786
2014	2	14	1799	2033	2241	2260	2190	2248	1827	1388	998	779	588	571	25620
2014	2	15	1590	1719	1743	1688	1752	1601	1452	1138	850	747	631	434	24137
2014	2	16	1287	1577	1731	1909	1926	1944	1533	1340	1050	754	551	367	21654
2014	2	17	1697	2003	1765	2039	2072	2142	1641	1134	915	753	581	443	28033
2014	2	18	1502	1595	1728	1805	1891	1920	1483	1066	838	722	579	376	26645
2014	2	19	1556	1684	1832	1898	1903	2002	1414	1102	809	744	577	454	26970
2014	2	20	1727	1780	1960	2090	2162	2143	1684	1373	1077	824	687	483	29239
2014	2	21	2109	2203	2346	2491	2440	2453	2144	1938	1536	1032	811	624	33712
2014	2	22	1777	1755	1753	1828	1841	1802	1560	1227	982	841	720	464	26827
2014	2	23	1617	1707	2046	2050	2130	2184	1872	1470	1125	804	634	517	24210
2014	2	24	1554	1581	1687	1683	1683	1744	1363	1001	788	644	533	401	25749
2014	2	25	1462	1516	1724	1857	1873	1925	1424	1007	833	691	562	421	26150
2014	2	26	1487	1574	1747	1763	1832	1905	1488	1154	848	723	578	431	26513
2014	2	27	1706	1727	1855	2008	2041	2116	1568	1336	1030	845	665	479	28575
2014	2	28	1924	2060	2252	2345	2387	2423	2295	1747	1517	1184	834	605	33365

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	3	1	484	340	322	288	371	486	746	957	1140	1380	1650	1795
2014	3	2	370	285	209	186	201	247	398	513	738	1074	1443	1596
2014	3	3	310	258	240	244	374	706	1201	1621	1462	1530	1511	1654
2014	3	4	352	243	235	237	352	628	1115	1468	1343	1416	1379	1388
2014	3	5	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	6	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	7	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	8	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	9	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	10	303	247	219	223	342	673	1182	1603	1460	1459	1504	1465
2014	3	11	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	12	337	291	264	294	367	674	1112	1460	1356	1497	1550	1688
2014	3	13	362	321	275	294	429	680	1177	1520	1469	1480	1501	1626
2014	3	14	384	350	310	325	412	584	1110	1520	1525	1537	1793	1908
2014	3	15	483	377	353	317	357	443	648	854	1030	1355	1640	1739
2014	3	16	380	310	209	151	162	216	317	372	561	877	1132	1453
2014	3	17	293	252	202	213	340	641	1116	1572	1408	1465	1497	1527
2014	3	18	268	280	261	243	360	582	1070	1507	1456	1394	1428	1443
2014	3	19	337	279	276	280	379	647	1153	1478	1427	1502	1497	1537
2014	3	20	353	316	276	301	401	694	1171	1546	1524	1511	1687	1705
2014	3	21	403	336	333	321	415	725	1062	1530	1536	1736	1735	1854
2014	3	22	463	382	281	258	293	467	668	871	1162	1386	1640	1738
2014	3	23	401	191	174	158	142	206	321	442	634	941	1208	1503
2014	3	24	308	233	215	212	312	674	1229	1618	1510	1505	1596	1515
2014	3	25	329	305	246	274	378	696	1123	1538	1499	1396	1454	1465
2014	3	26	328	295	277	248	372	657	1087	1614	1550	1519	1513	1545
2014	3	27	342	294	276	283	425	649	1149	1572	1516	1616	1614	1656
2014	3	28	390	305	289	348	413	708	1118	1525	1513	1458	1680	1911
2014	3	29	419	333	315	258	313	475	649	811	1050	1335	1514	1774
2014	3	30	370	222	177	127	157	193	373	481	658	1138	1294	1470
2014	3	31	0	0	0	0	0	0	0	0	0	0	0	0

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	3	1	1753	1715	1696	1768	1819	1799	1779	1411	1155	941	713	486	26994
2014	3	2	1920	2132	2248	2388	2234	2386	1967	1788	1569	987	703	431	28013
2014	3	3	1567	1561	1643	1704	1640	1714	1300	891	670	552	475	282	25110
2014	3	4	1501	1464	1632	1720	1854	1837	1414	999	831	679	601	379	25067
2014	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	7	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	8	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	9	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	10	1589	1648	1726	1826	1889	1468	1078	839	787	603	443	364	24940
2014	3	11	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	3	12	1657	1634	1828	1772	1954	1996	1477	1083	912	760	634	464	27061
2014	3	13	1601	1847	1899	2053	2154	2179	1737	1381	1022	916	684	534	29141
2014	3	14	2038	2128	2290	2428	2468	2496	2172	1804	1394	1128	828	628	33560
2014	3	15	1715	1744	1843	1827	1871	1679	1549	1323	1072	933	723	552	26427
2014	3	16	1663	1786	2019	1967	2020	1990	2191	1582	1187	843	651	433	24472
2014	3	17	1472	1506	1537	1629	1766	1696	1373	982	765	619	643	395	24909
2014	3	18	1567	1577	1721	1779	1898	1877	1384	1043	843	723	585	417	25706
2014	3	19	1518	1670	1745	1818	1982	1964	1580	1197	902	777	636	422	27003
2014	3	20	1750	1880	2054	2128	2273	2105	1793	1374	1100	915	655	501	30013
2014	3	21	1987	2091	2289	2430	2453	2493	2176	1857	1469	1091	827	600	33749
2014	3	22	1641	1782	1699	1956	1872	1840	1667	1265	1109	933	848	576	26797
2014	3	23	1601	1703	2083	2227	2297	2293	1819	1480	1175	890	654	447	24990
2014	3	24	1528	1636	1663	1757	1814	1983	1437	1180	897	758	697	431	26708
2014	3	25	1474	1510	1582	1671	1905	1909	1408	1037	799	718	564	422	25702
2014	3	26	1533	1384	1818	1791	1866	1956	1566	1164	902	853	664	496	26998
2014	3	27	1656	1718	1915	1974	2145	2154	1748	1394	1080	935	725	522	29358
2014	3	28	1963	2182	2262	2300	2321	2418	2192	1765	1451	1102	832	533	32979
2014	3	29	1743	1764	1831	1732	1750	1662	1420	1203	949	854	664	470	25288
2014	3	30	1661	1852	2078	2063	2173	2184	2002	1515	1195	1108	739	474	25704
2014	3	31	0	0	0	0	0	0	0	0	0	0	0	0	0

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	4	1	346	251	298	284	382	676	1145	1529	1501	1502	1572	1519
2014	4	2	363	324	242	293	405	719	1235	1586	1514	1503	1578	1576
2014	4	3	398	342	342	298	410	713	1192	1584	1592	1570	1620	1758
2014	4	4	440	340	296	348	384	722	1160	1473	1567	1645	1806	1905
2014	4	5	473	361	256	271	319	489	743	994	1209	1515	1668	1776
2014	4	6	433	289	167	136	154	200	332	460	674	1060	1360	1545
2014	4	7	329	230	188	211	326	597	1131	1459	1291	1208	1498	1596
2014	4	8	334	281	291	278	407	650	1141	1519	1445	1602	1562	1577
2014	4	9	347	273	293	293	397	691	1141	1545	1530	1534	1585	1657
2014	4	10	409	302	290	324	425	673	939	1569	1556	1500	1521	1490
2014	4	11	447	319	334	346	445	711	1171	1488	1533	1736	1963	1981
2014	4	12	588	427	320	324	346	548	792	1084	1368	1743	1861	2064
2014	4	13	704	373	232	181	179	230	417	578	775	1205	1535	1799
2014	4	14	363	270	217	256	384	715	1233	1640	1513	1587	1548	1771
2014	4	15	346	283	272	278	389	672	1057	1558	1440	1500	1557	1610
2014	4	16	365	295	281	335	398	626	1205	1602	1535	1589	1703	1680
2014	4	17	407	334	319	344	449	659	1193	1645	1602	1636	1820	1955
2014	4	18	528	414	336	363	411	614	978	1382	1552	1841	2253	2348
2014	4	19	418	348	265	257	247	369	487	692	862	1388	1539	1607
2014	4	20	383	267	157	136	132	172	316	424	701	1064	1286	1502
2014	4	21	304	219	205	236	353	695	1315	1756	1611	1684	1852	1797
2014	4	22	323	296	308	306	356	674	1159	1641	1601	1458	1230	1713
2014	4	23	351	280	279	292	387	635	1248	1644	1499	1588	1583	1565
2014	4	24	412	280	264	299	387	681	1230	1596	1594	1315	2024	1654
2014	4	25	505	406	295	348	420	740	1184	1577	1577	1686	1889	2068
2014	4	26	467	356	260	284	304	437	738	980	1156	1433	1601	1725
2014	4	27	445	294	193	163	179	211	390	495	743	1058	1345	1510
2014	4	28	281	236	211	238	366	700	1220	1659	1486	1551	1613	1636
2014	4	29	337	288	284	277	383	645	1176	1567	1411	1418	1449	1485
2014	4	30	336	282	264	260	375	643	1129	1450	1467	1476	1434	1488

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	4	1	1434	1622	1673	1803	1843	1815	1458	1091	899	779	644	464	26530
2014	4	2	1669	1659	1795	1633	1433	2011	1949	1110	873	791	642	514	27417
2014	4	3	1819	1881	2170	2179	2289	2311	1924	1627	1164	955	735	517	31390
2014	4	4	2086	2179	2283	2415	2430	2390	2198	1498	1765	1206	932	607	34075
2014	4	5	1691	1845	1841	1995	2090	2019	1730	1392	1108	958	753	557	28053
2014	4	6	1688	1990	2102	2225	2191	2150	1906	1611	1191	859	658	500	25881
2014	4	7	1465	1582	1641	1605	1698	1797	1397	1050	871	763	579	447	24959
2014	4	8	1571	1710	1779	1889	1936	2016	1549	1126	978	790	666	494	27591
2014	4	9	1490	1603	1824	1982	2110	2027	1576	1132	1012	763	708	492	28005
2014	4	10	1734	1788	2242	2125	2212	2168	1752	1445	1222	953	814	564	30017
2014	4	11	2061	2290	2487	2665	2703	2567	2441	2178	1722	1310	937	730	36565
2014	4	12	2067	1998	2152	2141	2099	1962	1742	1455	1284	1135	876	728	31104
2014	4	13	2081	2131	2432	2490	2509	2452	2280	1753	1355	1110	783	507	30091
2014	4	14	1710	1738	1781	1717	1862	1863	1524	1118	897	777	668	447	27599
2014	4	15	1603	1666	1707	1751	1808	1880	1518	1149	970	773	616	455	26858
2014	4	16	1722	1829	1931	2042	2149	2207	1762	1334	1155	935	755	583	30018
2014	4	17	2006	2159	2332	2373	2494	2443	2002	1658	1810	1334	1143	706	34823
2014	4	18	2377	2553	2491	2416	2480	2262	2075	1668	1263	985	797	619	35006
2014	4	19	1817	1704	1832	1777	1699	1589	1397	1120	921	748	638	459	24180
2014	4	20	1654	1763	1962	2201	2394	2355	2444	1994	1571	1049	858	504	27289
2014	4	21	1801	1870	1959	1925	1861	2011	1488	1152	952	748	656	432	28882
2014	4	22	1551	1634	1754	1798	1889	1894	1463	1100	863	734	596	414	26755
2014	4	23	1688	1641	1707	1891	1932	2004	1573	1226	956	728	632	493	27822
2014	4	24	1819	1776	1964	2129	2235	2102	1644	1375	1170	933	752	599	30234
2014	4	25	2217	2264	2379	2389	2493	2480	2080	1760	1338	1064	815	613	34587
2014	4	26	1666	1662	1708	1378	1814	1705	1616	1297	1131	964	874	770	26326
2014	4	27	1733	1821	2042	2191	2165	2064	2003	1616	1297	1029	662	437	26086
2014	4	28	1578	1609	1689	1700	1857	1828	1482	1012	854	667	644	514	26631
2014	4	29	1499	1515	1540	1649	1786	1832	1401	1018	749	672	528	393	25302
2014	4	30	1535	1656	1691	1855	1923	1904	1533	1149	887	727	621	474	26559

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	5	1	380	339	283	296	360	697	1209	1645	1672	1609	1762	1718
2014	5	2	421	332	293	345	460	666	1182	1520	1591	1690	1809	2029
2014	5	3	468	390	298	293	326	447	740	990	1193	1441	1609	1725
2014	5	4	410	298	213	152	156	258	373	466	722	1078	1218	1445
2014	5	5	479	316	240	211	315	695	1292	1696	1523	1425	1700	1678
2014	5	6	407	311	311	313	401	666	1206	1556	1460	1586	1517	1555
2014	5	7	398	304	275	304	370	652	1174	1597	1486	1551	1587	1590
2014	5	8	429	351	295	338	420	693	1214	1639	1520	1506	1841	1805
2014	5	9	460	414	348	375	455	736	1233	1618	1616	1751	1967	1907
2014	5	10	546	399	293	294	337	490	701	897	1161	1517	1672	1848
2014	5	11	428	270	177	144	144	175	339	457	724	1142	1434	1691
2014	5	12	350	266	239	272	368	714	1313	1736	1571	1650	1796	1734
2014	5	13	345	319	310	317	399	701	1215	1606	1465	1635	1607	1576
2014	5	14	352	319	308	323	402	675	1262	1589	1551	1574	1590	1682
2014	5	15	406	348	332	323	384	665	1150	1492	1492	1551	1734	1824
2014	5	16	410	363	365	381	442	693	1173	1573	1696	1794	2001	2070
2014	5	17	545	380	314	306	279	485	767	903	1255	1394	1682	1651
2014	5	18	631	588	368	181	155	222	330	536	786	1158	1318	1668
2014	5	19	320	278	200	246	329	694	1357	1657	1526	1551	1688	1594
2014	5	20	391	302	275	306	370	698	1264	1680	1671	1571	1598	1636
2014	5	21	372	331	285	330	394	712	1221	1618	1567	1577	1640	1721
2014	5	22	395	320	318	352	474	695	1260	1702	1563	1651	1863	1791
2014	5	23	557	473	376	401	550	872	1265	1666	1755	1947	2307	2505
2014	5	24	631	431	392	302	412	550	866	1094	1459	1931	2006	2238
2014	5	25	458	248	178	153	156	178	369	484	689	1052	1237	1412
2014	5	26	722	504	216	148	185	289	494	693	932	1205	1470	1963
2014	5	27	360	269	187	221	360	690	1286	1691	1502	1594	1775	1708
2014	5	28	390	322	311	303	400	681	1183	1599	1576	1595	1571	1694
2014	5	29	408	345	314	331	406	707	1254	1619	1518	1525	1772	1688
2014	5	30	482	506	366	329	471	729	1152	1483	1556	1612	1782	1887
2014	5	31	471	335	319	280	324	471	831	1007	1190	1466	1594	1799

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	5	1	1710	1902	1899	2061	2280	2009	1817	1440	1194	948	751	505	30486
2014	5	2	2063	2387	2562	2440	2515	2479	2043	2235	1582	1178	878	658	35358
2014	5	3	1632	1644	1692	1704	1700	1714	1488	1355	1066	932	740	647	26234
2014	5	4	1715	1707	2007	2064	2072	2107	2006	1714	1287	1011	796	583	25858
2014	5	5	1645	1714	1772	1804	1840	1933	1542	1148	867	712	625	497	27669
2014	5	6	1598	1747	1803	1835	1977	1765	1599	1263	934	798	673	473	27754
2014	5	7	1737	1743	1898	2000	2065	2084	1553	1154	1035	865	659	472	28553
2014	5	8	1897	2034	2197	2303	2251	2295	1955	1578	1279	1011	857	595	32303
2014	5	9	2444	2215	2572	2504	2273	2427	2223	1936	1594	1221	891	687	35867
2014	5	10	1931	2077	1968	1797	1789	1862	1860	1402	1159	971	786	592	28349
2014	5	11	1911	1968	2219	2364	2413	2322	2352	1931	1541	1222	858	509	28735
2014	5	12	1772	1847	1918	2003	2010	2084	1597	1261	926	826	605	470	29328
2014	5	13	1633	1583	1783	1813	1897	1716	1356	1351	904	871	633	471	27506
2014	5	14	1669	1695	1855	1894	2040	2077	1571	1262	966	748	695	490	28589
2014	5	15	1808	1856	1979	2050	2070	2029	1582	1361	1019	877	812	551	29695
2014	5	16	2185	2194	2402	2398	2442	2353	2254	1888	1518	1166	963	732	35456
2014	5	17	1670	1743	1885	1820	1790	1635	1508	1225	1068	952	837	598	26692
2014	5	18	1848	1911	2074	2319	2213	2164	1931	1607	1228	996	717	433	27382
2014	5	19	1714	1719	1760	1862	1939	1941	1528	1260	884	824	606	498	27975
2014	5	20	1497	1763	1728	1748	1963	1990	1485	1140	885	783	597	504	27845
2014	5	21	1694	1723	1798	1857	2089	2097	1378	1471	1026	901	680	553	29035
2014	5	22	2072	2084	2051	2363	2378	2242	1895	1567	1357	1087	849	736	33065
2014	5	23	2511	2745	2801	2675	2617	2801	2414	2458	1863	1073	1550	833	41015
2014	5	24	2010	1896	1879	1787	1740	1653	1508	1210	1094	957	789	637	29472
2014	5	25	1498	1596	1582	1565	1577	1584	1385	1297	962	854	773	665	21952
2014	5	26	1936	2012	2020	2139	2152	1956	1807	1558	1270	1034	837	473	28015
2014	5	27	1644	1683	1802	1907	1925	1954	1577	1178	980	801	647	447	28188
2014	5	28	1615	1719	1845	1808	1989	2005	1483	1174	835	773	707	528	28106
2014	5	29	1663	1798	1945	1950	2090	2011	1745	1319	1025	864	597	575	29469
2014	5	30	1969	2088	2290	2369	2403	1778	2293	2136	1462	1017	799	660	33619
2014	5	31	1696	1749	1737	1710	1777	1686	1531	1270	1136	981	757	668	26785

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	6	1	459	301	226	170	131	238	400	561	744	1063	1272	1438
2014	6	2	307	223	210	220	350	743	1293	1627	1479	1545	1620	1639
2014	6	3	329	284	279	283	352	669	1248	1602	1477	1546	1577	1637
2014	6	4	400	316	291	291	389	690	1168	1590	1471	1597	1519	1669
2014	6	5	367	313	325	293	407	725	1166	1604	1483	1606	1605	1832
2014	6	6	484	373	321	324	402	713	1169	1519	1504	1543	1813	2039
2014	6	7	474	357	282	305	322	488	765	943	1206	1382	1584	1766
2014	6	8	453	286	212	168	158	203	455	580	708	1052	1252	1487
2014	6	9	349	309	235	269	362	771	1314	1712	1568	1570	1665	1711
2014	6	10	375	330	292	315	367	665	1259	1610	1426	1501	1597	1621
2014	6	11	378	332	299	303	409	681	1239	1637	1473	1630	1636	1572
2014	6	12	454	382	280	317	400	714	1207	1544	1529	1818	1780	1757
2014	6	13	514	396	344	365	412	692	1193	1558	1702	1783	1979	2192
2014	6	14	512	405	325	308	373	545	737	1088	1274	1681	1848	1930
2014	6	15	593	341	229	186	183	232	410	555	869	1334	1640	2013
2014	6	16	487	349	277	247	413	767	1358	1765	1612	1805	1840	1912
2014	6	17	356	316	299	319	356	697	1251	1643	1521	1615	1688	1620
2014	6	18	397	339	314	317	411	753	1240	1622	1560	1644	1671	1721
2014	6	19	402	350	304	317	418	710	1246	1622	1577	1659	1644	1814
2014	6	20	468	397	326	352	442	758	1227	1557	1607	1719	1914	2143
2014	6	21	651	399	368	282	371	574	792	1013	1309	1556	1672	1926
2014	6	22	497	335	245	186	197	230	442	534	785	1134	1451	1663
2014	6	23	410	277	237	241	405	714	1315	1711	1633	1695	1672	1796
2014	6	24	352	391	267	313	388	705	1164	1592	1484	1497	1686	1696
2014	6	25	396	337	287	288	422	736	1222	1672	1580	1634	1714	1717
2014	6	26	412	382	283	336	465	713	1298	1644	1599	1718	1791	1864
2014	6	27	480	376	326	370	449	723	1195	1531	1544	1746	1959	2136
2014	6	28	525	469	288	326	350	555	826	1030	1315	1596	1840	2061
2014	6	29	449	324	234	184	169	253	396	588	791	1135	1405	1744
2014	6	30	601	324	233	263	379	758	1249	1685	1542	1570	1684	1837

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	6	1	1655	1870	2041	1964	2060	1967	1917	1559	1166	961	755	481	25399
2014	6	2	1645	1712	1617	1727	1891	1946	1438	1136	896	774	652	456	27146
2014	6	3	1599	1584	1802	1778	1861	1941	1394	1132	911	873	691	519	27368
2014	6	4	1522	1754	1813	1827	1898	1932	1403	1222	857	785	666	451	27521
2014	6	5	1727	1817	1997	2040	2219	2204	1572	1339	1137	869	751	510	29908
2014	6	6	2079	2034	2400	2346	2415	2403	2080	1843	1404	1125	904	695	33932
2014	6	7	1678	1720	1854	1839	1704	1685	1543	1308	1092	940	872	671	26780
2014	6	8	1740	1875	2331	2228	2335	2316	2030	1680	1233	988	757	497	27024
2014	6	9	1619	1835	1841	1748	1874	1985	1532	1151	989	747	639	488	28283
2014	6	10	1612	1686	1790	1839	1838	1892	1498	1330	957	791	634	559	27784
2014	6	11	1532	1059	1941	2532	1978	1912	1631	1338	1077	833	709	548	28679
2014	6	12	1902	1921	1928	2033	2102	2192	1883	1473	1295	1001	809	631	31352
2014	6	13	2191	2319	2469	2047	2156	2024	2268	1892	1367	1257	974	714	34808
2014	6	14	2006	1556	2330	2044	1977	1832	1715	1458	1222	1081	902	894	30043
2014	6	15	2259	2351	2452	2618	2560	2566	2363	1937	1538	1266	1038	732	32265
2014	6	16	1929	1960	2033	1960	1909	2029	1601	1230	929	755	671	532	30370
2014	6	17	1702	1764	1842	1793	1974	2047	1515	1133	963	833	675	490	28412
2014	6	18	1720	1800	1883	1945	1970	2161	1437	1294	987	782	678	551	29197
2014	6	19	2006	2019	2029	2293	2086	1920	2026	1702	1120	933	733	633	31563
2014	6	20	2167	2419	2342	2670	2353	2415	2445	1861	1436	1189	886	1038	36131
2014	6	21	1885	1897	1931	1854	1797	1769	1598	1347	1166	955	792	645	28549
2014	6	22	1937	2101	2396	2499	2582	2259	2200	1736	1224	1220	877	606	29336
2014	6	23	1839	1843	1825	1951	1975	1975	1586	1248	944	836	702	523	29353
2014	6	24	1675	1846	1839	1850	1951	1906	1444	1261	1096	831	669	464	28367
2014	6	25	1642	1864	1895	1945	2034	2068	1648	1390	1021	854	736	526	29628
2014	6	26	1881	2013	2053	2142	2329	2130	1835	1478	1242	1013	793	521	31935
2014	6	27	2228	2468	2529	2508	2500	2419	2233	1771	1485	1255	946	713	35890
2014	6	28	1866	1999	2028	2048	1916	1871	1709	1328	1114	1128	931	598	29717
2014	6	29	1855	1978	2233	2405	2460	2338	2180	2023	1779	1565	1434	1106	31028
2014	6	30	1770	1838	1950	1918	1876	1925	1750	1386	999	836	730	539	29642

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	7	1	438	335	295	348	418	655	1222	1519	1545	1677	1758	1788
2014	7	2	436	359	299	344	445	650	1182	1624	1610	1658	1696	1680
2014	7	3	503	479	375	410	472	686	1251	1468	1613	1816	2159	2268
2014	7	4	713	587	469	401	461	530	800	1013	1228	1656	2067	2185
2014	7	5	417	259	190	146	194	264	451	586	851	1122	1374	1476
2014	7	6	460	348	191	165	194	227	427	600	756	1233	1585	2069
2014	7	7	449	339	308	285	388	771	1357	1708	1653	1706	1848	1957
2014	7	8	436	306	281	339	363	717	1222	1616	1575	1648	1664	1685
2014	7	9	394	334	290	308	402	741	1197	1586	1571	1591	1646	1744
2014	7	10	451	340	322	292	403	705	1265	1540	1621	1714	1691	1871
2014	7	11	446	394	328	322	437	718	1191	1585	1546	1650	1817	2084
2014	7	12	540	375	306	281	321	545	757	999	1286	1460	1683	1767
2014	7	13	587	422	333	206	186	262	399	522	785	1125	1453	1769
2014	7	14	356	289	235	253	369	726	1393	1670	1500	1642	1722	1839
2014	7	15	377	321	278	306	410	714	1197	1654	1466	1620	1678	1749
2014	7	16	389	349	309	297	447	690	1224	1545	1493	1568	1708	1828
2014	7	17	478	360	294	328	422	690	1234	1606	1511	1709	1731	1814
2014	7	18	533	360	337	343	405	695	1231	1601	1594	1715	2041	2150
2014	7	19	489	389	311	284	377	528	714	854	1125	1506	1781	1952
2014	7	20	509	209	359	192	160	238	390	488	739	1159	1421	1778
2014	7	21	409	300	235	261	363	721	1343	1657	1432	1194	1374	2241
2014	7	22	382	322	266	288	379	688	1146	1579	1559	1657	1653	1583
2014	7	23	548	371	291	308	377	717	1204	1641	1542	1688	1705	1759
2014	7	24	589	359	313	357	451	715	1202	1625	1593	1657	1835	1901
2014	7	25	491	378	344	408	472	623	1040	1738	1617	1802	2089	2290
2014	7	26	638	462	365	325	354	543	762	1045	1309	1658	1882	2016
2014	7	27	633	377	209	189	199	238	393	508	745	1134	1488	1686
2014	7	28	440	290	228	258	381	763	1314	1763	1573	1640	1707	1772
2014	7	29	404	292	312	301	413	703	1235	1598	1722	1645	1780	1700
2014	7	30	414	354	308	327	402	759	1229	1525	1483	1590	1696	1794
2014	7	31	398	340	332	372	454	723	1200	1634	1670	1710	1703	1845

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	7	1	1781	1943	1905	1977	1888	1888	1572	1465	1070	887	722	576	29672
2014	7	2	1936	1914	1976	2156	2201	2154	1792	1727	1280	1070	893	588	31670
2014	7	3	2355	2543	2714	2596	2453	2142	1860	2917	1892	1452	1260	983	38667
2014	7	4	2038	1817	1808	1633	1450	1264	1076	900	840	715	599	556	26806
2014	7	5	1571	1696	1743	1810	1757	1673	1505	1274	1130	993	849	644	23975
2014	7	6	2233	2484	2735	2854	2953	2795	2464	1959	1762	1389	1041	674	33598
2014	7	7	1922	2065	2097	2056	2076	2198	1648	1350	1115	965	725	585	31571
2014	7	8	1754	1822	1881	1927	2025	1925	1489	1489	1068	863	755	491	29341
2014	7	9	1773	1887	1960	1978	2100	1883	1602	1453	1158	881	749	540	29768
2014	7	10	1893	2045	2143	2228	2274	2311	1869	1435	1180	893	721	614	31821
2014	7	11	2093	2305	2278	2557	1764	2427	2557	1864	1442	1141	895	725	34566
2014	7	12	1849	1909	1961	1936	1870	1737	1602	1333	1126	978	830	664	28115
2014	7	13	2034	2088	2275	2260	2107	2051	2003	1753	1272	1018	823	565	28298
2014	7	14	1819	1816	1913	1923	1945	2033	1658	1233	982	836	691	508	29351
2014	7	15	1771	1902	1933	1985	1966	1975	1529	1161	957	858	665	562	29034
2014	7	16	1695	1831	2079	2005	1930	2179	1692	1395	1048	905	771	598	29975
2014	7	17	1955	1938	2123	2219	2293	1883	1892	1752	1277	1021	824	616	31970
2014	7	18	2347	2525	2111	2576	2812	2520	2354	2006	1556	1167	984	720	36683
2014	7	19	1850	1847	1861	1839	1771	1861	1705	1321	1146	1019	830	636	27996
2014	7	20	2000	2097	2246	2536	2463	2453	2242	1791	1423	1077	807	570	29347
2014	7	21	1886	1461	1590	1714	2208	2114	1598	1258	949	796	679	535	28318
2014	7	22	1722	1645	1842	1812	1909	2028	1493	1211	991	781	667	569	28172
2014	7	23	1820	1889	1991	1990	2067	2015	1611	1350	1054	834	691	565	30028
2014	7	24	1939	2100	2180	2213	2287	2363	1802	1548	1171	1083	810	631	32724
2014	7	25	2281	2416	2586	2489	2488	2378	2201	1858	1497	1346	948	807	36587
2014	7	26	2069	2079	2210	2184	2130	1960	1711	1282	1230	1113	837	788	30952
2014	7	27	2005	2283	2425	2400	2434	2285	2099	1765	1443	1156	788	676	29558
2014	7	28	1844	1891	1905	1925	1834	2300	1610	1210	1090	917	810	648	30113
2014	7	29	1749	1767	1760	1955	2023	1943	1769	1280	1046	838	747	557	29539
2014	7	30	1719	1870	1932	2042	2134	2036	1705	1290	1001	934	729	549	29822
2014	7	31	1882	1968	2081	2117	2112	2258	1919	1531	1173	964	852	600	31838

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	8	1	471	397	323	348	429	697	1093	1411	1466	1697	2172	2288
2014	8	2	521	420	351	303	333	521	755	943	1239	1680	1861	1973
2014	8	3	505	333	238	176	189	235	406	531	856	1293	1701	2003
2014	8	4	507	297	258	269	373	702	1292	1717	1572	1565	1707	1787
2014	8	5	421	334	309	304	402	688	1256	1623	1504	1574	1646	1700
2014	8	6	391	284	316	301	388	696	1221	1573	1627	1617	1807	1779
2014	8	7	426	353	300	315	410	699	1237	1562	1660	1687	1872	1879
2014	8	8	526	376	362	344	439	730	1203	1586	1670	1750	2074	2269
2014	8	9	757	406	343	313	328	504	733	909	1132	1389	1757	1995
2014	8	10	469	265	225	163	185	234	369	489	697	1099	1353	1625
2014	8	11	360	251	253	264	378	745	1249	1748	1466	1623	1723	1813
2014	8	12	358	352	287	329	393	680	1148	1640	1617	1585	1614	1633
2014	8	13	559	420	338	359	397	703	1153	1658	1563	1591	1672	1753
2014	8	14	473	323	343	377	421	737	1259	1664	1561	1673	1738	1804
2014	8	15	554	405	329	367	424	719	1170	1670	1672	1773	2018	2363
2014	8	16	490	369	330	254	333	488	801	1068	1361	1772	1992	2128
2014	8	17	611	340	216	171	173	242	388	567	832	1158	1525	1749
2014	8	18	542	351	239	264	391	747	1272	1759	1698	1568	1691	1700
2014	8	19	403	309	275	303	384	707	1168	1687	1633	1620	1662	1643
2014	8	20	419	343	303	366	430	713	1237	1692	1529	1613	1660	1659
2014	8	21	372	299	313	349	420	722	1212	1645	1573	1499	1660	1629
2014	8	22	410	375	361	355	449	684	1161	1608	1517	1619	1675	1882
2014	8	23	619	427	345	270	316	512	681	857	1122	1438	1657	1756
2014	8	24	464	284	201	212	200	216	334	413	690	1034	1282	1501
2014	8	25	330	213	234	247	325	732	1286	1759	1546	1464	1646	1585
2014	8	26	359	274	316	287	414	697	1193	1678	1569	1515	1587	1493
2014	8	27	329	275	324	287	416	739	1243	1676	1595	1561	1604	1626
2014	8	28	380	321	278	346	429	742	1305	1697	1646	1638	1728	1990
2014	8	29	538	419	376	428	478	766	1237	1678	1739	1891	2121	2216
2014	8	30	778	534	387	348	398	587	754	1038	1460	1925	2269	2343
2014	8	31	476	333	199	159	145	188	336	429	690	1030	1119	1603

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	8	1	2380	2474	2580	2508	2425	2622	2256	1936	1472	1221	967	839	36472
2014	8	2	2118	2233	2155	2172	2088	2001	1847	1538	1307	1182	1435	999	31975
2014	8	3	2249	2070	2594	2642	2483	2364	2238	1811	1433	1108	769	668	30895
2014	8	4	1841	1874	1992	1854	1943	2092	1625	1216	1123	896	634	570	29706
2014	8	5	1697	1688	2066	1921	2048	2009	1541	1231	1000	806	704	544	29016
2014	8	6	1745	1789	1977	1972	2122	2013	1676	1189	1087	844	706	637	29757
2014	8	7	1835	2032	2127	2235	2409	2313	1743	1711	1207	993	845	623	32473
2014	8	8	2238	2465	2563	2417	2437	2331	2170	1819	1593	1174	1005	931	36472
2014	8	9	1993	2036	1972	1984	2088	1823	1681	1385	1184	974	932	669	29287
2014	8	10	1577	2376	2369	2399	2367	2253	2117	1741	1254	932	736	513	27807
2014	8	11	1844	1938	1939	1975	2098	2041	1639	1293	971	861	677	462	29611
2014	8	12	1656	1816	1821	1842	2002	2016	1540	1262	1029	905	711	543	28779
2014	8	13	1854	1921	1984	2028	2098	2114	1749	1359	1128	968	752	542	30663
2014	8	14	1907	1933	2088	2275	2257	2206	1702	1867	1280	1046	782	581	32297
2014	8	15	2296	2370	2637	2670	2572	2638	2370	2035	1806	1412	971	708	37949
2014	8	16	2063	2041	2003	1996	1993	1931	1732	1440	1155	1132	988	791	30651
2014	8	17	2068	2116	2222	2466	2366	2347	2209	1807	1358	1082	873	639	29525
2014	8	18	1743	1765	1877	1930	1968	2068	1548	1152	950	793	626	500	29142
2014	8	19	1559	1662	1711	1912	2009	1984	1523	1218	950	775	632	502	28231
2014	8	20	1645	1691	1826	1932	2023	2027	1581	1084	920	797	619	490	28599
2014	8	21	1651	1794	1962	2118	2132	2016	1792	1403	1040	810	750	521	29682
2014	8	22	2075	2043	2288	2354	2356	2455	2118	1681	1343	1014	1036	689	33548
2014	8	23	1797	1759	1842	1771	1758	1676	1466	1283	1077	802	832	767	26830
2014	8	24	1738	1826	2125	2176	2090	2140	1997	1616	1174	901	659	488	25761
2014	8	25	1595	1647	1718	1697	1830	1994	1432	1010	885	707	627	452	26961
2014	8	26	1451	1565	1706	1751	1941	1937	1527	1122	871	846	648	471	27218
2014	8	27	1578	1750	1806	1908	2017	2110	1587	1303	1012	796	664	502	28708
2014	8	28	2017	2036	1792	2557	2404	2043	1804	1653	1209	1012	826	668	32521
2014	8	29	2708	2583	2215	2424	2849	2839	2294	2305	2194	1637	1276	1199	40410
2014	8	30	2019	1986	1982	1717	1803	1540	1356	1149	1027	870	701	572	29543
2014	8	31	1597	1740	1661	1886	1750	1637	1488	1263	1016	914	677	593	22929

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	9	1	375	456	202	181	183	236	446	574	751	996	1434	1715
2014	9	2	298	244	219	258	371	744	1246	1751	1501	1515	1604	1547
2014	9	3	334	287	285	303	386	708	1182	1682	1485	1523	1635	1539
2014	9	4	322	252	308	315	395	745	1200	1620	1487	1552	1589	1582
2014	9	5	394	327	304	327	436	710	1138	1601	1472	1566	1696	1859
2014	9	6	534	376	261	259	315	506	716	1131	1409	1588	1481	1571
2014	9	7	453	265	188	162	148	201	353	469	688	1088	1176	1363
2014	9	8	271	272	200	249	407	722	1258	1732	1494	1469	1484	1508
2014	9	9	339	287	260	319	360	727	1198	1619	1472	1481	1534	1447
2014	9	10	328	266	294	285	425	689	1205	1712	1464	1512	1406	1481
2014	9	11	354	286	287	306	425	703	1177	1602	1581	1498	1581	1572
2014	9	12	440	333	311	351	465	717	1178	1556	1532	1558	1658	1912
2014	9	13	549	350	301	254	282	424	661	875	1103	1354	1541	1708
2014	9	14	392	279	137	155	150	195	345	409	670	1004	1226	1490
2014	9	15	301	241	180	232	330	740	1273	1786	1556	1640	1611	1611
2014	9	16	293	282	278	301	382	676	1174	1751	1584	1469	1512	1443
2014	9	17	456	347	311	336	428	696	1175	1650	1588	1551	1579	1528
2014	9	18	0	0	0	0	0	0	0	0	0	0	0	0
2014	9	19	433	333	345	313	412	705	1136	1532	1540	1654	1954	2061
2014	9	20	490	376	300	278	309	469	738	900	1147	1479	1622	1577
2014	9	21	497	327	251	170	175	184	348	442	640	1114	1311	1644
2014	9	22	646	623	257	244	355	665	1311	1796	1573	1536	1627	1675
2014	9	23	324	288	278	331	368	701	1212	1669	1459	1442	1551	1480
2014	9	24	307	270	268	298	401	691	1185	1597	1514	1479	1652	1574
2014	9	25	400	296	299	344	446	753	1320	1677	1484	1737	1969	1777
2014	9	26	423	333	321	310	479	714	1227	1593	1487	1672	1917	2086
2014	9	27	444	384	290	289	316	489	716	971	1234	1498	1817	2137
2014	9	28	465	387	222	149	130	204	343	463	666	1059	1300	1632
2014	9	29	450	371	198	235	339	663	1295	1651	1497	1543	1544	1599
2014	9	30	322	285	249	320	358	673	1177	1648	1516	1552	1550	1473

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Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	9	1	1990	2064	2244	2328	2248	2238	2004	1687	1377	1082	748	464	28023
2014	9	2	1588	1651	1653	1643	1820	1877	1425	1090	869	793	617	473	26797
2014	9	3	1612	1540	1709	1739	1900	1973	1388	1001	834	717	606	461	26829
2014	9	4	1623	1654	1729	1947	2047	1962	1556	1272	937	830	623	471	28018
2014	9	5	1952	1993	2131	2263	2419	2502	2197	1894	1336	1046	803	672	33038
2014	9	6	1555	1661	1645	1601	1755	1639	1478	1078	948	853	704	537	25601
2014	9	7	1539	1717	1825	1943	1810	1989	1844	1526	1105	839	609	408	23708
2014	9	8	1520	1656	1678	1722	1856	1925	1360	1027	789	654	567	426	26246
2014	9	9	1404	1502	1582	1707	1892	1770	1373	1282	898	715	518	450	26136
2014	9	10	1439	1641	1695	1828	1949	1942	1509	1118	906	742	592	465	26893
2014	9	11	1645	1733	1868	1964	2110	2030	1401	1442	1054	858	636	598	28711
2014	9	12	1927	2219	2193	2232	2238	2395	2144	1662	1225	1082	813	669	32810
2014	9	13	1428	1519	1745	1646	1590	1589	1355	1153	956	814	605	510	24312
2014	9	14	1675	1772	1877	2248	2321	2175	2638	1875	1273	917	679	416	26318
2014	9	15	1558	1641	1707	1697	1799	1891	1459	1063	841	736	571	440	26904
2014	9	16	1507	1563	1763	1710	1922	1938	1368	1071	864	756	579	479	26665
2014	9	17	1579	1633	1766	1917	1954	2002	1565	1148	934	764	591	443	27941
2014	9	18	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	9	19	2130	2355	2531	2432	2570	2462	2179	1888	1542	1086	1281	768	35642
2014	9	20	1581	1582	1722	1799	1877	1767	1590	1535	1176	1014	838	588	26754
2014	9	21	1733	1875	2156	2405	2214	2023	2081	1709	1392	925	751	484	26851
2014	9	22	1689	1775	1786	1762	1902	1882	1466	962	944	738	544	408	28166
2014	9	23	1483	1557	1665	1794	1696	1868	1416	1065	856	772	573	424	26272
2014	9	24	1540	1665	1809	1821	1980	1973	1531	1096	928	731	626	452	27388
2014	9	25	1826	1950	1982	2166	2271	2192	1621	1615	1169	915	719	515	31443
2014	9	26	2183	2407	2522	2595	2678	2681	2441	1792	1731	1153	921	683	36349
2014	9	27	2101	2193	2059	2001	1935	1746	1486	1309	974	856	813	675	28733
2014	9	28	1771	1896	2041	2001	2466	2228	2057	1653	1293	920	678	421	26445
2014	9	29	1615	1635	1735	1702	1809	1917	1439	1048	793	706	556	437	26777
2014	9	30	1587	1568	1693	1828	1958	1880	1403	1149	970	829	631	423	27042

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			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	10	1	320	308	303	308	374	718	1170	1730	1446	1517	1629	1620
2014	10	2	373	300	286	304	425	726	1209	1639	1550	1582	1637	1739
2014	10	3	404	316	293	360	441	730	1122	1604	1531	1618	2018	2113
2014	10	4	499	335	314	260	311	481	640	927	1429	1905	2235	2365
2014	10	5	555	345	220	128	164	185	308	429	705	1036	1195	1616
2014	10	6	0	0	0	0	0	0	0	0	0	0	0	0
2014	10	7	372	252	236	296	375	702	1229	1667	1495	1536	1607	1544
2014	10	8	380	291	268	296	388	690	1231	1660	1526	1431	1566	1583
2014	10	9	371	284	291	324	380	718	1179	1607	1527	1505	1696	1678
2014	10	10	398	347	334	394	459	743	1172	1559	1557	1785	2046	2183
2014	10	11	588	428	313	314	370	431	715	1002	1493	1854	2118	2195
2014	10	12	577	673	339	181	171	209	323	508	666	1165	1494	1832
2014	10	13	327	263	169	258	341	697	1219	1653	1590	1590	1669	1813
2014	10	14	353	279	274	296	392	653	1162	1606	1503	1453	1570	1423
2014	10	15	350	275	265	314	374	698	1214	1686	1535	1600	1640	1728
2014	10	16	370	294	299	327	420	709	1196	1651	1463	1732	1803	1760
2014	10	17	412	304	293	310	430	745	1137	1574	1595	1752	2038	2105
2014	10	18	562	496	336	306	331	473	749	1002	1318	1581	1849	1923
2014	10	19	460	376	438	227	186	192	377	487	687	1133	1367	1805
2014	10	20	330	282	229	243	329	715	1315	1726	1510	1580	1783	1666
2014	10	21	317	288	256	313	394	685	1160	1652	1549	1478	1526	1448
2014	10	22	319	277	277	296	392	655	1221	1671	1487	1489	1562	1539
2014	10	23	362	264	289	327	402	692	1165	1609	1608	1571	1685	1735
2014	10	24	414	333	307	333	440	710	1148	1604	1578	1712	1816	2046
2014	10	25	564	485	322	273	298	474	691	804	1203	1698	1917	2163
2014	10	26	537	382	399	217	172	223	353	465	657	1084	1413	1643
2014	10	27	367	369	189	246	319	697	1276	1824	1554	1637	1653	1688
2014	10	28	328	276	258	323	384	710	1179	1708	1560	1551	1632	1549
2014	10	29	321	260	289	320	398	674	1202	1615	1523	1517	1579	1483
2014	10	30	339	322	280	318	412	660	1237	1575	1484	1494	1582	1690
2014	10	31	0	0	0	0	0	0	0	0	0	0	0	0

I-85 ATR Station
P-14
Southbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	10	1	1643	1658	1876	1804	1918	2041	1549	1183	848	765	590	473	27791
2014	10	2	1700	1882	1933	2052	2235	2069	1704	1405	1082	901	713	533	29979
2014	10	3	2188	2089	1845	2508	2663	2518	2460	2043	1616	1247	964	664	35355
2014	10	4	1615	2096	1818	1874	1808	1652	1563	1307	1070	898	682	570	28654
2014	10	5	1741	1946	2127	2127	1710	2431	2653	1961	1356	1052	720	451	27161
2014	10	6	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	10	7	1522	1578	1700	1780	1937	1941	1390	1118	861	749	546	468	26901
2014	10	8	1606	1649	1814	1840	1961	1973	1503	1261	983	774	597	423	27694
2014	10	9	1785	1947	2120	2160	2320	2012	1744	1259	1304	919	767	578	30475
2014	10	10	2425	2469	2692	2699	2835	2788	2561	2145	1801	1190	1006	734	38322
2014	10	11	1935	1804	1817	1770	1621	1675	1694	1361	1130	912	723	587	28850
2014	10	12	2001	2105	2143	2252	2210	2189	2097	1641	1235	886	672	480	28049
2014	10	13	1876	1863	2063	1902	2074	2122	1544	1220	960	723	624	481	29041
2014	10	14	1567	1601	1723	1788	1975	1861	1412	1135	868	678	605	469	26646
2014	10	15	1725	1815	1926	1962	2002	2058	1585	1208	990	812	617	491	28870
2014	10	16	1862	1978	2117	2166	2200	2286	1710	1509	1243	993	737	539	31364
2014	10	17	2243	2292	2359	2635	2535	2554	2256	1833	1587	1112	829	704	35634
2014	10	18	1802	1720	1820	1739	1891	1761	1465	1247	1078	814	715	517	27495
2014	10	19	1968	2170	2355	2519	2464	2412	2226	1872	1359	1004	744	498	29326
2014	10	20	1738	1732	1763	1955	1904	1976	1443	1177	889	724	561	412	27982
2014	10	21	1578	1650	1774	1895	1973	1943	1462	1148	833	715	620	415	27072
2014	10	22	1611	1707	1742	1979	2078	2054	1455	1232	955	846	584	475	27903
2014	10	23	1758	1868	2032	2149	2343	2216	1640	1397	1229	905	792	563	30601
2014	10	24	2231	2484	2647	2709	2664	2646	2312	1924	1503	1112	935	901	36509
2014	10	25	2024	1969	1902	1913	1953	1688	1604	1367	1170	966	906	752	29106
2014	10	26	1863	1942	2372	2502	2461	2762	2455	2002	1411	959	758	481	29513
2014	10	27	1718	1713	1819	1827	1904	1971	1299	1180	828	654	539	404	27675
2014	10	28	1566	1684	1736	1795	1962	1977	1468	1125	910	733	601	394	27409
2014	10	29	1616	1654	1789	1875	2052	1930	1423	1124	936	748	609	509	27446
2014	10	30	1665	1859	1995	2045	2205	2039	1469	1411	1367	1000	726	538	29712
2014	10	31	0	0	0	0	0	0	0	0	0	0	0	0	0

I-85 ATR Station
P-14
Southbound Volumes

			Hour											
Year	Month	Day	1	2	3	4	5	6	7	8	9	10	11	12
2014	11	1	457	358	302	284	325	466	582	717	987	1275	1399	1622
2014	11	2	366	325	195	110	248	203	387	477	713	1088	1434	1546
2014	11	3	270	203	179	236	349	701	1296	1755	1467	1487	1654	1610
2014	11	4	266	272	275	294	376	671	1189	1525	1487	1590	1577	1564
2014	11	5	325	284	272	319	396	691	1302	1726	1544	1566	1544	1492
2014	11	6	376	275	266	318	402	669	1209	1639	1444	1516	1607	1624
2014	11	7	394	447	367	368	412	675	1224	1564	1546	1676	1902	2031
2014	11	8	483	372	278	250	380	438	693	831	1171	1441	1554	1685
2014	11	9	398	234	152	141	156	203	344	452	636	1077	1265	1535
2014	11	10	268	215	177	221	353	678	1293	1792	1559	1557	1684	1666
2014	11	11	323	274	252	279	355	670	1230	1696	1590	1545	1599	1564
2014	11	12	309	271	277	284	367	697	1278	1675	1601	1475	1622	1539
2014	11	13	333	287	276	313	429	688	1207	1676	1576	1550	1658	1676
2014	11	14	348	313	310	325	396	707	1156	1544	1538	1543	1716	1856
2014	11	15	431	316	278	261	311	477	706	822	1080	1425	1639	1642
2014	11	16	298	228	168	168	155	177	317	436	606	924	1182	1440
2014	11	17	263	209	177	232	335	690	1245	1614	1425	1501	1428	1560
2014	11	18	362	292	279	275	402	671	1187	1688	1572	1457	1496	1527
2014	11	19	300	294	249	275	374	671	1221	1629	1514	1351	1659	1575
2014	11	20	355	272	276	269	384	689	1175	1638	1539	1565	1637	1646
2014	11	21	389	328	304	348	428	740	1167	1616	1599	1599	1757	1931
2014	11	22	529	370	274	296	371	536	714	860	1410	1809	2140	2255
2014	11	23	338	250	189	177	228	277	360	441	655	968	1217	1372
2014	11	24	319	238	196	234	343	696	1252	1711	1529	1651	1754	1703
2014	11	25	415	364	320	347	482	672	1203	1692	1605	1680	1939	2137
2014	11	26	650	494	450	518	581	922	1305	1651	1887	2253	2543	2607
2014	11	27	658	558	446	394	410	506	645	882	1328	2005	2471	2148
2014	11	28	490	433	339	286	298	400	607	809	1062	1420	1874	2288
2014	11	29	418	298	236	207	261	391	775	1295	1508	1757	2120	2611
2014	11	30	508	378	293	242	269	441	578	767	1144	1850	2272	2749

I-85 ATR Station
P-14
Southbound Volumes

Year	Month	Day	13	14	15	16	17	18	19	20	21	22	23	24	Total
2014	11	1	1637	1728	1741	1704	1559	1492	1337	1185	892	755	641	486	23931
2014	11	2	1745	1835	2089	2117	2109	2196	2113	1610	1180	870	652	387	25995
2014	11	3	1625	1750	1762	1815	1888	1933	1465	1134	827	637	558	394	26995
2014	11	4	1671	1750	1882	2011	2108	2055	1502	1349	903	776	595	420	28108
2014	11	5	1533	1634	1697	1791	1865	1981	1370	1075	815	698	805	453	27178
2014	11	6	1735	1734	2006	1964	2096	2013	1587	1264	1044	786	639	523	28736
2014	11	7	2204	2237	2285	2508	2405	2396	2214	2004	1632	1002	859	737	35089
2014	11	8	1648	1783	1745	1818	1865	1739	1564	1230	979	766	630	525	25868
2014	11	9	1664	1851	2062	2189	2165	2223	1804	1652	1175	828	604	413	25223
2014	11	10	1670	1737	1831	1706	1864	1902	1441	1034	812	675	541	404	27080
2014	11	11	1584	1634	1749	1849	1926	1904	1518	1059	905	678	560	385	27128
2014	11	12	1505	1745	1800	1901	1912	1967	1454	1082	803	677	542	471	27254
2014	11	13	1671	1819	1974	1970	1961	2294	1621	1251	930	859	609	461	29089
2014	11	14	2019	2055	2387	2164	2297	2405	2191	1826	1441	1002	847	725	33111
2014	11	15	1661	1722	1638	1766	1927	1768	1596	1279	954	844	660	441	25644
2014	11	16	1661	1857	2100	2143	2331	2511	2414	1767	1126	844	573	394	25820
2014	11	17	1528	1627	1658	1771	1756	1775	1342	1006	791	678	588	375	25574
2014	11	18	1585	1573	1665	1729	1884	1927	1435	1001	812	653	540	443	26455
2014	11	19	1538	1622	1882	1858	1867	1831	1470	1116	858	732	572	445	26903
2014	11	20	1691	1805	1901	2066	2115	2121	1601	1258	1062	784	634	510	28993
2014	11	21	2021	2213	2371	2475	2472	2433	2245	1880	1602	1067	882	759	34626
2014	11	22	2020	1977	2063	1924	1891	1963	1647	1288	1039	905	657	510	29448
2014	11	23	1555	1856	1707	1801	1876	1726	1643	1263	882	801	579	385	22546
2014	11	24	1677	1917	1878	1926	1951	2050	1447	1205	1010	749	692	552	28680
2014	11	25	2327	2434	2492	2632	2631	2673	1991	2046	2164	1694	1164	879	37983
2014	11	26	2395	2740	2845	2416	2655	2461	2419	2577	2260	1171	1617	963	42380
2014	11	27	2960	1635	1435	1474	1532	1525	1397	1373	1274	1080	864	666	29666
2014	11	28	2548	2569	2765	2757	2758	2564	2127	1740	1437	1143	864	560	34138
2014	11	29	2642	2761	2849	2940	2669	2624	2235	1657	1537	1547	940	693	36971
2014	11	30	3070	2876	2386	2710	2606	2079	2430	2557	2481	1351	978	677	37692

Appendix G

HCS Freeway Segment Analysis

Existing AM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 80 to Exit 82
Jurisdiction:	Spartantburg County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1899	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	528	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1451	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1451	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 82 to Exit 83
Jurisdiction:	Spartantburg County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1870	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	519	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1428	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1428	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	22.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 83 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1797	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	499	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1373	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1373	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 87 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1805	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	501	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1379	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1379	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 90 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1612	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	448	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1231	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1231	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1610	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	447	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1230	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1230	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1456	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	404	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1112	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1112	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.1	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 96 to Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1430	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	397	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1092	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1092	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 97 to Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1437	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	399	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1098	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1098	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 98 to Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1409	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	391	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1076	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1076	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	16.6	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 100 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1443	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	401	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1102	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1102	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1566	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	435	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1196	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1196	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1544	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	429	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1179	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1179	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	18.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 92 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1515	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	421	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1157	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1157	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	17.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 90 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1748	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	486	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1335	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1335	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	20.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 87 to Exit 83
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	1865	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	518	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1425	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1425	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	2	
Density, D	21.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 83 to Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2125	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	590	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1623	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1623	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	2	
Density, D	25.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Existing PM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 80 to Exit 82
Jurisdiction:	Spartantburg County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3068	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	852	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2344	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2344	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	52.4	mi/h
Number of lanes, N	2	
Density, D	44.8	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 82 to Exit 83
Jurisdiction:	Spartantburg County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3015	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	838	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2303	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2303	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	53.4	mi/h
Number of lanes, N	2	
Density, D	43.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 83 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2852	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	792	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2179	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2179	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	56.4	mi/h
Number of lanes, N	2	
Density, D	38.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/13/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 87 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2767	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	769	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2114	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2114	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	57.8	mi/h
Number of lanes, N	2	
Density, D	36.6	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 90 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2620	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	728	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2001	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2001	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.9	mi/h
Number of lanes, N	2	
Density, D	33.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2606	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	724	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1991	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1991	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	2	
Density, D	33.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2494	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	693	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1905	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1905	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.4	mi/h
Number of lanes, N	2	
Density, D	31.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 3.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 93 to Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2413	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	370	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1843	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number od lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	35.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	35.0	mi/h

LOS and Performance Measures

Flow rate, vp	1843	pc/h/ln
Free-flow speed, FFS	35.0	mi/h
Average passenger-car speed, S	32.2	mi/h
Number od lanes, N	2	
Density, D	29.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 97 to Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2419	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	672	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1848	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1848	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.2	mi/h
Number of lanes, N	2	
Density, D	29.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 98 to Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2412	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	670	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1842	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1842	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.2	mi/h
Number of lanes, N	2	
Density, D	29.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 100 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2519	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	700	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1924	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1924	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.1	mi/h
Number of lanes, N	2	
Density, D	31.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2630	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	731	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2009	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2009	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.7	mi/h
Number of lanes, N	2	
Density, D	33.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2642	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	734	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2018	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2018	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.6	mi/h
Number of lanes, N	2	
Density, D	33.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 92 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2636	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	732	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2014	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2014	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.7	mi/h
Number of lanes, N	2	
Density, D	33.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 90 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2905	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	807	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2219	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2219	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	55.5	mi/h
Number of lanes, N	2	
Density, D	40.0	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 87 to Exit 83
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2930	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	814	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2238	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2238	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	55.0	mi/h
Number of lanes, N	2	
Density, D	40.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 83 to Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3029	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	841	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2314	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2314	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	53.2	mi/h
Number of lanes, N	2	
Density, D	43.5	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

No Build AM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 80 to Exit 82
Jurisdiction:	Spartantburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2839	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	789	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2169	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2169	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	56.6	mi/h
Number of lanes, N	2	
Density, D	38.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 82 to Exit 83
Jurisdiction:	Spartantburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2796	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	777	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2136	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2136	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	57.3	mi/h
Number of lanes, N	2	
Density, D	37.3	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 83 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2686	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	746	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2052	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2052	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.0	mi/h
Number of lanes, N	2	
Density, D	34.8	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 87 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2698	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	749	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2061	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2061	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	58.8	mi/h
Number of lanes, N	2	
Density, D	35.0+	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 90 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2410	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	669	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1841	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1841	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.2	mi/h
Number of lanes, N	2	
Density, D	29.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2407	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	669	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1839	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1839	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.3	mi/h
Number of lanes, N	2	
Density, D	29.5	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2176	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	604	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1662	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1662	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.0	mi/h
Number of lanes, N	2	
Density, D	26.0-	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 3.2

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 93 to Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2138	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	594	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1333	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	35.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	35.0	mi/h

LOS and Performance Measures

Flow rate, vp	1333	pc/h/ln
Free-flow speed, FFS	35.0	mi/h
Average passenger-car speed, S	34.2	mi/h
Number of lanes, N	2	
Density, D	25.4	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 97 to Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2148	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	597	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1641	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1641	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.2	mi/h
Number of lanes, N	2	
Density, D	25.6	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 98 to Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2106	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	585	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1609	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1609	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.4	mi/h
Number of lanes, N	2	
Density, D	25.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 100 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2157	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	599	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1648	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1648	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	2	
Density, D	25.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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STV
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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2341	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	650	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1788	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1788	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.9	mi/h
Number of lanes, N	2	
Density, D	28.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2308	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	641	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1763	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1763	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.1	mi/h
Number of lanes, N	2	
Density, D	27.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 92 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2265	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	629	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1730	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1730	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.5	mi/h
Number of lanes, N	2	
Density, D	27.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 90 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2613	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	726	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1996	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1996	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	2	
Density, D	33.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 87 to Exit 83
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2788	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	774	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2130	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2130	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	57.4	mi/h
Number of lanes, N	2	
Density, D	37.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 83 to Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3177	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	883	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2427	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2427	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	50.0	mi/h
Number of lanes, N	2	
Density, D	48.5	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

No Build PM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 80 to Exit 82
Jurisdiction:	Spartantburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4586	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1274	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3503	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3503	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	2.3	mi/h
Number of lanes, N	2	
Density, D	1531.4	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 82 to Exit 83
Jurisdiction:	Spartantburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4507	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1252	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3443	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3443	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	5.8	mi/h
Number of lanes, N	2	
Density, D	592.1	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 83 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4263	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1184	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3256	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3256	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	16.2	mi/h
Number of lanes, N	2	
Density, D	201.6	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 87 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4136	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1149	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3159	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3159	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	21.1	mi/h
Number of lanes, N	2	
Density, D	149.5	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 90 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3916	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1088	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2991	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2991	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	29.1	mi/h
Number of lanes, N	2	
Density, D	102.8	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3895	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1082	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2975	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2975	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	29.8	mi/h
Number of lanes, N	2	
Density, D	99.7	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3728	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1036	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2848	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2848	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	35.3	mi/h
Number of lanes, N	2	
Density, D	80.8	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 93 to Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3307	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1002	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2755	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	35.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	35.0	mi/h

LOS and Performance Measures

Flow rate, vp	2755	pc/h/ln
Free-flow speed, FFS	35.0	mi/h
Average passenger-car speed, S	39.0	mi/h
Number of lanes, N	2	
Density, D	70.7	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 97 to Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3616	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1004	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2762	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2762	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	38.7	mi/h
Number of lanes, N	2	
Density, D	71.4	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 98 to Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3606	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1002	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2755	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2755	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	39.0	mi/h
Number of lanes, N	2	
Density, D	70.7	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 100 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3766	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1046	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2877	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2877	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	34.1	mi/h
Number of lanes, N	2	
Density, D	84.5	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3931	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1092	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3003	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3003	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	28.6	mi/h
Number of lanes, N	2	
Density, D	105.1	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3949	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1097	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3017	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3017	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	27.9	mi/h
Number of lanes, N	2	
Density, D	108.0	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 92 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3941	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1095	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3010	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3010	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	28.2	mi/h
Number of lanes, N	2	
Density, D	106.6	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 90 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4342	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1206	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3317	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3317	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	12.9	mi/h
Number of lanes, N	2	
Density, D	257.3	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 87 to Exit 83
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4380	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1217	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3346	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3346	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	11.3	mi/h
Number of lanes, N	2	
Density, D	296.1	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 83 to Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4528	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1258	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	3459	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	2	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	3459	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	4.9	mi/h
Number of lanes, N	2	
Density, D	708.2	pc/mi/ln
Level of service, LOS	F	

Overall results are not computed when free-flow speed is less than 55 mph.

Build AM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.3

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 80 to Exit 83
Jurisdiction:	Spartantburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2839	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	789	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1446	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1446	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	22.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 80 to Exit 83
Jurisdiction:	Spartantburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2839	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	789	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1084	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1084	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	16.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 83 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2686	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	746	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1368	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1368	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.0	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 83 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2686	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	746	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1026	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1026	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 87 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2698	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	749	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1374	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1374	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 87 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2698	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	749	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1030	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1030	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	15.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 90 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2410	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	669	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1227	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1227	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2407	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	669	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1226	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1226	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2176	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	604	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1108	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1108	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 96 to Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2148	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	597	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1094	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1094	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.8	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 100 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2157	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	599	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1098	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1098	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	16.9	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2341	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	650	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1192	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1192	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2308	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	641	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1175	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1175	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	18.1	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 92 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2265	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	629	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1153	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1153	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	17.7	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 90 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2613	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	726	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1331	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1331	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	20.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 90 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2613	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	726	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	998	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	998	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	15.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 87 to Exit 83
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2788	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	774	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1420	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1420	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	3	
Density, D	21.8	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
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Suite 300
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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 87 to Exit 83
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	2788	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	774	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1065	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1065	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	16.4	pc/mi/ln
Level of service, LOS	B	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 83 to Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3177	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	883	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1618	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1618	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	3	
Density, D	25.2	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	AM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 83 to Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3177	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	883	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1213	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1213	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	65.0	mi/h
Number of lanes, N	4	
Density, D	18.7	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

Build PM Peak

I-85 Northbound

HCS 2010: Basic Freeway Segments Release 6.3

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 80 to Exit 83
Jurisdiction:	Spartantburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4520	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1256	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2302	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2302	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	53.5	mi/h
Number of lanes, N	3	
Density, D	43.1	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 80 to Exit 83
Jurisdiction:	Spartantburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4520	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1256	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1726	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1726	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.5	mi/h
Number of lanes, N	4	
Density, D	27.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 83 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4263	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1184	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2171	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2171	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	56.6	mi/h
Number of lanes, N	3	
Density, D	38.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 83 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4263	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1184	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1628	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1628	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.3	mi/h
Number of lanes, N	4	
Density, D	25.3	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 87 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4136	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1149	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2106	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2106	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	57.9	mi/h
Number of lanes, N	3	
Density, D	36.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 87 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4136	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1149	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1580	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1580	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.5	mi/h
Number of lanes, N	4	
Density, D	24.5	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

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Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 90 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3916	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1088	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1994	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1994	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.0	mi/h
Number of lanes, N	3	
Density, D	33.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 92 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3895	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1082	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1984	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1984	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	60.2	mi/h
Number of lanes, N	3	
Density, D	33.0	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 95 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3728	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1036	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1899	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1899	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.5	mi/h
Number of lanes, N	3	
Density, D	30.9	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 NB
From/To:	Exit 96 to Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3616	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1004	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1841	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1841	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	62.2	mi/h
Number of lanes, N	3	
Density, D	29.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

I-85 Southbound

HCS 2010: Basic Freeway Segments Release 6.2

STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 100 to Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3766	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1046	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1918	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1918	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	61.2	mi/h
Number of lanes, N	3	
Density, D	31.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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STV
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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 96 to Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3931	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1092	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2002	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2002	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.9	mi/h
Number of lanes, N	3	
Density, D	33.4	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 95 to Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3949	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1097	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2011	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2011	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.7	mi/h
Number of lanes, N	3	
Density, D	33.7	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 92 to Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	3941	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1095	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2007	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2007	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	59.8	mi/h
Number of lanes, N	3	
Density, D	33.6	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

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Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 90 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4342	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1206	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2211	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2211	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	55.7	mi/h
Number of lanes, N	3	
Density, D	39.7	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

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Analyst:	RJD
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Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 90 to Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4342	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1206	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1658	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1658	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	64.1	mi/h
Number of lanes, N	4	
Density, D	25.9	pc/mi/ln
Level of service, LOS	C	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.2

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 87 to Exit 83
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4380	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1217	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2231	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2231	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	55.2	mi/h
Number of lanes, N	3	
Density, D	40.4	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 87 to Exit 83
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4380	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1217	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1673	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1673	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.9	mi/h
Number of lanes, N	4	
Density, D	26.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 83 to Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4528	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1258	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	2306	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	2306	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	53.4	mi/h
Number of lanes, N	3	
Density, D	43.2	pc/mi/ln
Level of service, LOS	E	

Overall results are not computed when free-flow speed is less than 55 mph.

HCS 2010: Basic Freeway Segments Release 6.3

STV
1320 Main Street
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E-mail:

Operational Analysis

Analyst:	RJD
Agency or Company:	STV Incorporated
Date Performed:	12/19/2014
Analysis Time Period:	PM Peak
Freeway/Direction:	I-85 SB
From/To:	Exit 83 to Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Flow Inputs and Adjustments

Volume, V	4528	veh/h
Peak-hour factor, PHF	0.90	
Peak 15-min volume, v15	1258	v
Trucks and buses	25	%
Recreational vehicles	0	%
Terrain type:	Rolling	
Grade	-	%
Segment length	-	mi
Trucks and buses PCE, ET	2.5	
Recreational vehicle PCE, ER	2.0	
Heavy vehicle adjustment, fHV	0.727	
Driver population factor, fp	1.00	
Flow rate, vp	1729	pc/h/ln

Speed Inputs and Adjustments

Lane width	-	ft
Right-side lateral clearance	-	ft
Total ramp density, TRD	-	ramps/mi
Number of lanes, N	4	
Free-flow speed:	Measured	
FFS or BFFS	65.0	mi/h
Lane width adjustment, fLW	-	mi/h
Lateral clearance adjustment, fLC	-	mi/h
TRD adjustment	-	mi/h
Free-flow speed, FFS	65.0	mi/h

LOS and Performance Measures

Flow rate, vp	1729	pc/h/ln
Free-flow speed, FFS	65.0	mi/h
Average passenger-car speed, S	63.5	mi/h
Number of lanes, N	4	
Density, D	27.2	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.

Appendix H

HCS Ramp Merge/Diverge Outputs

Merge Outputs

Existing AM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1758	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	141	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1758	141		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	488	39		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2686 176 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2686 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2862	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2686 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2862	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.305

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1758	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	141	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	300	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2530	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1758	141	300	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	488	39	83	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2686 176 375 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2686 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2862	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2686 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2862	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.305

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

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STV
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Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1695	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1695	102		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	471	28		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2590 128 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2590 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2718	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2590 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2718	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.352	
Space mean speed in ramp influence area,	S_R = 56.9	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1695	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	175	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1695	102	175	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	471	28	49	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2590 128 219 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2590 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2718	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2590 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2718	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.352

Space mean speed in ramp influence area, S_R = 56.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.9 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1721	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	84	vph
Length of first accel/decel lane	620	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1721	84		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	478	23		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2629 105 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2629 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2734	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2629 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2734	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.338	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Phone: 803-724-1430 Fax: 803-724-1201
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1721	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	84	vph
Length of first accel/decel lane	620	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	76	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1721	84	76	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	478	23	21	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2629 105 95 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2629 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2734	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2629 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2734	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_{R} + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.338	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1435	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	177	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1435	177		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	399	49		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2192 221 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2192 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2413	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2192 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2413	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 19.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.312	
Space mean speed in ramp influence area,	S_R = 57.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.8	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1435	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	177	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	370	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1435	177	370	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	399	49	103	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2192 221 463 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2192 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2413	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2192 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2413	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 19.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.312

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1406	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	103	vph
Length of first accel/decel lane	860	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	101	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1406	103	101	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	391	29	28	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2148 129 126 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2148 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2277	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2148 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2277	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 17.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.299

Space mean speed in ramp influence area, S_R = 58.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1406	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	103	vph
Length of first accel/decel lane	860	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	206	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1406	103	206	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	391	29	57	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2148 129 258 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2148 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2277	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2148 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2277	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 58.1	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1509	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	101	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1509	101		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	419	28		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2305 126 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2305 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2431	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2305 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2431	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 15.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.260	
Space mean speed in ramp influence area,	S_R = 59.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1509	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	101	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	103	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1509	101	103	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	419	28	29	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2305 126 129 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2305 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2431	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2305 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2431	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 15.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.260

Space mean speed in ramp influence area, S_R = 59.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 59.0 mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1292	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	138	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	164	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1292	138	164	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	359	38	46	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 1974 173 205 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1974 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2147	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 $v_{12}/2$ No

If yes, v_{12A} = 1974 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2147	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.316

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1292	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	138	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	164	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1292	138	164	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	359	38	46	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 1974 173 205 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 1974 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2147	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 $v_{12}/2$ No

If yes, v_{12A} = 1974 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2147	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.316

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mailF

Merge Analysis

AnalystF	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of TravelF	I-85 NB
Junction:	Exit 97
Jurisdiction:	Cherokee County
Analysis 5ear:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1430	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	7	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	28	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1430	7	28	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	397	2	8	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2185 9 35 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2185 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2194	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2185 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2194	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.303

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1430	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	7	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	138	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1430	7	138	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	397	2	38	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2185 9 173 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2185 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2194	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2185 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2194	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.303

Space mean speed in ramp influence area, S_R = 58.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.0 mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1322	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	121	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1322	121		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	367	34		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2020 151 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2020 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2171	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2020 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2171	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 12.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.250	
Space mean speed in ramp influence area,	S_R = 59.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 59.2	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1322	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	121	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	56	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2515	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1322	121	56	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	367	34	16	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2020 151 70 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2020 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2171	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2020 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2171	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 12.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.250

Space mean speed in ramp influence area, S_R = 59.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 59.2 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1384	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	182	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	109	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1384	182	109	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	384	51	30	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2114 228 136 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2114 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2342	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2114 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2342	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.334

Space mean speed in ramp influence area, S_R = 57.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1384	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	182	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	59	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1340	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1384	182	59	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	384	51	16	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2114 228 74 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2114 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2342	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2114 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2342	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.334

Space mean speed in ramp influence area, S_R = 57.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.3 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1457	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	87	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1457	87		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	405	24		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2226 109 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2226 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2335	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2226 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2335	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.6 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1457	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	87	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	109	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1457	87	109	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	405	24	30	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2226 109 136 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2226 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2335	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2226 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2335	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 20.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.6 mph

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1463	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	52	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1463	52		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	406	14		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2235 65 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2235 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2300	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2235 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2300	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.290

Space mean speed in ramp influence area, S_R = 58.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1463	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	52	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	105	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1463	52	105	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	406	14	29	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2235 65 131 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2235 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2300	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2235 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2300	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.290

Space mean speed in ramp influence area, S_R = 58.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1358	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	105	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	52	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1358	105	52	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	377	29	14	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2075 131 65 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2075 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2206	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2075 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2206	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.297

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1358	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	105	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	186	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1358	105	186	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	377	29	52	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2075 131 233 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2075 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2206	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2075 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2206	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.297

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 58.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1342	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	406	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1342	406		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	373	113		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2050 508 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2050 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2558	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2050 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2558	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.342	
Space mean speed in ramp influence area,	S_R = 57.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1342	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	406	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	173	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1342	406	173	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	373	113	48	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2050 508 216 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2050 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2558	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2050 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2558	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 22.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.342

Space mean speed in ramp influence area, S_R = 57.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1701	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	164	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1701	164		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	473	46		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2599 205 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2599 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2804	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2599 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2804	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.319

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1701	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	164	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	47	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1701	164	47	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	473	46	13	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2599 205 59 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2599 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2804	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2599 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2804	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 21.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.319

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 57.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 86
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1794	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	65.0	mph
Volume on ramp	661	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1794	661		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	498	92		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2741 414 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 16-6 or 16-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2741 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6155	4700	No

v_6 or v_{av64} 0 pc/h (Equation 16-14 or 16-17)

Is v_6 or v_{av64} > 2700 pc/h? No

Is v_6 or v_{av64} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2741 (Equation 16-15, 16-16, 16-18, or 16-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6155	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00764\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.677

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1620 Main Street
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 86
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-8Y Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1794	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	65.0	mph
Volume on ramp	661	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	71	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1794	661	71	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	498	92	20	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2741 414 89 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 16-6 or 16-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2741 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6155	4700	No

v_6 or v_{av64} 0 pc/h (Equation 16-14 or 16-17)

Is v_6 or v_{av64} > 2700 pc/h? No

Is v_6 or v_{av64} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2741 (Equation 16-15, 16-16, 16-18, or 16-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6155	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00764\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.677

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

Existing PM Peak
I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2977	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	91	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2977	91		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	827	25		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 4548 114 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4548 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4662	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4548 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4662	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.650

Space mean speed in ramp influence area, S_R = 50.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 50.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2977	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	91	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	237	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2530	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2977	91	237	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	827	25	66	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 4548 114 296 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4548 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4662	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4548 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4662	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 34.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.650	
Space mean speed in ramp influence area,	S_R = 50.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 50.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2753	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2753	99		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	765	28		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 4206 124 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4206 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4330	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4206 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4330	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 36.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	M_S = 0.589	
Space mean speed in ramp influence area,	S_R = 51.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 51.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2753	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	262	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2753	99	262	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	765	28	73	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 4206 124 328 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4206 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4330	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4206 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4330	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 36.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	M_S = 0.589	
Space mean speed in ramp influence area,	S_R = 51.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 51.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2702	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	65	vph
Length of first accel/decel lane	620	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2702	65		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	751	18		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 4128 81 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4128 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4209	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4128 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4209	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.540

Space mean speed in ramp influence area, S_R = 52.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 52.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2702	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	65	vph
Length of first accel/decel lane	620	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	150	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2702	65	150	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	751	18	42	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 4128 81 188 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4128 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4209	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4128 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4209	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.540

Space mean speed in ramp influence area, S_R = 52.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 52.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2306	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	314	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2306	314		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	641	87		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3523 393 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3523 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3916	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3523 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3916	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 31.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.464	
Space mean speed in ramp influence area,	S_R = 54.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2306	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	314	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	461	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2306	314	461	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	641	87	128	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3523 393 576 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3523 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3916	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3523 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3916	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 31.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.464

Space mean speed in ramp influence area, S_R = 54.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2352	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	73	vph
Length of first accel/decel lane	860	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	181	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2352	73	181	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	653	20	50	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3593 91 226 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3593 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3684	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3593 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3684	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 28.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.416	
Space mean speed in ramp influence area,	S_R = 55.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2352	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	73	vph
Length of first accel/decel lane	860	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	268	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2352	73	268	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	653	20	74	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3593 91 335 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3593 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3684	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3593 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3684	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 28.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.416	
Space mean speed in ramp influence area,	S_R = 55.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.4	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2425	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	112	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	8680	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2425	181	112	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	674	50	31	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3705 226 140 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3705 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3931	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3705 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3931	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.415	
Space mean speed in ramp influence area,	S_R = 55.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2425	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	73	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2425	181	73	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	674	50	20	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3705 226 91 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3705 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3931	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3705 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3931	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.415

Space mean speed in ramp influence area, S_R = 55.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2263	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	150	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	6	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2263	150	6	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	629	42	2	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3457 188 8 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3457 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3645	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 $v_{12}/2$ No

If yes, v_{12A} = 3457 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3645	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 30.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.432

Space mean speed in ramp influence area, S_R = 55.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2263	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	150	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	231	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2263	150	231	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	629	42	64	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3457 188 289 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3457 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3645	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3457 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3645	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 30.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.432	
Space mean speed in ramp influence area,	S_R = 55.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

AnalystF	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 97
Jurisdiction:	Cherokee County
Analysis 5ear:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2413	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	6	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	7	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2413	6	7	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	670	2	2	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3687 8 9 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3687 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3695	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3687 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3695	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.425	
Space mean speed in ramp influence area,	S_R = 55.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2413	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	6	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	150	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2413	6	150	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	670	2	42	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3687 8 188 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3687 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3695	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3687 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3695	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.425	
Space mean speed in ramp influence area,	S_R = 55.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.2	mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2340	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	179	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	82	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	9999	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2340	179	82	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	650	50	23	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3575 224 103 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3575 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3799	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3575 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3799	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 25.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.390

Space mean speed in ramp influence area, S_R = 56.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2340	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	179	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	58	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2515	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2340	179	58	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	650	50	16	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3575 224 73 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3575 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3799	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3575 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3799	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 25.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.390

Space mean speed in ramp influence area, S_R = 56.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2437	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	193	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	94	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2437	193	94	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	677	54	26	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3723 241 118 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3723 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3964	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3723 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3964	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 33.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.498	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2437	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	193	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	82	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1340	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2437	193	82	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	677	54	23	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3723 241 103 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) = 3723$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3964	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3723 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3964	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 33.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.498

Space mean speed in ramp influence area, S_R = 53.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2536	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2536	106		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	704	29		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3874 133 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3874 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4007	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3874 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4007	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 33.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.497

Space mean speed in ramp influence area, S_R = 53.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 3.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2536	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	94	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2536	106	94	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	704	29	26	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3874 133 118 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3874 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4007	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3874 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4007	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 33.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.497

Space mean speed in ramp influence area, S_R = 53.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2576	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2576	60		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	716	17		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3936 75 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3936 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4011	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3936 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4011	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 30.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.466

Space mean speed in ramp influence area, S_R = 54.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2576	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	60	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	195	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2576	60	195	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	716	17	54	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3936 75 244 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3936 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4011	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3936 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4011	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 30.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.466

Space mean speed in ramp influence area, S_R = 54.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2381	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	195	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	60	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2381	195	60	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	661	54	17	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3638 244 75 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3638 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3882	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3638 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3882	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 30.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.451

Space mean speed in ramp influence area, S_R = 54.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2381	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	195	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	261	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2381	195	261	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	661	54	73	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3638 244 326 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3638 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3882	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3638 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3882	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 30.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.451

Space mean speed in ramp influence area, S_R = 54.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.6 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2410	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2410	495		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	669	138		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3682 619 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3682 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4301	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3682 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4301	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 36.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	M_S = 0.579	
Space mean speed in ramp influence area,	S_R = 51.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 51.7	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2410	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	226	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2410	495	226	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	669	138	63	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3682 619 283 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3682 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4301	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3682 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4301	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 36.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, M_S = 0.579

Space mean speed in ramp influence area, S_R = 51.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2839	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	91	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2839	91		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	789	25		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 4337 114 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4337 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4451	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4337 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4451	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.589

Space mean speed in ramp influence area, S_R = 51.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.5 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2839	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	91	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	66	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2839	91	66	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	789	25	18	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 4337 114 83 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4337 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4451	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4337 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4451	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.589

Space mean speed in ramp influence area, S_R = 51.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.5 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2825	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	204	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2825	204		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	785	57		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 4316 255 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) = 4316$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4571	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4316 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4571	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 37.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	M_S = 0.663	
Space mean speed in ramp influence area,	S_R = 49.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 49.8	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2825	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	204	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	105	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2825	204	105	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	785	57	29	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 4316 255 131 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4316 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4571	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4316 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4571	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 37.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	M_S = 0.663	
Space mean speed in ramp influence area,	S_R = 49.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 49.8	mph

No Build AM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2628	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	211	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2628	211		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	730	59		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 4015 264 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4015 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4279	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 4015 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4279	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 31.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.518

Space mean speed in ramp influence area, S_R = 53.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.1 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2628	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	211	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	448	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2530	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2628	211	448	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	730	59	124	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 4015 264 560 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4015 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4279	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4015 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4279	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 31.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.518

Space mean speed in ramp influence area, S_R = 53.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.1 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2534	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	152	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2534	152		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	704	42		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3871 190 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3871 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4061	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3871 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4061	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.519

Space mean speed in ramp influence area, S_R = 53.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.1 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2534	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	152	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	262	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2534	152	262	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	704	42	73	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3871 190 328 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3871 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4061	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3871 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4061	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.519

Space mean speed in ramp influence area, S_R = 53.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.1 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2572	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	114	vph
Length of first accel/decel lane	620	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2572	114		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	714	32		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3929 143 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3929 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4072	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3929 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4072	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 33.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.506	
Space mean speed in ramp influence area,	S_R = 53.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2572	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	126	vph
Length of first accel/decel lane	620	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	114	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2572	126	114	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	714	35	32	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3929 158 143 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3929 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4087	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3929 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4087	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 33.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.510

Space mean speed in ramp influence area, S_R = 53.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.3 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2145	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	265	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2145	265		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	596	74		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3277 331 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3277 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3608	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3277 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3608	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 28.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.412	
Space mean speed in ramp influence area,	S_R = 55.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.5	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2145	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	265	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	553	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2145	265	553	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	596	74	154	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3277 331 691 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3277 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3608	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3277 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3608	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 28.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.412	
Space mean speed in ramp influence area,	S_R = 55.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2102	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	860	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	151	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2102	154	151	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	584	43	42	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3211 193 189 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3211 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3404	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3211 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3404	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.378	
Space mean speed in ramp influence area,	S_R = 56.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2102	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	860	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	308	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2102	154	308	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	584	43	86	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3211 193 385 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3211 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3404	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3211 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3404	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.378	
Space mean speed in ramp influence area,	S_R = 56.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2256	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	151	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2256	151		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	627	42		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3447 189 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3447 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3636	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3447 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3636	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.364

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2256	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	151	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	154	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2256	151	154	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	627	42	43	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3447 189 193 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3447 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3636	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3447 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3636	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.364

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1931	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	207	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	10	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1931	207	10	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	536	58	3	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2950 259 13 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2950 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3209	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2950 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3209	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.379

Space mean speed in ramp influence area, S_R = 56.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1931	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	207	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	245	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1931	207	245	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	536	58	68	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 2950 259 306 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 2950 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3209	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2950 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3209	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.379

Space mean speed in ramp influence area, S_R = 56.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

AnalystF	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2138	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	42	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2138	10	42	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	594	3	12	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3266 13 53 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3266 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3279	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3266 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3279	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.372	
Space mean speed in ramp influence area,	S_R = 56.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.4	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2138	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	207	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2138	10	207	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	594	3	58	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3266 13 259 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3266 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3279	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3266 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3279	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.372	
Space mean speed in ramp influence area,	S_R = 56.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.4	mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1976	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1976	181		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	549	50		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3019 226 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3019 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3245	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3019 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3245	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 21.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.316	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1976	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	84	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2515	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1976	181	84	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	549	50	23	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3019 226 105 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3019 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3245	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3019 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3245	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 21.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.316	
Space mean speed in ramp influence area,	S_R = 57.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 57.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2069	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	272	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	163	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2069	272	163	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	575	76	45	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3161 340 204 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3161 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3501	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3161 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3501	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 30.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.422

Space mean speed in ramp influence area, S_R = 55.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2069	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	272	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	88	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1340	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2069	272	88	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	575	76	24	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3161 340 110 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3161 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3501	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3161 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3501	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 30.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.422

Space mean speed in ramp influence area, S_R = 55.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2178	130		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	605	36		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3327 163 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3327 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3490	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3327 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3490	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.410	
Space mean speed in ramp influence area,	S_R = 55.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 3.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	163	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2178	130	163	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	605	36	45	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3327 163 204 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3327 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3490	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3327 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3490	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.410

Space mean speed in ramp influence area, S_R = 55.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2187	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	78	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2187	78		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	608	22		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3341 98 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3341 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3439	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3341 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3439	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.373	
Space mean speed in ramp influence area,	S_R = 56.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2187	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	78	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	157	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2187	78	157	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	608	22	44	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

:low rate, vp 3341 98 196 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3341 pc/h

Capacity Checks

	Actual	Maximum	LOS :?
$v_{:O}$	3439	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.Y $v_{12}/2$ No

If yes, v_{12A} = 3341 (Equation 13-1Y, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3439	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.373

Space mean speed in ramp influence area, S_R = 56.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.4 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2030	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	78	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2030	157	78	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	564	44	22	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3101 196 98 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3101 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3297	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3101 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3297	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 25.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.367

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2030	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	278	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2030	157	278	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	564	44	77	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3101 196 348 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3101 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3297	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3101 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3297	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 25.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.367

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2006	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	607	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2006	607		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	557	169		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3065 759 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3065 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3824	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3065 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3824	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 32.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.470

Space mean speed in ramp influence area, S_R = 54.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2006	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	607	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	259	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2006	607	259	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	557	169	72	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

:low rate, vp 306Y 759 324 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 306Y pc/h

Capacity Checks

	Actual	Maximum	LOS :?
$v_{:O}$	3824	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.Y $v_{12}/2$ No

If yes, v_{12A} = 306Y (Equation 13-1Y, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3824	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 32.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.470	
Space mean speed in ramp influence area,	S_R = 54.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Buil
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2543	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2543	245		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	706	68		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3885 306 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3885 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4191	4700	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3885 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4191	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 32.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.512	
Space mean speed in ramp influence area,	S_R = 53.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.2	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2543	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	70	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2543	245	70	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	706	68	19	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 388Y 306 88 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 3885 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4191	4700	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3885 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4191	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 32.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.512

Space mean speed in ramp influence area, S_R = 53.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2682	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2682	495		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	745	138		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 4097 619 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4097 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4716	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 4097 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4716	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 38.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 0.722

Space mean speed in ramp influence area, S_R = 48.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 48.4 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2682	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	106	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2682	495	106	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	745	138	29	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 4097 619 133 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 4097 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4716	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 4097 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4716	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 38.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 0.722	
Space mean speed in ramp influence area,	S_R = 48.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 48.4	mph

No Build PM Peak

I-85 Northbound

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4450	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4450	136		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1236	38		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 6799 170 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6799 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6969	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6799 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6969	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 52.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 4.383	
Space mean speed in ramp influence area,	S_R = -35.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S =	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4450	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	354	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2530	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4450	136	354	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1236	38	98	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 6799 170 443 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6799 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6969	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 6799 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6969	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 52.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 4.383

Space mean speed in ramp influence area, S_R = -35.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4115	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	148	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4115	148		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1143	41		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 6287 185 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6287 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6472	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6287 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6472	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 53.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 2.815	
Space mean speed in ramp influence area,	S_R = 0.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 0.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4115	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	148	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	392	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4115	148	392	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1143	41	109	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 6287 185 490 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6287 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6472	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6287 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6472	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 53.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 2.815

Space mean speed in ramp influence area, S_R = 0.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 0.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4039	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	620	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4039	97		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1122	27		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 6171 121 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6171 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6292	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 6171 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6292	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 50.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 2.385

Space mean speed in ramp influence area, S_R = 10.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 10.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4039	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	620	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	224	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4039	97	224	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1122	27	62	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 6171 121 280 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6171 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6292	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6171 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6292	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 50.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 2.385

Space mean speed in ramp influence area, S_R = 10.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 10.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3447	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	469	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3447	469		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	958	130		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5266 586 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5266 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5852	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5266 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5852	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 46.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.625

Space mean speed in ramp influence area, S_R = 27.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 27.6 mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3447	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	469	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	689	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3447	469	689	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	958	130	191	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5266 586 861 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5266 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5852	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5266 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5852	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 46.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.625	
Space mean speed in ramp influence area,	S_R = 27.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 27.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3516	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	860	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	270	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3516	109	270	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	977	30	75	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5372 136 338 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5372 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5508	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5372 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5508	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 43.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.223	
Space mean speed in ramp influence area,	S_R = 36.9	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 36.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3516	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	860	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	400	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3516	109	400	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	977	30	111	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5372 136 500 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5372 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5508	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 5372 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5508	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 43.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.223	
Space mean speed in ramp influence area,	S_R = 36.9	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 36.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	270	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	167	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	8680	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3625	270	167	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1007	75	46	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5538 338 209 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5538 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5876	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5538 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5876	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 41.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.606	
Space mean speed in ramp influence area,	S_R = 28.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 28.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	270	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	109	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3625	270	109	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1007	75	30	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5538 338 136 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5538 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5876	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5538 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5876	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 41.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.606

Space mean speed in ramp influence area, S_R = 28.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 28.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3383	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	224	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	9	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3383	224	9	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	940	62	3	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5168 280 11 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5168 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5448	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5168 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5448	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 44.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.188

Space mean speed in ramp influence area, S_R = 37.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 37.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3383	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	224	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	345	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3383	224	345	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	940	62	96	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5168 280 431 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5168 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5448	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 5168 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5448	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 44.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.188	
Space mean speed in ramp influence area,	S_R = 37.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 37.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

AnalystF	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3607	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	9	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	10	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3607	9	10	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1002	3	3	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5511 11 13 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5511 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5522	4700	5es
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 5511 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5522	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 43.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.244	
Space mean speed in ramp influence area,	S_R = 36.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 36.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 97
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3607	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	9	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	224	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	5100	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3607	9	224	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1002	3	62	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5511 11 280 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5511 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5522	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 5511 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5522	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 43.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.244	
Space mean speed in ramp influence area,	S_R = 36.4	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 36.4	mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3498	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	268	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3498	268		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	972	74		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5344 335 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5344 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5679	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5344 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5679	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 40.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.357	
Space mean speed in ramp influence area,	S_R = 33.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 33.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Buiuld
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3498	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	268	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	87	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2515	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3498	268	87	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	972	74	24	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5344 335 109 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 5344 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5679	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 5344 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5679	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 40.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.357

Space mean speed in ramp influence area, S_R = 33.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 33.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3643	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	288	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	140	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3643	288	140	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1012	80	39	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5566 360 175 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5566 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5926	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 5566 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5926	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 49.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.754	
Space mean speed in ramp influence area,	S_R = 24.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 24.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3643	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	288	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	123	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1340	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3643	288	123	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1012	80	34	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5566 360 154 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5566 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5926	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5566 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5926	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 49.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.754	
Space mean speed in ramp influence area,	S_R = 24.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 24.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3791	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3791	158		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1053	44		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5792 198 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5792 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5990	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5792 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5990	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 48.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.840	
Space mean speed in ramp influence area,	S_R = 22.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 22.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 3.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3791	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	550	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	140	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3791	158	140	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1053	44	39	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5792 198 175 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5792 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5990	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5792 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5990	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 48.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.840

Space mean speed in ramp influence area, S_R = 22.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 22.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3851	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	90	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3851	90		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1070	25		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5883 113 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5883 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5996	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5883 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5996	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 45.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.818

Space mean speed in ramp influence area, S_R = 23.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 23.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3851	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	90	vph
Length of first accel/decel lane	1000	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	292	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3851	90	292	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1070	25	81	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

:low rate, vp 5883 113 36Y pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5883 pc/h

Capacity Checks

	Actual	Maximum	LOS :?
$v_{:O}$	5996	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.Y $v_{12}/2$ No

If yes, v_{12A} = 5883 (Equation 13-1Y, 13-16, 13-18, or 13-19)

:low Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5996	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 45.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.818	
Space mean speed in ramp influence area,	S_R = 23.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 23.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3559	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	292	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	90	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3559	292	90	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	989	81	25	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5437 365 113 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5437 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5802	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5437 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5802	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 45.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 1.552	
Space mean speed in ramp influence area,	S_R = 29.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 29.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3559	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	292	vph
Length of first accel/decel lane	850	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	390	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3559	292	390	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	989	81	108	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5437 365 488 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5437 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5802	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5437 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5802	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 45.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 1.552

Space mean speed in ramp influence area, S_R = 29.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 29.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3602	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	740	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3602	740		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1001	206		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5503 925 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5503 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6428	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5503 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6428	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 52.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 2.705	
Space mean speed in ramp influence area,	S_R = 2.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 2.8	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3602	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	740	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	339	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3602	740	339	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1001	206	94	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

:low rate, vp 5503 925 424 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 5503 pc/h

Capacity Checks

	Actual	Maximum	LOS :?
$v_{:O}$	6428	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.Y $v_{12}/2$ No

If yes, v_{12A} = 5503 (Equation 13-1Y, 13-16, 13-18, or 13-19)

:low Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6428	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 52.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	M_S = 2.705	
Space mean speed in ramp influence area,	S_R = 2.8	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 2.8	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4244	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4244	136		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1179	38		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 6484 170 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM}) =$ 6484 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6654	4700	Yes
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 6484 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6654	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 51.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 3.280

Space mean speed in ramp influence area, S_R = -10.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4244	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	98	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4244	136	98	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1179	38	27	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 6484 170 123 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6484 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6654	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6484 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6654	4600	Yes

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 51.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 3.280

Space mean speed in ramp influence area, S_R = -10.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4223	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4223	305		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1173	85		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 6452 381 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6452 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6833	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6452 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6833	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 55.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 3.905

Space mean speed in ramp influence area, S_R = -24.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4223	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	157	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4223	305	157	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1173	85	44	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 6452 381 196 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 1.000 Using Equation 0

$v_{12} = v_F (P_{FM})$ = 6452 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6833	4700	Yes

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6452 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6833	4600	Yes

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 55.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, M_S = 3.905

Space mean speed in ramp influence area, S_R = -24.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = mph

Build AM Peak

I-85 Northbound

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2586	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	211	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	448	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2530	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2586	211	448	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	718	59	124	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3951 264 560 pcph

Estimation of V12 Merge Areas

L_{EQ} = 863.01 (Equation 13-6 or 13-7)

P_{FM} = 0.611 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 2414 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4215	7050	No
v_3 or v_{av34}	1537 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 2414 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4215	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.294

Space mean speed in ramp influence area, S_R = 58.2 mph

Space mean speed in outer lanes, S_O = 61.3 mph

Space mean speed for all vehicles, S = 59.3 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2586	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	211	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	448	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2530	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2586	211	448	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	718	59	124	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3951	264	560	pcph

Estimation of V12 Merge Areas

L = 863.01 (Equation 13-6 or 13-7)

EQ
P = 0.185 Using Equation 4
FM
v = v (P) = 730 pc/h
12 F FM

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		4215	9400	No
v_3 or v_{av34}		1610 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 1580 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4215	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 12.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.262	
Space mean speed in ramp influence area,	S_R = 59.0	mph
Space mean speed in outer lanes,	S_0 = 62.5	mph
Space mean speed for all vehicles,	S = 60.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2534	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	152	vph
Length of first accel/decel lane	1353	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2534	152		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	704	42		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3871	190		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.615 Using Equation 1
FM
v = v (P) = 2382 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	4061	7050	No
v or v 3 av34	1489 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 2382 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	4061	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.277	
Space mean speed in ramp influence area,	S_R = 58.6	mph
Space mean speed in outer lanes,	S_0 = 61.4	mph
Space mean speed for all vehicles,	S = 59.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2534	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	152	vph
Length of first accel/decel lane	1353	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	262	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1330	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2534	152	262	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	704	42	73	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3871	190	328	pcph

Estimation of V12 Merge Areas

L = 897.99 (Equation 13-6 or 13-7)

EQ
P = 0.615 Using Equation 1
FM
v = v (P) = 2382 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	4061	7050	No
v or v 3 av34	1489 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 2382 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	4061	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 17.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.277	
Space mean speed in ramp influence area,	S_R = 58.6	mph
Space mean speed in outer lanes,	S_0 = 61.4	mph
Space mean speed for all vehicles,	S = 59.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2534	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	152	vph
Length of first accel/decel lane	1353	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2534	152		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	704	42		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3871	190		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.194 Using Equation 4
FM
v_{12} = v_{12} (P) = 751 pc/h
F FM

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		4061	9400	No
v_3 or v_{av34}		1560 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		Yes	

If yes, v_{12A} = 1548 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4061	4600	No

Level of Service Determination (if not F)

Density, D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 10.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.248	
Space mean speed in ramp influence area,	S_R = 59.3	mph
Space mean speed in outer lanes,	S_0 = 62.6	mph
Space mean speed for all vehicles,	S = 61.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2534	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	152	vph
Length of first accel/decel lane	1353	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	262	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1330	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2534	152	262	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	704	42	73	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3871	190	328	pcph

Estimation of V12 Merge Areas

L = 897.99 (Equation 13-6 or 13-7)

EQ
P = 0.194 Using Equation 4
FM
v = v (P) = 751 pc/h
12 F FM

Capacity Checks

		Actual	Maximum	LOS F?
v FO		4061	9400	No
v or v 3 av34		1560 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?		No	
Is v or v 3 av34	> 1.5 v /2 12		Yes	

If yes, v = 1548 (Equation 13-15, 13-16, 18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	4061	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 10.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.248	
Space mean speed in ramp influence area,	S_R = 59.3	mph
Space mean speed in outer lanes,	S_0 = 62.6	mph
Space mean speed for all vehicles,	S = 61.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2572	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	126	vph
Length of first accel/decel lane	1023	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2572	126		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	714	35		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3929	158		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.606 Using Equation 1
FM
v = v (P) = 2382 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	4087	7050	No
v or v 3 av34	1547 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 2382 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	4087	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_{R} + 0.0078\ v_{R12} - 0.00627\ L_{A} = 18.8$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_0 = 61.2	mph
Space mean speed for all vehicles,	S = 59.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2572	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	126	vph
Length of first accel/decel lane	1023	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	114	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1673	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2572	126	114	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	714	35	32	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3929	158	143	pcph

Estimation of V12 Merge Areas

L = 757.03 (Equation 13-6 or 13-7)

EQ
P = 0.606 Using Equation 1
FM
v_{12} = v_{12} (P_{FM}) = 2382 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4087	7050	No
v_3 or v_{av34}	1547 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2382 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4087	4600	No

Level of Service Determination (if not F)

Density, D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 18.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.299	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_0 = 61.2	mph
Space mean speed for all vehicles,	S = 59.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2572	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	126	vph
Length of first accel/decel lane	1023	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2572	126		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	714	35		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3929	158		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.198 Using Equation 4
FM
v = v (P) = 778 pc/h
12 F FM

Capacity Checks

		Actual	Maximum	LOS F?
v FO		4087	9400	No
v or v 3 av34		1575 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?		No	
Is v or v 3 av34	> 1.5 v /2 12		Yes	

If yes, v = 1571 (Equation 13-15, 13-16, 18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	4087	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 12.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.271	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_0 = 62.6	mph
Space mean speed for all vehicles,	S = 60.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2572	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	126	vph
Length of first accel/decel lane	1023	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	114	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1673	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2572	126	114	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	714	35	32	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3929	158	143	pcph

Estimation of V12 Merge Areas

L = 757.03 (Equation 13-6 or 13-7)

EQ
P = 0.198 Using Equation 4
FM
v = v (P) = 778 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4087	9400	No
v_3 or v_{av34}	1575 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	Yes	

If yes, v_{12A} = 1571 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4087	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 12.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.271	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_0 = 62.6	mph
Space mean speed for all vehicles,	S = 60.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2145	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	265	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2145	265		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	596	74		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3277 331 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1961 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3608	7050	No
v_3 or v_{av34}	1316 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 1961 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3608	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 18.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 57.9	mph
Space mean speed in outer lanes,	S_O = 62.1	mph
Space mean speed for all vehicles,	S = 59.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2145	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	265	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	553	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2145	265	553	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	596	74	154	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3277 331 691 pcph

Estimation of V12 Merge Areas

L_{EQ} = 533.31 (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1961 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3608	7050	No
v_3 or v_{av34}	1316 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$		No

If yes, v_{12A} = 1961 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3608	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 18.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 57.9	mph
Space mean speed in outer lanes,	S_O = 62.1	mph
Space mean speed for all vehicles,	S = 59.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2102	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	1220	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	151	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2102	154	151	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	584	43	42	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3211	193	189	pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.612 Using Equation 1
FM
v = v (P) = 1964 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3404	7050	No
v or v 3 av34	1247 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 1964 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3404	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 14.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.269	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_0 = 62.3	mph
Space mean speed for all vehicles,	S = 60.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2102	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	1220	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	308	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2102	154	308	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	584	43	86	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3211	193	385	pcph

Estimation of V12 Merge Areas

L = 698.34 (Equation 13-6 or 13-7)

EQ
P = 0.612 Using Equation 1
FM
v = v (P) = 1964 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3404	7050	No
v_3 or v_{av34}	1247 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 1964 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3404	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 14.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.269	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_0 = 62.3	mph
Space mean speed for all vehicles,	S = 60.0	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2256	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	151	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2256	151		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	627	42		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3447	189		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.619 Using Equation 1
FM
v = v (P) = 2135 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3636	7050	No
v or v 3 av34	1312 pc/h	(Equation 13-14 or 13-17)	
Is v or v > 2700 pc/h? 3 av34		No	
Is v or v > 1.5 v /2 3 av34 12		No	

If yes, v = 2135 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3636	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 14.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	$M_S = 0.256$	
Space mean speed in ramp influence area,	$S_R = 59.1$	mph
Space mean speed in outer lanes,	$S_0 = 62.1$	mph
Space mean speed for all vehicles,	$S = 60.2$	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2256	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	151	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	154	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2256	151	154	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	627	42	43	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3447	189	193	pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.619 Using Equation 1
FM
v = v (P) = 2135 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3636	7050	No
v_3 or v_{av34}	1312 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2135 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3636	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_{R} + 0.0078\ v_{12} - 0.00627\ L_A$ = 14.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.256	
Space mean speed in ramp influence area,	S_R = 59.1	mph
Space mean speed in outer lanes,	S_0 = 62.1	mph
Space mean speed for all vehicles,	S = 60.2	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2176	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	990	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	245	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4934	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2176	99	245	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	604	28	68	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3324	124	306	pcph

Estimation of V12 Merge Areas

L = 1419.76 (Equation 13-6 or 13-7)

EQ
P = 0.605 Using Equation 1
FM
v = v (P) = 2012 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3448	7050	No
v_3 or v_{av34}	1312 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2012 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3448	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_{R} + 0.0078\ v_{12} - 0.00627\ L_A$ = 15.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.285	
Space mean speed in ramp influence area,	S_R = 58.5	mph
Space mean speed in outer lanes,	S_0 = 62.1	mph
Space mean speed for all vehicles,	S = 59.8	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2176	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	99	vph
Length of first accel/decel lane	990	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	231	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2800	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2176	99	231	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	604	28	64	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3324	124	289	pcph

Estimation of V12 Merge Areas

L = 605.63 (Equation 13-6 or 13-7)

$P_{EQ} = 0.605$ Using Equation 1

$v_{12} = v_F (P_{FM}) = 2012$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3448	7050	No
v_3 or v_{av34}	1312 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, $v_{12A} = 2012$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3448	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 15.9$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	$M_S = 0.285$	
Space mean speed in ramp influence area,	$S_R = 58.5$	mph
Space mean speed in outer lanes,	$S_0 = 62.1$	mph
Space mean speed for all vehicles,	$S = 59.8$	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2030	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	118	vph
Length of first accel/decel lane	1327	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2030	118		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	564	33		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3101	148		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.615 Using Equation 1
FM
v = v (P) = 1906 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3249	7050	No
v or v 3 av34	1195 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 1906 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3249	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 13.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	$M_S = 0.259$	
Space mean speed in ramp influence area,	$S_R = 59.1$	mph
Space mean speed in outer lanes,	$S_0 = 62.5$	mph
Space mean speed for all vehicles,	$S = 60.3$	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2030	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	118	vph
Length of first accel/decel lane	1327	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	245	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2201	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2030	118	245	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	564	33	68	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3101	148	306	pcph

Estimation of V12 Merge Areas

L = 712.67 (Equation 13-6 or 13-7)

EQ
P = 0.615 Using Equation 1
FM
v = v (P) = 1906 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3249	7050	No
v or v 3 av34	1195 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 1906 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3249	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 13.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	$M_S = 0.259$	
Space mean speed in ramp influence area,	$S_R = 59.1$	mph
Space mean speed in outer lanes,	$S_0 = 62.5$	mph
Space mean speed for all vehicles,	$S = 60.3$	mph

I-85 Southbound

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STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1976	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1976	181		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	549	50		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3019 226 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.619 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1870 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3245	7050	No
v_3 or v_{av34}	1149 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No
Is v_3 or v_{av34}	> 1.5 v_{12}/2		No

If yes, v_{12A} = 1870 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3245	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 12.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.248	
Space mean speed in ramp influence area,	S_R = 59.3	mph
Space mean speed in outer lanes,	S_O = 62.7	mph
Space mean speed for all vehicles,	S = 60.5	mph

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STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1976	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	181	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	84	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2515	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1976	181	84	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	549	50	23	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 3019 226 105 pcph

Estimation of V12 Merge Areas

L_{EQ} = 788.63 (Equation 13-6 or 13-7)

P_{FM} = 0.619 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1870 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3245	7050	No
v_3 or v_{av34}	1149 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No
Is v_3 or v_{av34}	> 1.5 v_{12}/2		No

If yes, v_{12A} = 1870 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3245	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 12.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, M_S = 0.248

Space mean speed in ramp influence area, S_R = 59.3 mph

Space mean speed in outer lanes, S_O = 62.7 mph

Space mean speed for all vehicles, S = 60.5 mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2069	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	272	vph
Length of first accel/decel lane	1272	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	163	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5324	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2069	272	163	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	575	76	45	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3161	340	204	pcph

Estimation of V12 Merge Areas

L = 830.27 (Equation 13-6 or 13-7)

EQ
P = 0.613 Using Equation 1
FM
v = v (P) = 1938 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3501	7050	No
v or v 3 av34	1223 pc/h	(Equation 13-14 or 13-17)	
Is v or v > 2700 pc/h? 3 av34		No	
Is v or v > 1.5 v /2 3 av34 12		No	

If yes, v = 1938 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3501	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 15.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.270	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_0 = 62.4	mph
Space mean speed for all vehicles,	S = 60.0	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2069	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	272	vph
Length of first accel/decel lane	1272	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	88	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2372	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2069	272	88	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	575	76	24	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3161	340	110	pcph

Estimation of V12 Merge Areas

L = 742.18 (Equation 13-6 or 13-7)

EQ
P = 0.613 Using Equation 1
FM
v = v (P) = 1938 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3501	7050	No
v or v 3 av34	1223 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 1938 (Equation 13-15, 13-16, 18, or 19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3501	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 15.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.270	
Space mean speed in ramp influence area,	S_R = 58.8	mph
Space mean speed in outer lanes,	S_0 = 62.4	mph
Space mean speed for all vehicles,	S = 60.0	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	1321	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2178	130		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	605	36		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3327	163		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.614 Using Equation 1
FM
v = v (P) = 2044 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3490	7050	No
v or v 3 av34	1283 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 2044 (Equation 13-15, 13-16, 18, or 19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3490	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_{R} + 0.0078\ v_{R12} - 0.00627\ L_{A} = 14.3$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.264	
Space mean speed in ramp influence area,	S_R = 58.9	mph
Space mean speed in outer lanes,	S_0 = 62.2	mph
Space mean speed for all vehicles,	S = 60.1	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2178	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	130	vph
Length of first accel/decel lane	1321	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	163	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2242	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2178	130	163	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	605	36	45	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3327	163	204	pcph

Estimation of V12 Merge Areas

L = 761.58 (Equation 13-6 or 13-7)

EQ
P = 0.614 Using Equation 1
FM
v_{12} = v_F (P_{FM}) = 2044 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3490	7050	No
v_3 or v_{av34}	1283 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2044 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3490	4600	No

Level of Service Determination (if not F)

Density, D_R = 5.475 + 0.00734 v_{R} + 0.0078 v_{12} - 0.00627 L_A = 14.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.264	
Space mean speed in ramp influence area,	S_R = 58.9	mph
Space mean speed in outer lanes,	S_0 = 62.2	mph
Space mean speed for all vehicles,	S = 60.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2187	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	78	vph
Length of first accel/decel lane	1125	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2187	78		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	608	22		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3341	98		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.609 Using Equation 1
FM
v = v (P) = 2035 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3439	7050	No
v or v 3 av34	1306 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 2035 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3439	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 15.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.275	
Space mean speed in ramp influence area,	S_R = 58.7	mph
Space mean speed in outer lanes,	S_0 = 62.1	mph
Space mean speed for all vehicles,	S = 59.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2187	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	78	vph
Length of first accel/decel lane	1125	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	157	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2187	78	157	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	608	22	44	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3341	98	196	pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

$P_{EQ} = 0.609$ Using Equation 1

$v_{12} = v_F (P_{FM}) = 2035$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3439	7050	No
v_3 or v_{av34}	1306 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, $v_{12A} = 2035$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3439	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 15.0$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	$M_S = 0.275$	
Space mean speed in ramp influence area,	$S_R = 58.7$	mph
Space mean speed in outer lanes,	$S_0 = 62.1$	mph
Space mean speed for all vehicles,	$S = 59.9$	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2030	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	1220	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	78	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2030	157	78	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	564	44	22	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3101	196	98	pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.612 Using Equation 1
FM
v = v (P) = 1897 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3297	7050	No
v_3 or v_{av34}	1204 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1897 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3297	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 14.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.267	
Space mean speed in ramp influence area,	S_R = 58.9	mph
Space mean speed in outer lanes,	S_0 = 62.5	mph
Space mean speed for all vehicles,	S = 60.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2030	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	1220	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	278	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2030	157	278	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	564	44	77	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3101	196	348	pcph

Estimation of V12 Merge Areas

L = 675.44 (Equation 13-6 or 13-7)

EQ
P = 0.612 Using Equation 1
FM
v = v (P) = 1897 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	3297	7050	No
v 3 or v av34	1204 pc/h	(Equation 13-14 or 13-17)	
Is v 3 or v av34	> 2700 pc/h?	No	
Is v 3 or v av34	> 1.5 v 12 /2	No	

If yes, v 12A = 1897 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	3297	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 14.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.267	
Space mean speed in ramp influence area,	S_R = 58.9	mph
Space mean speed in outer lanes,	S_0 = 62.5	mph
Space mean speed for all vehicles,	S = 60.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2006	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	607	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2006	607		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	557	169		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3065 759 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.589 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1807 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	3824	7050	No
v_3 or v_{av34}	1258 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 1807 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3824	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.342

Space mean speed in ramp influence area, S_R = 57.1 mph

Space mean speed in outer lanes, S_O = 62.3 mph

Space mean speed for all vehicles, S = 58.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2006	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	607	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	259	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2006	607	259	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	557	169	72	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

:low rate, vp 306Y 759 324 pcph

Estimation of V12 Merge Areas

L_{EQ} = 435.24 (Equation 13-6 or 13-7)

P_{FM} = 0.589 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 1807 pc/h

Capacity Checks

	Actual	Maximum	LOS :?
$v_{:O}$	3824	7050	No
v_3 or v_{av34}	12Y8 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.Y $v_{12}/2$		No	

If yes, v_{12A} = 1807 (Equation 13-1Y, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	3824	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.342

Space mean speed in ramp influence area, S_R = 57.1 mph

Space mean speed in outer lanes, S_O = 62.3 mph

Space mean speed for all vehicles, S = 58.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2543	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	1001	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2543	245		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	706	68		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3885	306		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.606 Using Equation 1
FM
v = v (P) = 2352 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	4191	7050	No
v or v	1533 pc/h	(Equation 13-14 or 13-17)	
3 av34			
Is v or v	> 2700 pc/h?	No	
3 av34			
Is v or v	> 1.5 v /2	No	
3 av34	12		

If yes, v = 2352 (Equation 13-15, 13-16, 18, or 19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	4191	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 19.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 57.9	mph
Space mean speed in outer lanes,	S_0 = 61.3	mph
Space mean speed for all vehicles,	S = 59.1	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2543	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	1001	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	70	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1182	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2543	245	70	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	706	68	19	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3885	306	88	pcph

Estimation of V12 Merge Areas

L = 769.52 (Equation 13-6 or 13-7)

EQ
P = 0.606 Using Equation 1
FM
v = v (P) = 2352 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	4191	7050	No
v or v 3 av34	1533 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 2352 (Equation 13-15, 13-16, 18, or 19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	4191	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{R12} - 0.00627\ L_A$ = 19.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.307	
Space mean speed in ramp influence area,	S_R = 57.9	mph
Space mean speed in outer lanes,	S_0 = 61.3	mph
Space mean speed for all vehicles,	S = 59.1	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2543	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	1001	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2543	245		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	706	68		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3885	306		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.180 Using Equation 4
FM
v = v (P) = 698 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4191	9400	No
v_3 or v_{av34}	1593 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	Yes	

If yes, v_{12A} = 1554 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4191	4600	No

Level of Service Determination (if not F)

Density, D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 13.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.276	
Space mean speed in ramp influence area,	S_R = 58.7	mph
Space mean speed in outer lanes,	S_0 = 62.6	mph
Space mean speed for all vehicles,	S = 60.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2543	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	1001	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	70	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1182	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2543	245	70	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	706	68	19	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3885	306	88	pcph

Estimation of V12 Merge Areas

L = 769.52 (Equation 13-6 or 13-7)

EQ
P = 0.180 Using Equation 4
FM
v = v (P) = 698 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	4191	9400	No
v or v 3 av34	1593 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	Yes	

If yes, v = 1554 (Equation 13-15, 13-16, 18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	4191	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 13.6$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.276	
Space mean speed in ramp influence area,	S_R = 58.7	mph
Space mean speed in outer lanes,	S_0 = 62.6	mph
Space mean speed for all vehicles,	S = 60.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2682	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2682	495		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	745	138		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4097	619		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.604 Using Equation 1
FM
v = v (P) = 2475 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4716	7050	No
v_3 or v_{av34}	1622 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2475 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4716	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 23.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.341	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = 61.0	mph
Space mean speed for all vehicles,	S = 58.4	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2682	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	106	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2682	495	106	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	745	138	29	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4097	619	133	pcph

Estimation of V12 Merge Areas

L = 859.22 (Equation 13-6 or 13-7)

P_{EQ} = 0.604 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 2475 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4716	7050	No
v_3 or v_{av34}	1622 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2475 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	4716	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 23.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.341	
Space mean speed in ramp influence area,	S_R = 57.2	mph
Space mean speed in outer lanes,	S_0 = 61.0	mph
Space mean speed for all vehicles,	S = 58.4	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2682	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2682	495		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	745	138		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4097	619		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.140 Using Equation 4
FM
v = v (P) = 575 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4716	9400	No
v_3 or v_{av34}	1761 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	Yes	

If yes, v_{12A} = 1638 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4716	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 16.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.292	
Space mean speed in ramp influence area,	S_R = 58.3	mph
Space mean speed in outer lanes,	S_0 = 62.4	mph
Space mean speed for all vehicles,	S = 60.4	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2682	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	495	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	106	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2682	495	106	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	745	138	29	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4097	619	133	pcph

Estimation of V12 Merge Areas

L = 859.22 (Equation 13-6 or 13-7)

EQ
P = 0.140 Using Equation 4
FM
v = v (P) = 575 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	4716	9400	No
v_3 or v_{av34}	1761 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	Yes	

If yes, v_{12A} = 1638 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4716	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 16.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.292	
Space mean speed in ramp influence area,	S_R = 58.3	mph
Space mean speed in outer lanes,	S_0 = 62.4	mph
Space mean speed for all vehicles,	S = 60.4	mph

Build PM Peak
I-85 Northbound

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STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4384	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4384	136		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1218	38		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 6698 170 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.611 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 4093 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6868	7050	No
v_3 or v_{av34}	2605 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 4093 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6868	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 31.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.514

Space mean speed in ramp influence area, S_R = 53.2 mph

Space mean speed in outer lanes, S_O = 56.6 mph

Space mean speed for all vehicles, S = 54.4 mph

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4384	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	420	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2530	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4384	136	420	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1218	38	117	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 6698 170 525 pcph

Estimation of V12 Merge Areas

L_{EQ} = 1430.75 (Equation 13-6 or 13-7)

P_{FM} = 0.611 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 4093 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6868	7050	No
v_3 or v_{av34}	2605 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 4093 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6868	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 31.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.514

Space mean speed in ramp influence area, S_R = 53.2 mph

Space mean speed in outer lanes, S_O = 56.6 mph

Space mean speed for all vehicles, S = 54.4 mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4384	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4384	136		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1218	38		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6698	170		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.197 Using Equation 4
FM
v = v (P) = 1316 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6868	9400	No
v_3 or v_{av34}	2691 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	Yes	

If yes, v_{12A} = 2679 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	6868	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 20.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.304	
Space mean speed in ramp influence area,	S_R = 58.0	mph
Space mean speed in outer lanes,	S_0 = 59.6	mph
Space mean speed for all vehicles,	S = 58.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4384	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	420	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2530	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4384	136	420	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1218	38	117	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6698	170	525	pcph

Estimation of V12 Merge Areas

L = 1430.75 (Equation 13-6 or 13-7)

EQ
P = 0.197 Using Equation 4
FM
v = v (P) = 1316 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6868	9400	No
v or v 3 av34	2691 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	Yes	

If yes, v = 2679 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	6868	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 20.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.304	
Space mean speed in ramp influence area,	S_R = 58.0	mph
Space mean speed in outer lanes,	S_0 = 59.6	mph
Space mean speed for all vehicles,	S = 58.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4115	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	148	vph
Length of first accel/decel lane	1353	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4115	148		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1143	41		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6287	185		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

P_{EQ} = 0.615 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 3869 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6472	7050	No
v_3 or v_{av34}	2418 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3869 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6472	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 28.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.451	
Space mean speed in ramp influence area,	S_R = 54.6	mph
Space mean speed in outer lanes,	S_0 = 57.8	mph
Space mean speed for all vehicles,	S = 55.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4115	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	148	vph
Length of first accel/decel lane	1353	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	405	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1330	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4115	148	405	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1143	41	113	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6287	185	506	pcph

Estimation of V12 Merge Areas

L = 1413.94 (Equation 13-6 or 13-7)

EQ
P = 0.610 Using Equation 2
FM
$v_{12} = v_F (P_{FM}) =$ 3835 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6472	7050	No
v_3 or v_{av34}	2452 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3835 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6472	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 28.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.444	
Space mean speed in ramp influence area,	S_R = 54.8	mph
Space mean speed in outer lanes,	S_0 = 57.6	mph
Space mean speed for all vehicles,	S = 55.8	mph

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STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4115	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	148	vph
Length of first accel/decel lane	1353	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4115	148		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1143	41		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6287	185		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.195 Using Equation 4
FM
v = v (P) = 1224 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6472	9400	No
v or v 3 av34	2531 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	Yes	

If yes, v = 2514 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	6472	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 18.0$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.284	
Space mean speed in ramp influence area,	S_R = 58.5	mph
Space mean speed in outer lanes,	S_0 = 60.0	mph
Space mean speed for all vehicles,	S = 59.4	mph

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STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4115	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	148	vph
Length of first accel/decel lane	1353	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	405	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1330	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4115	148	405	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1143	41	113	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6287	185	506	pcph

Estimation of V12 Merge Areas

L = 1413.94 (Equation 13-6 or 13-7)

EQ
P = 0.195 Using Equation 4
FM
v = v (P) = 1224 pc/h
12 F FM

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		6472	9400	No
v_3 or v_{av34}		2531 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2		Yes	

If yes, v_{12A} = 2514 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	6472	4600	No

Level of Service Determination (if not F)

Density, D_R = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 18.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.284	
Space mean speed in ramp influence area,	S_R = 58.5	mph
Space mean speed in outer lanes,	S_0 = 60.0	mph
Space mean speed for all vehicles,	S = 59.4	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4039	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	1023	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4039	97		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1122	27		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6171	121		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

$P_{EQ} = 0.606$ Using Equation 1

$v_{12} = v_F (P_{FM}) = 3741$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6292	7050	No
v_3 or v_{av34}	2430 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, $v_{12A} = 3741$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6292	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 29.1$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	$M_S = 0.435$	
Space mean speed in ramp influence area,	$S_R = 55.0$	mph
Space mean speed in outer lanes,	$S_0 = 57.7$	mph
Space mean speed for all vehicles,	$S = 56.0$	mph

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STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4039	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	1023	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	224	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1673	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4039	97	224	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1122	27	62	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6171	121	280	pcph

Estimation of V12 Merge Areas

L = 1228.90 (Equation 13-6 or 13-7)

EQ
P = 0.606 Using Equation 1
FM
v = v (P) = 3741 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6292	7050	No
v or v 3 av34	2430 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3741 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	6292	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.435	
Space mean speed in ramp influence area,	S_R = 55.0	mph
Space mean speed in outer lanes,	S_0 = 57.7	mph
Space mean speed for all vehicles,	S = 56.0	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4039	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	1023	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4039	97		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1122	27		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6171	121		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.203 Using Equation 4
FM
v = v (P) = 1251 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6292	9400	No
v or v 3 av34	2460 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	Yes	

If yes, v = 2468 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	6292	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 19.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.301	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_0 = 60.1	mph
Space mean speed for all vehicles,	S = 59.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4039	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	97	vph
Length of first accel/decel lane	1023	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	224	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1673	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4039	97	224	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1122	27	62	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6171	121	280	pcph

Estimation of V12 Merge Areas

L = 1228.90 (Equation 13-6 or 13-7)

EQ
P = 0.203 Using Equation 4
FM
v = v (P) = 1251 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6292	9400	No
v_3 or v_{av34}	2460 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	Yes	

If yes, v_{12A} = 2468 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	6292	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 19.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M_S = 0.301	
Space mean speed in ramp influence area,	S_R = 58.1	mph
Space mean speed in outer lanes,	S_0 = 60.1	mph
Space mean speed for all vehicles,	S = 59.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3447	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	469	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3447	469		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	958	130		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5266 586 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3152 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5852	7050	No
v_3 or v_{av34}	2114 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3152 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5852	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.432	
Space mean speed in ramp influence area,	S_R = 55.1	mph
Space mean speed in outer lanes,	S_O = 59.2	mph
Space mean speed for all vehicles,	S = 56.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3447	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	469	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	689	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3447	469	689	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	958	130	191	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5266 586 861 pcph

Estimation of V12 Merge Areas

L_{EQ} = 1013.53 (Equation 13-6 or 13-7)

P_{FM} = 0.599 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3152 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5852	7050	No
v_3 or v_{av34}	2114 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No
Is v_3 or v_{av34}	> 1.5 v_{12}/2		No

If yes, v_{12A} = 3152 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5852	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_{R} + 0.0078\ v_{12} - 0.00627\ L_A$ = 29.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.432

Space mean speed in ramp influence area, S_R = 55.1 mph

Space mean speed in outer lanes, S_O = 59.2 mph

Space mean speed for all vehicles, S = 56.5 mph

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STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3516	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	1220	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	270	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3516	109	270	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	977	30	75	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5372	136	338	pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.612 Using Equation 1
FM
v = v (P) = 3286 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5508	7050	No
v_3 or v_{av34}	2086 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3286 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5508	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.355	
Space mean speed in ramp influence area,	S_R = 56.8	mph
Space mean speed in outer lanes,	S_0 = 59.3	mph
Space mean speed for all vehicles,	S = 57.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3516	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	1220	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	400	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3516	109	400	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	977	30	111	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5372	136	500	pcph

Estimation of V12 Merge Areas

L = 1148.59 (Equation 13-6 or 13-7)

EQ
P = 0.600 Using Equation 2
FM
v = v (P) = 3223 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5508	7050	No
v_3 or v_{av34}	2149 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3223 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5508	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.348	
Space mean speed in ramp influence area,	S_R = 57.0	mph
Space mean speed in outer lanes,	S_0 = 59.1	mph
Space mean speed for all vehicles,	S = 57.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	270	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	167	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	8680	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3625	270	167	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1007	75	46	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5538	338	209	pcph

Estimation of V12 Merge Areas

L = 773.79 (Equation 13-6 or 13-7)

$P_{EQ} = 0.619$ Using Equation 1

$v_{12} = v_F (P_{FM}) = 3431$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5876	7050	No
v_3 or v_{av34}	2107 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, $v_{12A} = 3431$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5876	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A = 25.3$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	$M_S = 0.385$	
Space mean speed in ramp influence area,	$S_R = 56.1$	mph
Space mean speed in outer lanes,	$S_0 = 59.2$	mph
Space mean speed for all vehicles,	$S = 57.2$	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3625	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	270	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	109	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1490	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3625	270	109	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1007	75	30	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5538	338	136	pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.619 Using Equation 1
FM
v = v (P) = 3431 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5876	7050	No
v_3 or v_{av34}	2107 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3431 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5876	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 25.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.385	
Space mean speed in ramp influence area,	S_R = 56.1	mph
Space mean speed in outer lanes,	S_0 = 59.2	mph
Space mean speed for all vehicles,	S = 57.2	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3728	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	131	vph
Length of first accel/decel lane	990	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	345	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	4934	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3728	131	345	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1036	36	96	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5696	164	431	pcph

Estimation of V12 Merge Areas

L = 1999.72 (Equation 13-6 or 13-7)

EQ
P = 0.605 Using Equation 1
FM
v = v (P) = 3447 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5860	7050	No
v_3 or v_{av34}	2249 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3447 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5860	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 27.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.396	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_0 = 58.7	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3728	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	131	vph
Length of first accel/decel lane	990	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	167	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2800	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3728	131	167	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1036	36	46	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5696	164	209	pcph

Estimation of V12 Merge Areas

L = 1121.80 (Equation 13-6 or 13-7)

EQ
P = 0.605 Using Equation 1
FM
v = v (P) = 3447 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5860	7050	No
v_3 or v_{av34}	2249 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3447 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5860	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 27.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.396	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_0 = 58.7	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3514	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	1327	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3514	102		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	976	28		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5369	128		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.615 Using Equation 1
FM
v = v (P) = 3300 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5497	7050	No
v_3 or v_{av34}	2069 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3300 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5497	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 23.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.348	
Space mean speed in ramp influence area,	S_R = 57.0	mph
Space mean speed in outer lanes,	S_0 = 59.4	mph
Space mean speed for all vehicles,	S = 57.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3514	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	102	vph
Length of first accel/decel lane	1327	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	345	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2201	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3514	102	345	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	976	28	96	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5369	128	431	pcph

Estimation of V12 Merge Areas

L = 1193.75 (Equation 13-6 or 13-7)

EQ
P = 0.615 Using Equation 1
FM
v = v (P) = 3300 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5497	7050	No
v_3 or v_{av34}	2069 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3300 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5497	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 23.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.348	
Space mean speed in ramp influence area,	S_R = 57.0	mph
Space mean speed in outer lanes,	S_0 = 59.4	mph
Space mean speed for all vehicles,	S = 57.9	mph

I-85 Southbound

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STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3498	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	268	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3498	268		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	972	74		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5344 335 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.619 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3311 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5679	7050	No
v_3 or v_{av34}	2033 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3311 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5679	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 24.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.365

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = 59.5 mph

Space mean speed for all vehicles, S = 57.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3498	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	268	vph
Length of first accel/decel lane	1500	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	87	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2515	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3498	268	87	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	972	74	24	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

Flow rate, vp 5344 335 109 pcph

Estimation of V12 Merge Areas

L_{EQ} = 1309.51 (Equation 13-6 or 13-7)

P_{FM} = 0.619 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3311 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5679	7050	No
v_3 or v_{av34}	2033 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3311 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5679	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 24.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, M_S = 0.365

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = 59.5 mph

Space mean speed for all vehicles, S = 57.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3643	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	288	vph
Length of first accel/decel lane	1272	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	140	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	5324	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3643	288	140	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1012	80	39	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5566	360	175	pcph

Estimation of V12 Merge Areas

L = 712.24 (Equation 13-6 or 13-7)

EQ
P = 0.613 Using Equation 1
FM
v = v (P) = 3413 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	5926	7050	No
v or v 3 av34	2153 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3413 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	5926	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.402	
Space mean speed in ramp influence area,	S_R = 55.8	mph
Space mean speed in outer lanes,	S_0 = 59.0	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3643	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	288	vph
Length of first accel/decel lane	1272	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	123	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2372	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3643	288	123	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1012	80	34	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5566	360	154	pcph

Estimation of V12 Merge Areas

L = 1261.13 (Equation 13-6 or 13-7)

P_{EQ} = 0.613 Using Equation 1

$v_{12} = v_F (P_{FM}) =$ 3413 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5926	7050	No
v_3 or v_{av34}	2153 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3413 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5926	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_{R12} + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.402	
Space mean speed in ramp influence area,	S_R = 55.8	mph
Space mean speed in outer lanes,	S_0 = 59.0	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3791	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	1321	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3791	158		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1053	44		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5792	198		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.614 Using Equation 1
FM
v = v (P) = 3559 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	5990	7050	No
v or v 3 av34	2233 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3559 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	5990	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.396	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_0 = 58.8	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
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Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3791	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	158	vph
Length of first accel/decel lane	1321	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	140	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2242	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3791	158	140	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1053	44	39	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5792	198	175	pcph

Estimation of V12 Merge Areas

L = 1296.58 (Equation 13-6 or 13-7)

EQ
P = 0.614 Using Equation 1
FM
v = v (P) = 3559 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	5990	7050	No
v or v 3 av34	2233 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3559 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	5990	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_R - 0.00627\ L_A$ = 26.4 pc/mi/ln
(12)

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.396	
Space mean speed in ramp influence area,	S_R = 55.9	mph
Space mean speed in outer lanes,	S_0 = 58.8	mph
Space mean speed for all vehicles,	S = 56.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3851	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	90	vph
Length of first accel/decel lane	1125	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3851	90		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1070	25		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5883	113		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.609 Using Equation 1
FM
v = v (P) = 3583 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	5996	7050	No
v or v 3 av34	2300 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3583 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	5996	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 27.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.399	
Space mean speed in ramp influence area,	S_R = 55.8	mph
Space mean speed in outer lanes,	S_0 = 58.5	mph
Space mean speed for all vehicles,	S = 56.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3851	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	90	vph
Length of first accel/decel lane	1125	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	292	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3851	90	292	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1070	25	81	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5883	113	365	pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.609 Using Equation 1
FM
v = v (P) = 3583 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	5996	7050	No
v_3 or v_{av34}	2300 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3583 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5996	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 27.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.399	
Space mean speed in ramp influence area,	S_R = 55.8	mph
Space mean speed in outer lanes,	S_0 = 58.5	mph
Space mean speed for all vehicles,	S = 56.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3559	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	292	vph
Length of first accel/decel lane	1220	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	90	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	On	
Distance to adjacent Ramp	1325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3559	292	90	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	989	81	25	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5437	365	113	pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.612 Using Equation 1
FM
v = v (P) = 3326 pc/h
12 F FM

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		5802	7050	No
v_3 or v_{av34}		2111 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 3326 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5802	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.392	
Space mean speed in ramp influence area,	S_R = 56.0	mph
Space mean speed in outer lanes,	S_0 = 59.2	mph
Space mean speed for all vehicles,	S = 57.1	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92 Loop
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3559	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	292	vph
Length of first accel/decel lane	1220	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	390	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3559	292	390	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	989	81	108	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5437	365	488	pcph

Estimation of V12 Merge Areas

L = 1211.51 (Equation 13-6 or 13-7)

EQ
P = 0.598 Using Equation 2
FM
v = v (P) = 3252 pc/h
12 F FM

Capacity Checks

		Actual	Maximum	LOS F?
v_{FO}		5802	7050	No
v_3 or v_{av34}		2185 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 3252 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	5802	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 25.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.381	
Space mean speed in ramp influence area,	S_R = 56.2	mph
Space mean speed in outer lanes,	S_0 = 58.9	mph
Space mean speed for all vehicles,	S = 57.2	mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3602	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	740	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3602	740		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1001	206		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 5503 925 pcph

Estimation of V12 Merge Areas

L_{EQ} = (Equation 13-6 or 13-7)

P_{FM} = 0.589 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3243 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6428	7050	No
v_3 or v_{av34}	2260 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3243 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6428	4600	No

Level of Service Determination (if not F)

$D_R = 5.475 + 0.00734\, v_R + 0.0078\, v_{12} - 0.00627\, L_A$ = 34.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, M_S = 0.543

Space mean speed in ramp influence area, S_R = 52.5 mph

Space mean speed in outer lanes, S_O = 58.7 mph

Space mean speed for all vehicles, S = 54.5 mph

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STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3602	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	740	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	339	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3602	740	339	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1001	206	94	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	

:low rate, vp 5503 925 424 pcph

Estimation of V12 Merge Areas

L_{EQ} = 992.49 (Equation 13-6 or 13-7)

P_{FM} = 0.589 Using Equation 1

$v_{12} = v_F (P_{FM})$ = 3243 pc/h

Capacity Checks

	Actual	Maximum	LOS :?
$v_{:O}$	6428	7050	No
v_3 or v_{av34}	2260 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.Y $v_{12}/2$	No	

If yes, v_{12A} = 3243 (Equation 13-1Y, 13-16, 13-18, or 13-19)

:low Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6428	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 34.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.543	
Space mean speed in ramp influence area,	S_R = 52.5	mph
Space mean speed in outer lanes,	S_O = 58.7	mph
Space mean speed for all vehicles,	S = 54.5	mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3602	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	740	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3602	740		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1001	206		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5503	925		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.102 Using Equation 4
FM
v = v (P) = 562 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6428	9400	No
v or v 3 av34	2470 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	Yes	

If yes, v = 2201 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	6428	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.380	
Space mean speed in ramp influence area,	S_R = 56.3	mph
Space mean speed in outer lanes,	S_0 = 60.9	mph
Space mean speed for all vehicles,	S = 58.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3602	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	740	vph
Length of first accel/decel lane	425	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	339	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3602	740	339	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1001	206	94	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5503	925	424	pcph

Estimation of V12 Merge Areas

L = 992.49 (Equation 13-6 or 13-7)

EQ
P = 0.102 Using Equation 4
FM
v = v (P) = 562 pc/h
12 F FM

Capacity Checks

		Actual	Maximum	LOS F?
v FO		6428	9400	No
v or v 3 av34		2470 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?		No	
Is v or v 3 av34	> 1.5 v /2 12		Yes	

If yes, v = 2201 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	6428	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.380	
Space mean speed in ramp influence area,	S_R = 56.3	mph
Space mean speed in outer lanes,	S_0 = 60.9	mph
Space mean speed for all vehicles,	S = 58.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4244	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1001	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4244	136		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1179	38		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6484	170		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.606 Using Equation 1
FM
v = v (P) = 3926 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6654	7050	No
v or v 3 av34	2558 pc/h	(Equation 13-14 or 13-17)	
Is v or v > 2700 pc/h? 3 av34		No	
Is v or v > 1.5 v /2 3 av34 12		No	

If yes, v = 3926 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	6654	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_R - 0.00627\ L_A$ = 31.1 pc/mi/ln
(R 12)

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.485	
Space mean speed in ramp influence area,	S_R = 53.8	mph
Space mean speed in outer lanes,	S_0 = 56.9	mph
Space mean speed for all vehicles,	S = 55.0	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4244	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1001	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	98	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1182	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4244	136	98	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1179	38	27	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6484	170	123	pcph

Estimation of V12 Merge Areas

L = 1296.60 (Equation 13-6 or 13-7)

EQ
P = 0.598 Using Equation 2
FM
v = v (P) = 3879 pc/h
12 F FM

Capacity Checks

		Actual	Maximum	LOS F?
v FO		6654	7050	No
v or v 3 av34		2605 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?		No	
Is v or v 3 av34	> 1.5 v /2 12		No	

If yes, v = 3879 (Equation 13-15, 13-16, 18, or 19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	6654	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 30.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.475	
Space mean speed in ramp influence area,	S_R = 54.1	mph
Space mean speed in outer lanes,	S_0 = 56.6	mph
Space mean speed for all vehicles,	S = 55.1	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4244	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1001	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4244	136		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1179	38		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6484	170		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.197 Using Equation 4
FM
v = v (P) = 1274 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6654	9400	No
v_3 or v_{av34}	2605 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	Yes	

If yes, v_{12A} = 2593 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	6654	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.313	
Space mean speed in ramp influence area,	S_R = 57.8	mph
Space mean speed in outer lanes,	S_0 = 59.8	mph
Space mean speed for all vehicles,	S = 59.0	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4244	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	136	vph
Length of first accel/decel lane	1001	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	98	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1182	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4244	136	98	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1179	38	27	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6484	170	123	pcph

Estimation of V12 Merge Areas

L = 1296.60 (Equation 13-6 or 13-7)

EQ
P = 0.197 Using Equation 4
FM
v = v (P) = 1274 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6654	9400	No
v or v 3 av34	2605 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	Yes	

If yes, v = 2593 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	6654	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.313	
Space mean speed in ramp influence area,	S_R = 57.8	mph
Space mean speed in outer lanes,	S_0 = 59.8	mph
Space mean speed for all vehicles,	S = 59.0	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4223	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4223	305		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1173	85		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6452	381		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.604 Using Equation 1
FM
v = v (P) = 3898 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6833	7050	No
v or v 3 av34	2554 pc/h	(Equation 13-14 or 13-17)	
Is v or v 3 av34	> 2700 pc/h?	No	
Is v or v 3 av34	> 1.5 v /2 12	No	

If yes, v = 3898 (Equation 13-15, 13-16, 13-18, or 13-19)
12A

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v R12	6833	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 32.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.536	
Space mean speed in ramp influence area,	S_R = 52.7	mph
Space mean speed in outer lanes,	S_0 = 56.9	mph
Space mean speed for all vehicles,	S = 54.2	mph

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Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4223	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	157	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4223	305	157	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1173	85	44	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6452	381	196	pcph

Estimation of V12 Merge Areas

L = 1312.26 (Equation 13-6 or 13-7)

EQ
P = 0.604 Using Equation 1
FM
v_{12} = v_F (P_{FM}) = 3898 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6833	7050	No
v_3 or v_{av34}	2554 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3898 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	6833	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 32.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	M_S = 0.536	
Space mean speed in ramp influence area,	S_R = 52.7	mph
Space mean speed in outer lanes,	S_0 = 56.9	mph
Space mean speed for all vehicles,	S = 54.2	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4223	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent Ramp		vph
Position of adjacent Ramp		
Type of adjacent Ramp		
Distance to adjacent Ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4223	305		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1173	85		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6452	381		pcph

Estimation of V12 Merge Areas

L = (Equation 13-6 or 13-7)

EQ
P = 0.170 Using Equation 4
FM
v = v (P) = 1098 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v FO	6833	9400	No
v 3 or v av34	2677 pc/h	(Equation 13-14 or 13-17)	
Is v 3 or v av34	> 2700 pc/h?	No	
Is v 3 or v av34	> 1.5 v 12 /2	Yes	

If yes, v 12A = 2580 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v 12A	6833	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.330	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_0 = 59.8	mph
Space mean speed for all vehicles,	S = 58.8	mph

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E-mail:

Merge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4223	vph

On Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-flow speed on ramp	35.0	mph
Volume on ramp	305	vph
Length of first accel/decel lane	950	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	157	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4223	305	157	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1173	85	44	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	%	%	%	
Length	mi	mi	mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6452	381	196	pcph

Estimation of V12 Merge Areas

L = 1312.26 (Equation 13-6 or 13-7)

EQ
P = 0.170 Using Equation 4
FM
v = v (P) = 1098 pc/h
12 F FM

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	6833	9400	No
v_3 or v_{av34}	2677 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	Yes	

If yes, v_{12A} = 2580 (Equation 13-15, 13-16, 18, or 13-19)

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	6833	4600	No

Level of Service Determination (if not F)

Density, $D_R = 5.475 + 0.00734\ v_R + 0.0078\ v_{12} - 0.00627\ L_A$ = 22.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	M_S = 0.330	
Space mean speed in ramp influence area,	S_R = 57.4	mph
Space mean speed in outer lanes,	S_0 = 59.8	mph
Space mean speed for all vehicles,	S = 58.8	mph

Diverge Outputs

Existing AM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 82
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1899	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	29	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	175	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1899		29		175		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	528		8		49		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2901 36 219 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2901 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2901	4700	No
$v_{FO} = v_F - v_R$	2865	4700	No
v_R	36	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2901 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2901	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 25.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.431

Space mean speed in ramp influence area, S_R = 55.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.1 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 82
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1899	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	29	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1899		29			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	528		8			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 2901 36 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2901 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2901	4700	No
$v_{FO} = v_F - v_R$	2865	4700	No
v_R	36	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2901 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2901	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 25.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.431	
Space mean speed in ramp influence area,	S_R = 55.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.1	mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1870	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	175	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	102	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1870		175		102		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	519		49		28		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2857 219 128 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2857 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2857	4700	No
$v_{FO} = v_F - v_R$	2638	4700	No
v_R	219	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2857 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2857	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.448

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1870	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	175	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	29	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1870		175		29		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	519		49		8		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2857 219 36 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2857 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2857	4700	No
$v_{FO} = v_F - v_R$	2638	4700	No
v_R	219	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2857 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2857	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 26.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.448

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1797	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	150	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	84	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1797		150		84		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	499		42		23		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2745 188 105 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2745 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2745	4700	No
$v_{FO} = v_F - v_R$	2557	4700	No
v_R	188	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2745 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2745	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 17.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.510

Space mean speed in ramp influence area, S_R = 53.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.3 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1797	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	76	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1797		76			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	499		21			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 2745 95 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2745 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2745	4700	No
$v_{FO} = v_F - v_R$	2650	4700	No
v_R	95	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2745 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2745	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 17.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.502	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.5	mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1805	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	370	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	177	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1805		370		177		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	501		103		49		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2758 463 221 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2758 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2758	4700	No
$v_{FO} = v_F - v_R$	2295	4700	No
v_R	463	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2758 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2758	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 26.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.470

Space mean speed in ramp influence area, S_R = 54.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.2 mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1805	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	370	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1805	370		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	501	103		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2758 463 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2758 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2758	4700	No
$v_{FO} = v_F - v_R$	2295	4700	No
v_R	463	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2758 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2758	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.470

Space mean speed in ramp influence area, S_R = 54.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.2 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1612	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	206	vph
Length of first accel/decel lane	745	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	103	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1612		206		103		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	448		57		29		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2463 258 114 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2463 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2463	4700	No
$v_{FO} = v_F - v_R$	2205	4700	No
v_R	258	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2463 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2463	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.451

Space mean speed in ramp influence area, S_R = 54.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.6 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1612	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	206	vph
Length of first accel/decel lane	745	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1612		206			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	448		57			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 2463 258 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2463 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2463	4700	No
$v_{FO} = v_F - v_R$	2205	4700	No
v_R	258	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 2463 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2463	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 18.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.451

Space mean speed in ramp influence area, S_R = 54.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.6 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1610	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	164	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	9475	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1610		154		164		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	447		43		46		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2460 193 182 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2460 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2460	4700	No
$v_{FO} = v_F - v_R$	2267	4700	No
v_R	193	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2460 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2460	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.380

Space mean speed in ramp influence area, S_R = 56.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.3 mph

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STV
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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1610	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	154	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1610		154			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	447		43			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 2460 193 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2460 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2460	4700	No
$v_{FO} = v_F - v_R$	2267	4700	No
v_R	193	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2460 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2460	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.380

Space mean speed in ramp influence area, S_R = 56.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.3 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1456	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	164	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	138	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1456		164		138		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	404		46		38		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2224 205 153 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2224 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2224	4700	No
$v_{FO} = v_F - v_R$	2019	4700	No
v_R	205	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2224 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2224	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_{12}$ = 16.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1456	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	164	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1456		164			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	404		46			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 2224 205 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2224 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2224	4700	No
$v_{FO} = v_F - v_R$	2019	4700	No
v_R	205	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2224 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2224	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 16.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1437	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	28	vph
Length of first accel/decel lane	430	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	208	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1437		28		208		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	399		8		58		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2195 35 231 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2195 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2195	4700	No
$v_{FO} = v_F - v_R$	2160	4700	No
v_R	35	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2195 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2195	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 19.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.366

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

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STV
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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-8Y NB
Junction:	Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1437	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	28	vph
Length of first accel/decel lane	430	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	7	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1437		28		7		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	399		8		2		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 219Y 35 8 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 219Y pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	219Y	4700	No
$v_{FO} = v_F - v_R$	2160	4700	No
v_R	35	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 219Y (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	219Y	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 19.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.366	
Space mean speed in ramp influence area,	S_R = 56.6	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.6	mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1409	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	208	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	58	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1409		208		58		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	391		58		16		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2153 260 64 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2153 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2153	4700	No
$v_{FO} = v_F - v_R$	1893	4700	No
v_R	260	1900	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2153 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2153	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_{12}$ = 19.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.581

Space mean speed in ramp influence area, S_R = 51.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.6 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1409	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	208	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	28	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1409		208		28		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	391		58		8		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2153 260 31 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2153 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2153	4700	No
$v_{FO} = v_F - v_R$	1893	4700	No
v_R	260	1900	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2153 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2153	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 19.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.581

Space mean speed in ramp influence area, S_R = 51.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.6 mph

I-85 Southbound

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1443	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	59	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	182	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1340	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1443		59		182		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	401		16		51		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2205 74 202 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2205 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2205	4700	No
$v_{FO} = v_F - v_R$	2131	4700	No
v_R	74	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2205 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2205	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 20.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.435

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1443	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	59	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1443		59			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	401		16			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 2205 74 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2205 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2205	4700	No
$v_{FO} = v_F - v_R$	2131	4700	No
v_R	74	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2205 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2205	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 20.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.435	
Space mean speed in ramp influence area,	S_R = 55.0	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 55.0	mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1566	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	87	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1566		109		87		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	435		30		24		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2392 136 97 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2392 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2392	4700	No
$v_{FO} = v_F - v_R$	2256	4700	No
v_R	136	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2392 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2392	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1566	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	109	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	182	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1566		109		182		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	435		30		51		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2392 136 202 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2392 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2392	4700	No
$v_{FO} = v_F - v_R$	2256	4700	No
v_R	136	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2392 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2392	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1544	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	186	vph
Length of first accel/decel lane	525	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	105	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1544		186		105		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	429		52		29		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2359 233 117 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2359 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2359	4700	No
$v_{FO} = v_F - v_R$	2126	4700	No
v_R	233	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2359 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2359	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 19.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.514

Space mean speed in ramp influence area, S_R = 53.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.2 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1544	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	186	vph
Length of first accel/decel lane	525	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1544		186				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	429		52				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 2359 233 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2359 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2359	4700	No
$v_{FO} = v_F - v_R$	2126	4700	No
v_R	233	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2359 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2359	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 19.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.514

Space mean speed in ramp influence area, S_R = 53.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.2 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1515	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	173	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	406	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1515		173		406		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	421		48		113		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2315 216 451 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2315 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2315	4700	No
$v_{FO} = v_F - v_R$	2099	4700	No
v_R	216	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2315 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2315	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 20.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.447

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1515	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	173	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1515	173		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	421	48		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2315 216 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2315 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2315	4700	No
$v_{FO} = v_F - v_R$	2099	4700	No
v_R	216	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 2315 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2315	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 20.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.447

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1748	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	47	vph
Length of first accel/decel lane	330	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	164	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1748		47		164		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	486		13		46		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2671 59 182 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2671 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2671	4700	No
$v_{FO} = v_F - v_R$	2612	4700	No
v_R	59	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2671 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2671	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 24.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.498

Space mean speed in ramp influence area, S_R = 53.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.5 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1748	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	47	vph
Length of first accel/decel lane	330	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1748	47		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	486	13		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 2671 Y9 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2671 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2671	4700	No
$v_{FO} = v_F - v_R$	2612	4700	No
v_R	59	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2671 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2671	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 24.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.498	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.5	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1865	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	71	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	331	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	1865		71		331		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	518		20		92		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 2849 89 368 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2849 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2849	4700	No
$v_{FO} = v_F - v_R$	2760	4700	No
v_R	89	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2849 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2849	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 24.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.436

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	1865	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	71	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	1865		71			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	518		20			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 2849 89 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2849 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	2849	4700	No
$v_{FO} = v_F - v_R$	2760	4700	No
v_R	89	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2849 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2849	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 24.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.436

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2125	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	151	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	312	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2035	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2125		151		312		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	590		42		87		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3247 189 347 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.670 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2238 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3247	7050	No
$v_{FO} = v_F - v_R$	3058	7050	No
v_R	189	2100	No
v_3 or v_{av34}	1009 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2238 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2238	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.315	
Space mean speed in ramp influence area,	S_R = 57.8	mph
Space mean speed in outer lanes,	S_O = 71.3	mph
Space mean speed for all vehicles,	S = 61.4	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2125	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	151	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2125		151			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	590		42			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3247 189 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.670 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2238 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3247	7050	No
$v_{FO} = v_F - v_R$	3058	7050	No
v_R	189	2100	No
v_3 or v_{av34}	1009 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2238 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2238	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.315

Space mean speed in ramp influence area, S_R = 57.8 mph

Space mean speed in outer lanes, S_O = 71.3 mph

Space mean speed for all vehicles, S = 61.4 mph

Existing PM Peak
I-85 Northbound

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 82
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3068	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	53	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	262	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3068		53		262		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	852		15		73		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4687 66 328 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4687 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4687	4700	No
$v_{FO} = v_F - v_R$	4621	4700	No
v_R	66	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4687 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4687	4400	Yes

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 41.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.434

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 82
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3068	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	53	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3068		53			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	852		15			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4687 66 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4687 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4687	4700	No
$v_{FO} = v_F - v_R$	4621	4700	No
v_R	66	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4687 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4687	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.434

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

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STV
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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3015	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	262	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	99	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3015		262		99		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	838		73		28		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4606 328 124 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4606 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4606	4700	No
$v_{FO} = v_F - v_R$	4278	4700	No
v_R	328	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4606 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4606	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3015	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	262	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	53	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3015		262		53		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	838		73		15		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4606 328 66 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4606 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4606	4700	No
$v_{FO} = v_F - v_R$	4278	4700	No
v_R	328	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4606 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4606	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 41.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2852	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	150	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	65	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2852		150		65		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	792		42		18		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4357 188 81 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4357 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4357	4700	No
$v_{FO} = v_F - v_R$	4169	4700	No
v_R	188	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4357 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4357	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.510

Space mean speed in ramp influence area, S_R = 53.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.3 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2852	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	150	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2852		150			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	792		42			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4357 188 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4357 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4357	4700	No
$v_{FO} = v_F - v_R$	4169	4700	No
v_R	188	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4357 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4357	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 30.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.510

Space mean speed in ramp influence area, S_R = 53.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.3 mph

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STV
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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2767	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	461	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	314	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2767		461		314		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	769		128		87		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4227 576 393 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4227 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4227	4700	No
$v_{FO} = v_F - v_R$	3651	4700	No
v_R	576	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4227 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4227	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 38.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.480

Space mean speed in ramp influence area, S_R = 54.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.0 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2767	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	461	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2767		461			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	769		128			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4227 576 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4227 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4227	4700	No
$v_{FO} = v_F - v_R$	3651	4700	No
v_R	576	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4227 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4227	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 38.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.480

Space mean speed in ramp influence area, S_R = 54.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.0 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2620	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	268	vph
Length of first accel/decel lane	745	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	73	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2620		268		73		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	728		74		20		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4003 335 81 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4003 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4003	4700	No
$v_{FO} = v_F - v_R$	3668	4700	No
v_R	335	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 4003 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4003	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 32.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.5 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2620	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	268	vph
Length of first accel/decel lane	745	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2620		268			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	728		74			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4003 335 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4003 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4003	4700	No
$v_{FO} = v_F - v_R$	3668	4700	No
v_R	335	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4003 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4003	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.5 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	112	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2606		112			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	724		31			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3981 140 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3981 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3981	4700	No
$v_{FO} = v_F - v_R$	3841	4700	No
v_R	140	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3981 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3981	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 34.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.376

Space mean speed in ramp influence area, S_R = 56.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.4 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	112	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2606		112			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	724		31			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3981 140 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3981 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3981	4700	No
$v_{FO} = v_F - v_R$	3841	4700	No
v_R	140	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3981 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3981	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 34.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.376

Space mean speed in ramp influence area, S_R = 56.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.4 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2494	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	150	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2494		231		150		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	693		64		42		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3810 289 167 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3810 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3810	4700	No
$v_{FO} = v_F - v_R$	3521	4700	No
v_R	289	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3810 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3810	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_{12}$ = 30.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.454

Space mean speed in ramp influence area, S_R = 54.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.6 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2494	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	112	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	9475	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2494		231		112		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	693		64		31		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3810 289 124 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3810 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3810	4700	No
$v_{FO} = v_F - v_R$	3521	4700	No
v_R	289	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3810 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3810	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_{12}$ = 30.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.454

Space mean speed in ramp influence area, S_R = 54.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2419	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	7	vph
Length of first accel/decel lane	430	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	143	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2419		7		143		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	672		2		40		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3696 9 159 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3696 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3696	4700	No
$v_{FO} = v_F - v_R$	3687	4700	No
v_R	9	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3696 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3696	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.364

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-8Y NB
Junction:	Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2419	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	7	vph
Length of first accel/decel lane	430	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	6	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2419		7		6		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	672		2		2		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3696 9 7 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3696 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3696	4700	No
$v_{FO} = v_F - v_R$	3687	4700	No
v_R	9	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3696 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3696	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.364

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2412	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	143	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	47	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2412		143		47		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	670		40		13		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3685 179 52 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3685 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3685	4700	No
$v_{FO} = v_F - v_R$	3506	4700	No
v_R	179	1900	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3685 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3685	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.574

Space mean speed in ramp influence area, S_R = 51.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.8 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2412	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	143	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	7	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2412		143		7		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	670		40		2		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3685 179 8 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3685 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3685	4700	No
$v_{FO} = v_F - v_R$	3506	4700	No
v_R	179	1900	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3685 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3685	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.574

Space mean speed in ramp influence area, S_R = 51.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.8 mph

I-85 Southbound

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2519	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	82	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	193	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1340	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2519		82		193		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	700		23		54		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3848 103 214 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3848 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3848	4700	No
$v_{FO} = v_F - v_R$	3745	4700	No
v_R	103	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3848 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3848	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_{12}$ = 34.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.437

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2519	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	82	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2519		82			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	700		23			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3848 103 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3848 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3848	4700	No
$v_{FO} = v_F - v_R$	3745	4700	No
v_R	103	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3848 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3848	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_{12}$ = 34.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.437

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	94	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	106	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2630		94		106		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	731		26		29		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4018 118 118 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4018 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4018	4700	No
$v_{FO} = v_F - v_R$	3900	4700	No
v_R	118	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4018 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4018	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 35.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2630	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	94	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	193	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2630		94		193		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	731		26		54		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4018 118 214 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4018 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4018	4700	No
$v_{FO} = v_F - v_R$	3900	4700	No
v_R	118	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4018 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4018	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 35.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.439

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2642	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	261	vph
Length of first accel/decel lane	525	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	195	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2642		261		195		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	734		73		54		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4036 326 217 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4036 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4036	4700	No
$v_{FO} = v_F - v_R$	3710	4700	No
v_R	326	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4036 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4036	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 34.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.522

Space mean speed in ramp influence area, S_R = 53.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.0 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2642	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	261	vph
Length of first accel/decel lane	525	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2642		261			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	734		73			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4036 326 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4036 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4036	4700	No
$v_{FO} = v_F - v_R$	3710	4700	No
v_R	326	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4036 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4036	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 34.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.522

Space mean speed in ramp influence area, S_R = 53.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.0 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2636	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	226	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	495	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2636		226		495		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	732		63		138		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4027 283 550 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4027 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4027	4700	No
$v_{FO} = v_F - v_R$	3744	4700	No
v_R	283	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4027 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4027	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 35.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.453

Space mean speed in ramp influence area, S_R = 54.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.6 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2636	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	226	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2636		226				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	732		63				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 4027 283 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4027 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4027	4700	No
$v_{FO} = v_F - v_R$	3744	4700	No
v_R	283	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4027 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4027	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 35.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.453

Space mean speed in ramp influence area, S_R = 54.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.6 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2905	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	66	vph
Length of first accel/decel lane	330	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	91	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2905		66		91		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	807		18		25		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4438 83 101 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4438 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4438	4700	No
$v_{FO} = v_F - v_R$	4355	4700	No
v_R	83	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4438 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4438	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 39.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.500

Space mean speed in ramp influence area, S_R = 53.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.5 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2905	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	66	vph
Length of first accel/decel lane	330	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2905	66		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	807	18		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 4438 83 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4438 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4438	4700	No
$v_{FO} = v_F - v_R$	4355	4700	No
v_R	83	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4438 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4438	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 39.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.500

Space mean speed in ramp influence area, S_R = 53.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.5 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2930	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	105	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	204	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2930		105		204		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	814		29		57		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4476 131 227 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4476 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4476	4700	No
$v_{FO} = v_F - v_R$	4345	4700	No
v_R	131	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4476 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4476	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 38.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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STV
1620 Main Street
Suite 600
Columbia, SC 29201
Phone: 806-724-1460 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2960	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	65.0	mph
Volume on ramp	105	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2960		105			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	814		29			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4476 161 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 16-12 or 16-16)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4476 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4476	4700	No
$v_{FO} = v_F - v_R$	4645	4700	No
v_R	161	2000	No

v_6 or v_{av64} = 0 pc/h (Equation 16-14 or 16-17)

Is v_6 or v_{av64} > 2700 pc/h? No

Is v_6 or v_{av64} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4476 (Equation 16-15, 16-16, 16-18, or 16-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4476	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 68.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3029	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	111	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	122	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2035	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3029		111		122		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	841		31		34		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4628 139 136 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.638 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3003 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4628	7050	No
$v_{FO} = v_F - v_R$	4489	7050	No
v_R	139	2100	No
v_3 or v_{av34}	1625 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3003 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3003	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.311

Space mean speed in ramp influence area, S_R = 57.9 mph

Space mean speed in outer lanes, S_O = 68.9 mph

Space mean speed for all vehicles, S = 61.3 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2014
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3029	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	111	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3029		111			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	841		31			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4628 139 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.638 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3003 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4628	7050	No
$v_{FO} = v_F - v_R$	4489	7050	No
v_R	139	2100	No
v_3 or v_{av34}	1625 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3003 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3003	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.311

Space mean speed in ramp influence area, S_R = 57.9 mph

Space mean speed in outer lanes, S_O = 68.9 mph

Space mean speed for all vehicles, S = 61.3 mph

No Build AM Peak

I-85 Northbound

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 82
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2839	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	43	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	262	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2839		43		262		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	789		12		73		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4337 54 328 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4337 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4337	4700	No
$v_{FO} = v_F - v_R$	4283	4700	No
v_R	54	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4337 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4337	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 38.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.433

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 82
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2839	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	43	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2839		43				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	789		12				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 4337 54 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4337 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4337	4700	No
$v_{FO} = v_F - v_R$	4283	4700	No
v_R	54	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4337 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4337	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 38.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.433

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2796	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	262	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	152	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2796		262		152		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	777		73		42		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4272 328 190 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4272 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4272	4700	No
$v_{FO} = v_F - v_R$	3944	4700	No
v_R	328	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 4272 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4272	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 38.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.5 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2796	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	262	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	43	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2796		262		43		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	777		73		12		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4272 328 54 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4272 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4272	4700	No
$v_{FO} = v_F - v_R$	3944	4700	No
v_R	328	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 4272 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4272	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 38.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.5 mph

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STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2686	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	114	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	126	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2686		114		126		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	746		32		35		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4104 143 158 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4104 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4104	4700	No
$v_{FO} = v_F - v_R$	3961	4700	No
v_R	143	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4104 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4104	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.506

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.4 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2686	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	114	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2686		114			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	746		32			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4104 143 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4104 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4104	4700	No
$v_{FO} = v_F - v_R$	3961	4700	No
v_R	143	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4104 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4104	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, v_{12}$ L_D = 28.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.506

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.4 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2698	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	553	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	265	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2698		553		265		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	749		154		74		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4122 691 331 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4122 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4122	4700	No
$v_{FO} = v_F - v_R$	3431	4700	No
v_R	691	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4122 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4122	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, v_{12}$ L_D = 37.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.490

Space mean speed in ramp influence area, S_R = 53.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.7 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2698	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	553	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2698		553				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	749		154				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 4122 691 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4122 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4122	4700	No
$v_{FO} = v_F - v_R$	3431	4700	No
v_R	691	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4122 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4122	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, v_{12}$ L_D = 37.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.490

Space mean speed in ramp influence area, S_R = 53.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.7 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2410	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	308	vph
Length of first accel/decel lane	745	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	154	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2410		308		154		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	669		86		43		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3682 385 171 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3682 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3682	4700	No
$v_{FO} = v_F - v_R$	3297	4700	No
v_R	385	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3682 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3682	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, v_{12}$ L_D = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.463

Space mean speed in ramp influence area, S_R = 54.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.4 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2410	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	308	vph
Length of first accel/decel lane	745	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2410		308			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	669		86			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3682 385 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3682 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3682	4700	No
$v_{FO} = v_F - v_R$	3297	4700	No
v_R	385	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3682 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3682	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.463

Space mean speed in ramp influence area, S_R = 54.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.4 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040_No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2407	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2407		231			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	669		64			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3677 289 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3677 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3677	4700	No
$v_{FO} = v_F - v_R$	3388	4700	No
v_R	289	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3677 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3677	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.389

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.1 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2407	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2407		231			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	669		64			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3677 289 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3677 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3677	4700	No
$v_{FO} = v_F - v_R$	3388	4700	No
v_R	289	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3677 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3677	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.389

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.1 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2176	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	207	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2176		245		207		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	604		68		58		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3324 306 230 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3324 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3324	4700	No
$v_{FO} = v_F - v_R$	3018	4700	No
v_R	306	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3324 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3324	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.456

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.5 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2176	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2176		245			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	604		68			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3324 306 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3324 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3324	4700	No
$v_{FO} = v_F - v_R$	3018	4700	No
v_R	306	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3324 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3324	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 26.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.456	
Space mean speed in ramp influence area,	S_R = 54.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.5	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2148	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	42	vph
Length of first accel/decel lane	430	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	311	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2148		42		311		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	597		12		86		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3282 53 346 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3282 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3282	4700	No
$v_{FO} = v_F - v_R$	3229	4700	No
v_R	53	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3282 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3282	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_{12}$ = 28.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.368

Space mean speed in ramp influence area, S_R = 56.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.5 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-8Y NB
Junction:	Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2148	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	42	vph
Length of first accel/decel lane	430	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	10	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2148		42		10	vph
Peak-hour factor, PHF	0.90		0.90		0.90	
Peak 15-min volume, v15	597		12		3	v
Trucks and buses	25		25		0	%
Recreational vehicles	0		0		0	%
Terrain type:	Rolling		Level		Level	
Grade	0.00	%	0.00	%	0.00	%
Length	0.00	mi	0.00	mi	0.00	mi
Trucks and buses PCE, ET	2.5		1.5		1.5	
Recreational vehicle PCE, ER	2.0		1.2		1.2	
Heavy vehicle adjustment, fHV	0.727		0.889		1.000	
Driver population factor, fP	1.00		1.00		1.00	

Flow rate, vp 3282 Y3 11 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3282 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3282	4700	No
$v_{FO} = v_F - v_R$	3229	4700	No
v_R	53	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3282 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3282	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 28.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.368

Space mean speed in ramp influence area, S_R = 56.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.5 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2106	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	311	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	87	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2106		311		87		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	585		86		24		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3217 389 97 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3217 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3217	4700	No
$v_{FO} = v_F - v_R$	2828	4700	No
v_R	389	1900	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3217 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3217	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, v_{12} - L_D$ = 28.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.593

Space mean speed in ramp influence area, S_R = 51.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.4 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2106	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	311	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	42	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2106		311		42		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	585		86		12		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3217 389 47 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3217 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3217	4700	No
$v_{FO} = v_F - v_R$	2828	4700	No
v_R	389	1900	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3217 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3217	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 28.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.593

Space mean speed in ramp influence area, S_R = 51.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.4 mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2157	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	88	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	272	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1340	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2157		88		272		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	599		24		76		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3295 110 302 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3295 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3295	4700	No
$v_{FO} = v_F - v_R$	3185	4700	No
v_R	110	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3295 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3295	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 29.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.438

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2157	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	88	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2157		88			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	599		24			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3295 110 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3295 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3295	4700	No
$v_{FO} = v_F - v_R$	3185	4700	No
v_R	110	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3295 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3295	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 29.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.438

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2341	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	130	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2341		163		130		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	650		45		36		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3577 204 144 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3577 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3577	4700	No
$v_{FO} = v_F - v_R$	3373	4700	No
v_R	204	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3577 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3577	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 31.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2341	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	272	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2341		163		272		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	650		45		76		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3577 204 302 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3577 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3577	4700	No
$v_{FO} = v_F - v_R$	3373	4700	No
v_R	204	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3577 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3577	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 31.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.7 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2308	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	278	vph
Length of first accel/decel lane	525	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	157	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2308		278		157		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	641		77		44		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3526 348 174 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3526 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3526	4700	No
$v_{FO} = v_F - v_R$	3178	4700	No
v_R	348	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3526 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3526	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 29.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.524

Space mean speed in ramp influence area, S_R = 52.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 52.9 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2308	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	278	vph
Length of first accel/decel lane	525	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2308		278			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	641		77			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 3526 348 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3526 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3526	4700	No
$v_{FO} = v_F - v_R$	3178	4700	No
v_R	348	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3526 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3526	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 29.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.524

Space mean speed in ramp influence area, S_R = 52.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 52.9 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2265	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	259	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	607	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2265		259		607		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	629		72		169		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3460 324 674 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3460 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3460	4700	No
$v_{FO} = v_F - v_R$	3136	4700	No
v_R	324	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		No	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 3460 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3460	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 30.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.457

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.5 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2265	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	259	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2265		259				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	629		72				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 3460 324 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3460 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3460	4700	No
$v_{FO} = v_F - v_R$	3136	4700	No
v_R	324	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3460 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3460	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.457	
Space mean speed in ramp influence area,	S_R = 54.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.5	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2613	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	70	vph
Length of first accel/decel lane	330	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	245	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2613		70		245		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	726		19		68		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3992 88 272 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3992 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3992	4700	No
$v_{FO} = v_F - v_R$	3904	4700	No
v_R	88	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3992 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3992	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 35.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.501

Space mean speed in ramp influence area, S_R = 53.5 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.5 mph

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STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2613	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	70	vph
Length of first accel/decel lane	330	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2613	70		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	726	19		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 3992 88 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3992 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3992	4700	No
$v_{FO} = v_F - v_R$	3904	4700	No
v_R	88	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3992 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3992	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 35.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable,	D_S = 0.501	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.5	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2788	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	495	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2788		106		495		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	774		29		138		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4259 133 550 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4259 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4259	4700	No
$v_{FO} = v_F - v_R$	4126	4700	No
v_R	133	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4259 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4259	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 36.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2788	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	65.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2788		106			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	774		29			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4259 166 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 16-12 or 16-16)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4259 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4259	4700	No
$v_{FO} = v_F - v_R$	4126	4700	No
v_R	166	2000	No

v_6 or v_{av64} 0 pc/h (Equation 16-14 or 16-17)

Is v_6 or v_{av64} > 2700 pc/h? No

Is v_6 or v_{av64} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4259 (Equation 16-15, 16-16, 16-18, or 16-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	4259	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 66.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.9 mph

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3177	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	226	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	466	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2035	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3177		226		466		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	883		63		129		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4854 283 518 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.626 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3143 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4854	7050	No
$v_{FO} = v_F - v_R$	4571	7050	No
v_R	283	2100	No
v_3 or v_{av34}	1711 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3143 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3143	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_O = 68.5 mph

Space mean speed for all vehicles, S = 61.0 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3177	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	226	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3177		226			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	883		63			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 48Y4 283 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.626 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3143 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	48Y4	7050	No
$v_{FO} = v_F - v_R$	4571	7050	No
v_R	283	2100	No
v_3 or v_{av34}	1711 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3143 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3143	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_O = 68.5 mph

Space mean speed for all vehicles, S = 61.0 mph

No Build PM Peak

I-85 Northbound

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 82
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4586	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	79	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	392	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4586		79		392		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1274		22		109		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, v_p 7006 99 490 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 7006 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7006	4700	Yes
$v_{FO} = v_F - v_R$	6907	4700	Yes
v_R	99	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 7006 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	7006	4400	Yes

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 60.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.437

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 82
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4586	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	79	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4586		79			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1274		22			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 7006 99 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 7006 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	7006	4700	Yes
$v_{FO} = v_F - v_R$	6907	4700	Yes
v_R	99	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 7006 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	7006	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 60.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.437

Space mean speed in ramp influence area, S_R = 55.0 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 55.0 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4507	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	392	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	148	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4507		392		148		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1252		109		41		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6886 490 185 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6886 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6886	4700	Yes
$v_{FO} = v_F - v_R$	6396	4700	Yes
v_R	490	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 6886 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6886	4400	Yes

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 60.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.472

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.1 mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4507	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	392	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	79	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4507		392		79		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1252		109		22		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6886 490 99 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6886 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6886	4700	Yes
$v_{FO} = v_F - v_R$	6396	4700	Yes
v_R	490	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6886 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6886	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 60.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.472

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.1 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4263	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	224	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	97	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4263		224		97		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1184		62		27		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6513 280 121 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6513 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6513	4700	Yes
$v_{FO} = v_F - v_R$	6233	4700	Yes
v_R	280	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6513 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6513	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 49.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.518	
Space mean speed in ramp influence area,	S_R = 53.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.1	mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4263	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	224	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4263		224			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1184		62			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 6513 280 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6513 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6513	4700	Yes
$v_{FO} = v_F - v_R$	6233	4700	Yes
v_R	280	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6513 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6513	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 49.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.518	
Space mean speed in ramp influence area,	S_R = 53.1	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 53.1	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4136	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	689	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	469	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4136		689		469		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1149		191		130		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6319 861 586 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6319 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6319	4700	Yes
$v_{FO} = v_F - v_R$	5458	4700	Yes
v_R	861	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6319 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6319	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 56.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.505

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.4 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4136	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	689	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4136		689			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1149		191			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 6319 861 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6319 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6319	4700	Yes
$v_{FO} = v_F - v_R$	5458	4700	Yes
v_R	861	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6319 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6319	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 56.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.505

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.4 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3916	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	400	vph
Length of first accel/decel lane	745	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	109	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3916		400		109		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1088		111		30		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5983 500 121 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5983 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5983	4700	Yes
$v_{FO} = v_F - v_R$	5483	4700	Yes
v_R	500	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5983 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5983	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 49.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.473

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.1 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3916	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	400	vph
Length of first accel/decel lane	745	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3916		400			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1088		111			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 5983 500 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5983 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5983	4700	Yes
$v_{FO} = v_F - v_R$	5483	4700	Yes
v_R	500	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5983 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5983	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 49.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.473

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.1 mph

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3895	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	167	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3895		167				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	1082		46				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 5951 209 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5951 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5951	4700	Yes
$v_{FO} = v_F - v_R$	5742	4700	Yes
v_R	209	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5951 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5951	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 51.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.382

Space mean speed in ramp influence area, S_R = 56.2 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.2 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3895	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	167	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3895		167				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	1082		46				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 5951 209 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5951 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5951	4700	Yes
$v_{FO} = v_F - v_R$	5742	4700	Yes
v_R	209	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5951 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5951	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 51.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.382	
Space mean speed in ramp influence area,	S_R = 56.2	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 56.2	mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3728	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	345	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	224	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3728		345		224		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1036		96		62		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5696 431 249 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5696 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5696	4700	Yes
$v_{FO} = v_F - v_R$	5265	4700	Yes
v_R	431	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 5696 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5696	4400	Yes

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 46.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.467

Space mean speed in ramp influence area, S_R = 54.3 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.3 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3728	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	345	vph
Length of first accel/decel lane	750	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	167	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	9475	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3728		345		167		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1036		96		46		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5696 431 186 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5696 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5696	4700	Yes
$v_{FO} = v_F - v_R$	5265	4700	Yes
v_R	431	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5696 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5696	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 46.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.467	
Space mean speed in ramp influence area,	S_R = 54.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.3	mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3616	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	430	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	214	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3616		10		214		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1004		3		59		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5524 13 238 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5524 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5524	4700	Yes
$v_{FO} = v_F - v_R$	5511	4700	Yes
v_R	13	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5524 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5524	4400	Yes

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\ v_R - 0.009\ L_D$ = 47.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.364

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-8Y NB
Junction:	Exit 98
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3616	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	10	vph
Length of first accel/decel lane	430	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	9	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4730	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3616		10		9		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1004		3		3		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5524 13 10 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5524 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5524	4700	Yes
$v_{FO} = v_F - v_R$	5511	4700	Yes
v_R	13	2100	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5524 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5524	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 47.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.364

Space mean speed in ramp influence area, S_R = 56.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 56.6 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	214	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	70	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3606		214		70		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1002		59		19		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5509 268 78 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5509 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5509	4700	Yes
$v_{FO} = v_F - v_R$	5241	4700	Yes
v_R	268	1900	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5509 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5509	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 48.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.582

Space mean speed in ramp influence area, S_R = 51.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.6 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	214	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	10	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3606		214		10		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1002		59		3		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5509 268 11 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5509 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5509	4700	Yes
$v_{FO} = v_F - v_R$	5241	4700	Yes
v_R	268	1900	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 5509 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5509	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 48.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.582

Space mean speed in ramp influence area, S_R = 51.6 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 51.6 mph

I-85 Southbound

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STV
1320 Main Street
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Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3766	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	123	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	288	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1340	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3766		123		288		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1046		34		80		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5754 154 320 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5754 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5754	4700	Yes
$v_{FO} = v_F - v_R$	5600	4700	Yes
v_R	154	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5754 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5754	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 50.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.442

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.8 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3766	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	123	vph
Length of first accel/decel lane	320	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3766		123			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1046		34			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 5754 154 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 5754 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5754	4700	Yes
$v_{FO} = v_F - v_R$	5600	4700	Yes
v_R	154	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 5754 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	5754	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 50.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.442

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3931	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	158	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1310	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3931		140		158		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1092		39		44		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6006 175 176 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6006 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6006	4700	Yes
$v_{FO} = v_F - v_R$	5831	4700	Yes
v_R	175	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6006 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6006	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 52.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.444

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.8 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3931	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	350	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	288	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5740	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3931		140		288		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1092		39		80		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6006 175 320 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6006 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6006	4700	Yes
$v_{FO} = v_F - v_R$	5831	4700	Yes
v_R	175	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6006 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6006	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 52.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.444

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.8 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3949	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	390	vph
Length of first accel/decel lane	525	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	292	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3949		390		292		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1097		108		81		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6033 488 324 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6033 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6033	4700	Yes
$v_{FO} = v_F - v_R$	5545	4700	Yes
v_R	488	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6033 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6033	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 51.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.537	
Space mean speed in ramp influence area,	S_R = 52.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 52.7	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3949	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	390	vph
Length of first accel/decel lane	525	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3949		390			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1097		108			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 6033 488 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6033 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6033	4700	Yes
$v_{FO} = v_F - v_R$	5545	4700	Yes
v_R	488	2000	No

v_3 or v_{av34} 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6033 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6033	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 51.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.537	
Space mean speed in ramp influence area,	S_R = 52.7	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 52.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3941	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	339	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	740	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3941		339		740		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1095		94		206		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6021 424 822 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6021 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6021	4700	Yes
$v_{FO} = v_F - v_R$	5597	4700	Yes
v_R	424	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6021 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6021	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 52.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.466	
Space mean speed in ramp influence area,	S_R = 54.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3941	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	339	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3941		339				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	1095		94				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 6021 424 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6021 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6021	4700	Yes
$v_{FO} = v_F - v_R$	5597	4700	Yes
v_R	424	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6021 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6021	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 52.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable,	D_S = 0.466	
Space mean speed in ramp influence area,	S_R = 54.3	mph
Space mean speed in outer lanes,	S_O = N/A	mph
Space mean speed for all vehicles,	S = 54.3	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4342	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	98	vph
Length of first accel/decel lane	330	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	136	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1420	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4342		98		136		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1206		27		38		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6634 123 151 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6634 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6634	4700	Yes
$v_{FO} = v_F - v_R$	6511	4700	Yes
v_R	123	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6634 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6634	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 58.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.504

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.4 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4342	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	98	vph
Length of first accel/decel lane	330	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4342		98			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1206		27			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 6634 123 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6634 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6634	4700	Yes
$v_{FO} = v_F - v_R$	6511	4700	Yes
v_R	123	2000	No

v_3 or v_{av34} = 0 pc/h (Equation 13-14 or 13-17)

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6634 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6634	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 58.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.504

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 53.4 mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4380	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	305	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4380		157		305		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1217		44		85		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6692 196 339 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6692 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6692	4700	Yes
$v_{FO} = v_F - v_R$	6496	4700	Yes
v_R	196	2000	No
v_3 or v_{av34}	0 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6692 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6692	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 57.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	2	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4680	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	65.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	450	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4680		1Y7			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1217		44			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 6692 196 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 16-12 or 16-16)

P_{FD} = 1.000 Using Equation 0

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 6692 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6692	4700	Yes
$v_{FO} = v_F - v_R$	6496	4700	Yes
v_R	196	2000	No
v_6 or v_{av64}	0 pc/h	(Equation 16-14 or 16-17)	

Is v_6 or v_{av64} > 2700 pc/h? No

Is v_6 or v_{av64} > 1.5 v_{12}/2 No

If yes, v_{12A} = 6692 (Equation 16-15, 16-16, 16-18, or 16-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	6692	4400	Yes

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 57.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence F

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_O = N/A mph

Space mean speed for all vehicles, S = 54.8 mph

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4528	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	166	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	182	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2035	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4528		166		182		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1258		46		51		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6918 208 202 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.577 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4083 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6918	7050	No
$v_{FO} = v_F - v_R$	6710	7050	No
v_R	208	2100	No
v_3 or v_{av34}	2835 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		5es	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4218 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4218	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 38.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.317

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = 64.7 mph

Space mean speed for all vehicles, S = 60.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 No-Build
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4528	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	166	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4528		166			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1258		46			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 6918 208 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.577 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4083 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6918	7050	No
$v_{FO} = v_F - v_R$	6710	7050	No
v_R	208	2100	No
v_3 or v_{av34}	2835 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? Yes

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 4218 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4218	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 38.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.317

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = 64.7 mph

Space mean speed for all vehicles, S = 60.2 mph

Build AM Peak

I-85 Northbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	8/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2797	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	263	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	152	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1330	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2797	263	152	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	777	73	42	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4273	329	190	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.638 Using Equation 5
FD
v = v + (v - v) P = 2845 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4273	7050	No
$v_{FO} = v - v$	F R	3944	7050	No
v_R		329	2000	No
v_3 or v_{av34}		1428 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 2845$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2845	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 25.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.458	
Space mean speed in ramp influence area,	S_R = 54.5	mph
Space mean speed in outer lanes,	S_0 = 69.6	mph
Space mean speed for all vehicles,	S = 58.7	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2797	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	263	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2797	263		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	777	73		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4273	329		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.638 Using Equation 5
FD
v = v + (v - v) P = 2845 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4273	7050	No
$v_{FO} = v - v_R$		3944	7050	No
v_R		329	2000	No
v_3 or v_{av34}		1428 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 2845$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2845	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 25.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_0 = 69.6 mph

Space mean speed for all vehicles, S = 58.7 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	8/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2797	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	263	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	152	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1330	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2797	263	152	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	777	73	42	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4273	329	190	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 2049 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4273	9400	No
$v_{FO} = v - v_{FR}$	3944	9400	No
v_R	329	2000	No
v_3 or v_{av34}	1112 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2049 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2049	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 18.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_0 = 70.9 mph

Space mean speed for all vehicles, S = 61.9 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2797	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	263	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2797	263		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	777	73		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4273	329		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 2049 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4273	9400	No
$v_{FO} = v_F - v_R$	3944	9400	No
v_R	329	2000	No
v_3 or v_{av34}	1112 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2049 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2049	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 18.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.458

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_0 = 70.9 mph

Space mean speed for all vehicles, S = 61.9 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2686	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	114	vph
Length of first accel/decel lane	980	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	126	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1673	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2686	114	126	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	746	32	35	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4104	143	158	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.651 Using Equation 5
FD
v = v + (v - v) P = 2721 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4104	7050	No
$v_{FO} = v - v_R$		3961	7050	No
v_R		143	2000	No
v_3 or v_{av34}		1383 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2721 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2721	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 18.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.506

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_0 = 69.8 mph

Space mean speed for all vehicles, S = 58.0 mph

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STV
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Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2686	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	114	vph
Length of first accel/decel lane	980	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2686	114		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	746	32		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4104	143		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.651 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD} = 2721$ pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4104	7050	No
$v_{FO} = v_F - v_R$		3961	7050	No
v_R		143	2000	No
v_3 or v_{av34}		1383 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2721 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2721	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 18.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.506

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_0 = 69.8 mph

Space mean speed for all vehicles, S = 58.0 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2686	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	114	vph
Length of first accel/decel lane	980	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	126	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1673	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2686	114	126	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	746	32	35	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4104	143	158	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{FD}^{EQ} = 0.436 Using Equation 8

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 1870 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4104	9400	No
$v_{FO} = v_F - v_R$		3961	9400	No
v_R		143	2000	No
v_3 or v_{av34}		1117 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 1870 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1870	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 11.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.506	
Space mean speed in ramp influence area,	S_R = 53.4	mph
Space mean speed in outer lanes,	S_0 = 70.8	mph
Space mean speed for all vehicles,	S = 61.6	mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2686	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	114	vph
Length of first accel/decel lane	980	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2686	114		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	746	32		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4104	143		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 1870 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4104	9400	No
$v_{FO} = v - v_R$		3961	9400	No
v_R		143	2000	No
v_3 or v_{av34}		1117 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 1870$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1870	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 11.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.506	
Space mean speed in ramp influence area,	S_R = 53.4	mph
Space mean speed in outer lanes,	S_0 = 70.8	mph
Space mean speed for all vehicles,	S = 61.6	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2698	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	553	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	265	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2698		553		265		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	749		154		74		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4122 691 331 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.625 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2836 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4122	7050	No
$v_{FO} = v_F - v_R$	3431	7050	No
v_R	691	2000	No
v_3 or v_{av34}	1286 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2836 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2836	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.490

Space mean speed in ramp influence area, S_R = 53.7 mph

Space mean speed in outer lanes, S_O = 70.2 mph

Space mean speed for all vehicles, S = 58.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2698	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	553	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2698		553			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	749		154			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 4122 691 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.625 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2836 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4122	7050	No
$v_{FO} = v_F - v_R$	3431	7050	No
v_R	691	2000	No
v_3 or v_{av34}	1286 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2836 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2836	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 26.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.490

Space mean speed in ramp influence area, S_R = 53.7 mph

Space mean speed in outer lanes, S_O = 70.2 mph

Space mean speed for all vehicles, S = 58.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2698	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	553	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	265	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2698	553	265	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	749	154	74	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4122	691	331	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2187 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4122	9400	No
$v_{FO} = v_F - v_R$	3431	9400	No
v_R	691	2000	No
v_3 or v_{av34}	967 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2187 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2187	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.490

Space mean speed in ramp influence area, S_R = 53.7 mph

Space mean speed in outer lanes, S_0 = 71.3 mph

Space mean speed for all vehicles, S = 60.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2698	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	553	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2698	553		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	749	154		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4122	691		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 2187 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4122	9400	No
$v_{FO} = v_F - v_R$		3431	9400	No
v_R		691	2000	No
v_3 or v_{av34}		967 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2187 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2187	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.490	
Space mean speed in ramp influence area,	S_R = 53.7	mph
Space mean speed in outer lanes,	S_0 = 71.3	mph
Space mean speed for all vehicles,	S = 60.8	mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2410	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	308	vph
Length of first accel/decel lane	910	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	154	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2410	308	154	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	669	86	43	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3682	385	171	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.650 Using Equation 5
FD
v = v + (v - v) P = 2529 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3682	7050	No
$v_{FO} = v - v_R$		3297	7050	No
v_R		385	2000	No
v_3 or v_{av34}		1153 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 2529$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2529	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 17.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.463	
Space mean speed in ramp influence area,	S_R = 54.4	mph
Space mean speed in outer lanes,	S_0 = 70.7	mph
Space mean speed for all vehicles,	S = 58.6	mph

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STV
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Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2410	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	308	vph
Length of first accel/decel lane	910	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2410	308		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	669	86		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3682	385		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.650 Using Equation 5
FD
v = v + (v - v) P = 2529 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3682	7050	No
$v_{FO} = v - v_R$	3297	7050	No
v_R	385	2000	No
v_3 or v_{av34}	1153 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2529 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2529	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 17.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.463	
Space mean speed in ramp influence area,	S_R = 54.4	mph
Space mean speed in outer lanes,	S_0 = 70.7	mph
Space mean speed for all vehicles,	S = 58.6	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2407	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	99	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2800	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2407	231	99	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	669	64	28	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3677	289	110	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.655 Using Equation 5
FD
v = v + (v - v) P = 2507 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3677	7050	No
$v_{FO} = v - v$	F R	3388	7050	No
v_R		289	2100	No
v_3 or v_{av34}		1170 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 2507$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2507	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.389

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_0 = 70.6 mph

Space mean speed for all vehicles, S = 60.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2407	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	231	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2407	231		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	669	64		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3677	289		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.655 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 2507 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3677	7050	No
$v_{FO} = v_F - v_R$	3388	7050	No
v_R	289	2100	No
v_3 or v_{av34}	1170 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2507 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2507	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 21.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.389

Space mean speed in ramp influence area, S_R = 56.1 mph

Space mean speed in outer lanes, S_0 = 70.6 mph

Space mean speed for all vehicles, S = 60.0 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2275	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	118	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2201	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2275	245	118	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	632	68	33	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3476	306	131	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.659 Using Equation 5
FD
v = v + (v - v) P = 2395 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3476	7050	No
$v_{FO} = v - v_R$		3170	7050	No
v_R		306	2000	No
v_3 or v_{av34}		1081 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 2395$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2395	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.456

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_0 = 71.0 mph

Space mean speed for all vehicles, S = 58.8 mph

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STV
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Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2275	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	245	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	99	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4934	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2275	245	99	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	632	68	28	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3476	306	110	pcph

Estimation of V12 Diverge Areas

L = 861.45 (Equation 13-12 or 13-13)

P_{EQ} = 0.659 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 2395 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3476	7050	No
$v_{FO} = v_F - v_R$	3170	7050	No
v_R	306	2000	No
v_3 or v_{av34}	1081 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2395 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2395	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.456

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_0 = 71.0 mph

Space mean speed for all vehicles, S = 58.8 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2148	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	353	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	87	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2148		353		87		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	597		98		24		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	3282		441		97		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{FD}^{EQ} = 0.658 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2309 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3282	7050	No
$v_{FO} = v_F - v_R$	2841	7050	No
v_R	441	1900	No
v_3 or v_{av34}	973 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2309 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2309	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.598

Space mean speed in ramp influence area, S_R = 51.3 mph

Space mean speed in outer lanes, S_0 = 71.3 mph

Space mean speed for all vehicles, S = 55.9 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2148	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	353	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2148	353		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	597	98		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3282	441		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{FD}^{EQ} = 0.658 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2309 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3282	7050	No
$v_{FO} = v_F - v_R$	2841	7050	No
v_R	441	1900	No
v_3 or v_{av34}	973 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 2309 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2309	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 20.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.598

Space mean speed in ramp influence area, S_R = 51.3 mph

Space mean speed in outer lanes, S_0 = 71.3 mph

Space mean speed for all vehicles, S = 55.9 mph

I-85 Southbound

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2157	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	88	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	272	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2372	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2157	88	272	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	599	24	76	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3295	110	302	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.673 Using Equation 5
FD
v = v + (v - v) P = 2252 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3295	7050	No
$v_{FO} = v - v_R$		3185	7050	No
v_R		110	2000	No
v_3 or v_{av34}		1043 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2252 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2252	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 19.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.438	
Space mean speed in ramp influence area,	S_R = 54.9	mph
Space mean speed in outer lanes,	S_0 = 71.1	mph
Space mean speed for all vehicles,	S = 59.2	mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2157	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	88	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2157	88		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	599	24		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3295	110		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.673 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2252 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3295	7050	No
$v_{FO} = v_F - v_R$	3185	7050	No
v_R	110	2000	No
v_3 or v_{av34}	1043 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2252 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2252	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 19.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.438	
Space mean speed in ramp influence area,	S_R = 54.9	mph
Space mean speed in outer lanes,	S_0 = 71.1	mph
Space mean speed for all vehicles,	S = 59.2	mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2341	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	130	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2242	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2341	163	130	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	650	45	36	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3577	204	144	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.661 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2434 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3577	7050	No
$v_{FO} = v_F - v_R$	3373	7050	No
v_R	204	2000	No
v_3 or v_{av34}	1143 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2434 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2434	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.446	
Space mean speed in ramp influence area,	S_R = 54.7	mph
Space mean speed in outer lanes,	S_0 = 70.7	mph
Space mean speed for all vehicles,	S = 59.0	mph

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2341	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	163	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	272	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5324	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2341		163		272		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	650		45		76		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	3577		204		302		pcph

Estimation of V12 Diverge Areas

L = 2192.11 (Equation 13-12 or 13-13)

P_{EQ} = 0.661 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 2434 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3577	7050	No
$v_{FO} = v_F - v_R$	3373	7050	No
v_R	204	2000	No
v_3 or v_{av34}	1143 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2434 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2434	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 21.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.7 mph

Space mean speed in outer lanes, S_0 = 70.7 mph

Space mean speed for all vehicles, S = 59.0 mph

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STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2308	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	278	vph
Length of first accel/decel lane	625	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	157	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2308		278		157		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	641		77		44		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	3526		348		174		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.656 Using Equation 5
FD
v = v + (v - v) P = 2432 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3526	7050	No
$v_{FO} = v - v_R$		3178	7050	No
v_R		348	2000	No
v_3 or v_{av34}		1094 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 2432$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2432	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 19.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.524	
Space mean speed in ramp influence area,	S_R = 52.9	mph
Space mean speed in outer lanes,	S_0 = 70.9	mph
Space mean speed for all vehicles,	S = 57.5	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2308	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	278	vph
Length of first accel/decel lane	625	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2308	278		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	641	77		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3526	348		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.656 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 2432 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3526	7050	No
$v_{FO} = v_F - v_R$	3178	7050	No
v_R	348	2000	No
v_3 or v_{av34}	1094 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2432 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2432	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 19.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.524

Space mean speed in ramp influence area, S_R = 52.9 mph

Space mean speed in outer lanes, S_0 = 70.9 mph

Space mean speed for all vehicles, S = 57.5 mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2265	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	259	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	607	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2265		259		607		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	629		72		169		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 3460 324 674 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.659 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2389 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3460	7050	No
$v_{FO} = v_F - v_R$	3136	7050	No
v_R	324	2000	No
v_3 or v_{av34}	1071 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2389 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2389	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.457

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = 71.0 mph

Space mean speed for all vehicles, S = 58.7 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2265	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	259	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	2265		259				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	629		72				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				

Flow rate, vp 3460 324 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.659 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2389 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3460	7050	No
$v_{FO} = v_F - v_R$	3136	7050	No
v_R	324	2000	No
v_3 or v_{av34}	1071 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 2389 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2389	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 21.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.457

Space mean speed in ramp influence area, S_R = 54.5 mph

Space mean speed in outer lanes, S_O = 71.0 mph

Space mean speed for all vehicles, S = 58.7 mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2613	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	70	vph
Length of first accel/decel lane	637	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	245	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1182	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2613	70	245	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	726	19	68	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3992	88	272	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.656 Using Equation 5
FD
$v_{12} = v_R + (v_F - v_R) P_{FD} = 2650$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3992	7050	No
$v_{FO} = v_F - v_R$	3904	7050	No
v_R	88	2000	No
v_3 or v_{av34}	1342 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, $v_{12A} = 2650$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2650	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D = 21.3$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, $D_S = 0.501$

Space mean speed in ramp influence area, $S_R = 53.5$ mph

Space mean speed in outer lanes, $S_0 = 70.0$ mph

Space mean speed for all vehicles, $S = 58.1$ mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2613	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	70	vph
Length of first accel/decel lane	637	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	2613		70			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	726		19			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%	%	
Length	0.00	mi	0.00	mi	mi	
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			
Flow rate, vp	3992		88			pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.656 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2650 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		3992	7050	No
$v_{FO} = v_F - v_R$		3904	7050	No
v_R		88	2000	No
v_3 or v_{av34}		1342 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2650 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2650	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.501	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_0 = 70.0	mph
Space mean speed for all vehicles,	S = 58.1	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2613	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	70	vph
Length of first accel/decel lane	637	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	245	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1182	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2613	70	245	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	726	19	68	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	3992	88	272	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 1790 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
v_{Fi}	$= v_F$	3992	9400	No
v_{FO}	$= v - v_R$	3904	9400	No
v_R		88	2000	No
v_3 or v_{av34}		1101 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 1790$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1790	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 13.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.501	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_0 = 70.9	mph
Space mean speed for all vehicles,	S = 61.9	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2613	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	70	vph
Length of first accel/decel lane	637	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2613	70		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	726	19		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	3992	88		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 1790 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	3992	9400	No
$v_{FO} = v - v_R$	3904	9400	No
v_R	88	2000	No
v_3 or v_{av34}	1101 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1790 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1790	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 13.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.501	
Space mean speed in ramp influence area,	S_R = 53.5	mph
Space mean speed in outer lanes,	S_0 = 70.9	mph
Space mean speed for all vehicles,	S = 61.9	mph

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STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2788	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	775	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	495	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2788	106	495	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	774	29	138	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4259	133	550	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.647 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2804 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4259	7050	No
$v_{FO} = v_F - v_R$		4126	7050	No
v_R		133	2000	No
v_3 or v_{av34}		1455 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2804 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2804	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_0 = 69.5 mph

Space mean speed for all vehicles, S = 59.1 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2788	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	775	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2788	106		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	774	29		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4259	133		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.647 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2804 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4259	7050	No
$v_{FO} = v_F - v_R$		4126	7050	No
v_R		133	2000	No
v_3 or v_{av34}		1455 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 2804 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2804	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_0 = 69.5 mph

Space mean speed for all vehicles, S = 59.1 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2788	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	775	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	495	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2788	106	495	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	774	29	138	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4259	133	550	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 1932 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		4259	9400	No
$v_{FO} = v - v_R$		4126	9400	No
v_R		133	2000	No
v_3 or v_{av34}		1163 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 1932 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1932	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 13.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	D_S = 0.440	
Space mean speed in ramp influence area,	S_R = 54.9	mph
Space mean speed in outer lanes,	S_0 = 70.7	mph
Space mean speed for all vehicles,	S = 62.5	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	2788	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	106	vph
Length of first accel/decel lane	775	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	2788	106		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	774	29		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4259	133		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 1932 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4259	9400	No
$v_{FO} = v_F - v_R$	4126	9400	No
v_R	133	2000	No
v_3 or v_{av34}	1163 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 1932 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	1932	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 13.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable, D_S = 0.440

Space mean speed in ramp influence area, S_R = 54.9 mph

Space mean speed in outer lanes, S_0 = 70.7 mph

Space mean speed for all vehicles, S = 62.5 mph

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STV
1320 Main Street
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3177	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	226	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	466	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2035	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3177		226		466		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	883		63		129		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 4854 283 518 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.626 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3143 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4854	7050	No
$v_{FO} = v_F - v_R$	4571	7050	No
v_R	283	2100	No
v_3 or v_{av34}	1711 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3143 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3143	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_O = 68.5 mph

Space mean speed for all vehicles, S = 61.0 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3177	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	226	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	3177		226			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	883		63			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, v_p 48Y4 283 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.626 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3143 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	48Y4	7050	No
$v_{FO} = v_F - v_R$	4571	7050	No
v_R	283	2100	No
v_3 or v_{av34}	1711 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3143 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3143	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 28.9 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_O = 68.5 mph

Space mean speed for all vehicles, S = 61.0 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3177	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	226	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	466	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2035	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3177	226	466	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	883	63	129	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	4854	283	518	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 2276 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4854	9400	No
$v_{FO} = v_F - v_R$	4571	9400	No
v_R	283	2100	No
v_3 or v_{av34}	1289 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2276 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2276	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_0 = 70.2 mph

Space mean speed for all vehicles, S = 63.6 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	AM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3177	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	226	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3177	226		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	883	63		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	4854	283		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 2276 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	4854	9400	No
$v_{FO} = v - v_R$	4571	9400	No
v_R	283	2100	No
v_3 or v_{av34}	1289 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2276 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2276	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 21.4 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.323

Space mean speed in ramp influence area, S_R = 57.6 mph

Space mean speed in outer lanes, S_0 = 70.2 mph

Space mean speed for all vehicles, S = 63.6 mph

Build PM Peak
I-85 Northbound

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STV
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Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4507	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	392	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	148	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	3650	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4507		392		148		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1252		109		41		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6886 490 185 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.565 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4106 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6886	7050	No
$v_{FO} = v_F - v_R$	6396	7050	No
v_R	490	2000	No
v_3 or v_{av34}	2780 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	Yes	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 4186 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4186	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 37.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.472

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_O = 64.7 mph

Space mean speed for all vehicles, S = 57.8 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4507	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	392	vph
Length of first accel/decel lane	300	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	79	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	5140	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4507		392		79		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1252		109		22		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6886 490 99 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.565 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4106 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6886	7050	No
$v_{FO} = v_F - v_R$	6396	7050	No
v_R	490	2000	No
v_3 or v_{av34}	2780 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	Yes	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 4186 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4186	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 37.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.472

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_O = 64.7 mph

Space mean speed for all vehicles, S = 57.8 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4520	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	405	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	148	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1330	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4520	405	148	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1256	113	41	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6906	506	185	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 3296 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6906	9400	No
$v_{FO} = v - v_{FR}$	6400	9400	No
v_R	506	2000	No
v_3 or v_{av34}	1805 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, $v_{12A} = 3296$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3296	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.474

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_0 = 68.2 mph

Space mean speed for all vehicles, S = 60.6 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4520	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	405	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4520	405		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1256	113		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6906	506		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3296 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6906	9400	No
$v_{FO} = v_F - v_R$	6400	9400	No
v_R	506	2000	No
v_3 or v_{av34}	1805 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3296 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3296	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 29.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.474

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_0 = 68.2 mph

Space mean speed for all vehicles, S = 60.6 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4263	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	224	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	97	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1720	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4263		224		97		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1184		62		27		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6513 280 121 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.584 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3922 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6513	7050	No
$v_{FO} = v_F - v_R$	6233	7050	No
v_R	280	2000	No
v_3 or v_{av34}	2591 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3922 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3922	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.518

Space mean speed in ramp influence area, S_R = 53.1 mph

Space mean speed in outer lanes, S_O = 65.1 mph

Space mean speed for all vehicles, S = 57.3 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4263	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	224	vph
Length of first accel/decel lane	1200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4263		224			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1184		62			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 6513 280 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.584 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3922 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6513	7050	No
$v_{FO} = v_F - v_R$	6233	7050	No
v_R	280	2000	No
v_3 or v_{av34}	2591 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3922 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3922	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 27.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.518

Space mean speed in ramp influence area, S_R = 53.1 mph

Space mean speed in outer lanes, S_O = 65.1 mph

Space mean speed for all vehicles, S = 57.3 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4263	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	224	vph
Length of first accel/decel lane	980	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	97	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1673	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4263	224	97	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1184	62	27	v
Trucks and buses	25	25	25	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	0.889	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6513	280	121	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 2998 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		6513	9400	No
$v_{FO} = v - v_R$		6233	9400	No
v_R		280	2000	No
v_3 or v_{av34}		1757 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 2998$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2998	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 21.2$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, $D_S = 0.518$

Space mean speed in ramp influence area, $S_R = 53.1$ mph

Space mean speed in outer lanes, $S_0 = 68.4$ mph

Space mean speed for all vehicles, $S = 60.4$ mph

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STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4263	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	224	vph
Length of first accel/decel lane	980	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4263	224		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1184	62		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6513	280		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 2998 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6513	9400	No
$v_{FO} = v_F - v_R$	6233	9400	No
v_R	280	2000	No
v_3 or v_{av34}	1757 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2998 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2998	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 21.2 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.518

Space mean speed in ramp influence area, S_R = 53.1 mph

Space mean speed in outer lanes, S_0 = 68.4 mph

Space mean speed for all vehicles, S = 60.4 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4136	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	689	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	469	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4136		689		469		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1149		191		130		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6319 861 586 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.562 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3931 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6319	7050	No
$v_{FO} = v_F - v_R$	5458	7050	No
v_R	861	2000	No
v_3 or v_{av34}	2388 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3931 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3931	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 36.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.505

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = 65.9 mph

Space mean speed for all vehicles, S = 57.5 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4136	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	689	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4136	689		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1149	191		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 6319 861 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.562 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3931 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6319	7050	No
$v_{FO} = v_F - v_R$	5458	7050	No
v_R	861	2000	No
v_3 or v_{av34}	2388 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3931 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3931	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 36.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.505

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_O = 65.9 mph

Space mean speed for all vehicles, S = 57.5 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4136	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	689	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	469	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1930	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4136		689		469		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1149		191		130		v
Trucks and buses	25		25		25		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		0.889		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	6319		861		586		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3241 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6319	9400	No
$v_{FO} = v_F - v_R$	5458	9400	No
v_R	861	2000	No
v_3 or v_{av34}	1539 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3241 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3241	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 30.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.505

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_0 = 69.2 mph

Space mean speed for all vehicles, S = 60.1 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4136	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	689	vph
Length of first accel/decel lane	200	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4136	689		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1149	191		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6319	861		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3241 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6319	9400	No
$v_{FO} = v_F - v_R$	5458	9400	No
v_R	861	2000	No
v_3 or v_{av34}	1539 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3241 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3241	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 30.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.505

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_0 = 69.2 mph

Space mean speed for all vehicles, S = 60.1 mph

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STV
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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3916	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	400	vph
Length of first accel/decel lane	910	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	109	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	965	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3916		400		109		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1088		111		30		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	5983		500		121		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{FD}^{EQ} = 0.587 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3721 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5983	7050	No
$v_{FO} = v_F - v_R$	5483	7050	No
v_R	500	2000	No
v_3 or v_{av34}	2262 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 $v_{12}/2$	No	

If yes, v_{12A} = 3721 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3721	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 28.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.473	
Space mean speed in ramp influence area,	S_R = 54.1	mph
Space mean speed in outer lanes,	S_0 = 66.4	mph
Space mean speed for all vehicles,	S = 58.2	mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3916	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	400	vph
Length of first accel/decel lane	910	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3916	400		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1088	111		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5983	500		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.587 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3721 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5983	7050	No
$v_{FO} = v_F - v_R$	5483	7050	No
v_R	500	2000	No
v_3 or v_{av34}	2262 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3721 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3721	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 28.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.473

Space mean speed in ramp influence area, S_R = 54.1 mph

Space mean speed in outer lanes, S_0 = 66.4 mph

Space mean speed for all vehicles, S = 58.2 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3895	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	167	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	131	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2800	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3895		167		131		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1082		46		36		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	5951		209		146		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.602 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3663 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5951	7050	No
$v_{FO} = v_F - v_R$	5742	7050	No
v_R	209	2100	No
v_3 or v_{av34}	2288 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3663 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3663	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 31.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.382

Space mean speed in ramp influence area, S_R = 56.2 mph

Space mean speed in outer lanes, S_0 = 66.3 mph

Space mean speed for all vehicles, S = 59.7 mph

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STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3895	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	40.0	mph
Volume on ramp	167	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3895	167		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1082	46		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5951	209		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{FD}^{EQ} = 0.602 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3663 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5951	7050	No
$v_{FO} = v_F - v_R$	5742	7050	No
v_R	209	2100	No
v_3 or v_{av34}	2288 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3663 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3663	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 31.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.382

Space mean speed in ramp influence area, S_R = 56.2 mph

Space mean speed in outer lanes, S_0 = 66.3 mph

Space mean speed for all vehicles, S = 59.7 mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3859	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	345	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	102	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2201	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3859	345	102	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1072	96	28	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5896	431	113	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.593 Using Equation 5
FD
v = v + (v - v) P = 3671 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		5896	7050	No
$v_{FO} = v - v_R$		5465	7050	No
v_R		431	2000	No
v_3 or v_{av34}		2225 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 3671 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3671	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 31.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.467	
Space mean speed in ramp influence area,	S_R = 54.3	mph
Space mean speed in outer lanes,	S_0 = 66.5	mph
Space mean speed for all vehicles,	S = 58.3	mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3859	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	345	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	131	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	4934	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3859	345	131	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1072	96	36	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5896	431	146	pcph

Estimation of V12 Diverge Areas

L = 839.79 (Equation 13-12 or 13-13)

P_{EQ} = 0.593 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3671 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5896	7050	No
$v_{FO} = v_F - v_R$	5465	7050	No
v_R	431	2000	No
v_3 or v_{av34}	2225 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3671 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3671	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 31.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.467	
Space mean speed in ramp influence area,	S_R = 54.3	mph
Space mean speed in outer lanes,	S_0 = 66.5	mph
Space mean speed for all vehicles,	S = 58.3	mph

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STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	214	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	70	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1440	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3606		214		70		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1002		59		19		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5509 268 78 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.610 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3465 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5509	7050	No
$v_{FO} = v_F - v_R$	5241	7050	No
v_R	268	1900	No
v_3 or v_{av34}	2044 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3465 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3465	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.582

Space mean speed in ramp influence area, S_R = 51.6 mph

Space mean speed in outer lanes, S_O = 67.2 mph

Space mean speed for all vehicles, S = 56.5 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 NB
Junction:	Exit 100
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3606	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	25.0	mph
Volume on ramp	214	vph
Length of first accel/decel lane	380	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	10	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	6360	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3606		214		10		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1002		59		3		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 5509 268 11 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.610 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3465 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	5509	7050	No
$v_{FO} = v_F - v_R$	5241	7050	No
v_R	268	1900	No
v_3 or v_{av34}	2044 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3465 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3465	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 30.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.582

Space mean speed in ramp influence area, S_R = 51.6 mph

Space mean speed in outer lanes, S_O = 67.2 mph

Space mean speed for all vehicles, S = 56.5 mph

I-85 Southbound

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3766	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	123	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	288	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2372	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3766	123	288	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1046	34	80	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	5754	154	320	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.609 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3565 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		5754	7050	No
$v_{FO} = v_F - v_R$		5600	7050	No
v_R		154	2000	No
v_3 or v_{av34}		2189 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 3565 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3565	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 30.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.442	
Space mean speed in ramp influence area,	S_R = 54.8	mph
Space mean speed in outer lanes,	S_0 = 66.7	mph
Space mean speed for all vehicles,	S = 58.8	mph

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 96
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3766	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	123	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3766	123		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1046	34		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	5754	154		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.609 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3565 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		5754	7050	No
$v_{FO} = v - v_R$		5600	7050	No
v_R		154	2000	No
v_3 or v_{av34}		2189 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 3565 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3565	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 30.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.442	
Space mean speed in ramp influence area,	S_R = 54.8	mph
Space mean speed in outer lanes,	S_0 = 66.7	mph
Space mean speed for all vehicles,	S = 58.8	mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3931	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	158	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2242	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3931	140	158	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1092	39	44	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6006	175	176	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.602 Using Equation 5
FD
v = v + (v - v) P = 3684 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		6006	7050	No
$v_{FO} = v - v_R$		5831	7050	No
v_R		175	2000	No
v_3 or v_{av34}		2322 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 3684$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3684	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 31.8$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, $D_S = 0.444$

Space mean speed in ramp influence area, $S_R = 54.8$ mph

Space mean speed in outer lanes, $S_0 = 66.1$ mph

Space mean speed for all vehicles, $S = 58.7$ mph

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STV
1320 Main Street
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Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 95
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3931	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	140	vph
Length of first accel/decel lane	457	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	288	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	5324	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3931	140	288	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1092	39	80	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6006	175	320	pcph

Estimation of V12 Diverge Areas

L = 1634.00 (Equation 13-12 or 13-13)

EQ
P = 0.602 Using Equation 5
FD
v = v + (v - v) P = 3684 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		6006	7050	No
$v_{FO} = v - v_R$		5831	7050	No
v_R		175	2000	No
v_3 or v_{av34}		2322 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 3684$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3684	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D = 31.8$ pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, $D_S = 0.444$

Space mean speed in ramp influence area, $S_R = 54.8$ mph

Space mean speed in outer lanes, $S_0 = 66.1$ mph

Space mean speed for all vehicles, $S = 58.7$ mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/15/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3949	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	390	vph
Length of first accel/decel lane	625	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	292	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1000	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3949		390		292		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1097		108		81		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		
Flow rate, vp	6033		488		324		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.587 Using Equation 5
FD
v = v + (v - v) P = 3741 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		6033	7050	No
$v_{FO} = v - v_R$		5545	7050	No
v_R		488	2000	No
v_3 or v_{av34}		2292 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, $v_{12A} = 3741$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3741	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 30.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.537

Space mean speed in ramp influence area, S_R = 52.7 mph

Space mean speed in outer lanes, S_0 = 66.3 mph

Space mean speed for all vehicles, S = 57.1 mph

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Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	6/17/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 92
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3949	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	390	vph
Length of first accel/decel lane	625	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3949	390		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1097	108		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6033	488		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.587 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3741 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6033	7050	No
$v_{FO} = v_F - v_R$	5545	7050	No
v_R	488	2000	No
v_3 or v_{av34}	2292 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3741 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3741	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 30.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable,	D_S = 0.537	
Space mean speed in ramp influence area,	S_R = 52.7	mph
Space mean speed in outer lanes,	S_0 = 66.3	mph
Space mean speed for all vehicles,	S = 57.1	mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3941	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	339	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	740	vph
Position of adjacent ramp	Upstream	
Type of adjacent ramp	Off	
Distance to adjacent ramp	2125	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	3941		339		740		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1095		94		206		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6021 424 822 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.590 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3726 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6021	7050	No
$v_{FO} = v_F - v_R$	5597	7050	No
v_R	424	2000	No
v_3 or v_{av34}	2295 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3726 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3726	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.466

Space mean speed in ramp influence area, S_R = 54.3 mph

Space mean speed in outer lanes, S_O = 66.3 mph

Space mean speed for all vehicles, S = 58.3 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 90
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	3941	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	339	vph
Length of first accel/decel lane	400	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	3941	339		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1095	94		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		

Flow rate, vp 6021 424 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.590 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3726 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6021	7050	No
$v_{FO} = v_F - v_R$	5597	7050	No
v_R	424	2000	No
v_3 or v_{av34}	2295 pc/h	(Equation 13-14 or 13-17)	

Is v_3 or v_{av34} > 2700 pc/h? No

Is v_3 or v_{av34} > 1.5 v_{12}/2 No

If yes, v_{12A} = 3726 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3726	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 32.7 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.466

Space mean speed in ramp influence area, S_R = 54.3 mph

Space mean speed in outer lanes, S_O = 66.3 mph

Space mean speed for all vehicles, S = 58.3 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4342	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	98	vph
Length of first accel/decel lane	637	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	136	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1182	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4342	98	136	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1206	27	38	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6634	123	151	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.588 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3955 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6634	7050	No
$v_{FO} = v_F - v_R$	6511	7050	No
v_R	123	2000	No
v_3 or v_{av34}	2679 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3955 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3955	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 32.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.504

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_0 = 64.8 mph

Space mean speed for all vehicles, S = 57.5 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4342	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	98	vph
Length of first accel/decel lane	637	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4342	98		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1206	27		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6634	123		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.588 Using Equation 5

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 3955 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6634	7050	No
$v_{FO} = v_F - v_R$	6511	7050	No
v_R	123	2000	No
v_3 or v_{av34}	2679 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3955 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3955	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 32.5 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.504

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_0 = 64.8 mph

Space mean speed for all vehicles, S = 57.5 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4342	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	98	vph
Length of first accel/decel lane	637	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	136	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	1182	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4342	98	136	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1206	27	38	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6634	123	151	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 2962 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6634	9400	No
$v_{FO} = v - v_R$	6511	9400	No
v_R	123	2000	No
v_3 or v_{av34}	1836 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2962 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2962	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 24.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.504

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_0 = 68.0 mph

Space mean speed for all vehicles, S = 60.6 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 87
Jurisdiction:	Cherokee County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4342	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	30.0	mph
Volume on ramp	98	vph
Length of first accel/decel lane	637	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4342	98		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1206	27		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6634	123		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{FD} = v_{12} + (v_R - v_F) P_{FD}$ = 2962 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6634	9400	No
$v_{FO} = v_F - v_R$	6511	9400	No
v_R	123	2000	No
v_3 or v_{av34}	1836 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 2962 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	2962	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 24.0 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.504

Space mean speed in ramp influence area, S_R = 53.4 mph

Space mean speed in outer lanes, S_0 = 68.0 mph

Space mean speed for all vehicles, S = 60.6 mph

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STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4380	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	775	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	305	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4380	157	305	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1217	44	85	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6692	196	339	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.584 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3988 pc/h

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		6692	7050	No
$v_{FO} = v_F - v_R$		6496	7050	No
v_R		196	2000	No
v_3 or v_{av34}		2704 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		Yes	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 3992 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3992	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 31.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_0 = 64.7 mph

Space mean speed for all vehicles, S = 58.4 mph

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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4380	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	775	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4380	157		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1217	44		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %		%
Length	0.00 mi	0.00 mi		mi
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6692	196		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.584 Using Equation 5
FD
v = v + (v - v) P = 3988 pc/h
12 R F R FD

Capacity Checks

		Actual	Maximum	LOS F?
$v_{Fi} = v_F$		6692	7050	No
$v_{FO} = v - v_R$		6496	7050	No
v_R		196	2000	No
v_3 or v_{av34}		2704 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?		Yes	
Is v_3 or v_{av34}	> 1.5 v_{12} /2		No	

If yes, v_{12A} = 3992 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	3992	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 31.6 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_0 = 64.7 mph

Space mean speed for all vehicles, S = 58.4 mph

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STV
1320 Main Street
Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4380	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	775	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	305	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2325	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4380	157	305	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1217	44	85	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6692	196	339	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 3028 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6692	9400	No
$v_{FO} = v - v_{FR}$	6496	9400	No
v_R	196	2000	No
v_3 or v_{av34}	1832 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, v_{12A} = 3028 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3028	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 23.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable, D_S = 0.446

Space mean speed in ramp influence area, S_R = 54.8 mph

Space mean speed in outer lanes, S_0 = 68.1 mph

Space mean speed for all vehicles, S = 61.3 mph

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STV
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Suite 300
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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	08/12/2015
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 83
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4380	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	35.0	mph
Volume on ramp	157	vph
Length of first accel/decel lane	775	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4380		157				vph
Peak-hour factor, PHF	0.90		0.90				
Peak 15-min volume, v15	1217		44				v
Trucks and buses	25		25				%
Recreational vehicles	0		0				%
Terrain type:	Rolling		Level				
Grade	0.00	%	0.00	%		%	
Length	0.00	mi	0.00	mi		mi	
Trucks and buses PCE, ET	2.5		1.5				
Recreational vehicle PCE, ER	2.0		1.2				
Heavy vehicle adjustment, fHV	0.727		0.889				
Driver population factor, fP	1.00		1.00				
Flow rate, vp	6692		196				pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

P_{EQ} = 0.436 Using Equation 8

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 3028 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6692	9400	No
$v_{FO} = v_F - v_R$	6496	9400	No
v_R	196	2000	No
v_3 or v_{av34}	1832 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 3028 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3028	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086 v_{12} - 0.009 L_D$ = 23.3 pc/mi/ln

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	D_S = 0.446	
Space mean speed in ramp influence area,	S_R = 54.8	mph
Space mean speed in outer lanes,	S_0 = 68.1	mph
Space mean speed for all vehicles,	S = 61.3	mph

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Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4528	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	166	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	182	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2035	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp		
Volume, V (vph)	4528		166		182		vph
Peak-hour factor, PHF	0.90		0.90		0.90		
Peak 15-min volume, v15	1258		46		51		v
Trucks and buses	25		25		0		%
Recreational vehicles	0		0		0		%
Terrain type:	Rolling		Level		Level		
Grade	0.00	%	0.00	%	0.00	%	
Length	0.00	mi	0.00	mi	0.00	mi	
Trucks and buses PCE, ET	2.5		1.5		1.5		
Recreational vehicle PCE, ER	2.0		1.2		1.2		
Heavy vehicle adjustment, fHV	0.727		0.889		1.000		
Driver population factor, fP	1.00		1.00		1.00		

Flow rate, vp 6918 208 202 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.577 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4083 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6918	7050	No
$v_{FO} = v_F - v_R$	6710	7050	No
v_R	208	2100	No
v_3 or v_{av34}	2835 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	5es	
Is v_3 or v_{av34}	> 1.5 v_{12}/2	No	

If yes, v_{12A} = 4218 (Equation 13-15, 13-16, 18, or 19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4218	4400	No

Level of Service Determination (if not F)

Density, $D = 4.252 + 0.0086\, v_R - 0.009\, L_D$ = 38.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.317

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = 64.7 mph

Space mean speed for all vehicles, S = 60.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.2

STV
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E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-8Y SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-8Y Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	3	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4528	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	166	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway		Ramp		Adjacent Ramp	
Volume, V (vph)	4528		166			vph
Peak-hour factor, PHF	0.90		0.90			
Peak 15-min volume, v15	1258		46			v
Trucks and buses	25		25			%
Recreational vehicles	0		0			%
Terrain type:	Rolling		Level			
Grade	0.00	%	0.00	%		%
Length	0.00	mi	0.00	mi		mi
Trucks and buses PCE, ET	2.5		1.5			
Recreational vehicle PCE, ER	2.0		1.2			
Heavy vehicle adjustment, fHV	0.727		0.889			
Driver population factor, fP	1.00		1.00			

Flow rate, vp 6918 208 pcph

Estimation of V12 Diverge Areas

L_{EQ} = (Equation 13-12 or 13-13)

P_{FD} = 0.577 Using Equation 5

$v_{12} = v_R + (v_F - v_R) P_{FD}$ = 4083 pc/h

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6918	7050	No
$v_{FO} = v_F - v_R$	6710	7050	No
v_R	208	2100	No
v_3 or v_{av34}	2835 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34} > 2700 pc/h?		Yes	
Is v_3 or v_{av34} > 1.5 v_{12}/2		No	

If yes, v_{12A} = 4218 (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12A}	4218	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\, v_{12} - 0.009\, L_D$ = 38.1 pc/mi/ln

Level of service for ramp-freeway junction areas of influence E

Speed Estimation

Intermediate speed variable, D_S = 0.317

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_O = 64.7 mph

Space mean speed for all vehicles, S = 60.2 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4528	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	166	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent ramp	182	vph
Position of adjacent ramp	Downstream	
Type of adjacent ramp	On	
Distance to adjacent ramp	2035	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4528	166	182	vph
Peak-hour factor, PHF	0.90	0.90	0.90	
Peak 15-min volume, v15	1258	46	51	v
Trucks and buses	25	25	0	%
Recreational vehicles	0	0	0	%
Terrain type:	Rolling	Level	Level	
Grade	0.00 %	0.00 %	0.00 %	
Length	0.00 mi	0.00 mi	0.00 mi	
Trucks and buses PCE, ET	2.5	1.5	1.5	
Recreational vehicle PCE, ER	2.0	1.2	1.2	
Heavy vehicle adjustment, fHV	0.727	0.889	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	6918	208	202	pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 3134 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6918	9400	No
$v_{FO} = v - v_R$	6710	9400	No
v_R	208	2100	No
v_3 or v_{av34}	1892 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, $v_{12A} = 3134$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3134	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 28.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.317

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = 67.8 mph

Space mean speed for all vehicles, S = 62.8 mph

HCS 2010: Freeway Merge and Diverge Segments Release 6.3

STV
1320 Main Street
Suite 300
Columbia, SC 29201
Phone: 803-724-1430 Fax: 803-724-1201
E-mail:

Diverge Analysis

Analyst:	RJD
Agency/Co.:	STV Incorporated
Date performed:	12/26/2014
Analysis time period:	PM Peak
Freeway/Dir of Travel:	I-85 SB
Junction:	Exit 80
Jurisdiction:	Spartanburg County
Analysis Year:	2040 Build
Description:	I-85 Widening

Freeway Data

Type of analysis	Diverge	
Number of lanes in freeway	4	
Free-flow speed on freeway	65.0	mph
Volume on freeway	4528	vph

Off Ramp Data

Side of freeway	Right	
Number of lanes in ramp	1	
Free-Flow speed on ramp	45.0	mph
Volume on ramp	166	vph
Length of first accel/decel lane	270	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	No	
Volume on adjacent ramp		vph
Position of adjacent ramp		
Type of adjacent ramp		
Distance to adjacent ramp		ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	4528	166		vph
Peak-hour factor, PHF	0.90	0.90		
Peak 15-min volume, v15	1258	46		v
Trucks and buses	25	25		%
Recreational vehicles	0	0		%
Terrain type:	Rolling	Level		
Grade	0.00 %	0.00 %	%	
Length	0.00 mi	0.00 mi	mi	
Trucks and buses PCE, ET	2.5	1.5		
Recreational vehicle PCE, ER	2.0	1.2		
Heavy vehicle adjustment, fHV	0.727	0.889		
Driver population factor, fP	1.00	1.00		
Flow rate, vp	6918	208		pcph

Estimation of V12 Diverge Areas

L = (Equation 13-12 or 13-13)

EQ
P = 0.436 Using Equation 8
FD
v = v + (v - v) P = 3134 pc/h
12 R F R FD

Capacity Checks

	Actual	Maximum	LOS F?
$v_{Fi} = v_F$	6918	9400	No
$v_{FO} = v - v_{FR}$	6710	9400	No
v_R	208	2100	No
v_3 or v_{av34}	1892 pc/h	(Equation 13-14 or 13-17)	
Is v_3 or v_{av34}	> 2700 pc/h?	No	
Is v_3 or v_{av34}	> 1.5 v_{12} /2	No	

If yes, $v_{12A} = 3134$ (Equation 13-15, 13-16, 13-18, or 13-19)

Flow Entering Diverge Influence Area

	Actual	Max Desirable	Violation?
v_{12}	3134	4400	No

Level of Service Determination (if not F)

Density, $D_R = 4.252 + 0.0086\ v_{12} - 0.009\ L_D$ = 28.8 pc/mi/ln

Level of service for ramp-freeway junction areas of influence D

Speed Estimation

Intermediate speed variable, D_S = 0.317

Space mean speed in ramp influence area, S_R = 57.7 mph

Space mean speed in outer lanes, S_0 = 67.8 mph

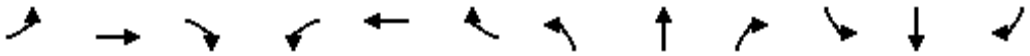
Space mean speed for all vehicles, S = 62.8 mph

Appendix I

Intersection HCM Synchro Outputs

Existing Exit 80

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	19	90	96	10	7	39	164	127	28	87	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	5	22	102	109	11	8	44	186	144	32	99	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	362	586	53	573	518	165	107			331		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	362	586	53	573	518	165	107			331		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.3		
p0 queue free %	99	95	90	66	97	99	97			97		
cM capacity (veh/h)	524	393	996	322	424	835	1467			1177		

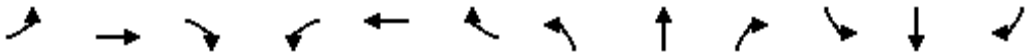
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	5	124	109	19	44	124	206	32	66	41
Volume Left	5	0	109	0	44	0	0	32	0	0
Volume Right	0	102	0	8	0	0	144	0	0	8
cSH	524	786	322	532	1467	1700	1700	1177	1700	1700
Volume to Capacity	0.01	0.16	0.34	0.04	0.03	0.07	0.12	0.03	0.04	0.02
Queue Length 95th (ft)	1	14	36	3	2	0	0	2	0	0
Control Delay (s)	11.9	10.4	21.8	12.0	7.5	0.0	0.0	8.1	0.0	0.0
Lane LOS	B	B	C	B	A			A		
Approach Delay (s)	10.5		20.3		0.9			1.9		
Approach LOS	B		C							

Intersection Summary				
Average Delay	5.9			
Intersection Capacity Utilization	33.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (veh/h)	109	0	42	0	288	0	0	245	28	0	0
Sign Control		Stop			Free			Free		Stop	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	133	0	51	0	351	0	0	299	34	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	501	650	176	299			351			474	650
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	501	650	176	299			351			474	650
tC, single (s)	7.7	6.7	7.1	4.2			4.1			7.5	6.5
tC, 2 stage (s)											
tF (s)	3.6	4.1	3.4	2.2			2.2			3.5	4.0
p0 queue free %	69	100	94	100			100			100	100
cM capacity (veh/h)	431	367	807	1252			1204			448	391

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	133	51	176	176	149	149	34
Volume Left	133	0	0	0	0	0	0
Volume Right	0	51	0	0	0	0	34
cSH	431	807	1700	1700	1700	1700	1700
Volume to Capacity	0.31	0.06	0.10	0.10	0.09	0.09	0.02
Queue Length 95th (ft)	32	5	0	0	0	0	0
Control Delay (s)	17.0	9.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	15.0		0.0		0.0		
Approach LOS	C						

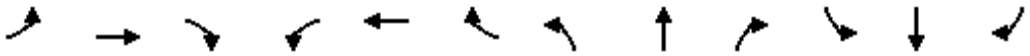
Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	22.7%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	168	0	132	0	0	0	0	432	88	53	301	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	198	0	155	0	0	0	0	508	104	62	354	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	733	987	177	810	987	254	354			508		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	733	987	177	810	987	254	354			508		
tC, single (s)	7.6	6.6	7.0	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	31	100	81	100	100	100	100			94		
cM capacity (veh/h)	288	225	823	213	235	751	1194			1053		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	198	155	254	254	104	62	177	177
Volume Left	198	0	0	0	0	62	0	0
Volume Right	0	155	0	0	104	0	0	0
cSH	288	823	1700	1700	1700	1053	1700	1700
Volume to Capacity	0.69	0.19	0.15	0.15	0.06	0.06	0.10	0.10
Queue Length 95th (ft)	116	17	0	0	0	5	0	0
Control Delay (s)	41.1	10.4	0.0	0.0	0.0	8.6	0.0	0.0
Lane LOS	E	B				A		
Approach Delay (s)	27.6		0.0			1.3		
Approach LOS	D							

Intersection Summary				
Average Delay	7.4			
Intersection Capacity Utilization	34.6%	ICU Level of Service	A	
Analysis Period (min)	15			

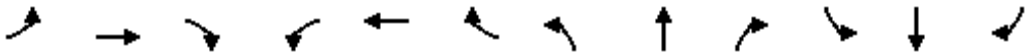


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	26	0	4	2	1	13	4	481	1	14	401	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	33	0	5	3	1	16	5	609	1	18	508	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	886	1175	265	914	1185	305	530			610		
vC1, stage 1 conf vol	554	554		620	620							
vC2, stage 2 conf vol	332	620		294	566							
vCu, unblocked vol	886	1175	265	914	1185	305	530			610		
tC, single (s)	8.0	7.0	7.4	7.8	6.8	7.2	4.2			4.2		
tC, 2 stage (s)	7.0	6.0		6.8	5.8							
tF (s)	3.8	4.2	3.5	3.6	4.2	3.4	2.2			2.3		
p0 queue free %	91	100	99	99	100	97	100			98		
cM capacity (veh/h)	369	327	668	373	348	654	1019			938		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	33	5	3	18	5	406	204	18	338	192
Volume Left	33	0	3	0	5	0	0	18	0	0
Volume Right	0	5	0	16	0	0	1	0	0	23
cSH	369	668	373	615	1019	1700	1700	938	1700	1700
Volume to Capacity	0.09	0.01	0.01	0.03	0.00	0.24	0.12	0.02	0.20	0.11
Queue Length 95th (ft)	7	1	1	2	0	0	0	1	0	0
Control Delay (s)	15.7	10.4	14.7	11.0	8.5	0.0	0.0	8.9	0.0	0.0
Lane LOS	C	B	B	B	A			A		
Approach Delay (s)	15.0		11.5		0.1			0.3		
Approach LOS	B		B							

Intersection Summary					
Average Delay	0.8				
Intersection Capacity Utilization	28.1%	ICU Level of Service		A	
Analysis Period (min)	15				

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	17	69	180	23	16	41	293	26	12	30	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	21	86	225	29	20	51	366	32	15	38	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	391	572	22	631	559	199	44			399		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	391	572	22	631	559	199	44			399		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.5		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.4		
p0 queue free %	100	95	92	26	93	97	97			99		
cM capacity (veh/h)	487	413	1057	303	406	793	1556			1038		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	108	225	49	51	244	155	15	25	19
Volume Left	0	0	225	0	51	0	0	15	0	0
Volume Right	0	86	0	20	0	0	32	0	0	6
cSH	1700	808	303	507	1556	1700	1700	1038	1700	1700
Volume to Capacity	0.00	0.13	0.74	0.10	0.03	0.14	0.09	0.01	0.01	0.01
Queue Length 95th (ft)	0	11	138	8	3	0	0	1	0	0
Control Delay (s)	0.0	10.1	44.7	12.8	7.4	0.0	0.0	8.5	0.0	0.0
Lane LOS	A	B	E	B	A			A		
Approach Delay (s)	10.1		39.0		0.8			2.2		
Approach LOS	B		E							

Intersection Summary				
Average Delay	13.8			
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (veh/h)	75	0	36	0	324	0	0	210	69	0	0
Sign Control		Stop			Free			Free		Stop	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	83	0	40	0	360	0	0	233	77	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	477	593	180	233			360			413	593
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	477	593	180	233			360			413	593
tC, single (s)	7.7	6.7	7.1	4.2			4.2			7.5	6.5
tC, 2 stage (s)											
tF (s)	3.6	4.1	3.4	2.2			2.2			3.5	4.0
p0 queue free %	82	100	95	100			100			100	100
cM capacity (veh/h)	451	398	804	1317			1181			502	421

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	83	40	180	180	117	117	77
Volume Left	83	0	0	0	0	0	0
Volume Right	0	40	0	0	0	0	77
cSH	451	804	1700	1700	1700	1700	1700
Volume to Capacity	0.18	0.05	0.11	0.11	0.07	0.07	0.05
Queue Length 95th (ft)	17	4	0	0	0	0	0
Control Delay (s)	14.8	9.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A					
Approach Delay (s)	13.1		0.0		0.0		
Approach LOS	B						

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	19.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	40	0	197	0	0	0	0	406	61	30	255	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	43	0	212	0	0	0	0	437	66	32	274	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	557	775	137	638	775	218	274			437		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	557	775	137	638	775	218	274			437		
tC, single (s)	7.6	6.6	7.0	7.5	6.5	6.9	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	76	100	100	100	100			97		
cM capacity (veh/h)	398	312	877	271	322	792	1271			1113		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	43	212	218	218	66	32	137	137
Volume Left	43	0	0	0	0	32	0	0
Volume Right	0	212	0	0	66	0	0	0
cSH	398	877	1700	1700	1700	1113	1700	1700
Volume to Capacity	0.11	0.24	0.13	0.13	0.04	0.03	0.08	0.08
Queue Length 95th (ft)	9	24	0	0	0	2	0	0
Control Delay (s)	15.1	10.4	0.0	0.0	0.0	8.3	0.0	0.0
Lane LOS	C	B				A		
Approach Delay (s)	11.2		0.0			0.9		
Approach LOS	B							

Intersection Summary				
Average Delay	2.9			
Intersection Capacity Utilization	27.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	32	3	7	2	3	13	3	422	2	9	409	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	41	4	9	3	4	17	4	541	3	12	524	44
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	866	1121	284	846	1141	272	568			544		
vC1, stage 1 conf vol	569	569		550	550							
vC2, stage 2 conf vol	297	551		296	591							
vCu, unblocked vol	866	1121	284	846	1141	272	568			544		
tC, single (s)	7.8	6.8	7.2	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.8	5.8		6.6	5.6							
tF (s)	3.6	4.2	3.4	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	90	99	99	99	99	98	100			99		
cM capacity (veh/h)	392	364	675	424	379	714	993			1001		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	41	13	3	21	4	361	183	12	350	218
Volume Left	41	0	3	0	4	0	0	12	0	0
Volume Right	0	9	0	17	0	0	3	0	0	44
cSH	392	538	424	612	993	1700	1700	1001	1700	1700
Volume to Capacity	0.10	0.02	0.01	0.03	0.00	0.21	0.11	0.01	0.21	0.13
Queue Length 95th (ft)	9	2	0	3	0	0	0	1	0	0
Control Delay (s)	15.2	11.9	13.5	11.1	8.6	0.0	0.0	8.6	0.0	0.0
Lane LOS	C	B	B	B	A			A		
Approach Delay (s)	14.4		11.4		0.1			0.2		
Approach LOS	B		B							

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	27.5%	ICU Level of Service		A
Analysis Period (min)	15			

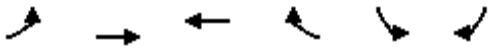
Existing Exit 82

AM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	3	0	29	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	0	0	4	0	36	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	73	72	72	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	73	72	72	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	100	100	100	100	98	
cM capacity (veh/h)	903	805	805	1091	1617	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	4	36
Volume Left	0	0	36
Volume Right	0	0	0
cSH	1700	805	1617
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	9.5	7.3
Lane LOS	A	A	A
Approach Delay (s)	0.0	9.5	7.3
Approach LOS	A	A	

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	13	9	2	1	28
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	1	17	12	3	1	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	15				33	13
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				33	13
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	96
cM capacity (veh/h)	1616				977	1064

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	19	15	39
Volume Left	1	0	1
Volume Right	0	3	37
cSH	1616	1700	1061
Volume to Capacity	0.00	0.01	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.5	0.0	8.5
Lane LOS	A		A
Approach Delay (s)	0.5	0.0	8.5
Approach LOS			A

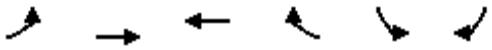
Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	2	0	53	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	3	0	68	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	137	136	136	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	137	136	136	0	0	
tC, single (s)	7.1	6.5	7.0	6.7	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.5	3.8	2.2	
p0 queue free %	100	100	100	100	96	
cM capacity (veh/h)	809	727	647	960	1636	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	3	68
Volume Left	0	0	68
Volume Right	0	0	0
cSH	1700	647	1636
Volume to Capacity	0.00	0.00	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	10.6	7.3
Lane LOS	A	B	A
Approach Delay (s)	0.0	10.6	7.3
Approach LOS	A	B	

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	6	7	2	9	44
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	7	8	2	11	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	11				16	9
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	11				16	9
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	100				99	95
cM capacity (veh/h)	1583				1004	1075

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	7	11	62
Volume Left	0	0	11
Volume Right	0	2	52
cSH	1583	1700	1062
Volume to Capacity	0.00	0.01	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	8.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

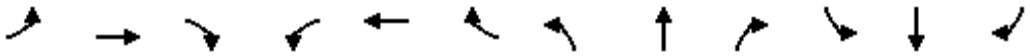
Existing Exit 83

AM Peak Hour

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	152	0	106	204	1	11
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	190	0	132	255	1	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			190		710	190
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			190		710	190
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.4
p0 queue free %			90		100	98
cM capacity (veh/h)			1366		351	832

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	190	388	15
Volume Left	0	132	1
Volume Right	0	0	14
cSH	1700	1366	746
Volume to Capacity	0.11	0.10	0.02
Queue Length 95th (ft)	0	8	2
Control Delay (s)	0.0	3.3	9.9
Lane LOS		A	A
Approach Delay (s)	0.0	3.3	9.9
Approach LOS			A

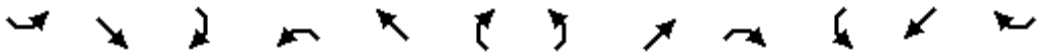
Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	4	20	51	1	1	37	144	209	4	178	23
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	8	4	22	57	1	1	41	160	232	4	198	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	579	462	211	602	565	276	198			160		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	579	462	211	602	565	276	198			160		
tC, single (s)	7.2	6.6	6.3	7.3	6.7	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.7	4.2	3.5	2.2			2.2		
p0 queue free %	98	99	97	84	100	100	97			100		
cM capacity (veh/h)	397	464	800	362	396	719	1363			1425		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	34	59	433	228
Volume Left	8	57	41	4
Volume Right	22	1	232	26
cSH	605	366	1363	1425
Volume to Capacity	0.06	0.16	0.03	0.00
Queue Length 95th (ft)	5	14	2	0
Control Delay (s)	11.3	16.7	1.0	0.2
Lane LOS	B	C	A	A
Approach Delay (s)	11.3	16.7	1.0	0.2
Approach LOS	B	C		

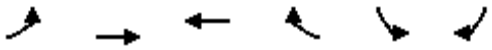
Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	53.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	4	102	0	47	9	0	2	12	203	13	6	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	5	121	0	56	11	0	2	14	242	15	7	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	11			121			258	254	121	261	254	11
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	11			121			258	254	121	261	254	11
tC, single (s)	4.2			4.3			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.4			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			96			100	98	73	97	99	100
cM capacity (veh/h)	1583			1372			642	602	898	472	612	1053

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	126	67	258	24
Volume Left	5	56	2	15
Volume Right	0	0	242	1
cSH	1583	1372	872	522
Volume to Capacity	0.00	0.04	0.30	0.05
Queue Length 95th (ft)	0	3	31	4
Control Delay (s)	0.3	6.5	10.9	12.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.3	6.5	10.9	12.2
Approach LOS			B	B

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Yield		Stop	
Volume (vph)	0	0	27	56	14	304
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Hourly flow rate (vph)	0	0	47	98	25	533

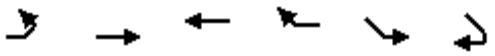
Direction, Lane #	WB 1	SB 1
Volume Total (vph)	146	558
Volume Left (vph)	0	25
Volume Right (vph)	98	533
Hadj (s)	-0.12	-0.48
Departure Headway (s)	4.9	3.8
Degree Utilization, x	0.20	0.59
Capacity (veh/h)	665	928
Control Delay (s)	9.2	12.1
Approach Delay (s)	9.2	12.1
Approach LOS	A	B

Intersection Summary			
Delay	11.5		
Level of Service	B		
Intersection Capacity Utilization	31.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	14	0	44	27	0	39
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	18	0	55	34	0	49
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	89				107	72
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	89				107	72
tC, single (s)	4.5				7.0	6.8
tC, 2 stage (s)						
tF (s)	2.6				4.0	3.8
p0 queue free %	99				100	94
cM capacity (veh/h)	1280				763	857

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	18	89	49
Volume Left	18	0	0
Volume Right	0	34	49
cSH	1280	1700	857
Volume to Capacity	0.01	0.05	0.06
Queue Length 95th (ft)	1	0	5
Control Delay (s)	7.9	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	7.9	0.0	9.5
Approach LOS			A

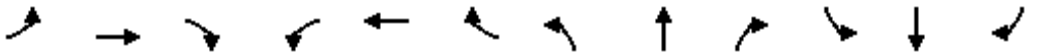
Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	14.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	15	10	0	175	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	0	20	13	0	230	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	467	461	461	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	467	461	461	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	100	95	97	100	86	
cM capacity (veh/h)	442	428	428	1091	1591	

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	20	13	230
Volume Left	0	0	230
Volume Right	0	0	0
cSH	428	428	1591
Volume to Capacity	0.05	0.03	0.14
Queue Length 95th (ft)	4	2	13
Control Delay (s)	13.8	13.7	7.6
Lane LOS	B	B	A
Approach Delay (s)	13.8	13.7	7.6
Approach LOS	B	B	

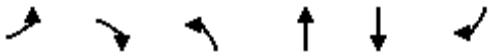
Intersection Summary				
Average Delay		8.4		
Intersection Capacity Utilization		19.7%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	50	7	133	0	0	8	3	332	2	34	208	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.9			5.9	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.91			0.86			1.00			1.00	
Flt Protected		0.99			1.00			1.00			0.99	
Satd. Flow (prot)		1544			1255			1725			1757	
Flt Permitted		0.91			1.00			1.00			0.91	
Satd. Flow (perm)		1419			1255			1721			1613	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	56	8	149	0	0	9	3	373	2	38	234	8
RTOR Reduction (vph)	0	114	0	0	7	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	99	0	0	2	0	0	377	0	0	278	0
Heavy Vehicles (%)	10%	10%	10%	31%	31%	31%	10%	10%	10%	7%	7%	7%
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		8.6			8.6			17.6			17.6	
Effective Green, g (s)		8.6			8.6			17.6			17.6	
Actuated g/C Ratio		0.23			0.23			0.47			0.47	
Clearance Time (s)		5.0			5.0			5.9			5.9	
Vehicle Extension (s)		4.0			4.0			2.5			2.5	
Lane Grp Cap (vph)		328			290			816			765	
v/s Ratio Prot					0.00							
v/s Ratio Perm		c0.07						c0.22			0.17	
v/c Ratio		0.30			0.01			0.46			0.36	
Uniform Delay, d1		11.8			11.0			6.6			6.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.0			0.3			0.2	
Delay (s)		12.5			11.0			6.9			6.4	
Level of Service		B			B			A			A	
Approach Delay (s)		12.5			11.0			6.9			6.4	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	37.1	Sum of lost time (s)	10.9
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	39	4	2	63	7	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	53	5	3	86	10	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	105	14	18			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	105	14	18			
tC, single (s)	6.6	6.4	4.2			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.3			
p0 queue free %	94	99	100			
cM capacity (veh/h)	851	1019	1524			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	59	89	18
Volume Left	53	3	0
Volume Right	5	0	8
cSH	864	1524	1700
Volume to Capacity	0.07	0.00	0.01
Queue Length 95th (ft)	5	0	0
Control Delay (s)	9.5	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	102	0	0	0	13	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	113	0	0	0	14	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			113		113	113
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			113		113	113
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1476		883	939

Direction, Lane #	EB 1	NB 1
Volume Total	113	14
Volume Left	0	14
Volume Right	0	0
cSH	1700	883
Volume to Capacity	0.07	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	9.1
Lane LOS		A
Approach Delay (s)	0.0	9.1
Approach LOS		A

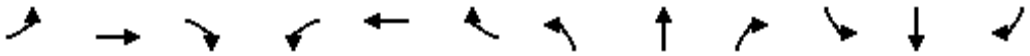
Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	15.4%	ICU Level of Service		A
Analysis Period (min)	15			

PM Peak Hour

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	255	0	57	151	0	24
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	283	0	63	168	0	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			283		578	283
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			283		578	283
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		100	96
cM capacity (veh/h)			1262		449	748

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	283	231	27
Volume Left	0	63	0
Volume Right	0	0	27
cSH	1700	1262	748
Volume to Capacity	0.17	0.05	0.04
Queue Length 95th (ft)	0	4	3
Control Delay (s)	0.0	2.5	10.0
Lane LOS		A	A
Approach Delay (s)	0.0	2.5	10.0
Approach LOS			A

Intersection Summary			
Average Delay		1.6	
Intersection Capacity Utilization		31.2%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	11	9	30	69	4	2	14	242	138	0	142	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	14	12	39	90	5	3	18	314	179	0	184	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	636	541	190	675	625	404	184			314		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	636	541	190	675	625	404	184			314		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	96	97	95	73	99	100	99			100		
cM capacity (veh/h)	381	442	851	332	387	632	1378			1257		

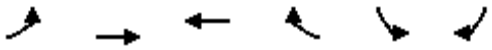
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	65	97	512	196
Volume Left	14	90	18	0
Volume Right	39	3	179	12
cSH	592	339	1378	1257
Volume to Capacity	0.11	0.29	0.01	0.00
Queue Length 95th (ft)	9	29	1	0
Control Delay (s)	11.8	19.9	0.4	0.0
Lane LOS	B	C	A	
Approach Delay (s)	11.8	19.9	0.4	0.0
Approach LOS	B	C		

Intersection Summary				
Average Delay	3.3			
Intersection Capacity Utilization	50.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	5	52	0	66	20	0	0	14	133	10	9	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	7	70	0	89	27	0	0	19	180	14	12	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	27			70			301	289	70	299	289	27
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	27			70			301	289	70	299	289	27
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	100			94			100	97	81	97	98	99
cM capacity (veh/h)	1580			1457			587	564	962	492	580	1048

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	77	116	199	31
Volume Left	7	89	0	14
Volume Right	0	0	180	5
cSH	1580	1457	902	580
Volume to Capacity	0.00	0.06	0.22	0.05
Queue Length 95th (ft)	0	5	21	4
Control Delay (s)	0.7	6.0	10.1	11.6
Lane LOS	A	A	B	B
Approach Delay (s)	0.7	6.0	10.1	11.6
Approach LOS			B	B

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	27.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Yield		Stop	
Volume (vph)	0	0	25	86	16	179
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	33	115	21	239

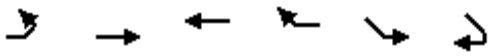
Direction, Lane #	WB 1	SB 1
Volume Total (vph)	148	260
Volume Left (vph)	0	21
Volume Right (vph)	115	239
Hadj (s)	-0.43	-0.48
Departure Headway (s)	4.0	3.7
Degree Utilization, x	0.16	0.27
Capacity (veh/h)	843	930
Control Delay (s)	7.8	8.1
Approach Delay (s)	7.8	8.1
Approach LOS	A	A

Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	25.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	16	0	79	26	0	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	0	88	29	0	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	117				138	102
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117				138	102
tC, single (s)	4.5				6.6	6.4
tC, 2 stage (s)						
tF (s)	2.6				3.7	3.5
p0 queue free %	99				100	96
cM capacity (veh/h)	1253				801	903

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	18	117	36
Volume Left	18	0	0
Volume Right	0	29	36
cSH	1253	1700	903
Volume to Capacity	0.01	0.07	0.04
Queue Length 95th (ft)	1	0	3
Control Delay (s)	7.9	0.0	9.1
Lane LOS	A		A
Approach Delay (s)	7.9	0.0	9.1
Approach LOS			A

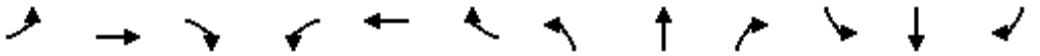
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	15.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	24	15	0	259	3
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	30	19	0	328	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	667	658	656	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	667	658	656	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	100	90	94	100	79	
cM capacity (veh/h)	301	308	308	1091	1597	

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	30	19	332
Volume Left	0	0	328
Volume Right	0	0	4
cSH	308	308	1597
Volume to Capacity	0.10	0.06	0.21
Queue Length 95th (ft)	8	5	19
Control Delay (s)	18.0	17.4	7.8
Lane LOS	C	C	A
Approach Delay (s)	18.0	17.4	7.8
Approach LOS	C	C	

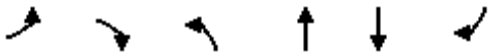
Intersection Summary			
Average Delay	9.1		
Intersection Capacity Utilization	24.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	92	16	175	2	1	9	9	293	3	31	205	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.9			5.9	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.90			1.00			1.00	
Flt Protected		0.98			0.99			1.00			0.99	
Satd. Flow (prot)		1572			1522			1788			1760	
Flt Permitted		0.89			0.94			0.99			0.92	
Satd. Flow (perm)		1416			1439			1766			1627	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	100	17	190	2	1	10	10	318	3	34	223	5
RTOR Reduction (vph)	0	81	0	0	7	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	226	0	0	6	0	0	330	0	0	261	0
Heavy Vehicles (%)	9%	9%	9%	11%	11%	11%	6%	6%	6%	7%	7%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		11.4			11.4			15.2			15.2	
Effective Green, g (s)		11.4			11.4			15.2			15.2	
Actuated g/C Ratio		0.30			0.30			0.41			0.41	
Clearance Time (s)		5.0			5.0			5.9			5.9	
Vehicle Extension (s)		4.0			4.0			2.5			2.5	
Lane Grp Cap (vph)		430			437			715			659	
v/s Ratio Prot												
v/s Ratio Perm		c0.16			0.00			c0.19			0.16	
v/c Ratio		0.52			0.01			0.46			0.40	
Uniform Delay, d1		10.8			9.1			8.2			7.9	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.5			0.0			0.3			0.3	
Delay (s)		12.3			9.1			8.5			8.2	
Level of Service		B			A			A			A	
Approach Delay (s)		12.3			9.1			8.5			8.2	
Approach LOS		B			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	9.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	37.5	Sum of lost time (s)	10.9
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	42	8	3	57	6	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	49	9	3	66	7	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	85	12	17			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	85	12	17			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	95	99	100			
cM capacity (veh/h)	904	1057	1555			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	58	70	17
Volume Left	49	3	0
Volume Right	9	0	10
cSH	925	1555	1700
Volume to Capacity	0.06	0.00	0.01
Queue Length 95th (ft)	5	0	0
Control Delay (s)	9.2	0.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.2	0.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	15.4%	ICU Level of Service	A
Analysis Period (min)	15		

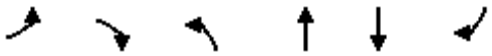
Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	99	0	0	0	15	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	110	0	0	0	17	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			110		110	110
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			110		110	110
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1480		887	943

Direction, Lane #	EB 1	NW 1
Volume Total	110	17
Volume Left	0	17
Volume Right	0	0
cSH	1700	887
Volume to Capacity	0.06	0.02
Queue Length 95th (ft)	0	1
Control Delay (s)	0.0	9.1
Lane LOS		A
Approach Delay (s)	0.0	9.1
Approach LOS		A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

Existing Exit 87

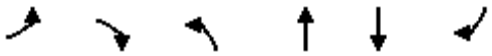
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	4	0	0	160	38
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	33	5	0	0	186	44
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	208	208	230			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	208	208	230			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	760	810	1350			

Direction, Lane #	EB 1	SB 1
Volume Total	37	230
Volume Left	33	0
Volume Right	5	44
cSH	766	1700
Volume to Capacity	0.05	0.14
Queue Length 95th (ft)	4	0
Control Delay (s)	9.9	0.0
Lane LOS	A	
Approach Delay (s)	9.9	0.0
Approach LOS	A	

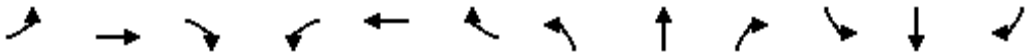
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	27	7	4	24	191	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	33	9	5	30	236	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	293	253	270			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	293	253	270			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	95	99	100			
cM capacity (veh/h)	700	790	1259			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	35	270
Volume Left	33	5	0
Volume Right	9	0	35
cSH	717	1259	1700
Volume to Capacity	0.06	0.00	0.16
Queue Length 95th (ft)	5	0	0
Control Delay (s)	10.3	1.2	0.0
Lane LOS	B	A	
Approach Delay (s)	10.3	1.2	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	5	11	35	30	54	21	107	90	24	3	130	58
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	6	14	43	37	67	26	132	111	30	4	160	72
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	653	609	196	644	630	126	232			141		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	653	609	196	644	630	126	232			141		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	96	95	89	81	97	90			100		
cM capacity (veh/h)	295	371	850	329	358	924	1336			1455		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	63	130	273	236
Volume Left	6	37	132	4
Volume Right	43	26	30	72
cSH	581	397	1336	1455
Volume to Capacity	0.11	0.33	0.10	0.00
Queue Length 95th (ft)	9	35	8	0
Control Delay (s)	11.9	18.4	4.3	0.1
Lane LOS	B	C	A	A
Approach Delay (s)	11.9	18.4	4.3	0.1
Approach LOS	B	C		

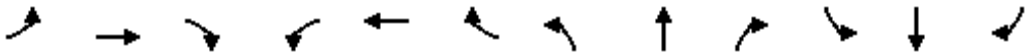
Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	45.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	38	0	0	58	47	0
Sign Control	Yield			Yield	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	47	0	0	72	58	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	116	0	140	116	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	116	0	140	116	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.2	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.3	
p0 queue free %	94	100	100	90	96	
cM capacity (veh/h)	744	1082	771	748	1591	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	47	72	58
Volume Left	0	0	58
Volume Right	0	0	0
cSH	744	748	1591
Volume to Capacity	0.06	0.10	0.04
Queue Length 95th (ft)	5	8	3
Control Delay (s)	10.2	10.3	7.3
Lane LOS	B	B	A
Approach Delay (s)	10.2	10.3	7.3
Approach LOS	B	B	

Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	55	66	16	0	23	71	1	95	12	136	30	29
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	74	89	22	0	31	96	1	128	16	184	41	39

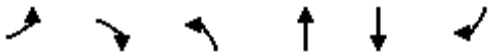
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	185	127	146	264
Volume Left (vph)	74	0	1	184
Volume Right (vph)	22	96	16	39
Hadj (s)	0.06	-0.40	-0.03	0.08
Departure Headway (s)	5.2	4.8	5.1	5.0
Degree Utilization, x	0.27	0.17	0.21	0.37
Capacity (veh/h)	636	667	654	676
Control Delay (s)	10.1	8.8	9.4	10.9
Approach Delay (s)	10.1	8.8	9.4	10.9
Approach LOS	B	A	A	B

Intersection Summary				
Delay	10.0			
Level of Service	B			
Intersection Capacity Utilization	38.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	81	133	0	0	94	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	85	140	0	0	99	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			85		155	155
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			85		155	155
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		88	100
cM capacity (veh/h)			1524		839	893

Direction, Lane #	EB 1	NB 1
Volume Total	225	102
Volume Left	0	99
Volume Right	140	3
cSH	1700	840
Volume to Capacity	0.13	0.12
Queue Length 95th (ft)	0	10
Control Delay (s)	0.0	9.9
Lane LOS		A
Approach Delay (s)	0.0	9.9
Approach LOS		A

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	24.5%	ICU Level of Service		A
Analysis Period (min)	15			

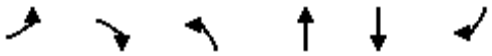


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	1	3	108	44	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	0	1	4	148	60	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	218	62	63			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	218	62	63			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	773	1009	1521			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	152	63
Volume Left	0	4	0
Volume Right	1	0	3
cSH	1009	1521	1700
Volume to Capacity	0.00	0.00	0.04
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.6	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.6	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		

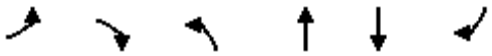
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	38	5	0	0	86	41
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	40	5	0	0	91	43
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	112	112	134			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112	112	134			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	99	100			
cM capacity (veh/h)	880	936	1463			

Direction, Lane #	EB 1	SB 1
Volume Total	45	134
Volume Left	40	0
Volume Right	5	43
cSH	886	1700
Volume to Capacity	0.05	0.08
Queue Length 95th (ft)	4	0
Control Delay (s)	9.3	0.0
Lane LOS	A	
Approach Delay (s)	9.3	0.0
Approach LOS	A	

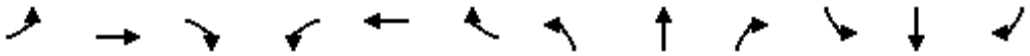
Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	33	7	2	36	120	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	37	8	2	40	135	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198	153	171			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	153	171			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	99	100			
cM capacity (veh/h)	794	899	1388			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	45	43	171
Volume Left	37	2	0
Volume Right	8	0	36
cSH	811	1388	1700
Volume to Capacity	0.06	0.00	0.10
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.7	0.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	0.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	18.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	13	40	48	40	35	97	80	62	9	55	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	17	14	43	52	43	38	104	86	67	10	59	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	474	448	67	465	423	119	75			153		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	474	448	67	465	423	119	75			153		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	97	96	89	91	96	93			99		
cM capacity (veh/h)	419	464	988	449	485	935	1530			1434		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	74	132	257	85
Volume Left	17	52	104	10
Volume Right	43	38	67	16
cSH	647	543	1530	1434
Volume to Capacity	0.11	0.24	0.07	0.01
Queue Length 95th (ft)	10	24	5	1
Control Delay (s)	11.3	13.8	3.4	0.9
Lane LOS	B	B	A	A
Approach Delay (s)	11.3	13.8	3.4	0.9
Approach LOS	B	B		

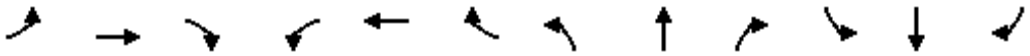
Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	38.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	84	0	0	60	63	3
Sign Control	Yield			Yield	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	104	0	0	74	78	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	159	0	209	157	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	159	0	209	157	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	85	100	100	89	95	
cM capacity (veh/h)	701	1091	643	703	1630	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	104	74	81
Volume Left	0	0	78
Volume Right	0	0	4
cSH	701	703	1630
Volume to Capacity	0.15	0.11	0.05
Queue Length 95th (ft)	13	9	4
Control Delay (s)	11.0	10.7	7.0
Lane LOS	B	B	A
Approach Delay (s)	11.0	10.7	7.0
Approach LOS	B	B	

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	115	59	26	4	33	72	2	52	15	62	54	27
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	134	69	30	5	38	84	2	60	17	72	63	31

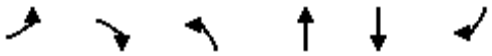
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	233	127	80	166
Volume Left (vph)	134	5	2	72
Volume Right (vph)	30	84	17	31
Hadj (s)	0.05	-0.39	-0.06	-0.01
Departure Headway (s)	4.7	4.4	4.9	4.9
Degree Utilization, x	0.31	0.16	0.11	0.22
Capacity (veh/h)	717	751	664	685
Control Delay (s)	9.8	8.3	8.5	9.3
Approach Delay (s)	9.8	8.3	8.5	9.3
Approach LOS	A	A	A	A

Intersection Summary				
Delay	9.2			
Level of Service	A			
Intersection Capacity Utilization	39.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	62	74	0	0	109	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	70	83	0	0	122	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			70		111	111
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			70		111	111
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		86	100
cM capacity (veh/h)			1544		890	947

Direction, Lane #	EB 1	NB 1
Volume Total	153	126
Volume Left	0	122
Volume Right	83	3
cSH	1700	892
Volume to Capacity	0.09	0.14
Queue Length 95th (ft)	0	12
Control Delay (s)	0.0	9.7
Lane LOS		A
Approach Delay (s)	0.0	9.7
Approach LOS		A

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	20.7%	ICU Level of Service	A
Analysis Period (min)	15		



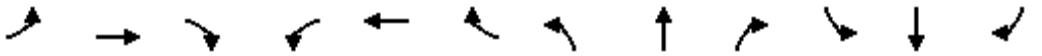
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	12	2	69	84	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	15	2	84	102	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	191	102	102			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	191	102	102			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	100	98	100			
cM capacity (veh/h)	774	926	1471			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	15	87	102
Volume Left	0	2	0
Volume Right	15	0	0
cSH	926	1471	1700
Volume to Capacity	0.02	0.00	0.06
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.0	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	15.2%	ICU Level of Service	A
Analysis Period (min)	15		

Existing Exit 90

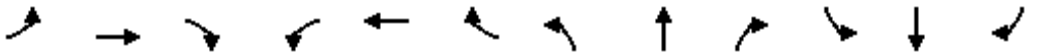
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	2	94	25	3	10	68	257	42	4	509	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	6.3		5.8		6.3	5.6		5.7	5.6	
Lane Util. Factor	1.00	1.00	1.00		1.00		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.97		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583		1776		3467	3499		1787	3564	
Flt Permitted	0.77	1.00	1.00		0.80		0.95	1.00		0.53	1.00	
Satd. Flow (perm)	1433	1863	1583		1468		3467	3499		1001	3564	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	4	2	116	31	4	12	84	317	52	5	628	12
RTOR Reduction (vph)	0	0	67	0	11	0	0	8	0	0	1	0
Lane Group Flow (vph)	4	2	49	0	36	0	84	361	0	5	639	0
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		pm+pt	NA	
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4						2		
Actuated Green, G (s)	5.2	5.2	11.5		5.2		6.3	54.7		53.8	50.8	
Effective Green, g (s)	5.2	5.2	11.5		5.2		6.3	54.7		53.8	50.8	
Actuated g/C Ratio	0.07	0.07	0.14		0.07		0.08	0.68		0.67	0.63	
Clearance Time (s)	5.8	5.8	6.3		5.8		6.3	5.6		5.7	5.6	
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	93	121	227		95		273	2392		702	2263	
v/s Ratio Prot		0.00	0.02				c0.02	c0.10		0.00	c0.18	
v/s Ratio Perm	0.00		0.01		c0.02					0.00		
v/c Ratio	0.04	0.02	0.22		0.38		0.31	0.15		0.01	0.28	
Uniform Delay, d1	35.1	35.0	30.3		35.8		34.8	4.5		4.3	6.5	
Progression Factor	1.00	1.00	1.00		1.00		0.76	1.45		1.00	1.00	
Incremental Delay, d2	0.2	0.1	0.5		2.5		0.6	0.1		0.0	0.3	
Delay (s)	35.3	35.1	30.8		38.3		27.1	6.6		4.3	6.8	
Level of Service	D	D	C		D		C	A		A	A	
Approach Delay (s)		31.0			38.3			10.4			6.8	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.30		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	47.4%	ICU Level of Service	A
Analysis Period (min)	15		

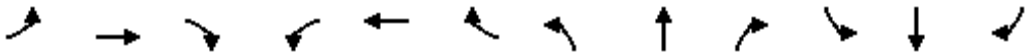
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	134	0	39	280	328	0	0	502	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.4	5.4		4.8	5.3			5.3	4.0
Lane Util. Factor				1.00	1.00		0.97	0.95			0.95	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1583	1417		3303	3406			3574	1599
Flt Permitted				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1583	1417		3303	3406			3574	1599
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	154	0	45	322	377	0	0	577	145
RTOR Reduction (vph)	0	0	0	0	38	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	154	7	0	322	377	0	0	577	145
Heavy Vehicles (%)	0%	0%	0%	14%	14%	14%	6%	6%	6%	1%	1%	1%
Turn Type				Split	NA		Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases												Free
Actuated Green, G (s)				13.1	13.1		13.0	56.2			38.4	80.0
Effective Green, g (s)				13.1	13.1		13.0	56.2			38.4	80.0
Actuated g/C Ratio				0.16	0.16		0.16	0.70			0.48	1.00
Clearance Time (s)				5.4	5.4		4.8	5.3			5.3	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				259	232		536	2392			1715	1599
v/s Ratio Prot				c0.10	0.01		c0.10	0.11			c0.16	
v/s Ratio Perm												0.09
v/c Ratio				0.59	0.03		0.60	0.16			0.34	0.09
Uniform Delay, d1				31.0	28.1		31.1	4.0			12.9	0.0
Progression Factor				1.00	1.00		1.03	1.81			0.78	1.00
Incremental Delay, d2				3.6	0.1		1.8	0.1			0.5	0.1
Delay (s)				34.6	28.2		33.8	7.3			10.5	0.1
Level of Service				C	C		C	A			B	A
Approach Delay (s)		0.0			33.2			19.5			8.5	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

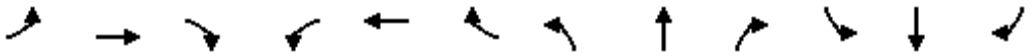
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	25	0	345	0	0	0	0	583	161	16	620	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	4.0					6.0		5.7	6.0	
Lane Util. Factor	0.95	0.95	1.00					0.95		0.97	0.95	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1559	1559	1468					3175		3400	3505	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1559	1559	1468					3175		3400	3505	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	28	0	392	0	0	0	0	662	183	18	705	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	13	0	0	0	0
Lane Group Flow (vph)	14	14	392	0	0	0	0	832	0	18	705	0
Heavy Vehicles (%)	10%	10%	10%	0%	0%	0%	10%	10%	10%	3%	3%	3%
Turn Type	Perm	NA	Free					NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8		Free									
Actuated Green, G (s)	2.9	2.9	80.0					57.7		1.4	64.8	
Effective Green, g (s)	2.9	2.9	80.0					57.7		1.4	64.8	
Actuated g/C Ratio	0.04	0.04	1.00					0.72		0.02	0.81	
Clearance Time (s)	6.3	6.3						6.0		5.7	6.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	56	56	1468					2289		59	2839	
v/s Ratio Prot								c0.26		0.01	0.20	
v/s Ratio Perm	0.01	0.01	c0.27									
v/c Ratio	0.25	0.25	0.27					0.36		0.31	0.25	
Uniform Delay, d1	37.5	37.5	0.0					4.2		38.8	1.8	
Progression Factor	1.00	1.00	1.00					0.49		1.06	0.95	
Incremental Delay, d2	2.3	2.3	0.4					0.4		2.8	0.2	
Delay (s)	39.8	39.8	0.4					2.5		44.0	1.9	
Level of Service	D	D	A					A		D	A	
Approach Delay (s)		3.1			0.0			2.5			3.0	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	2.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

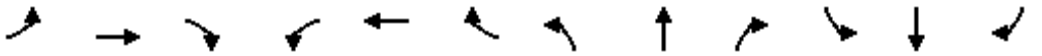


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	148	14	22	27	13	49	71	547	33	27	799	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	6.2	6.2		6.2	6.2	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1680			1820	1599	1641	3254		1703	3330	
Flt Permitted		0.74			0.78	1.00	0.27	1.00		0.32	1.00	
Satd. Flow (perm)		1286			1466	1599	458	3254		579	3330	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	170	16	25	31	15	56	82	629	38	31	918	160
RTOR Reduction (vph)	0	6	0	0	0	45	0	4	0	0	16	0
Lane Group Flow (vph)	0	205	0	0	46	11	82	663	0	31	1062	0
Heavy Vehicles (%)	7%	7%	7%	1%	1%	1%	10%	10%	10%	6%	6%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		16.4			16.4	16.4	42.3	42.3		51.7	51.7	
Effective Green, g (s)		16.4			16.4	16.4	42.3	42.3		51.7	51.7	
Actuated g/C Ratio		0.20			0.20	0.20	0.53	0.53		0.65	0.65	
Clearance Time (s)		5.7			5.7	5.7	6.2	6.2		6.2	6.2	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		263			300	327	242	1720		419	2152	
v/s Ratio Prot								0.20		0.00	c0.32	
v/s Ratio Perm		c0.16			0.03	0.01	0.18			0.04		
v/c Ratio		0.78			0.15	0.04	0.34	0.39		0.07	0.49	
Uniform Delay, d1		30.1			26.1	25.5	10.8	11.2		5.6	7.3	
Progression Factor		1.00			1.00	1.00	1.00	1.00		0.76	0.72	
Incremental Delay, d2		13.5			0.2	0.0	3.8	0.7		0.1	0.8	
Delay (s)		43.6			26.3	25.5	14.6	11.8		4.4	6.1	
Level of Service		D			C	C	B	B		A	A	
Approach Delay (s)		43.6			25.9			12.1			6.0	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.1
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

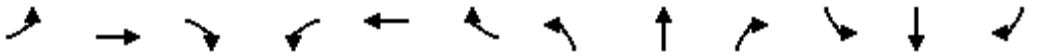
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	34	260	45	43	11	223	360	60	36	257	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	6.3		5.8		6.3	5.6		5.7	5.6	
Lane Util. Factor	1.00	1.00	1.00		1.00		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900	1615		1831		3467	3498		1787	3508	
Flt Permitted	0.74	1.00	1.00		0.84		0.95	1.00		0.50	1.00	
Satd. Flow (perm)	1409	1900	1615		1567		3467	3498		937	3508	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	31	35	271	47	45	11	232	375	62	38	268	38
RTOR Reduction (vph)	0	0	204	0	6	0	0	10	0	0	9	0
Lane Group Flow (vph)	31	35	67	0	97	0	232	427	0	38	297	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		pm+pt	NA	
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4						2		
Actuated Green, G (s)	9.0	9.0	19.8		9.0		10.8	47.9		48.5	42.5	
Effective Green, g (s)	9.0	9.0	19.8		9.0		10.8	47.9		48.5	42.5	
Actuated g/C Ratio	0.11	0.11	0.25		0.11		0.14	0.60		0.61	0.53	
Clearance Time (s)	5.8	5.8	6.3		5.8		6.3	5.6		5.7	5.6	
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	158	213	399		176		468	2094		631	1863	
v/s Ratio Prot		0.02	0.02				c0.07	c0.12		0.00	0.08	
v/s Ratio Perm	0.02		0.02		c0.06					0.03		
v/c Ratio	0.20	0.16	0.17		0.55		0.50	0.20		0.06	0.16	
Uniform Delay, d1	32.2	32.1	23.6		33.6		32.1	7.3		6.3	9.6	
Progression Factor	1.00	1.00	1.00		1.00		0.72	1.59		1.00	1.00	
Incremental Delay, d2	0.6	0.4	0.2		3.5		0.8	0.2		0.0	0.2	
Delay (s)	32.8	32.5	23.8		37.1		24.0	11.9		6.4	9.8	
Level of Service	C	C	C		D		C	B		A	A	
Approach Delay (s)		25.6			37.1			16.1			9.4	
Approach LOS		C			D			B			A	

Intersection Summary			
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

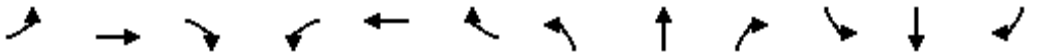
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	127	0	99	335	544	0	0	402	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.4	5.4		4.8	5.3			5.3	4.0
Lane Util. Factor				1.00	1.00		0.97	0.95			0.95	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1583	1417		3400	3505			3574	1599
Flt Permitted				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1583	1417		3400	3505			3574	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	131	0	102	345	561	0	0	414	165
RTOR Reduction (vph)	0	0	0	0	87	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	131	15	0	345	561	0	0	414	165
Heavy Vehicles (%)	0%	0%	0%	14%	14%	14%	3%	3%	3%	1%	1%	1%
Turn Type				Split	NA		Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases												Free
Actuated Green, G (s)				11.9	11.9		13.3	57.4			39.3	80.0
Effective Green, g (s)				11.9	11.9		13.3	57.4			39.3	80.0
Actuated g/C Ratio				0.15	0.15		0.17	0.72			0.49	1.00
Clearance Time (s)				5.4	5.4		4.8	5.3			5.3	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				235	210		565	2514			1755	1599
v/s Ratio Prot				c0.08	0.01		c0.10	c0.16			0.12	
v/s Ratio Perm												0.10
v/c Ratio				0.56	0.07		0.61	0.22			0.24	0.10
Uniform Delay, d1				31.6	29.3		30.9	3.8			11.7	0.0
Progression Factor				1.00	1.00		0.89	2.08			0.87	1.00
Incremental Delay, d2				2.9	0.1		1.8	0.2			0.3	0.1
Delay (s)				34.5	29.4		29.4	8.1			10.5	0.1
Level of Service				C	C		C	A			B	A
Approach Delay (s)		0.0			32.3			16.2			7.5	
Approach LOS		A			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

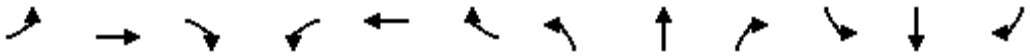
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	111	0	350	0	0	0	0	768	234	80	449	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	4.0					6.0		5.7	6.0	
Lane Util. Factor	0.95	0.95	1.00					0.95		0.97	0.95	
Frt	1.00	1.00	0.85					0.96		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1603	1603	1509					3318		3335	3438	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1603	1603	1509					3318		3335	3438	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	118	0	372	0	0	0	0	817	249	85	478	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	21	0	0	0	0
Lane Group Flow (vph)	59	59	372	0	0	0	0	1045	0	85	478	0
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA	Free					NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8		Free									
Actuated Green, G (s)	7.3	7.3	80.0					48.3		6.4	60.4	
Effective Green, g (s)	7.3	7.3	80.0					48.3		6.4	60.4	
Actuated g/C Ratio	0.09	0.09	1.00					0.60		0.08	0.75	
Clearance Time (s)	6.3	6.3						6.0		5.7	6.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	146	146	1509					2003		266	2595	
v/s Ratio Prot								c0.31		0.03	0.14	
v/s Ratio Perm	0.04	0.04	c0.25									
v/c Ratio	0.40	0.40	0.25					0.52		0.32	0.18	
Uniform Delay, d1	34.3	34.3	0.0					9.2		34.7	2.8	
Progression Factor	1.00	1.00	1.00					0.44		1.26	1.19	
Incremental Delay, d2	1.8	1.8	0.4					0.9		0.7	0.2	
Delay (s)	36.1	36.1	0.4					4.9		44.6	3.5	
Level of Service	D	D	A					A		D	A	
Approach Delay (s)		9.0			0.0			4.9			9.7	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



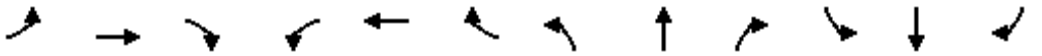
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	167	19	17	47	14	83	48	752	58	83	594	122
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	6.2	6.2		6.2	6.2	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.99			1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.96			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1735			1793	1583	1719	3401		1687	3287	
Flt Permitted		0.72			0.74	1.00	0.37	1.00		0.24	1.00	
Satd. Flow (perm)		1304			1382	1583	672	3401		423	3287	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	172	20	18	48	14	86	49	775	60	86	612	126
RTOR Reduction (vph)	0	5	0	0	0	68	0	6	0	0	19	0
Lane Group Flow (vph)	0	205	0	0	62	18	49	829	0	86	719	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	5%	5%	5%	7%	7%	7%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		16.4			16.4	16.4	38.9	38.9		51.7	51.7	
Effective Green, g (s)		16.4			16.4	16.4	38.9	38.9		51.7	51.7	
Actuated g/C Ratio		0.20			0.20	0.20	0.49	0.49		0.65	0.65	
Clearance Time (s)		5.7			5.7	5.7	6.2	6.2		6.2	6.2	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		267			283	324	326	1653		377	2124	
v/s Ratio Prot								c0.24		0.02	c0.22	
v/s Ratio Perm		c0.16			0.04	0.01	0.07			0.13		
v/c Ratio		0.77			0.22	0.05	0.15	0.50		0.23	0.34	
Uniform Delay, d1		30.0			26.5	25.6	11.4	14.0		6.6	6.4	
Progression Factor		1.00			1.00	1.00	1.00	1.00		0.82	0.72	
Incremental Delay, d2		12.5			0.4	0.1	1.0	1.1		0.3	0.4	
Delay (s)		42.5			26.9	25.6	12.4	15.1		5.7	5.0	
Level of Service		D			C	C	B	B		A	A	
Approach Delay (s)		42.5			26.1			14.9			5.1	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM 2000 Control Delay	14.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.1
Intersection Capacity Utilization	65.8%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Existing Exit 92

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	62	519	1	33	271	66	2	6	7	48	11	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.98	
Satd. Flow (prot)	1787	3573		1719	1810	1538		1594			1721	
Flt Permitted	0.54	1.00		0.42	1.00	1.00		0.97			0.84	
Satd. Flow (perm)	1018	3573		766	1810	1538		1554			1474	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	72	603	1	38	315	77	2	7	8	56	13	45
RTOR Reduction (vph)	0	0	0	0	0	27	0	7	0	0	31	0
Lane Group Flow (vph)	72	604	0	38	315	50	0	10	0	0	83	0
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	11%	11%	11%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8			4		
Actuated Green, G (s)	65.9	59.5		62.7	57.9	57.9		9.2			9.2	
Effective Green, g (s)	65.9	59.5		62.7	57.9	57.9		9.2			9.2	
Actuated g/C Ratio	0.73	0.66		0.70	0.64	0.64		0.10			0.10	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	800	2362		584	1164	989		158			150	
v/s Ratio Prot	c0.01	0.17		0.00	c0.17							
v/s Ratio Perm	0.06			0.04		0.03		0.01			c0.06	
v/c Ratio	0.09	0.26		0.07	0.27	0.05		0.06			0.56	
Uniform Delay, d1	3.4	6.2		4.2	6.9	5.9		36.5			38.5	
Progression Factor	1.00	1.00		0.69	0.93	1.21		1.00			1.00	
Incremental Delay, d2	0.0	0.3		0.0	0.6	0.1		0.2			4.4	
Delay (s)	3.5	6.5		3.0	7.0	7.2		36.7			42.9	
Level of Service	A	A		A	A	A		D			D	
Approach Delay (s)		6.2			6.7			36.7			42.9	
Approach LOS		A			A			D			D	

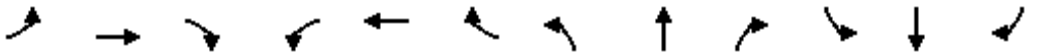
Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.29		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	113	73	297	0	0	522
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8	5.2			5.2
Lane Util. Factor	1.00	1.00	0.95			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1703	1524	3539			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1703	1524	3539			5085
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	140	90	367	0	0	644
RTOR Reduction (vph)	0	77	0	0	0	0
Lane Group Flow (vph)	140	13	367	0	0	644
Heavy Vehicles (%)	6%	6%	2%	2%	2%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		6			2
Permitted Phases		4				
Actuated Green, G (s)	12.8	12.8	67.2			67.2
Effective Green, g (s)	12.8	12.8	67.2			67.2
Actuated g/C Ratio	0.14	0.14	0.75			0.75
Clearance Time (s)	4.8	4.8	5.2			5.2
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	242	216	2642			3796
v/s Ratio Prot	c0.08		0.10			c0.13
v/s Ratio Perm		0.01				
v/c Ratio	0.58	0.06	0.14			0.17
Uniform Delay, d1	36.1	33.4	3.2			3.3
Progression Factor	1.00	1.00	0.92			0.62
Incremental Delay, d2	3.3	0.1	0.1			0.1
Delay (s)	39.4	33.5	3.1			2.2
Level of Service	D	C	A			A
Approach Delay (s)	37.1		3.1			2.2
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.23		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	27.5%	ICU Level of Service	A
Analysis Period (min)	15		

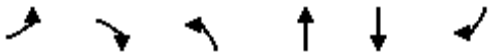
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	34	0	172	0	0	0	0	368	101	0	532	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0					5.2	4.0		5.2	
Lane Util. Factor	1.00		1.00					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1719		1538					3539	1583		3505	
Flt Permitted	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (perm)	1719		1538					3539	1583		3505	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	39	0	195	0	0	0	0	418	115	0	605	0
RTOR Reduction (vph)	0	0	175	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	39	0	20	0	0	0	0	418	115	0	605	0
Heavy Vehicles (%)	5%	5%	5%	0%	0%	0%	2%	2%	2%	3%	3%	3%
Turn Type	Prot		Perm					NA	Free		NA	
Protected Phases	8							6			2	
Permitted Phases			8						Free			
Actuated Green, G (s)	9.1		9.1					70.7	90.0		70.7	
Effective Green, g (s)	9.1		9.1					70.7	90.0		70.7	
Actuated g/C Ratio	0.10		0.10					0.79	1.00		0.79	
Clearance Time (s)	5.0		5.0					5.2			5.2	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	173		155					2780	1583		2753	
v/s Ratio Prot	c0.02							0.12			c0.17	
v/s Ratio Perm			0.01						0.07			
v/c Ratio	0.23		0.13					0.15	0.07		0.22	
Uniform Delay, d1	37.2		36.8					2.3	0.0		2.5	
Progression Factor	1.00		1.00					1.00	1.00		1.54	
Incremental Delay, d2	0.7		0.4					0.1	0.1		0.2	
Delay (s)	37.9		37.2					2.5	0.1		4.0	
Level of Service	D		D					A	A		A	
Approach Delay (s)		37.3			0.0			1.9			4.0	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	33.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

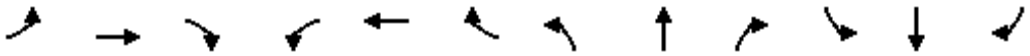


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	469	704	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	521	782	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)					222	
pX, platoon unblocked	0.96	0.96	0.96			
vC, conflicting volume	956	391	782			
vC1, stage 1 conf vol	782					
vC2, stage 2 conf vol	174					
vCu, unblocked vol	871	282	690			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	421	686	865			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	174	174	174	521	261
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.10	0.10	0.10	0.31	0.15
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		

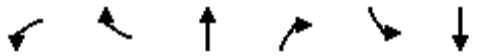
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	36	507	2	94	637	53	3	28	62	61	28	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.91			0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.98	
Satd. Flow (prot)	1787	3572		1787	1881	1599		1709			1717	
Flt Permitted	0.29	1.00		0.41	1.00	1.00		0.99			0.84	
Satd. Flow (perm)	538	3572		779	1881	1599		1698			1465	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	40	557	2	103	700	58	3	31	68	67	31	81
RTOR Reduction (vph)	0	0	0	0	0	23	0	58	0	0	36	0
Lane Group Flow (vph)	40	559	0	103	700	35	0	44	0	0	143	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8			4		
Actuated Green, G (s)	57.9	53.1		61.5	54.9	54.9		13.8			13.8	
Effective Green, g (s)	57.9	53.1		61.5	54.9	54.9		13.8			13.8	
Actuated g/C Ratio	0.64	0.59		0.68	0.61	0.61		0.15			0.15	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	412	2107		606	1147	975		260			224	
v/s Ratio Prot	0.01	0.16		c0.01	c0.37							
v/s Ratio Perm	0.06			0.10		0.02		0.03			c0.10	
v/c Ratio	0.10	0.27		0.17	0.61	0.04		0.17			0.64	
Uniform Delay, d1	7.2	9.0		4.9	10.9	7.0		33.1			35.7	
Progression Factor	1.00	1.00		0.62	1.07	1.93		1.00			1.00	
Incremental Delay, d2	0.1	0.3		0.1	2.4	0.1		0.3			5.8	
Delay (s)	7.3	9.3		3.2	14.1	13.6		33.4			41.6	
Level of Service	A	A		A	B	B		C			D	
Approach Delay (s)		9.1			12.7			33.4			41.6	
Approach LOS		A			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		

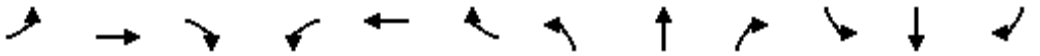
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	150	111	673	0	0	570
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8	5.2			5.2
Lane Util. Factor	1.00	1.00	0.95			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1736	1553	3574			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1736	1553	3574			5085
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	161	119	724	0	0	613
RTOR Reduction (vph)	0	101	0	0	0	0
Lane Group Flow (vph)	161	18	724	0	0	613
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		6			2
Permitted Phases		4				
Actuated Green, G (s)	13.7	13.7	66.3			66.3
Effective Green, g (s)	13.7	13.7	66.3			66.3
Actuated g/C Ratio	0.15	0.15	0.74			0.74
Clearance Time (s)	4.8	4.8	5.2			5.2
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	264	236	2632			3745
v/s Ratio Prot	c0.09		c0.20			0.12
v/s Ratio Perm		0.01				
v/c Ratio	0.61	0.08	0.28			0.16
Uniform Delay, d1	35.7	32.7	3.9			3.5
Progression Factor	1.00	1.00	0.93			0.33
Incremental Delay, d2	4.0	0.1	0.3			0.1
Delay (s)	39.6	32.9	3.9			1.3
Level of Service	D	C	A			A
Approach Delay (s)	36.7		3.9			1.3
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

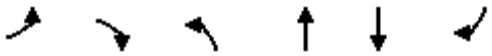
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	56	0	212	0	0	0	0	812	181	0	647	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0					5.2	4.0		5.2	
Lane Util. Factor	1.00		1.00					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1752		1568					3574	1599		3539	
Flt Permitted	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (perm)	1752		1568					3574	1599		3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	61	0	230	0	0	0	0	883	197	0	703	0
RTOR Reduction (vph)	0	0	184	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	61	0	46	0	0	0	0	883	197	0	703	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Prot		Perm					NA	Free		NA	
Protected Phases	8							6			2	
Permitted Phases			8						Free			
Actuated Green, G (s)	9.9		9.9					69.9	90.0		69.9	
Effective Green, g (s)	9.9		9.9					69.9	90.0		69.9	
Actuated g/C Ratio	0.11		0.11					0.78	1.00		0.78	
Clearance Time (s)	5.0		5.0					5.2			5.2	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	192		172					2775	1599		2748	
v/s Ratio Prot	c0.03							c0.25			0.20	
v/s Ratio Perm			0.03						0.12			
v/c Ratio	0.32		0.27					0.32	0.12		0.26	
Uniform Delay, d1	36.9		36.7					3.0	0.0		2.8	
Progression Factor	1.00		1.00					1.00	1.00		1.65	
Incremental Delay, d2	1.0		0.8					0.3	0.2		0.2	
Delay (s)	37.9		37.6					3.3	0.2		4.8	
Level of Service	D		D					A	A		A	
Approach Delay (s)		37.6			0.0			2.7			4.8	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	993	859	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	1103	954	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)					222	
pX, platoon unblocked	0.95	0.95	0.95			
vC, conflicting volume	1322	477	954			
vC1, stage 1 conf vol	954					
vC2, stage 2 conf vol	368					
vCu, unblocked vol	1227	334	839			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	335	626	749			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	368	368	368	636	318
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.22	0.22	0.22	0.37	0.19
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

Existing Exit 95

AM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
9501: Hampshire Drive & NB Off-Ramp

10/20/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	34	0	0	45	0	0	0	0	119	13	22
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	40	0	0	52	0	0	0	0	138	15	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	331	305	28	324	292	0	15			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	331	305	28	324	292	0	15			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	93	100	100	91	100	100			91		
cM capacity (veh/h)	541	556	1047	559	568	1091	1616			1591		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	52	179
Volume Left	0	0	138
Volume Right	0	0	26
cSH	556	568	1591
Volume to Capacity	0.07	0.09	0.09
Queue Length 95th (ft)	6	8	7
Control Delay (s)	12.0	12.0	5.9
Lane LOS	B	B	A
Approach Delay (s)	12.0	12.0	5.9
Approach LOS	B	B	

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	18.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	119	34	3	44	1	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	149	42	4	55	1	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			191		232	170
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			191		232	170
tC, single (s)			4.2		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.3		3.8	3.6
p0 queue free %			100		100	99
cM capacity (veh/h)			1347		698	808

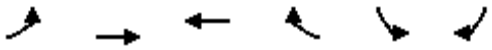
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	191	59	8
Volume Left	0	4	1
Volume Right	42	0	6
cSH	1700	1347	788
Volume to Capacity	0.11	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.5	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.6
Approach LOS			A

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		18.3%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	71	53	7	43	4	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	84	62	8	51	5	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				409		
pX, platoon unblocked						
vC, conflicting volume			146		182	115
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			146		182	115
tC, single (s)			4.2		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.3		3.8	3.6
p0 queue free %			99		99	100
cM capacity (veh/h)			1412		745	870

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	146	59	7
Volume Left	0	8	5
Volume Right	62	0	2
cSH	1700	1412	783
Volume to Capacity	0.09	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	1.1	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	1.1	9.6
Approach LOS			A

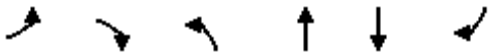
Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		18.2%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	102	109	5	33	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	165	176	8	53	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	184				348	180
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	184				348	180
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				92	99
cM capacity (veh/h)	1373				649	863

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	166	184	60
Volume Left	2	0	53
Volume Right	0	8	6
cSH	1373	1700	666
Volume to Capacity	0.00	0.11	0.09
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.1	0.0	10.9
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	10.9
Approach LOS			B

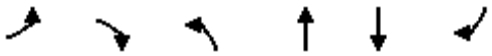
Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	26	109	93	248	388	21
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	34	142	121	322	504	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1153	
pX, platoon unblocked						
vC, conflicting volume	920	266	531			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	920	266	531			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	86	81	88			
cM capacity (veh/h)	234	727	1005			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	175	228	215	336	195
Volume Left	34	121	0	0	0
Volume Right	142	0	0	0	27
cSH	517	1005	1700	1700	1700
Volume to Capacity	0.34	0.12	0.13	0.20	0.11
Queue Length 95th (ft)	37	10	0	0	0
Control Delay (s)	15.5	5.3	0.0	0.0	0.0
Lane LOS	C	A			
Approach Delay (s)	15.5	2.8		0.0	
Approach LOS	C				

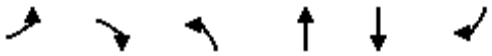
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	58	6	268	351	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	2	70	7	323	423	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					797	
pX, platoon unblocked						
vC, conflicting volume	599	211	423			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	599	211	423			
tC, single (s)	6.9	7.0	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	99	91	99			
cM capacity (veh/h)	423	785	1091			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	72	115	215	282	141
Volume Left	2	7	0	0	0
Volume Right	70	0	0	0	0
cSH	763	1091	1700	1700	1700
Volume to Capacity	0.09	0.01	0.13	0.17	0.08
Queue Length 95th (ft)	8	1	0	0	0
Control Delay (s)	10.2	0.6	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.2	0.2		0.0	
Approach LOS	B				

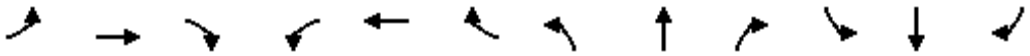
Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	42	28	38	75	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	3	55	37	50	99	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1105		
pX, platoon unblocked						
vC, conflicting volume	222	99	99			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	222	99	99			
tC, single (s)	6.4	6.2	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	100	94	97			
cM capacity (veh/h)	739	949	1373			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	58	87	99
Volume Left	3	37	0
Volume Right	55	0	0
cSH	937	1373	1700
Volume to Capacity	0.06	0.03	0.06
Queue Length 95th (ft)	5	2	0
Control Delay (s)	9.1	3.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.1	3.4	0.0
Approach LOS	A		

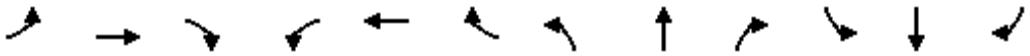
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	20.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	11	26	13	9	1	33	62	14	10	96	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	4	13	31	16	11	1	40	75	17	12	116	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								659				
pX, platoon unblocked												
vC, conflicting volume	316	317	122	347	316	83	129			92		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316	317	122	347	316	83	129			92		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.3			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.4			2.3		
p0 queue free %	99	98	97	97	98	100	97			99		
cM capacity (veh/h)	611	578	931	534	553	934	1364			1420		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	48	28	131	141
Volume Left	4	16	40	12
Volume Right	31	1	17	13
cSH	771	552	1364	1420
Volume to Capacity	0.06	0.05	0.03	0.01
Queue Length 95th (ft)	5	4	2	1
Control Delay (s)	10.0	11.9	2.5	0.7
Lane LOS	A	B	A	A
Approach Delay (s)	10.0	11.9	2.5	0.7
Approach LOS	A	B		

Intersection Summary				
Average Delay	3.6			
Intersection Capacity Utilization	24.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	90	0	19	68	90	0	0	116	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	105	0	22	79	105	0	0	135	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								576				
pX, platoon unblocked												
vC, conflicting volume	431	409	146	409	420	105	157			105		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	431	409	146	409	420	105	157			105		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	100	100	100	79	100	98	94			100		
cM capacity (veh/h)	503	505	906	509	478	918	1393			1398		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	127	184	157
Volume Left	105	79	0
Volume Right	22	0	22
cSH	552	1393	1700
Volume to Capacity	0.23	0.06	0.09
Queue Length 95th (ft)	22	5	0
Control Delay (s)	13.5	3.6	0.0
Lane LOS	B	A	
Approach Delay (s)	13.5	3.6	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	31.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	SBL	SBR	SBR2	SEL2	SEL	SER
Lane Configurations												
Volume (vph)	2	106	186	217	22	26	37	143	26	26	37	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00		0.95		1.00	
Frt		1.00	1.00	1.00	0.85		0.88		0.85		0.98	
Flt Protected		0.95	1.00	1.00	1.00		0.99		1.00		0.96	
Satd. Flow (prot)		1671	1759	1810	1538		1357		1258		1639	
Flt Permitted		0.60	1.00	1.00	1.00		0.99		1.00		0.86	
Satd. Flow (perm)		1061	1759	1810	1538		1357		1258		1471	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	2	123	216	252	26	30	43	166	30	30	43	12
RTOR Reduction (vph)	0	0	0	0	38	0	84	0	21	0	77	0
Lane Group Flow (vph)	0	125	216	252	18	0	128	0	6	0	8	0
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	22%	22%	22%	9%	9%	9%
Turn Type	Perm	Perm	NA	NA	Perm		Prot		Perm	Perm	Prot	
Protected Phases			2	6			8				4	
Permitted Phases	2	2			6				8	4		
Actuated Green, G (s)		15.5	15.5	15.5	15.5		10.6		10.6		4.2	
Effective Green, g (s)		15.5	15.5	15.5	15.5		10.6		10.6		4.2	
Actuated g/C Ratio		0.33	0.33	0.33	0.33		0.22		0.22		0.09	
Clearance Time (s)		6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)		346	573	590	501		302		280		130	
v/s Ratio Prot			0.12	c0.14			c0.09					
v/s Ratio Perm		0.12			0.01				0.00		c0.01	
v/c Ratio		0.36	0.38	0.43	0.04		0.42		0.02		0.06	
Uniform Delay, d1		12.2	12.3	12.5	10.9		15.8		14.4		19.8	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2		0.6	0.4	0.5	0.0		1.0		0.0		0.2	
Delay (s)		12.9	12.7	13.0	10.9		16.8		14.4		20.0	
Level of Service		B	B	B	B		B		B		C	
Approach Delay (s)			12.8	12.6			16.5				20.0	
Approach LOS			B	B			B				C	

Intersection Summary			
HCM 2000 Control Delay	14.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	47.5	Sum of lost time (s)	17.2
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
9501: Hampshire Drive & NB Off-Ramp

10/20/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	57	0	0	51	0	0	0	0	109	0	3
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	72	0	0	65	0	0	0	0	138	0	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	310	278	2	314	276	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	310	278	2	314	276	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	88	100	100	89	100	100			91		
cM capacity (veh/h)	552	578	1088	543	579	1091	1636			1566		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	72	65	142
Volume Left	0	0	138
Volume Right	0	0	4
cSH	578	579	1566
Volume to Capacity	0.12	0.11	0.09
Queue Length 95th (ft)	11	9	7
Control Delay (s)	12.1	12.0	7.3
Lane LOS	B	B	A
Approach Delay (s)	12.1	12.0	7.3
Approach LOS	B	B	

Intersection Summary				
Average Delay	9.7			
Intersection Capacity Utilization	16.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	140	26	4	48	3	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	163	30	5	56	3	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			193		243	178
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			193		243	178
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1357		747	870

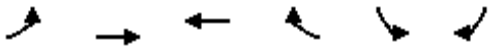
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	193	60	5
Volume Left	0	5	3
Volume Right	30	0	1
cSH	1700	1357	775
Volume to Capacity	0.11	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.6	9.7
Lane LOS		A	A
Approach Delay (s)	0.0	0.6	9.7
Approach LOS			A

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization	18.9%	ICU Level of Service	A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	107	34	1	39	13	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	123	39	1	45	15	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				409		
pX, platoon unblocked						
vC, conflicting volume			162		190	143
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			162		190	143
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		98	100
cM capacity (veh/h)			1393		803	910

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	162	46	15
Volume Left	0	1	15
Volume Right	39	0	0
cSH	1700	1393	803
Volume to Capacity	0.10	0.00	0.02
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.2	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	9.6
Approach LOS			A

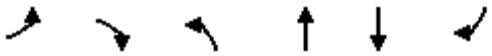
Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		17.7%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	46	30	3	26	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	50	33	3	28	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	36				86	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	36				86	34
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1569				907	1030

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	51	36	33
Volume Left	1	0	28
Volume Right	0	3	4
cSH	1569	1700	921
Volume to Capacity	0.00	0.02	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.2	0.0	9.0
Lane LOS	A		A
Approach Delay (s)	0.2	0.0	9.0
Approach LOS			A

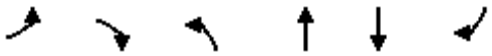
Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	61	24	389	298	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	12	67	26	427	327	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1155	
pX, platoon unblocked						
vC, conflicting volume	599	169	337			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	599	169	337			
tC, single (s)	6.8	6.9	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	92	98			
cM capacity (veh/h)	424	846	1211			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	79	169	285	218	119
Volume Left	12	26	0	0	0
Volume Right	67	0	0	0	10
cSH	734	1211	1700	1700	1700
Volume to Capacity	0.11	0.02	0.17	0.13	0.07
Queue Length 95th (ft)	9	2	0	0	0
Control Delay (s)	10.5	1.4	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.5	0.5		0.0	
Approach LOS	B				

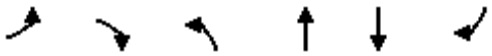
Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	33	12	388	274	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	2	37	13	436	308	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					799	
pX, platoon unblocked						
vC, conflicting volume	553	154	308			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	553	154	308			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	99			
cM capacity (veh/h)	451	854	1235			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	39	159	291	205	104
Volume Left	2	13	0	0	0
Volume Right	37	0	0	0	1
cSH	813	1235	1700	1700	1700
Volume to Capacity	0.05	0.01	0.17	0.12	0.06
Queue Length 95th (ft)	4	1	0	0	0
Control Delay (s)	9.7	0.8	0.0	0.0	0.0
Lane LOS	A	A			
Approach Delay (s)	9.7	0.3		0.0	
Approach LOS	A				

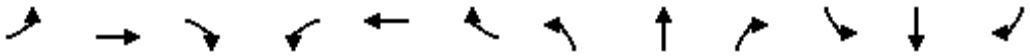
Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	29.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	1	24	17	84	68	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	1	33	23	115	93	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1105		
pX, platoon unblocked						
vC, conflicting volume	255	93	93			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	255	93	93			
tC, single (s)	6.9	6.7	4.3			
tC, 2 stage (s)						
tF (s)	4.0	3.8	2.3			
p0 queue free %	100	96	98			
cM capacity (veh/h)	631	847	1418			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	34	138	93
Volume Left	1	23	0
Volume Right	33	0	0
cSH	836	1418	1700
Volume to Capacity	0.04	0.02	0.05
Queue Length 95th (ft)	3	1	0
Control Delay (s)	9.5	1.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	1.4	0.0
Approach LOS	A		

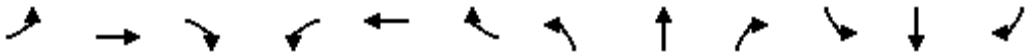
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	22.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	22	23	16	24	3	41	90	23	3	84	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	9	26	27	19	28	3	48	105	27	3	98	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								659				
pX, platoon unblocked												
vC, conflicting volume	338	334	101	360	324	118	103			131		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	338	334	101	360	324	118	103			131		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	98	95	97	97	95	100	97			100		
cM capacity (veh/h)	572	564	952	533	563	918	1446			1366		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	62	50	179	107
Volume Left	9	19	48	3
Volume Right	27	3	27	6
cSH	687	567	1446	1366
Volume to Capacity	0.09	0.09	0.03	0.00
Queue Length 95th (ft)	7	7	3	0
Control Delay (s)	10.8	12.0	2.2	0.3
Lane LOS	B	B	A	A
Approach Delay (s)	10.8	12.0	2.2	0.3
Approach LOS	B	B		

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	26.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	67	4	23	82	131	0	0	103	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	0	0	85	5	29	104	166	0	0	130	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								576				
pX, platoon unblocked												
vC, conflicting volume	548	516	143	516	529	166	156			166		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	548	516	143	516	529	166	156			166		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.3		
p0 queue free %	100	100	100	80	99	97	93			100		
cM capacity (veh/h)	407	431	910	431	411	858	1406			1337		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	119	270	156
Volume Left	85	104	0
Volume Right	29	0	25
cSH	490	1406	1700
Volume to Capacity	0.24	0.07	0.09
Queue Length 95th (ft)	24	6	0
Control Delay (s)	14.7	3.4	0.0
Lane LOS	B	A	
Approach Delay (s)	14.7	3.4	0.0
Approach LOS	B		

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	33.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	WBR2	SBL	SBR	SBR2	SEL2	SEL	SER
Lane Configurations											
Volume (vph)	152	272	182	25	18	34	121	15	43	54	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00		0.95		1.00	
Frt	1.00	1.00	1.00	0.85		0.88		0.85		0.99	
Flt Protected	0.95	1.00	1.00	1.00		0.99		1.00		0.96	
Satd. Flow (prot)	1752	1845	1827	1553		1455		1346		1678	
Flt Permitted	0.63	1.00	1.00	1.00		0.99		1.00		0.85	
Satd. Flow (perm)	1159	1845	1827	1553		1455		1346		1485	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	173	309	207	28	20	39	138	17	49	61	11
RTOR Reduction (vph)	0	0	0	32	0	87	0	12	0	94	0
Lane Group Flow (vph)	173	309	207	16	0	92	0	3	0	27	0
Heavy Vehicles (%)	3%	3%	4%	4%	4%	14%	14%	14%	7%	7%	7%
Turn Type	Perm	NA	NA	Perm		Prot		Perm	Perm	Prot	
Protected Phases		2	6			8				4	
Permitted Phases	2			6				8	4		
Actuated Green, G (s)	16.3	16.3	16.3	16.3		9.5		9.5		6.6	
Effective Green, g (s)	16.3	16.3	16.3	16.3		9.5		9.5		6.6	
Actuated g/C Ratio	0.33	0.33	0.33	0.33		0.19		0.19		0.13	
Clearance Time (s)	6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	380	606	600	510		278		257		197	
v/s Ratio Prot		c0.17	0.11			c0.06					
v/s Ratio Perm	0.15			0.01				0.00		c0.02	
v/c Ratio	0.46	0.51	0.34	0.03		0.33		0.01		0.14	
Uniform Delay, d1	13.1	13.4	12.6	11.3		17.3		16.2		19.0	
Progression Factor	1.00	1.00	1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	0.9	0.7	0.3	0.0		0.7		0.0		0.3	
Delay (s)	14.0	14.1	13.0	11.3		18.0		16.3		19.3	
Level of Service	B	B	B	B		B		B		B	
Approach Delay (s)		14.1	12.6			17.9				19.3	
Approach LOS		B	B			B				B	

Intersection Summary			
HCM 2000 Control Delay	15.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	49.6	Sum of lost time (s)	17.2
Intersection Capacity Utilization	54.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Existing Exit 96

AM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
9601: SB On-Ramp & Wilcox Avenue

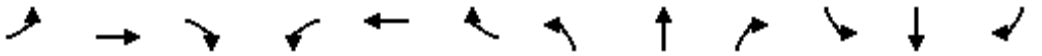
10/20/2015

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Volume (veh/h)	179	0	0	0	0	0	2	25	28	1
Sign Control	Yield			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	199	0	0	0	0	0	2	28	31	1
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type				None			None			
Median storage veh)										
Upstream signal (ft)										
pX, platoon unblocked										
vC, conflicting volume	33	30	30			0			16	16
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	33	30	30			0			16	16
tC, single (s)	7.2	6.6	4.1			4.2			6.5	6.2
tC, 2 stage (s)										
tF (s)	3.6	4.1	2.2			2.3			4.0	3.3
p0 queue free %	78	100	100			100			96	100
cM capacity (veh/h)	921	842	1596			1554			876	1060

Direction, Lane #	WB 1	SB 1	SE 1
Volume Total	199	30	32
Volume Left	199	0	0
Volume Right	0	28	1
cSH	921	1700	881
Volume to Capacity	0.22	0.02	0.04
Queue Length 95th (ft)	20	0	3
Control Delay (s)	10.0	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	10.0	0.0	9.2
Approach LOS	A		A

Intersection Summary				
Average Delay	8.7			
Intersection Capacity Utilization	26.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection has too many legs for HCM analysis.

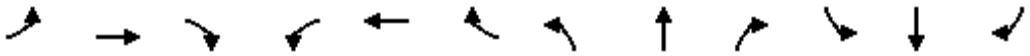


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	0	22	46	6	8	88	161	2	0	156	114
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	15	0	23	49	6	9	94	171	2	0	166	121
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	537	527	166	549	526	172	166			173		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	537	527	166	549	526	172	166			173		
tC, single (s)	7.2	6.7	6.4	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	96	100	97	88	98	99	93			100		
cM capacity (veh/h)	403	409	846	400	415	851	1365			1379		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	38	64	267	166	121
Volume Left	15	49	94	0	0
Volume Right	23	9	2	0	121
cSH	593	432	1365	1379	1700
Volume to Capacity	0.06	0.15	0.07	0.00	0.07
Queue Length 95th (ft)	5	13	6	0	0
Control Delay (s)	11.5	14.8	3.1	0.0	0.0
Lane LOS	B	B	A		
Approach Delay (s)	11.5	14.8	3.1	0.0	
Approach LOS	B	B			

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A	
Analysis Period (min)	15			

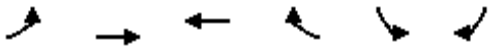
Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	64	1	99	0	0	0	0	187	109	28	196	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	72	1	111	0	0	0	0	210	122	31	220	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	493	493	220	605	493	210	220			210		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	493	493	220	605	493	210	220			210		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	84	100	86	100	100	100	100			98		
cM capacity (veh/h)	454	445	783	347	468	835	1287			1331		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	184	210	122	31	220
Volume Left	72	0	0	31	0
Volume Right	111	0	122	0	0
cSH	608	1700	1700	1331	1700
Volume to Capacity	0.30	0.12	0.07	0.02	0.13
Queue Length 95th (ft)	32	0	0	2	0
Control Delay (s)	13.5	0.0	0.0	7.8	0.0
Lane LOS	B			A	
Approach Delay (s)	13.5	0.0		1.0	
Approach LOS	B				

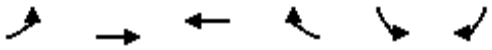
Intersection Summary				
Average Delay	3.5			
Intersection Capacity Utilization	32.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	179	132	180	117	155	140
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	192	142	194	126	167	151
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	194				720	194
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	194				720	194
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	85				49	82
cM capacity (veh/h)	1305				325	825

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	192	142	194	126	167	151
Volume Left	192	0	0	0	167	0
Volume Right	0	0	0	126	0	151
cSH	1305	1700	1700	1700	325	825
Volume to Capacity	0.15	0.08	0.11	0.07	0.51	0.18
Queue Length 95th (ft)	13	0	0	0	69	17
Control Delay (s)	8.2	0.0	0.0	0.0	27.2	10.3
Lane LOS	A				D	B
Approach Delay (s)	4.7		0.0		19.2	
Approach LOS					C	

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	38.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	2	285	294	0	1	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	2	303	313	0	1	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	313				620	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	313				620	156
tC, single (s)	4.3				7.5	7.6
tC, 2 stage (s)						
tF (s)	2.3				3.8	3.6
p0 queue free %	100				100	100
cM capacity (veh/h)	1202				354	772

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	2	303	209	104	4
Volume Left	2	0	0	0	1
Volume Right	0	0	0	0	3
cSH	1202	1700	1700	1700	596
Volume to Capacity	0.00	0.18	0.12	0.06	0.01
Queue Length 95th (ft)	0	0	0	0	1
Control Delay (s)	8.0	0.0	0.0	0.0	11.1
Lane LOS	A				B
Approach Delay (s)	0.1		0.0		11.1
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	25.0%	ICU Level of Service	A
Analysis Period (min)	15		

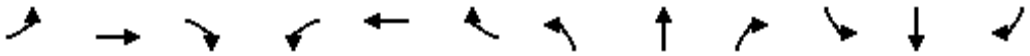
PM Peak Hour

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Volume (veh/h)	178	0	0	0	0	0	14	25	38	1
Sign Control	Yield			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	193	0	0	0	0	0	15	27	41	1
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type				None			None			
Median storage veh)										
Upstream signal (ft)										
pX, platoon unblocked										
vC, conflicting volume	51	42	42			0			29	29
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	51	42	42			0			29	29
tC, single (s)	7.2	6.6	4.1			4.2			6.6	6.3
tC, 2 stage (s)										
tF (s)	3.6	4.1	2.2			2.3			4.1	3.4
p0 queue free %	78	100	100			100			95	100
cM capacity (veh/h)	890	830	1580			1560			856	1035

Direction, Lane #	WB 1	SB 1	SE 1
Volume Total	193	42	42
Volume Left	193	0	0
Volume Right	0	27	1
cSH	890	1700	860
Volume to Capacity	0.22	0.02	0.05
Queue Length 95th (ft)	21	0	4
Control Delay (s)	10.2	0.0	9.4
Lane LOS	B		A
Approach Delay (s)	10.2	0.0	9.4
Approach LOS	B		A

Intersection Summary				
Average Delay	8.5			
Intersection Capacity Utilization	26.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection has too many legs for HCM analysis.

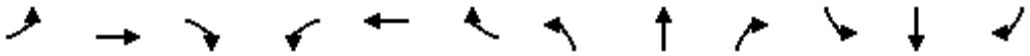


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	1	26	66	8	9	98	295	1	0	118	113
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	16	1	29	73	9	10	108	324	1	0	130	124
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	684	670	130	699	670	325	130			325		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	684	670	130	699	670	325	130			325		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	95	100	97	77	97	99	93			100		
cM capacity (veh/h)	328	347	915	312	340	696	1438			1223		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	46	91	433	130	124
Volume Left	16	73	108	0	0
Volume Right	29	10	1	0	124
cSH	545	335	1438	1223	1700
Volume to Capacity	0.08	0.27	0.07	0.00	0.07
Queue Length 95th (ft)	7	27	6	0	0
Control Delay (s)	12.2	19.7	2.5	0.0	0.0
Lane LOS	B	C	A		
Approach Delay (s)	12.2	19.7	2.5	0.0	
Approach LOS	B	C			

Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	43.6%	ICU Level of Service	A	
Analysis Period (min)	15			

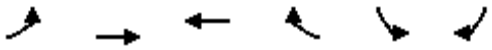
Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	143	1	87	0	0	0	0	251	131	18	192	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	155	1	95	0	0	0	0	273	142	20	209	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	521	521	209	616	521	273	209			273		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	521	521	209	616	521	273	209			273		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	66	100	88	100	100	100	100			98		
cM capacity (veh/h)	452	445	817	354	456	771	1344			1279		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	251	273	142	20	209
Volume Left	155	0	0	20	0
Volume Right	95	0	142	0	0
cSH	543	1700	1700	1279	1700
Volume to Capacity	0.46	0.16	0.08	0.02	0.12
Queue Length 95th (ft)	61	0	0	1	0
Control Delay (s)	17.2	0.0	0.0	7.9	0.0
Lane LOS	C			A	
Approach Delay (s)	17.2	0.0		0.7	
Approach LOS	C				

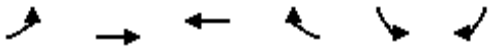
Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	34.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	256	139	147	126	96	183
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	308	167	177	152	116	220
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	177				961	177
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	177				961	177
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	77				45	74
cM capacity (veh/h)	1369				212	843

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	308	167	177	152	116	220
Volume Left	308	0	0	0	116	0
Volume Right	0	0	0	152	0	220
cSH	1369	1700	1700	1700	212	843
Volume to Capacity	0.23	0.10	0.10	0.09	0.55	0.26
Queue Length 95th (ft)	22	0	0	0	73	26
Control Delay (s)	8.4	0.0	0.0	0.0	40.7	10.8
Lane LOS	A				E	B
Approach Delay (s)	5.4		0.0		21.1	
Approach LOS					C	

Intersection Summary			
Average Delay	8.5		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	5	230	267	1	0	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	7	303	351	1	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	353				668	176
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	353				668	176
tC, single (s)	4.2				7.5	7.6
tC, 2 stage (s)						
tF (s)	2.3				3.8	3.6
p0 queue free %	99				100	99
cM capacity (veh/h)	1168				327	748

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	7	303	234	118	8
Volume Left	7	0	0	0	0
Volume Right	0	0	0	1	8
cSH	1168	1700	1700	1700	748
Volume to Capacity	0.01	0.18	0.14	0.07	0.01
Queue Length 95th (ft)	0	0	0	0	1
Control Delay (s)	8.1	0.0	0.0	0.0	9.9
Lane LOS	A				A
Approach Delay (s)	0.2		0.0		9.9
Approach LOS					A

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

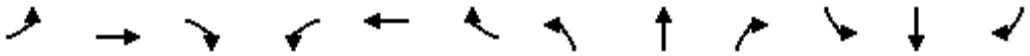
Existing Exit 100

AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	3	0	0	118	3
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	2	4	0	0	144	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	146	146	144			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	146	146	144			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	833	886	1451			

Direction, Lane #	EB 1	SB 1
Volume Total	6	148
Volume Left	2	0
Volume Right	4	4
cSH	864	1700
Volume to Capacity	0.01	0.09
Queue Length 95th (ft)	1	0
Control Delay (s)	9.2	0.0
Lane LOS	A	
Approach Delay (s)	9.2	0.0
Approach LOS	A	

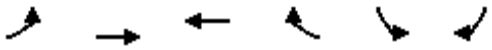
Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	16.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	2	27	5	24	90	57	3	0	132	26
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	2	30	6	27	100	63	3	0	147	29
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	456	428	161	428	441	65	176			67		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	456	428	161	428	441	65	176			67		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	94	99	97	93			100		
cM capacity (veh/h)	473	485	889	508	476	1002	1395			1516		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	2	62	167	176
Volume Left	0	30	100	0
Volume Right	2	27	3	29
cSH	889	639	1395	1516
Volume to Capacity	0.00	0.10	0.07	0.00
Queue Length 95th (ft)	0	8	6	0
Control Delay (s)	9.1	11.2	4.9	0.0
Lane LOS	A	B	A	
Approach Delay (s)	9.1	11.2	4.9	0.0
Approach LOS	A	B		

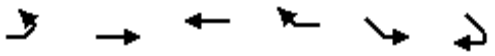
Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	36.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	3	0	56	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	4	0	67	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	67				74	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	67				74	67
tC, single (s)	4.4				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.5				3.6	3.4
p0 queue free %	100				100	100
cM capacity (veh/h)	1369				913	980

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	4	67	0
Volume Left	4	0	0
Volume Right	0	0	0
cSH	1369	1700	1700
Volume to Capacity	0.00	0.04	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	7.6	0.0	0.0
Lane LOS	A		A
Approach Delay (s)	7.6	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑	↑		Y	
Volume (veh/h)	0	1	0	0	208	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	0	2	0	0	320	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	640	640	640	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	640	640	640	0	0	
tC, single (s)	7.7	7.1	7.5	7.2	4.1	
tC, 2 stage (s)						
tF (s)	4.0	4.5	4.9	4.2	2.2	
p0 queue free %	100	99	100	100	80	
cM capacity (veh/h)	272	264	232	857	1604	

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	2	0	320
Volume Left	0	0	320
Volume Right	0	0	0
cSH	264	1700	1604
Volume to Capacity	0.01	0.00	0.20
Queue Length 95th (ft)	0	0	19
Control Delay (s)	18.7	0.0	7.8
Lane LOS	C	A	A
Approach Delay (s)	18.7	0.0	7.8
Approach LOS	C	A	

Intersection Summary			
Average Delay	7.9		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	136	14	42	119	0	14	2	193	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	164	17	51	143	0	17	2	233	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	143			181			417	425	143	651	417	172
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	143			181			417	425	143	651	417	172
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	100			96			97	100	74	100	100	100
cM capacity (veh/h)	1421			1342			524	495	894	275	510	877

Direction, Lane #	NB 1	SB 1	NE 1
Volume Total	181	194	252
Volume Left	0	51	17
Volume Right	17	0	233
cSH	1421	1342	847
Volume to Capacity	0.00	0.04	0.30
Queue Length 95th (ft)	0	3	31
Control Delay (s)	0.0	2.3	11.0
Lane LOS		A	B
Approach Delay (s)	0.0	2.3	11.0
Approach LOS			B

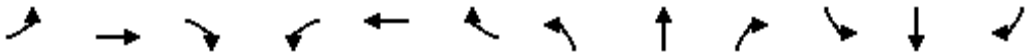
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	39.4%	ICU Level of Service	A	
Analysis Period (min)	15			

PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	6	4	0	0	175	16
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	8	5	0	0	240	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	251	251	240			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	251	251	240			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	99	99	100			
cM capacity (veh/h)	729	778	1339			

Direction, Lane #	EB 1	SB 1
Volume Total	14	262
Volume Left	8	0
Volume Right	5	22
cSH	748	1700
Volume to Capacity	0.02	0.15
Queue Length 95th (ft)	1	0
Control Delay (s)	9.9	0.0
Lane LOS	A	
Approach Delay (s)	9.9	0.0
Approach LOS	A	

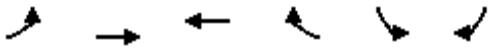
Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	20.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	1	2	18	17	23	145	92	7	3	77	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	1	2	20	19	26	161	102	8	3	86	32
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	572	541	102	539	553	106	118			110		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	572	541	102	539	553	106	118			110		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	99	100	100	95	95	97	89			100		
cM capacity (veh/h)	372	401	959	404	384	932	1464			1462		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	64	271	121
Volume Left	3	20	161	3
Volume Right	2	26	8	32
cSH	474	511	1464	1462
Volume to Capacity	0.01	0.13	0.11	0.00
Queue Length 95th (ft)	1	11	9	0
Control Delay (s)	12.7	13.1	5.0	0.2
Lane LOS	B	B	A	A
Approach Delay (s)	12.7	13.1	5.0	0.2
Approach LOS	B	B		

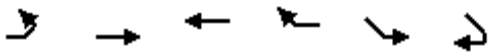
Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	30.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	11	0	58	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	14	0	72	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	72				99	72
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72				99	72
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1541				885	982

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	14	72	0
Volume Left	14	0	0
Volume Right	0	0	0
cSH	1541	1700	1700
Volume to Capacity	0.01	0.04	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	7.4	0.0	0.0
Lane LOS	A		A
Approach Delay (s)	7.4	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	10.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	4	0	0	143	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	5	0	0	166	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	333	333	333	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333	333	333	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	100	99	100	100	90	
cM capacity (veh/h)	575	529	529	1091	1597	

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	5	0	166
Volume Left	0	0	166
Volume Right	0	0	0
cSH	529	1700	1597
Volume to Capacity	0.01	0.00	0.10
Queue Length 95th (ft)	1	0	9
Control Delay (s)	11.9	0.0	7.5
Lane LOS	B	A	A
Approach Delay (s)	11.9	0.0	7.5
Approach LOS	B	A	

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	17.9%	ICU Level of Service	A
Analysis Period (min)	15		

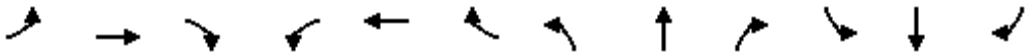
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	210	18	26	71	0	34	3	110	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	256	22	32	87	0	41	4	134	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	87			278			417	428	87	553	417	267
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	87			278			417	428	87	553	417	267
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	100			97			92	99	86	100	100	100
cM capacity (veh/h)	1497			1251			527	499	958	375	516	776

Direction, Lane #	NB 1	SB 1	NE 1
Volume Total	278	118	179
Volume Left	0	32	41
Volume Right	22	0	134
cSH	1497	1251	793
Volume to Capacity	0.00	0.03	0.23
Queue Length 95th (ft)	0	2	22
Control Delay (s)	0.0	2.3	10.9
Lane LOS		A	B
Approach Delay (s)	0.0	2.3	10.9
Approach LOS			B

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	36.1%	ICU Level of Service	A	
Analysis Period (min)	15			

No Build Exit 80

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	28	134	144	15	10	58	246	190	42	130	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	7	32	152	164	17	11	66	280	216	48	148	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	540	876	80	857	774	248	159			495		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	540	876	80	857	774	248	159			495		
tC, single (s)	7.6	6.6	7.0	7.6	6.6	7.0	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.3		
p0 queue free %	98	88	84	5	94	98	95			95		
cM capacity (veh/h)	368	256	958	172	289	737	1403			1017		

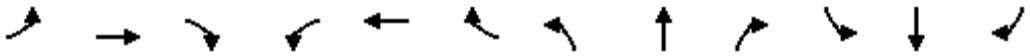
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	7	184	164	28	66	186	309	48	98	61
Volume Left	7	0	164	0	66	0	0	48	0	0
Volume Right	0	152	0	11	0	0	216	0	0	11
cSH	368	650	172	382	1403	1700	1700	1017	1700	1700
Volume to Capacity	0.02	0.28	0.95	0.07	0.05	0.11	0.18	0.05	0.06	0.04
Queue Length 95th (ft)	1	29	183	6	4	0	0	4	0	0
Control Delay (s)	15.0	12.7	110.0	15.2	7.7	0.0	0.0	8.7	0.0	0.0
Lane LOS	B	B	F	C	A			A		
Approach Delay (s)	12.8		96.0		0.9			2.0		
Approach LOS	B		F							

Intersection Summary				
Average Delay	18.9			
Intersection Capacity Utilization	47.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (veh/h)	163	0	63	0	431	0	0	366	42	0	0
Sign Control		Stop			Free			Free		Stop	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	199	0	77	0	526	0	0	446	51	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	749	972	263	446			526			709	972
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	749	972	263	446			526			709	972
tC, single (s)	7.7	6.7	7.1	4.2			4.1			7.5	6.5
tC, 2 stage (s)											
tF (s)	3.6	4.1	3.4	2.2			2.2			3.5	4.0
p0 queue free %	30	100	89	100			100			100	100
cM capacity (veh/h)	283	235	706	1103			1037			290	255

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	199	77	263	263	223	223	51
Volume Left	199	0	0	0	0	0	0
Volume Right	0	77	0	0	0	0	51
cSH	283	706	1700	1700	1700	1700	1700
Volume to Capacity	0.70	0.11	0.15	0.15	0.13	0.13	0.03
Queue Length 95th (ft)	121	9	0	0	0	0	0
Control Delay (s)	43.0	10.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	E	B					
Approach Delay (s)	34.0		0.0		0.0		
Approach LOS	D						

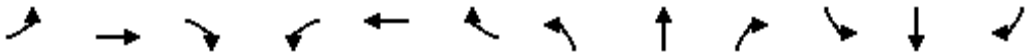
Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	32.2%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	251	0	197	0	0	0	0	646	132	79	450	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	295	0	232	0	0	0	0	760	155	93	529	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1095	1475	265	1211	1475	380	529			760		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1095	1475	265	1211	1475	380	529			760		
tC, single (s)	7.6	6.6	7.0	7.5	6.5	6.9	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	100	68	100	100	100	100			89		
cM capacity (veh/h)	149	108	722	87	114	624	1027			848		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	295	232	380	380	155	93	265	265
Volume Left	295	0	0	0	0	93	0	0
Volume Right	0	232	0	0	155	0	0	0
cSH	149	722	1700	1700	1700	848	1700	1700
Volume to Capacity	1.98	0.32	0.22	0.22	0.09	0.11	0.16	0.16
Queue Length 95th (ft)	576	35	0	0	0	9	0	0
Control Delay (s)	513.4	12.3	0.0	0.0	0.0	9.8	0.0	0.0
Lane LOS	F	B				A		
Approach Delay (s)	293.1		0.0			1.5		
Approach LOS	F							

Intersection Summary				
Average Delay	75.3			
Intersection Capacity Utilization	46.1%	ICU Level of Service	A	
Analysis Period (min)	15			

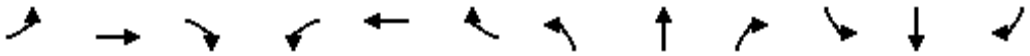


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	39	0	6	3	1	19	6	720	1	21	599	27
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	49	0	8	4	1	24	8	911	1	27	758	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1324	1756	396	1367	1773	456	792			913		
vC1, stage 1 conf vol	828	828		927	927							
vC2, stage 2 conf vol	496	928		440	846							
vCu, unblocked vol	1324	1756	396	1367	1773	456	792			913		
tC, single (s)	8.0	7.0	7.4	7.8	6.8	7.2	4.2			4.2		
tC, 2 stage (s)	7.0	6.0		6.8	5.8							
tF (s)	3.8	4.2	3.5	3.6	4.2	3.4	2.2			2.3		
p0 queue free %	79	100	99	98	99	95	99			96		
cM capacity (veh/h)	237	209	543	237	231	517	811			718		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	49	8	4	25	8	608	305	27	505	287
Volume Left	49	0	4	0	8	0	0	27	0	0
Volume Right	0	8	0	24	0	0	1	0	0	34
cSH	237	543	237	487	811	1700	1700	718	1700	1700
Volume to Capacity	0.21	0.01	0.02	0.05	0.01	0.36	0.18	0.04	0.30	0.17
Queue Length 95th (ft)	19	1	1	4	1	0	0	3	0	0
Control Delay (s)	24.2	11.7	20.5	12.8	9.5	0.0	0.0	10.2	0.0	0.0
Lane LOS	C	B	C	B	A			B		
Approach Delay (s)	22.5		13.8		0.1			0.3		
Approach LOS	C		B							

Intersection Summary					
Average Delay	1.1				
Intersection Capacity Utilization	35.4%	ICU Level of Service		A	
Analysis Period (min)	15				

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	25	103	269	34	24	61	440	39	18	45	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	31	129	336	42	30	76	550	49	22	56	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	584	857	32	944	837	299	65			599		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	584	857	32	944	837	299	65			599		
tC, single (s)	7.5	6.5	6.9	7.6	6.6	7.0	4.2			4.5		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.4		
p0 queue free %	100	89	88	0	84	96	95			97		
cM capacity (veh/h)	317	275	1040	158	270	682	1528			861		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	0	160	336	72	76	367	232	22	38	28
Volume Left	0	0	336	0	76	0	0	22	0	0
Volume Right	0	129	0	30	0	0	49	0	0	9
cSH	1700	674	158	360	1528	1700	1700	861	1700	1700
Volume to Capacity	0.00	0.24	2.13	0.20	0.05	0.22	0.14	0.03	0.02	0.02
Queue Length 95th (ft)	0	23	674	19	4	0	0	2	0	0
Control Delay (s)	0.0	12.0	574.9	17.5	7.5	0.0	0.0	9.3	0.0	0.0
Lane LOS	A	B	F	C	A			A		
Approach Delay (s)	12.0		476.1		0.8			2.4		
Approach LOS	B		F							

Intersection Summary				
Average Delay	148.2			
Intersection Capacity Utilization	47.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	WBL2	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NER
Lane Configurations											
Volume (veh/h)	112	0	54	0	486	0	0	314	103	0	0
Sign Control		Stop			Free			Free		Stop	
Grade		0%			0%			0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	124	0	60	0	540	0	0	349	114	0	0
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type					None			None			
Median storage veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	714	889	270	349			540			619	889
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	714	889	270	349			540			619	889
tC, single (s)	7.7	6.7	7.1	4.2			4.2			7.5	6.5
tC, 2 stage (s)											
tF (s)	3.6	4.1	3.4	2.2			2.2			3.5	4.0
p0 queue free %	59	100	91	100			100			100	100
cM capacity (veh/h)	302	265	701	1192			1011			345	285

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	124	60	270	270	174	174	114
Volume Left	124	0	0	0	0	0	0
Volume Right	0	60	0	0	0	0	114
cSH	302	701	1700	1700	1700	1700	1700
Volume to Capacity	0.41	0.09	0.16	0.16	0.10	0.10	0.07
Queue Length 95th (ft)	48	7	0	0	0	0	0
Control Delay (s)	25.0	10.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	B					
Approach Delay (s)	20.4		0.0		0.0		
Approach LOS	C						

Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	23.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	60	0	294	0	0	0	0	608	91	45	381	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	65	0	316	0	0	0	0	654	98	48	410	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	833	1160	205	955	1160	327	410			654		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	833	1160	205	955	1160	327	410			654		
tC, single (s)	7.6	6.6	7.0	7.5	6.5	6.9	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	74	100	60	100	100	100	100			95		
cM capacity (veh/h)	246	180	793	125	187	675	1131			922		

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	65	316	327	327	98	48	205	205
Volume Left	65	0	0	0	0	48	0	0
Volume Right	0	316	0	0	98	0	0	0
cSH	246	793	1700	1700	1700	922	1700	1700
Volume to Capacity	0.26	0.40	0.19	0.19	0.06	0.05	0.12	0.12
Queue Length 95th (ft)	26	48	0	0	0	4	0	0
Control Delay (s)	24.8	12.5	0.0	0.0	0.0	9.1	0.0	0.0
Lane LOS	C	B				A		
Approach Delay (s)	14.6		0.0			1.0		
Approach LOS	B							

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	35.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	48	4	10	3	4	20	4	631	3	13	611	51
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	62	5	13	4	5	26	5	809	4	17	783	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1292	1672	424	1262	1703	406	849			813		
vC1, stage 1 conf vol	849	849		821	821							
vC2, stage 2 conf vol	443	823		440	882							
vCu, unblocked vol	1292	1672	424	1262	1703	406	849			813		
tC, single (s)	7.8	6.8	7.2	7.6	6.6	7.0	4.2			4.2		
tC, 2 stage (s)	6.8	5.8		6.6	5.6							
tF (s)	3.6	4.2	3.4	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	76	98	98	99	98	96	99			98		
cM capacity (veh/h)	256	246	544	286	259	583	778			791		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2	SB 3
Volume Total	62	18	4	31	5	539	274	17	522	326
Volume Left	62	0	4	0	5	0	0	17	0	0
Volume Right	0	13	0	26	0	0	4	0	0	65
cSH	256	404	286	483	778	1700	1700	791	1700	1700
Volume to Capacity	0.24	0.04	0.01	0.06	0.01	0.32	0.16	0.02	0.31	0.19
Queue Length 95th (ft)	23	3	1	5	0	0	0	2	0	0
Control Delay (s)	23.4	14.3	17.8	13.0	9.7	0.0	0.0	9.7	0.0	0.0
Lane LOS	C	B	C	B	A			A		
Approach Delay (s)	21.4		13.5		0.1			0.2		
Approach LOS	C		B							

Intersection Summary					
Average Delay	1.3				
Intersection Capacity Utilization	34.5%	ICU Level of Service		A	
Analysis Period (min)	15				

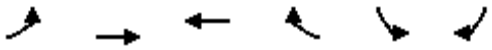
No Build Exit 82

AM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	4	0	43	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	0	0	5	0	53	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	109	106	106	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	109	106	106	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.2	
p0 queue free %	100	100	99	100	97	
cM capacity (veh/h)	849	762	762	1091	1617	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	5	53
Volume Left	0	0	53
Volume Right	0	0	0
cSH	1700	762	1617
Volume to Capacity	0.00	0.01	0.03
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	9.8	7.3
Lane LOS	A	A	A
Approach Delay (s)	0.0	9.8	7.3
Approach LOS	A	A	

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	19	13	3	1	42
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	1	25	17	4	1	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	21				47	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				47	19
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	1608				959	1056

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	27	21	57
Volume Left	1	0	1
Volume Right	0	4	56
cSH	1608	1700	1053
Volume to Capacity	0.00	0.01	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.4	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.4	0.0	8.6
Approach LOS			A

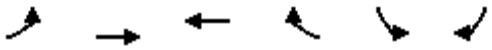
Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	0	3	0	79	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Hourly flow rate (vph)	0	0	4	0	101	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	204	203	203	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	204	203	203	0	0	
tC, single (s)	7.1	6.5	7.0	6.7	4.1	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.5	3.8	2.2	
p0 queue free %	100	100	99	100	94	
cM capacity (veh/h)	718	654	579	960	1636	

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	0	4	101
Volume Left	0	0	101
Volume Right	0	0	0
cSH	1700	579	1636
Volume to Capacity	0.00	0.01	0.06
Queue Length 95th (ft)	0	1	5
Control Delay (s)	0.0	11.3	7.3
Lane LOS	A	B	A
Approach Delay (s)	0.0	11.3	7.3
Approach LOS	A	B	

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	14.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	9	10	3	13	66
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	11	12	4	15	78
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	15				24	14
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	15				24	14
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	100				98	93
cM capacity (veh/h)	1577				994	1069

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	11	15	93
Volume Left	0	0	15
Volume Right	0	4	78
cSH	1577	1700	1056
Volume to Capacity	0.00	0.01	0.09
Queue Length 95th (ft)	0	0	7
Control Delay (s)	0.0	0.0	8.7
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.7
Approach LOS			A

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	14.8%	ICU Level of Service	A
Analysis Period (min)	15		

No Build Exit 83

AM Peak Hour

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	227	0	158	305	1	17
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	284	0	198	381	1	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			284		1060	284
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			284		1060	284
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.4
p0 queue free %			84		99	97
cM capacity (veh/h)			1261		202	737

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	284	579	22
Volume Left	0	198	1
Volume Right	0	0	21
cSH	1700	1261	642
Volume to Capacity	0.17	0.16	0.04
Queue Length 95th (ft)	0	14	3
Control Delay (s)	0.0	4.0	10.8
Lane LOS		A	B
Approach Delay (s)	0.0	4.0	10.8
Approach LOS			B

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	6	30	76	1	2	55	215	313	6	266	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	7	33	84	1	2	61	239	348	7	296	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	866	689	314	899	844	413	296			239		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	866	689	314	899	844	413	296			239		
tC, single (s)	7.2	6.6	6.3	7.3	6.7	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.7	4.2	3.5	2.2			2.2		
p0 queue free %	96	98	95	61	100	100	95			100		
cM capacity (veh/h)	249	335	699	216	265	600	1255			1334		

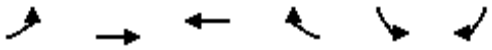
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	51	88	648	340
Volume Left	11	84	61	7
Volume Right	33	2	348	38
cSH	455	220	1255	1334
Volume to Capacity	0.11	0.40	0.05	0.00
Queue Length 95th (ft)	9	45	4	0
Control Delay (s)	13.9	31.7	1.3	0.2
Lane LOS	B	D	A	A
Approach Delay (s)	13.9	31.7	1.3	0.2
Approach LOS	B	D		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	71.0%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	6	152	0	70	14	0	3	18	304	20	9	1
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	7	181	0	83	17	0	4	21	362	24	11	1
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	17			181			385	379	181	389	379	17
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	17			181			385	379	181	389	379	17
tC, single (s)	4.2			4.3			7.2	6.6	6.3	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.3			2.4			3.6	4.1	3.4	3.6	4.1	3.4
p0 queue free %	100			94			99	96	56	92	98	100
cM capacity (veh/h)	1575			1304			514	499	832	290	507	1045

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	188	100	387	36
Volume Left	7	83	4	24
Volume Right	0	0	362	1
cSH	1575	1304	798	342
Volume to Capacity	0.00	0.06	0.49	0.10
Queue Length 95th (ft)	0	5	67	9
Control Delay (s)	0.3	6.7	13.7	16.8
Lane LOS	A	A	B	C
Approach Delay (s)	0.3	6.7	13.7	16.8
Approach LOS			B	C

Intersection Summary			
Average Delay	9.3		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Yield		Stop	
Volume (vph)	0	0	40	84	21	455
Peak Hour Factor	0.57	0.57	0.57	0.57	0.57	0.57
Hourly flow rate (vph)	0	0	70	147	37	798

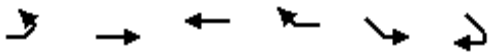
Direction, Lane #	WB 1	SB 1
Volume Total (vph)	218	835
Volume Left (vph)	0	37
Volume Right (vph)	147	798
Hadj (s)	-0.12	-0.48
Departure Headway (s)	5.6	4.1
Degree Utilization, x	0.34	0.95
Capacity (veh/h)	630	871
Control Delay (s)	11.5	38.3
Approach Delay (s)	11.5	38.3
Approach LOS	B	E

Intersection Summary			
Delay	32.8		
Level of Service	D		
Intersection Capacity Utilization	43.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	21	0	66	40	0	58
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	26	0	82	50	0	72
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	132				160	108
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	132				160	108
tC, single (s)	4.5				7.0	6.8
tC, 2 stage (s)						
tF (s)	2.6				4.0	3.8
p0 queue free %	98				100	91
cM capacity (veh/h)	1230				703	816

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	26	132	72
Volume Left	26	0	0
Volume Right	0	50	72
cSH	1230	1700	816
Volume to Capacity	0.02	0.08	0.09
Queue Length 95th (ft)	2	0	7
Control Delay (s)	8.0	0.0	9.8
Lane LOS	A		A
Approach Delay (s)	8.0	0.0	9.8
Approach LOS			A

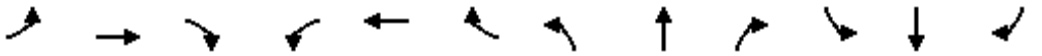
Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	16.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑	↑		Y	
Volume (veh/h)	0	22	14	0	262	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	0	29	18	0	345	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	699	689	689	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	699	689	689	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	100	90	94	100	78	
cM capacity (veh/h)	284	291	291	1091	1591	

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	29	18	345
Volume Left	0	0	345
Volume Right	0	0	0
cSH	291	291	1591
Volume to Capacity	0.10	0.06	0.22
Queue Length 95th (ft)	8	5	21
Control Delay (s)	18.8	18.2	7.9
Lane LOS	C	C	A
Approach Delay (s)	18.8	18.2	7.9
Approach LOS	C	C	

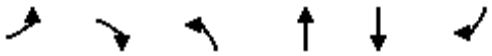
Intersection Summary				
Average Delay		9.2		
Intersection Capacity Utilization		24.5%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	75	10	199	0	0	12	4	496	3	51	311	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.9			5.9	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.91			0.86			1.00			1.00	
Flt Protected		0.99			1.00			1.00			0.99	
Satd. Flow (prot)		1543			1255			1725			1757	
Flt Permitted		0.91			1.00			1.00			0.88	
Satd. Flow (perm)		1417			1255			1720			1554	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	84	11	224	0	0	13	4	557	3	57	349	11
RTOR Reduction (vph)	0	125	0	0	9	0	0	1	0	0	2	0
Lane Group Flow (vph)	0	194	0	0	4	0	0	563	0	0	415	0
Heavy Vehicles (%)	10%	10%	10%	31%	31%	31%	10%	10%	10%	7%	7%	7%
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		11.8			11.8			19.9			19.9	
Effective Green, g (s)		11.8			11.8			19.9			19.9	
Actuated g/C Ratio		0.28			0.28			0.47			0.47	
Clearance Time (s)		5.0			5.0			5.9			5.9	
Vehicle Extension (s)		4.0			4.0			2.5			2.5	
Lane Grp Cap (vph)		392			347			803			725	
v/s Ratio Prot					0.00							
v/s Ratio Perm		c0.14						c0.33			0.27	
v/c Ratio		0.49			0.01			0.70			0.57	
Uniform Delay, d1		12.9			11.2			9.0			8.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.3			0.0			2.6			0.9	
Delay (s)		14.2			11.2			11.6			9.2	
Level of Service		B			B			B			A	
Approach Delay (s)		14.2			11.2			11.6			9.2	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	42.6	Sum of lost time (s)	10.9
Intersection Capacity Utilization	83.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	58	6	3	94	10	9
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	79	8	4	129	14	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	157	20	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	157	20	26			
tC, single (s)	6.6	6.4	4.2			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.3			
p0 queue free %	90	99	100			
cM capacity (veh/h)	794	1011	1514			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	88	133	26
Volume Left	79	4	0
Volume Right	8	0	12
cSH	810	1514	1700
Volume to Capacity	0.11	0.00	0.02
Queue Length 95th (ft)	9	0	0
Control Delay (s)	10.0	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	10.0	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	17.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	152	0	0	0	19	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	169	0	0	0	21	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			169		169	169
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			169		169	169
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1409		821	875

Direction, Lane #	EB 1	NB 1
Volume Total	169	21
Volume Left	0	21
Volume Right	0	0
cSH	1700	821
Volume to Capacity	0.10	0.03
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	9.5
Lane LOS		A
Approach Delay (s)	0.0	9.5
Approach LOS		A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	18.0%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	381	0	85	226	0	36
Sign Control	Free			Free	Yield	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	423	0	94	251	0	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			423		863	423
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			423		863	423
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			92		100	94
cM capacity (veh/h)			1120		294	624

Direction, Lane #	NB 1	SB 1	NW 1
Volume Total	423	346	40
Volume Left	0	94	0
Volume Right	0	0	40
cSH	1700	1120	624
Volume to Capacity	0.25	0.08	0.06
Queue Length 95th (ft)	0	7	5
Control Delay (s)	0.0	2.9	11.2
Lane LOS		A	B
Approach Delay (s)	0.0	2.9	11.2
Approach LOS			B

Intersection Summary			
Average Delay		1.8	
Intersection Capacity Utilization		43.3%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	14	45	103	6	3	21	362	206	0	212	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	21	18	58	134	8	4	27	470	268	0	275	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	951	809	284	1010	934	604	275			470		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	951	809	284	1010	934	604	275			470		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	91	94	92	27	97	99	98			100		
cM capacity (veh/h)	228	308	755	184	253	486	1276			1102		

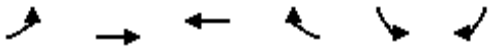
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	97	145	765	294
Volume Left	21	134	27	0
Volume Right	58	4	268	18
cSH	428	190	1276	1102
Volume to Capacity	0.23	0.77	0.02	0.00
Queue Length 95th (ft)	22	128	2	0
Control Delay (s)	15.9	68.1	0.6	0.0
Lane LOS	C	F	A	
Approach Delay (s)	15.9	68.1	0.6	0.0
Approach LOS	C	F		

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	67.7%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	7	78	0	99	30	0	0	21	199	15	13	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	9	105	0	134	41	0	0	28	269	20	18	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	41			105			449	432	105	447	432	41
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	41			105			449	432	105	447	432	41
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	99			91			100	94	71	94	96	99
cM capacity (veh/h)	1562			1414			447	450	920	325	464	1031

Direction, Lane #	SE 1	NW 1	NE 1	SW 1
Volume Total	115	174	297	46
Volume Left	9	134	0	20
Volume Right	0	0	269	8
cSH	1562	1414	836	425
Volume to Capacity	0.01	0.09	0.36	0.11
Queue Length 95th (ft)	0	8	40	9
Control Delay (s)	0.6	6.2	11.7	14.5
Lane LOS	A	A	B	B
Approach Delay (s)	0.6	6.2	11.7	14.5
Approach LOS			B	B

Intersection Summary			
Average Delay	8.4		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Yield		Stop	
Volume (vph)	0	0	37	129	24	268
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	0	0	49	172	32	357

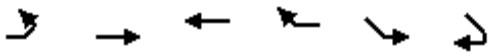
Direction, Lane #	WB 1	SB 1
Volume Total (vph)	221	389
Volume Left (vph)	0	32
Volume Right (vph)	172	357
Hadj (s)	-0.43	-0.48
Departure Headway (s)	4.3	3.9
Degree Utilization, x	0.26	0.42
Capacity (veh/h)	778	885
Control Delay (s)	8.8	9.8
Approach Delay (s)	8.8	9.8
Approach LOS	A	A

Intersection Summary			
Delay	9.4		
Level of Service	A		
Intersection Capacity Utilization	34.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	24	0	118	39	0	48
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	0	131	43	0	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	174				206	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	174				206	153
tC, single (s)	4.5				6.6	6.4
tC, 2 stage (s)						
tF (s)	2.6				3.7	3.5
p0 queue free %	98				100	94
cM capacity (veh/h)	1189				725	846

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	27	174	53
Volume Left	27	0	0
Volume Right	0	43	53
cSH	1189	1700	846
Volume to Capacity	0.02	0.10	0.06
Queue Length 95th (ft)	2	0	5
Control Delay (s)	8.1	0.0	9.5
Lane LOS	A		A
Approach Delay (s)	8.1	0.0	9.5
Approach LOS			A

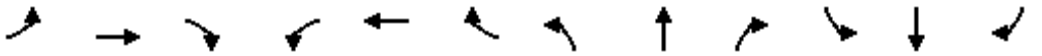
Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	36	21	0	388	4
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	46	27	0	491	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	998	985	982	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	998	985	982	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	100	74	85	100	69	
cM capacity (veh/h)	152	173	174	1091	1597	

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	46	27	496
Volume Left	0	0	491
Volume Right	0	0	5
cSH	173	174	1597
Volume to Capacity	0.26	0.15	0.31
Queue Length 95th (ft)	25	13	33
Control Delay (s)	33.0	29.4	8.2
Lane LOS	D	D	A
Approach Delay (s)	33.0	29.4	8.2
Approach LOS	D	D	

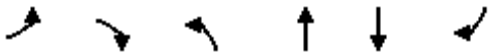
Intersection Summary			
Average Delay	11.2		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	138	24	262	3	1	13	13	438	4	47	306	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.9			5.9	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.92			0.90			1.00			1.00	
Flt Protected		0.98			0.99			1.00			0.99	
Satd. Flow (prot)		1572			1519			1788			1759	
Flt Permitted		0.88			0.93			0.98			0.90	
Satd. Flow (perm)		1413			1432			1761			1596	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	150	26	285	3	1	14	14	476	4	51	333	8
RTOR Reduction (vph)	0	88	0	0	9	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	373	0	0	9	0	0	493	0	0	391	0
Heavy Vehicles (%)	9%	9%	9%	11%	11%	11%	6%	6%	6%	7%	7%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		17.9			17.9			19.8			19.8	
Effective Green, g (s)		17.9			17.9			19.8			19.8	
Actuated g/C Ratio		0.37			0.37			0.41			0.41	
Clearance Time (s)		5.0			5.0			5.9			5.9	
Vehicle Extension (s)		4.0			4.0			2.5			2.5	
Lane Grp Cap (vph)		520			527			717			650	
v/s Ratio Prot												
v/s Ratio Perm		c0.26			0.01			c0.28			0.24	
v/c Ratio		0.72			0.02			0.69			0.60	
Uniform Delay, d1		13.2			9.8			11.9			11.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		5.0			0.0			2.5			1.3	
Delay (s)		18.2			9.8			14.4			12.6	
Level of Service		B			A			B			B	
Approach Delay (s)		18.2			9.8			14.4			12.6	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	48.6	Sum of lost time (s)	10.9
Intersection Capacity Utilization	80.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	63	12	4	85	9	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	73	14	5	99	10	15
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	126	18	26			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126	18	26			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	91	99	100			
cM capacity (veh/h)	856	1049	1544			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	87	103	26
Volume Left	73	5	0
Volume Right	14	0	15
cSH	882	1544	1700
Volume to Capacity	0.10	0.00	0.02
Queue Length 95th (ft)	8	0	0
Control Delay (s)	9.5	0.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	0.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

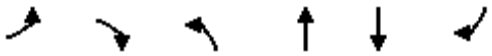
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	148	0	0	0	22	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	164	0	0	0	24	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			164		164	164
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			164		164	164
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1414		826	880

Direction, Lane #	EB 1	NB 1
Volume Total	164	24
Volume Left	0	24
Volume Right	0	0
cSH	1700	826
Volume to Capacity	0.10	0.03
Queue Length 95th (ft)	0	2
Control Delay (s)	0.0	9.5
Lane LOS		A
Approach Delay (s)	0.0	9.5
Approach LOS		A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

No Build Exit 87

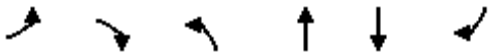
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	41	6	0	0	239	57
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	48	7	0	0	278	66
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	311	311	344			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	311	311	344			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	93	99	100			
cM capacity (veh/h)	663	709	1226			

Direction, Lane #	EB 1	SB 1
Volume Total	55	344
Volume Left	48	0
Volume Right	7	66
cSH	669	1700
Volume to Capacity	0.08	0.20
Queue Length 95th (ft)	7	0
Control Delay (s)	10.9	0.0
Lane LOS	B	
Approach Delay (s)	10.9	0.0
Approach LOS	B	

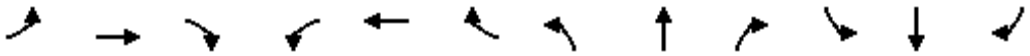
Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	26.0%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	40	10	6	35	286	42
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	49	12	7	43	353	52
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	437	379	405			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	437	379	405			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	91	98	99			
cM capacity (veh/h)	577	672	1122			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	62	51	405
Volume Left	49	7	0
Volume Right	12	0	52
cSH	594	1122	1700
Volume to Capacity	0.10	0.01	0.24
Queue Length 95th (ft)	9	0	0
Control Delay (s)	11.8	1.3	0.0
Lane LOS	B	A	
Approach Delay (s)	11.8	1.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	52	45	81	31	160	135	36	4	194	87
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	9	20	64	56	100	38	198	167	44	5	240	107
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	975	909	293	961	941	189	347			211		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	975	909	293	961	941	189	347			211		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	91	91	68	54	96	84			100		
cM capacity (veh/h)	126	231	751	176	220	853	1212			1371		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	93	194	409	352
Volume Left	9	56	198	5
Volume Right	64	38	44	107
cSH	387	238	1212	1371
Volume to Capacity	0.24	0.82	0.16	0.00
Queue Length 95th (ft)	23	155	15	0
Control Delay (s)	17.2	64.0	5.0	0.1
Lane LOS	C	F	A	A
Approach Delay (s)	17.2	64.0	5.0	0.1
Approach LOS	C	F		

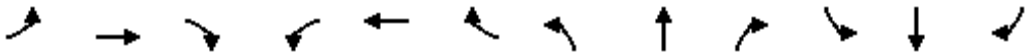
Intersection Summary			
Average Delay	15.3		
Intersection Capacity Utilization	59.2%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	56	0	0	87	70	0
Sign Control	Yield			Yield	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	69	0	0	107	86	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	173	0	207	173	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	173	0	207	173	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.2	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.3	
p0 queue free %	90	100	100	84	95	
cM capacity (veh/h)	680	1082	665	683	1591	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	69	107	86
Volume Left	0	0	86
Volume Right	0	0	0
cSH	680	683	1591
Volume to Capacity	0.10	0.16	0.05
Queue Length 95th (ft)	8	14	4
Control Delay (s)	10.9	11.3	7.4
Lane LOS	B	B	A
Approach Delay (s)	10.9	11.3	7.4
Approach LOS	B	B	

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	82	99	24	0	34	107	1	142	18	203	45	43
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	111	134	32	0	46	145	1	192	24	274	61	58

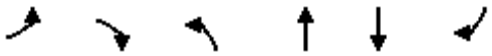
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	277	191	218	393
Volume Left (vph)	111	0	1	274
Volume Right (vph)	32	145	24	58
Hadj (s)	0.06	-0.40	-0.03	0.08
Departure Headway (s)	6.2	6.0	6.2	5.9
Degree Utilization, x	0.48	0.32	0.37	0.65
Capacity (veh/h)	520	515	522	580
Control Delay (s)	14.9	11.8	12.8	19.1
Approach Delay (s)	14.9	11.8	12.8	19.1
Approach LOS	B	B	B	C

Intersection Summary				
Delay	15.4			
Level of Service	C			
Intersection Capacity Utilization	57.8%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	121	199	0	0	141	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	127	209	0	0	148	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			127		232	232
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			127		232	232
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		80	99
cM capacity (veh/h)			1471		758	810

Direction, Lane #	EB 1	NB 1
Volume Total	337	154
Volume Left	0	148
Volume Right	209	5
cSH	1700	760
Volume to Capacity	0.20	0.20
Queue Length 95th (ft)	0	19
Control Delay (s)	0.0	10.9
Lane LOS		B
Approach Delay (s)	0.0	10.9
Approach LOS		B

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	33.4%	ICU Level of Service	A
Analysis Period (min)	15		

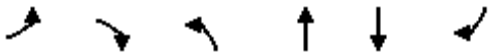


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	1	4	161	66	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	0	1	5	221	90	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	324	92	95			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	324	92	95			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	672	970	1481			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	1	226	95
Volume Left	0	5	0
Volume Right	1	0	4
cSH	970	1481	1700
Volume to Capacity	0.00	0.00	0.06
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.7	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	8.7	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	21.7%	ICU Level of Service	A
Analysis Period (min)	15		

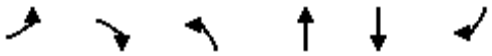
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	57	7	0	0	129	60
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	60	7	0	0	136	63
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	167	167	199			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167	167	199			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	99	100			
cM capacity (veh/h)	818	872	1386			

Direction, Lane #	EB 1	SB 1
Volume Total	67	199
Volume Left	60	0
Volume Right	7	63
cSH	824	1700
Volume to Capacity	0.08	0.12
Queue Length 95th (ft)	7	0
Control Delay (s)	9.8	0.0
Lane LOS	A	
Approach Delay (s)	9.8	0.0
Approach LOS	A	

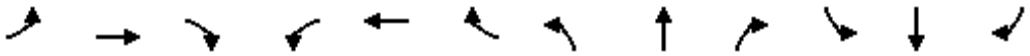
Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	20.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	49	10	3	54	179	48
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	55	11	3	61	201	54
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	296	228	255			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	296	228	255			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	99	100			
cM capacity (veh/h)	698	816	1293			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	66	64	255
Volume Left	55	3	0
Volume Right	11	0	54
cSH	716	1293	1700
Volume to Capacity	0.09	0.00	0.15
Queue Length 95th (ft)	8	0	0
Control Delay (s)	10.5	0.4	0.0
Lane LOS	B	A	
Approach Delay (s)	10.5	0.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	22.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	20	59	72	60	52	145	120	93	13	82	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	26	22	63	77	65	56	156	129	100	14	88	24
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	707	669	100	693	631	179	112			229		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	707	669	100	693	631	179	112			229		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	94	93	73	82	94	89			99		
cM capacity (veh/h)	255	332	947	291	354	866	1484			1345		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	111	198	385	126
Volume Left	26	77	156	14
Volume Right	63	56	100	24
cSH	475	386	1484	1345
Volume to Capacity	0.23	0.51	0.11	0.01
Queue Length 95th (ft)	22	71	9	1
Control Delay (s)	14.9	23.8	3.7	0.9
Lane LOS	B	C	A	A
Approach Delay (s)	14.9	23.8	3.7	0.9
Approach LOS	B	C		

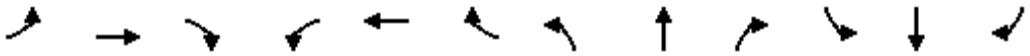
Intersection Summary				
Average Delay	9.6			
Intersection Capacity Utilization	50.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	126	0	0	90	94	4
Sign Control	Yield			Yield	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	156	0	0	111	116	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	237	0	312	235	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	237	0	312	235	0	
tC, single (s)	6.5	6.2	7.1	6.5	4.1	
tC, 2 stage (s)						
tF (s)	4.0	3.3	3.5	4.0	2.2	
p0 queue free %	75	100	100	82	93	
cM capacity (veh/h)	620	1091	492	622	1630	

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	156	111	121
Volume Left	0	0	116
Volume Right	0	0	5
cSH	620	622	1630
Volume to Capacity	0.25	0.18	0.07
Queue Length 95th (ft)	25	16	6
Control Delay (s)	12.7	12.0	7.1
Lane LOS	B	B	A
Approach Delay (s)	12.7	12.0	7.1
Approach LOS	B	B	

Intersection Summary			
Average Delay	10.8		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	172	88	39	6	49	108	3	78	22	93	80	40
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	200	102	45	7	57	126	3	91	26	108	93	47

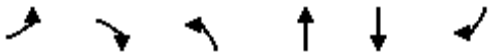
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	348	190	120	248
Volume Left (vph)	200	7	3	108
Volume Right (vph)	45	126	26	47
Hadj (s)	0.05	-0.39	-0.05	-0.01
Departure Headway (s)	5.3	5.1	5.8	5.6
Degree Utilization, x	0.51	0.27	0.19	0.38
Capacity (veh/h)	640	632	543	594
Control Delay (s)	13.8	10.0	10.1	12.0
Approach Delay (s)	13.8	10.0	10.1	12.0
Approach LOS	B	B	B	B

Intersection Summary				
Delay	12.0			
Level of Service	B			
Intersection Capacity Utilization	54.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	93	110	0	0	163	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	104	124	0	0	183	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			104		166	166
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104		166	166
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		78	99
cM capacity (veh/h)			1500		829	883

Direction, Lane #	EB 1	NB 1
Volume Total	228	188
Volume Left	0	183
Volume Right	124	4
cSH	1700	830
Volume to Capacity	0.13	0.23
Queue Length 95th (ft)	0	22
Control Delay (s)	0.0	10.6
Lane LOS		B
Approach Delay (s)	0.0	10.6
Approach LOS		B

Intersection Summary			
Average Delay	4.8		
Intersection Capacity Utilization	27.6%	ICU Level of Service	A
Analysis Period (min)	15		



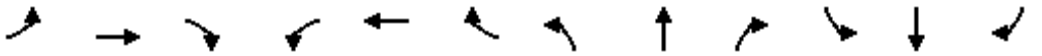
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	18	3	103	125	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	22	4	126	152	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	285	152	152			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	285	152	152			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	100	97	100			
cM capacity (veh/h)	682	868	1410			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	129	152
Volume Left	0	4	0
Volume Right	22	0	0
cSH	868	1410	1700
Volume to Capacity	0.03	0.00	0.09
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	17.8%	ICU Level of Service	A
Analysis Period (min)	15		

No Build Exit 90

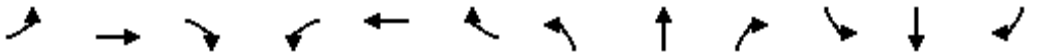
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	3	141	37	4	15	102	384	63	6	761	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	6.3		5.8		6.3	5.6		5.7	5.6	
Lane Util. Factor	1.00	1.00	1.00		1.00		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.96		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00	1.00		0.97		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1863	1583		1772		3467	3498		1787	3564	
Flt Permitted	0.86	1.00	1.00		0.80		0.95	1.00		0.45	1.00	
Satd. Flow (perm)	1596	1863	1583		1464		3467	3498		838	3564	
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	5	4	174	46	5	19	126	474	78	7	940	19
RTOR Reduction (vph)	0	0	28	0	17	0	0	9	0	0	1	0
Lane Group Flow (vph)	5	4	146	0	53	0	126	543	0	7	958	0
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		pm+pt	NA	
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4						2		
Actuated Green, G (s)	7.3	7.3	15.8		7.3		8.5	52.6		49.5	46.5	
Effective Green, g (s)	7.3	7.3	15.8		7.3		8.5	52.6		49.5	46.5	
Actuated g/C Ratio	0.09	0.09	0.20		0.09		0.11	0.66		0.62	0.58	
Clearance Time (s)	5.8	5.8	6.3		5.8		6.3	5.6		5.7	5.6	
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	145	169	312		133		368	2299		554	2071	
v/s Ratio Prot		0.00	c0.05				0.04	c0.16		0.00	c0.27	
v/s Ratio Perm	0.00		0.04		0.04					0.01		
v/c Ratio	0.03	0.02	0.47		0.40		0.34	0.24		0.01	0.46	
Uniform Delay, d1	33.1	33.1	28.4		34.3		33.2	5.6		5.8	9.6	
Progression Factor	1.00	1.00	1.00		1.00		0.64	1.17		1.00	1.00	
Incremental Delay, d2	0.1	0.1	1.1		1.9		0.6	0.2		0.0	0.7	
Delay (s)	33.2	33.2	29.5		36.2		21.6	6.8		5.8	10.3	
Level of Service	C	C	C		D		C	A		A	B	
Approach Delay (s)		29.7			36.2			9.5			10.3	
Approach LOS		C			D			A			B	

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		

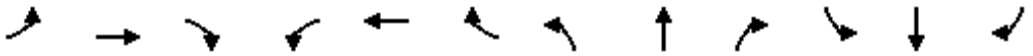
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	200	0	58	419	490	0	0	750	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.4	5.4		4.8	5.3			5.3	4.0
Lane Util. Factor				1.00	1.00		0.97	0.95			0.95	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1583	1417		3303	3406			3574	1599
Flt Permitted				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1583	1417		3303	3406			3574	1599
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	0	0	0	230	0	67	482	563	0	0	862	216
RTOR Reduction (vph)	0	0	0	0	53	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	230	14	0	482	563	0	0	862	216
Heavy Vehicles (%)	0%	0%	0%	14%	14%	14%	6%	6%	6%	1%	1%	1%
Turn Type				Split	NA		Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases												Free
Actuated Green, G (s)				16.7	16.7		15.7	52.6			32.1	80.0
Effective Green, g (s)				16.7	16.7		15.7	52.6			32.1	80.0
Actuated g/C Ratio				0.21	0.21		0.20	0.66			0.40	1.00
Clearance Time (s)				5.4	5.4		4.8	5.3			5.3	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				330	295		648	2239			1434	1599
v/s Ratio Prot				c0.15	0.01		c0.15	0.17			c0.24	
v/s Ratio Perm												0.14
v/c Ratio				0.70	0.05		0.74	0.25			0.60	0.14
Uniform Delay, d1				29.3	25.3		30.3	5.6			18.9	0.0
Progression Factor				1.00	1.00		1.01	1.82			0.79	1.00
Incremental Delay, d2				6.3	0.1		4.1	0.2			1.7	0.2
Delay (s)				35.6	25.4		34.8	10.5			16.7	0.2
Level of Service				D	C		C	B			B	A
Approach Delay (s)		0.0			33.3			21.7			13.3	
Approach LOS		A			C			C			B	

Intersection Summary			
HCM 2000 Control Delay	19.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

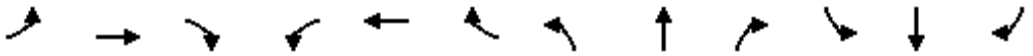
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	0	516	0	0	0	0	871	241	24	927	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	4.0					6.0		5.7	6.0	
Lane Util. Factor	0.95	0.95	1.00					0.95		0.97	0.95	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1559	1559	1468					3175		3400	3505	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1559	1559	1468					3175		3400	3505	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	42	0	586	0	0	0	0	990	274	27	1053	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	15	0	0	0	0
Lane Group Flow (vph)	21	21	586	0	0	0	0	1249	0	27	1053	0
Heavy Vehicles (%)	10%	10%	10%	0%	0%	0%	10%	10%	10%	3%	3%	3%
Turn Type	Perm	NA	Free					NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8		Free									
Actuated Green, G (s)	4.5	4.5	80.0					54.7		2.8	63.2	
Effective Green, g (s)	4.5	4.5	80.0					54.7		2.8	63.2	
Actuated g/C Ratio	0.06	0.06	1.00					0.68		0.03	0.79	
Clearance Time (s)	6.3	6.3						6.0		5.7	6.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	87	87	1468					2170		119	2768	
v/s Ratio Prot								c0.39		0.01	0.30	
v/s Ratio Perm	0.01	0.01	c0.40									
v/c Ratio	0.24	0.24	0.40					0.58		0.23	0.38	
Uniform Delay, d1	36.1	36.1	0.0					6.6		37.5	2.5	
Progression Factor	1.00	1.00	1.00					0.41		1.00	0.77	
Incremental Delay, d2	1.4	1.4	0.8					0.8		0.8	0.3	
Delay (s)	37.6	37.6	0.8					3.6		38.5	2.3	
Level of Service	D	D	A					A		D	A	
Approach Delay (s)		3.3			0.0			3.6			3.2	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

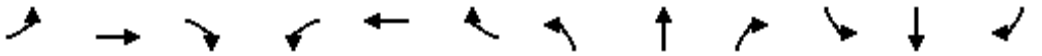


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	221	21	33	40	19	73	106	818	49	40	1194	208
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	6.2	6.2		6.2	6.2	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.98			1.00	0.85	1.00	0.99		1.00	0.98	
Flt Protected		0.96			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1679			1820	1599	1641	3254		1703	3330	
Flt Permitted		0.72			0.77	1.00	0.11	1.00		0.17	1.00	
Satd. Flow (perm)		1261			1444	1599	193	3254		313	3330	
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	254	24	38	46	22	84	122	940	56	46	1372	239
RTOR Reduction (vph)	0	6	0	0	0	64	0	4	0	0	18	0
Lane Group Flow (vph)	0	310	0	0	68	20	122	992	0	46	1593	0
Heavy Vehicles (%)	7%	7%	7%	1%	1%	1%	10%	10%	10%	6%	6%	6%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		19.3			19.3	19.3	37.8	37.8		48.8	48.8	
Effective Green, g (s)		19.3			19.3	19.3	37.8	37.8		48.8	48.8	
Actuated g/C Ratio		0.24			0.24	0.24	0.47	0.47		0.61	0.61	
Clearance Time (s)		5.7			5.7	5.7	6.2	6.2		6.2	6.2	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		304			348	385	91	1537		274	2031	
v/s Ratio Prot								0.30		0.01	c0.48	
v/s Ratio Perm		c0.25			0.05	0.01	c0.63			0.09		
v/c Ratio		1.02			0.20	0.05	1.34	0.65		0.17	0.78	
Uniform Delay, d1		30.4			24.2	23.3	21.1	16.0		8.3	11.7	
Progression Factor		1.00			1.00	1.00	1.00	1.00		0.87	0.80	
Incremental Delay, d2		56.7			0.3	0.1	210.1	2.1		0.3	3.0	
Delay (s)		87.0			24.4	23.4	231.2	18.1		7.5	12.4	
Level of Service		F			C	C	F	B		A	B	
Approach Delay (s)		87.0			23.9			41.4			12.2	
Approach LOS		F			C			D			B	

Intersection Summary			
HCM 2000 Control Delay	30.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	1.24		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.1
Intersection Capacity Utilization	89.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

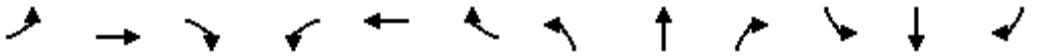
PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	45	51	389	67	64	16	333	539	90	54	384	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8	6.3		5.8		6.3	5.6		5.7	5.6	
Lane Util. Factor	1.00	1.00	1.00		1.00		0.97	0.95		1.00	0.95	
Frt	1.00	1.00	0.85		0.99		1.00	0.98		1.00	0.98	
Flt Protected	0.95	1.00	1.00		0.98		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1900	1615		1830		3467	3497		1787	3508	
Flt Permitted	0.64	1.00	1.00		0.83		0.95	1.00		0.40	1.00	
Satd. Flow (perm)	1211	1900	1615		1551		3467	3497		758	3508	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	47	53	405	70	67	17	347	561	94	56	400	56
RTOR Reduction (vph)	0	0	140	0	6	0	0	13	0	0	11	0
Lane Group Flow (vph)	47	53	265	0	148	0	347	642	0	56	445	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA	pm+ov	Perm	NA		Prot	NA		pm+pt	NA	
Protected Phases		8	1		4		1	6		5	2	
Permitted Phases	8		8	4						2		
Actuated Green, G (s)	12.8	12.8	26.7		12.8		13.9	41.1		44.6	35.6	
Effective Green, g (s)	12.8	12.8	26.7		12.8		13.9	41.1		44.6	35.6	
Actuated g/C Ratio	0.16	0.16	0.33		0.16		0.17	0.51		0.56	0.45	
Clearance Time (s)	5.8	5.8	6.3		5.8		6.3	5.6		5.7	5.6	
Vehicle Extension (s)	3.0	3.0	3.0		3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	193	304	539		248		602	1796		538	1561	
v/s Ratio Prot		0.03	0.09				c0.10	c0.18		0.01	0.13	
v/s Ratio Perm	0.04		0.08		c0.10					0.05		
v/c Ratio	0.24	0.17	0.49		0.60		0.58	0.36		0.10	0.29	
Uniform Delay, d1	29.4	29.0	21.2		31.2		30.3	11.6		8.1	14.1	
Progression Factor	1.00	1.00	1.00		1.00		0.63	1.41		1.00	1.00	
Incremental Delay, d2	0.7	0.3	0.7		3.8		1.3	0.5		0.1	0.5	
Delay (s)	30.0	29.3	22.0		35.0		20.6	16.8		8.2	14.6	
Level of Service	C	C	C		D		C	B		A	B	
Approach Delay (s)		23.5			35.0			18.1			13.9	
Approach LOS		C			D			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

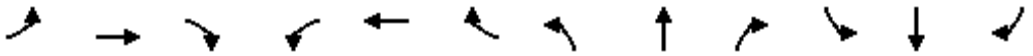
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	190	0	149	501	813	0	0	601	239
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.4	5.4		4.8	5.3			5.3	4.0
Lane Util. Factor				1.00	1.00		0.97	0.95			0.95	1.00
Frt				1.00	0.85		1.00	1.00			1.00	0.85
Flt Protected				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)				1583	1417		3400	3505			3574	1599
Flt Permitted				0.95	1.00		0.95	1.00			1.00	1.00
Satd. Flow (perm)				1583	1417		3400	3505			3574	1599
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	196	0	154	516	838	0	0	620	246
RTOR Reduction (vph)	0	0	0	0	125	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	196	29	0	516	838	0	0	620	246
Heavy Vehicles (%)	0%	0%	0%	14%	14%	14%	3%	3%	3%	1%	1%	1%
Turn Type				Split	NA		Prot	NA			NA	Free
Protected Phases				4	4		1	6			2	
Permitted Phases												Free
Actuated Green, G (s)				15.1	15.1		16.5	54.2			32.9	80.0
Effective Green, g (s)				15.1	15.1		16.5	54.2			32.9	80.0
Actuated g/C Ratio				0.19	0.19		0.21	0.68			0.41	1.00
Clearance Time (s)				5.4	5.4		4.8	5.3			5.3	
Vehicle Extension (s)				3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)				298	267		701	2374			1469	1599
v/s Ratio Prot				c0.12	0.02		c0.15	0.24			c0.17	
v/s Ratio Perm												0.15
v/c Ratio				0.66	0.11		0.74	0.35			0.42	0.15
Uniform Delay, d1				30.1	26.9		29.7	5.5			16.8	0.0
Progression Factor				1.00	1.00		0.79	2.03			1.12	1.00
Incremental Delay, d2				5.2	0.2		2.9	0.3			0.8	0.2
Delay (s)				35.2	27.1		26.5	11.4			19.6	0.2
Level of Service				D	C		C	B			B	A
Approach Delay (s)		0.0			31.6			17.1			14.1	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	18.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	15.5
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

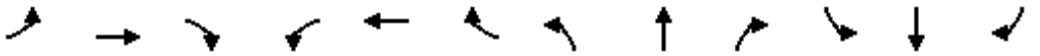
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	166	0	523	0	0	0	0	1148	349	120	671	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	4.0					6.0		5.7	6.0	
Lane Util. Factor	0.95	0.95	1.00					0.95		0.97	0.95	
Frt	1.00	1.00	0.85					0.97		1.00	1.00	
Flt Protected	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (prot)	1603	1603	1509					3318		3335	3438	
Flt Permitted	0.95	0.95	1.00					1.00		0.95	1.00	
Satd. Flow (perm)	1603	1603	1509					3318		3335	3438	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	177	0	556	0	0	0	0	1221	371	128	714	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	88	89	556	0	0	0	0	1570	0	128	714	0
Heavy Vehicles (%)	7%	7%	7%	0%	0%	0%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA	Free					NA		Prot	NA	
Protected Phases		8						6		5	2	
Permitted Phases	8		Free									
Actuated Green, G (s)	8.6	8.6	80.0					46.2		7.2	59.1	
Effective Green, g (s)	8.6	8.6	80.0					46.2		7.2	59.1	
Actuated g/C Ratio	0.11	0.11	1.00					0.58		0.09	0.74	
Clearance Time (s)	6.3	6.3						6.0		5.7	6.0	
Vehicle Extension (s)	3.0	3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)	172	172	1509					1916		300	2539	
v/s Ratio Prot								c0.47		0.04	0.21	
v/s Ratio Perm	0.05	0.06	c0.37									
v/c Ratio	0.51	0.52	0.37					0.82		0.43	0.28	
Uniform Delay, d1	33.7	33.7	0.0					13.6		34.4	3.4	
Progression Factor	1.00	1.00	1.00					0.42		1.23	0.97	
Incremental Delay, d2	2.6	2.6	0.7					2.6		0.9	0.3	
Delay (s)	36.3	36.4	0.7					8.3		43.3	3.6	
Level of Service	D	D	A					A		D	A	
Approach Delay (s)		9.3			0.0			8.3			9.6	
Approach LOS		A			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	69.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



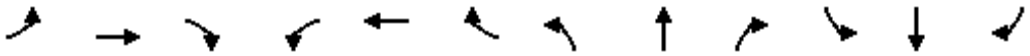
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	250	28	25	70	21	124	72	1123	87	124	888	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7	5.7	6.2	6.2		6.2	6.2	
Lane Util. Factor		1.00			1.00	1.00	1.00	0.95		1.00	0.95	
Frt		0.99			1.00	0.85	1.00	0.99		1.00	0.97	
Flt Protected		0.96			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1735			1794	1583	1719	3401		1687	3288	
Flt Permitted		0.70			0.74	1.00	0.26	1.00		0.10	1.00	
Satd. Flow (perm)		1264			1377	1583	468	3401		171	3288	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	258	29	26	72	22	128	74	1158	90	128	915	188
RTOR Reduction (vph)	0	4	0	0	0	97	0	6	0	0	21	0
Lane Group Flow (vph)	0	309	0	0	94	31	74	1242	0	128	1082	0
Heavy Vehicles (%)	4%	4%	4%	2%	2%	2%	5%	5%	5%	7%	7%	7%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		pm+pt	NA	
Protected Phases		8			4			6		5	2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)		19.3			19.3	19.3	35.4	35.4		48.8	48.8	
Effective Green, g (s)		19.3			19.3	19.3	35.4	35.4		48.8	48.8	
Actuated g/C Ratio		0.24			0.24	0.24	0.44	0.44		0.61	0.61	
Clearance Time (s)		5.7			5.7	5.7	6.2	6.2		6.2	6.2	
Vehicle Extension (s)		3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		304			332	381	207	1504		240	2005	
v/s Ratio Prot								c0.37		0.05	c0.33	
v/s Ratio Perm		c0.24			0.07	0.02	0.16			0.28		
v/c Ratio		1.02			0.28	0.08	0.36	0.83		0.53	0.54	
Uniform Delay, d1		30.4			24.7	23.5	14.8	19.6		12.3	9.1	
Progression Factor		1.00			1.00	1.00	1.00	1.00		1.48	0.64	
Incremental Delay, d2		56.1			0.5	0.1	4.8	5.3		2.2	1.0	
Delay (s)		86.4			25.2	23.6	19.5	24.9		20.4	6.8	
Level of Service		F			C	C	B	C		C	A	
Approach Delay (s)		86.4			24.3			24.6			8.2	
Approach LOS		F			C			C			A	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	80.0	Sum of lost time (s)	18.1
Intersection Capacity Utilization	81.4%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

No Build Exit 92

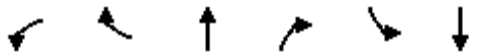
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	93	776	1	49	405	99	3	9	10	72	16	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00	1.00		0.99			0.98	
Satd. Flow (prot)	1787	3574		1719	1810	1538		1591			1721	
Flt Permitted	0.42	1.00		0.27	1.00	1.00		0.97			0.83	
Satd. Flow (perm)	792	3574		490	1810	1538		1549			1465	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	108	902	1	57	471	115	3	10	12	84	19	67
RTOR Reduction (vph)	0	0	0	0	0	47	0	10	0	0	29	0
Lane Group Flow (vph)	108	903	0	57	471	68	0	15	0	0	141	0
Heavy Vehicles (%)	1%	1%	1%	5%	5%	5%	11%	11%	11%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8			4		
Actuated Green, G (s)	59.8	53.2		59.4	53.0	53.0		13.9			13.9	
Effective Green, g (s)	59.8	53.2		59.4	53.0	53.0		13.9			13.9	
Actuated g/C Ratio	0.66	0.59		0.66	0.59	0.59		0.15			0.15	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	599	2112		410	1065	905		239			226	
v/s Ratio Prot	c0.01	0.25		0.01	c0.26							
v/s Ratio Perm	0.11			0.08		0.04		0.01			c0.10	
v/c Ratio	0.18	0.43		0.14	0.44	0.07		0.06			0.63	
Uniform Delay, d1	5.8	10.1		5.7	10.3	8.0		32.5			35.6	
Progression Factor	1.00	1.00		1.04	0.98	0.80		1.00			1.00	
Incremental Delay, d2	0.1	0.6		0.2	1.3	0.2		0.1			5.3	
Delay (s)	5.9	10.7		6.1	11.4	6.5		32.6			40.9	
Level of Service	A	B		A	B	A		C			D	
Approach Delay (s)		10.2			10.1			32.6			40.9	
Approach LOS		B			B			C			D	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	56.9%	ICU Level of Service	B
Analysis Period (min)	15		

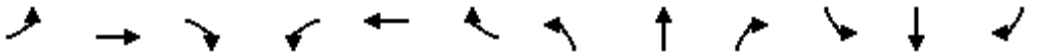
c Critical Lane Group



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	169	109	444	0	0	780
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8	5.2			5.2
Lane Util. Factor	1.00	1.00	0.95			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1703	1524	3539			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1703	1524	3539			5085
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	209	135	548	0	0	963
RTOR Reduction (vph)	0	110	0	0	0	0
Lane Group Flow (vph)	209	25	548	0	0	963
Heavy Vehicles (%)	6%	6%	2%	2%	2%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		6			2
Permitted Phases		4				
Actuated Green, G (s)	16.4	16.4	63.6			63.6
Effective Green, g (s)	16.4	16.4	63.6			63.6
Actuated g/C Ratio	0.18	0.18	0.71			0.71
Clearance Time (s)	4.8	4.8	5.2			5.2
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	310	277	2500			3593
v/s Ratio Prot	c0.12		0.15			c0.19
v/s Ratio Perm		0.02				
v/c Ratio	0.67	0.09	0.22			0.27
Uniform Delay, d1	34.3	30.6	4.6			4.8
Progression Factor	1.00	1.00	0.92			0.45
Incremental Delay, d2	5.7	0.1	0.2			0.2
Delay (s)	40.0	30.7	4.4			2.3
Level of Service	D	C	A			A
Approach Delay (s)	36.4		4.4			2.3
Approach LOS	D		A			A

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	32.8%	ICU Level of Service	A
Analysis Period (min)	15		

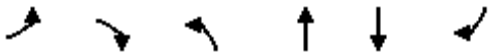
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	51	0	257	0	0	0	0	550	151	0	795	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0					5.2	4.0		5.2	
Lane Util. Factor	1.00		1.00					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1719		1538					3539	1583		3505	
Flt Permitted	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (perm)	1719		1538					3539	1583		3505	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	58	0	292	0	0	0	0	625	172	0	903	0
RTOR Reduction (vph)	0	0	104	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	58	0	188	0	0	0	0	625	172	0	903	0
Heavy Vehicles (%)	5%	5%	5%	0%	0%	0%	2%	2%	2%	3%	3%	3%
Turn Type	Prot		Perm					NA	Free		NA	
Protected Phases	8							6			2	
Permitted Phases			8						Free			
Actuated Green, G (s)	16.0		16.0					63.8	90.0		63.8	
Effective Green, g (s)	16.0		16.0					63.8	90.0		63.8	
Actuated g/C Ratio	0.18		0.18					0.71	1.00		0.71	
Clearance Time (s)	5.0		5.0					5.2			5.2	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	305		273					2508	1583		2484	
v/s Ratio Prot	0.03							0.18			c0.26	
v/s Ratio Perm			c0.12						0.11			
v/c Ratio	0.19		0.69					0.25	0.11		0.36	
Uniform Delay, d1	31.5		34.7					4.6	0.0		5.1	
Progression Factor	1.00		1.00					1.00	1.00		1.53	
Incremental Delay, d2	0.3		7.0					0.2	0.1		0.4	
Delay (s)	31.8		41.7					4.9	0.1		8.3	
Level of Service	C		D					A	A		A	
Approach Delay (s)		40.0			0.0			3.8			8.3	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

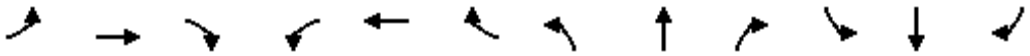


Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	701	1052	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	779	1169	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)					222	
pX, platoon unblocked	0.90	0.90	0.90			
vC, conflicting volume	1429	584	1169			
vC1, stage 1 conf vol	1169					
vC2, stage 2 conf vol	260					
vCu, unblocked vol	1254	316	965			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	283	612	638			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	260	260	260	779	390
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.15	0.15	0.15	0.46	0.23
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	54	758	3	141	952	79	4	42	93	91	42	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00		1.00			1.00	
Frt	1.00	1.00		1.00	1.00	0.85		0.91			0.94	
Flt Protected	0.95	1.00		0.95	1.00	1.00		1.00			0.98	
Satd. Flow (prot)	1787	3572		1787	1881	1599		1709			1716	
Flt Permitted	0.09	1.00		0.26	1.00	1.00		0.99			0.76	
Satd. Flow (perm)	163	3572		489	1881	1599		1697			1332	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	59	833	3	155	1046	87	4	46	102	100	46	122
RTOR Reduction (vph)	0	0	0	0	0	40	0	81	0	0	34	0
Lane Group Flow (vph)	59	836	0	155	1046	47	0	71	0	0	234	0
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	2%	2%
Turn Type	pm+pt	NA		pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2			6		6	8			4		
Actuated Green, G (s)	52.6	46.2		57.6	48.7	48.7		18.4			18.4	
Effective Green, g (s)	52.6	46.2		57.6	48.7	48.7		18.4			18.4	
Actuated g/C Ratio	0.58	0.51		0.64	0.54	0.54		0.20			0.20	
Clearance Time (s)	5.5	5.5		5.5	5.5	5.5		5.5			5.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0		3.0			3.0	
Lane Grp Cap (vph)	210	1833		441	1017	865		346			272	
v/s Ratio Prot	0.02	0.23		c0.03	c0.56							
v/s Ratio Perm	0.14			0.19		0.03		0.04			c0.18	
v/c Ratio	0.28	0.46		0.35	1.03	0.05		0.20			0.86	
Uniform Delay, d1	18.3	13.9		7.3	20.6	9.8		29.7			34.6	
Progression Factor	1.00	1.00		1.56	1.22	2.99		1.00			1.00	
Incremental Delay, d2	0.7	0.8		0.5	34.8	0.1		0.3			22.7	
Delay (s)	19.0	14.7		11.9	59.9	29.3		30.0			57.2	
Level of Service	B	B		B	E	C		C			E	
Approach Delay (s)		15.0			52.1			30.0			57.2	
Approach LOS		B			D			C			E	

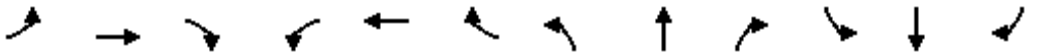
Intersection Summary			
HCM 2000 Control Delay	38.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	16.5
Intersection Capacity Utilization	97.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	224	166	1006	0	0	852
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.8	4.8	5.2			5.2
Lane Util. Factor	1.00	1.00	0.95			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	1736	1553	3574			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	1736	1553	3574			5085
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	241	178	1082	0	0	916
RTOR Reduction (vph)	0	65	0	0	0	0
Lane Group Flow (vph)	241	113	1082	0	0	916
Heavy Vehicles (%)	4%	4%	1%	1%	2%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		6			2
Permitted Phases		4				
Actuated Green, G (s)	17.9	17.9	62.1			62.1
Effective Green, g (s)	17.9	17.9	62.1			62.1
Actuated g/C Ratio	0.20	0.20	0.69			0.69
Clearance Time (s)	4.8	4.8	5.2			5.2
Vehicle Extension (s)	3.0	3.0	3.0			3.0
Lane Grp Cap (vph)	345	308	2466			3508
v/s Ratio Prot	c0.14		c0.30			0.18
v/s Ratio Perm		0.07				
v/c Ratio	0.70	0.37	0.44			0.26
Uniform Delay, d1	33.5	31.2	6.2			5.3
Progression Factor	1.00	1.00	1.61			0.24
Incremental Delay, d2	6.1	0.7	0.5			0.2
Delay (s)	39.6	31.9	10.5			1.4
Level of Service	D	C	B			A
Approach Delay (s)	36.3		10.5			1.4
Approach LOS	D		B			A

Intersection Summary			
HCM 2000 Control Delay	11.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.0
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

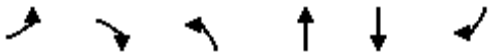
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	84	0	316	0	0	0	0	1214	270	0	967	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0		5.0					5.2	4.0		5.2	
Lane Util. Factor	1.00		1.00					0.95	1.00		0.95	
Frt	1.00		0.85					1.00	0.85		1.00	
Flt Protected	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (prot)	1752		1568					3574	1599		3539	
Flt Permitted	0.95		1.00					1.00	1.00		1.00	
Satd. Flow (perm)	1752		1568					3574	1599		3539	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	91	0	343	0	0	0	0	1320	293	0	1051	0
RTOR Reduction (vph)	0	0	67	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	91	0	276	0	0	0	0	1320	293	0	1051	0
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	1%	1%	1%	2%	2%	2%
Turn Type	Prot		Perm					NA	Free		NA	
Protected Phases	8							6			2	
Permitted Phases			8						Free			
Actuated Green, G (s)	20.8		20.8					59.0	90.0		59.0	
Effective Green, g (s)	20.8		20.8					59.0	90.0		59.0	
Actuated g/C Ratio	0.23		0.23					0.66	1.00		0.66	
Clearance Time (s)	5.0		5.0					5.2			5.2	
Vehicle Extension (s)	3.0		3.0					3.0			3.0	
Lane Grp Cap (vph)	404		362					2342	1599		2320	
v/s Ratio Prot	0.05							c0.37			0.30	
v/s Ratio Perm			c0.18						0.18			
v/c Ratio	0.23		0.76					0.56	0.18		0.45	
Uniform Delay, d1	28.1		32.3					8.5	0.0		7.6	
Progression Factor	1.00		1.00					1.00	1.00		1.51	
Incremental Delay, d2	0.3		9.2					1.0	0.3		0.6	
Delay (s)	28.3		41.5					9.5	0.3		12.1	
Level of Service	C		D					A	A		B	
Approach Delay (s)		38.7			0.0			7.8			12.1	
Approach LOS		D			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	13.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	10.2
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



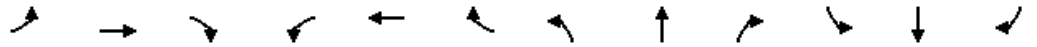
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	1484	1283	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	1649	1426	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)					222	
pX, platoon unblocked	0.85	0.85	0.85			
vC, conflicting volume	1975	713	1426			
vC1, stage 1 conf vol	1426					
vC2, stage 2 conf vol	550					
vCu, unblocked vol	1797	316	1153			
tC, single (s)	6.8	6.9	4.1			
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	206	579	513			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	0	550	550	550	950	475
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	0
cSH	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.00	0.32	0.32	0.32	0.56	0.28
Queue Length 95th (ft)	0	0	0	0	0	0
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	A					
Approach Delay (s)	0.0	0.0			0.0	
Approach LOS	A					

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

No Build Exit 95

AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	51	0	0	67	0	0	0	0	178	19	34
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	59	0	0	78	0	0	0	0	207	22	40
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	495	456	42	485	436	0	22			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	495	456	42	485	436	0	22			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	86	100	100	83	100	100			87		
cM capacity (veh/h)	380	436	1029	400	450	1091	1607			1591		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	59	78	269
Volume Left	0	0	207
Volume Right	0	0	40
cSH	436	450	1591
Volume to Capacity	0.14	0.17	0.13
Queue Length 95th (ft)	12	16	11
Control Delay (s)	14.6	14.7	6.1
Lane LOS	B	B	A
Approach Delay (s)	14.6	14.7	6.1
Approach LOS	B	B	

Intersection Summary				
Average Delay	9.0			
Intersection Capacity Utilization	23.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	178	51	4	66	1	7
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	222	64	5	82	1	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			286		347	254
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			286		347	254
tC, single (s)			4.2		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.3		3.8	3.6
p0 queue free %			100		100	99
cM capacity (veh/h)			1242		597	723

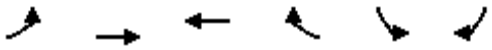
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	286	88	10
Volume Left	0	5	1
Volume Right	64	0	9
cSH	1700	1242	704
Volume to Capacity	0.17	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.5	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	10.2
Approach LOS			B

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		22.5%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	106	79	10	64	6	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	125	93	12	75	7	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				409		
pX, platoon unblocked						
vC, conflicting volume			218		270	171
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			218		270	171
tC, single (s)			4.2		6.7	6.5
tC, 2 stage (s)						
tF (s)			2.3		3.8	3.6
p0 queue free %			99		99	100
cM capacity (veh/h)			1329		659	807

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	218	87	11
Volume Left	0	12	7
Volume Right	93	0	4
cSH	1700	1329	702
Volume to Capacity	0.13	0.01	0.02
Queue Length 95th (ft)	0	1	1
Control Delay (s)	0.0	1.1	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	1.1	10.2
Approach LOS			B

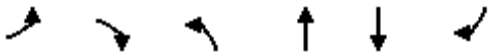
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	153	163	7	49	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	247	263	11	79	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	274				519	269
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	274				519	269
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				85	99
cM capacity (veh/h)	1272				517	770

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	248	274	89
Volume Left	2	0	79
Volume Right	0	11	10
cSH	1272	1700	536
Volume to Capacity	0.00	0.16	0.17
Queue Length 95th (ft)	0	0	15
Control Delay (s)	0.1	0.0	13.0
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	13.0
Approach LOS			B

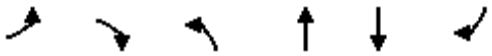
Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	39	163	139	371	580	31
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	51	212	181	482	753	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1153	
pX, platoon unblocked						
vC, conflicting volume	1375	397	794			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1375	397	794			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	51	65	77			
cM capacity (veh/h)	104	597	798			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	262	341	321	502	291
Volume Left	51	181	0	0	0
Volume Right	212	0	0	0	40
cSH	311	798	1700	1700	1700
Volume to Capacity	0.84	0.23	0.19	0.30	0.17
Queue Length 95th (ft)	183	22	0	0	0
Control Delay (s)	56.4	7.0	0.0	0.0	0.0
Lane LOS	F	A			
Approach Delay (s)	56.4	3.6		0.0	
Approach LOS	F				

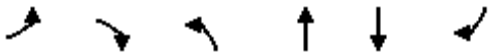
Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	86	9	401	525	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	4	104	11	483	633	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					797	
pX, platoon unblocked						
vC, conflicting volume	896	316	633			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	896	316	633			
tC, single (s)	6.9	7.0	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	99	85	99			
cM capacity (veh/h)	271	671	907			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	107	172	322	422	211
Volume Left	4	11	0	0	0
Volume Right	104	0	0	0	0
cSH	639	907	1700	1700	1700
Volume to Capacity	0.17	0.01	0.19	0.25	0.12
Queue Length 95th (ft)	15	1	0	0	0
Control Delay (s)	11.8	0.7	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	11.8	0.2		0.0	
Approach LOS	B				

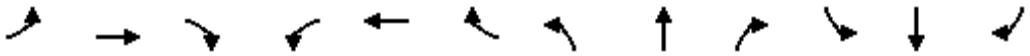
Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	29.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	63	42	57	112	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	4	83	55	75	147	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1105		
pX, platoon unblocked						
vC, conflicting volume	333	147	147			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333	147	147			
tC, single (s)	6.4	6.2	4.3			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.4			
p0 queue free %	99	91	96			
cM capacity (veh/h)	628	892	1315			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	87	130	147
Volume Left	4	55	0
Volume Right	83	0	0
cSH	875	1315	1700
Volume to Capacity	0.10	0.04	0.09
Queue Length 95th (ft)	8	3	0
Control Delay (s)	9.6	3.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.6	3.5	0.0
Approach LOS	A		

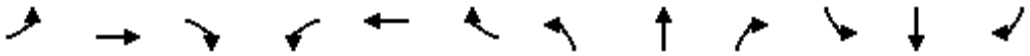
Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	16	39	19	13	1	49	94	21	15	144	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	5	19	47	23	16	1	59	113	25	18	173	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								659				
pX, platoon unblocked												
vC, conflicting volume	472	476	183	520	473	126	193			139		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	472	476	183	520	473	126	193			139		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.3			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.4			2.3		
p0 queue free %	99	96	95	94	96	100	95			99		
cM capacity (veh/h)	468	461	862	387	440	883	1290			1363		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	71	40	198	211
Volume Left	5	23	59	18
Volume Right	47	1	25	19
cSH	666	414	1290	1363
Volume to Capacity	0.11	0.10	0.05	0.01
Queue Length 95th (ft)	9	8	4	1
Control Delay (s)	11.0	14.6	2.6	0.8
Lane LOS	B	B	A	A
Approach Delay (s)	11.0	14.6	2.6	0.8
Approach LOS	B	B		

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	35.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	134	0	29	102	135	0	0	174	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	156	0	34	119	157	0	0	202	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								576				
pX, platoon unblocked												
vC, conflicting volume	647	613	219	613	629	157	235			157		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	647	613	219	613	629	157	235			157		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	100	100	100	57	100	96	91			100		
cM capacity (veh/h)	346	373	826	361	349	858	1304			1336		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	190	276	235
Volume Left	156	119	0
Volume Right	34	0	33
cSH	402	1304	1700
Volume to Capacity	0.47	0.09	0.14
Queue Length 95th (ft)	61	7	0
Control Delay (s)	21.7	3.9	0.0
Lane LOS	C	A	
Approach Delay (s)	21.7	3.9	0.0
Approach LOS	C		

Intersection Summary				
Average Delay	7.4			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL2	EBL	EBT	WBT	WBR	WBR2	SBL	SBR	SBR2	SEL2	SEL	SER
Lane Configurations												
Volume (vph)	2	159	278	325	33	39	55	214	39	39	55	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Lane Util. Factor		1.00	1.00	1.00	1.00		1.00		0.95		1.00	
Frt		1.00	1.00	1.00	0.85		0.88		0.85		0.98	
Flt Protected		0.95	1.00	1.00	1.00		0.99		1.00		0.96	
Satd. Flow (prot)		1671	1759	1810	1538		1357		1258		1640	
Flt Permitted		0.44	1.00	1.00	1.00		0.99		1.00		0.85	
Satd. Flow (perm)		775	1759	1810	1538		1357		1258		1451	
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	2	185	323	378	38	45	64	249	45	45	64	17
RTOR Reduction (vph)	0	0	0	0	53	0	80	0	30	0	97	0
Lane Group Flow (vph)	0	187	323	378	30	0	238	0	10	0	29	0
Heavy Vehicles (%)	8%	8%	8%	5%	5%	5%	22%	22%	22%	9%	9%	9%
Turn Type	Perm	Perm	NA	NA	Perm		Prot		Perm	Perm	Prot	
Protected Phases			2	6			8				4	
Permitted Phases	2	2			6				8	4		
Actuated Green, G (s)		22.3	22.3	22.3	22.3		16.3		16.3		6.4	
Effective Green, g (s)		22.3	22.3	22.3	22.3		16.3		16.3		6.4	
Actuated g/C Ratio		0.36	0.36	0.36	0.36		0.26		0.26		0.10	
Clearance Time (s)		6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Vehicle Extension (s)		3.0	3.0	3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)		277	630	648	551		355		329		149	
v/s Ratio Prot			0.18	0.21			c0.18					
v/s Ratio Perm		c0.24			0.02				0.01		c0.02	
v/c Ratio		0.68	0.51	0.58	0.05		0.67		0.03		0.20	
Uniform Delay, d1		16.9	15.7	16.2	13.1		20.6		17.1		25.5	
Progression Factor		1.00	1.00	1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2		6.4	0.7	1.3	0.0		4.9		0.0		0.6	
Delay (s)		23.2	16.4	17.5	13.1		25.5		17.1		26.2	
Level of Service		C	B	B	B		C		B		C	
Approach Delay (s)			18.9	16.7			24.5				26.2	
Approach LOS			B	B			C				C	

Intersection Summary			
HCM 2000 Control Delay	20.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	62.2	Sum of lost time (s)	17.2
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

PM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
9501: Hampshire Drive & NB Off-Ramp

10/20/2015

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	85	0	0	75	0	0	0	0	163	0	4
Sign Control		Yield			Yield			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	108	0	0	95	0	0	0	0	206	0	5
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	463	415	3	469	413	0	0			0		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463	415	3	469	413	0	0			0		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	77	100	100	79	100	100			87		
cM capacity (veh/h)	390	461	1087	376	462	1091	1636			1566		

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	108	95	211
Volume Left	0	0	206
Volume Right	0	0	5
cSH	461	462	1566
Volume to Capacity	0.23	0.21	0.13
Queue Length 95th (ft)	22	19	11
Control Delay (s)	15.2	14.8	7.5
Lane LOS	C	B	A
Approach Delay (s)	15.2	14.8	7.5
Approach LOS	C	B	

Intersection Summary				
Average Delay	11.2			
Intersection Capacity Utilization	20.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	209	39	6	71	4	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	243	45	7	83	5	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			288		362	266
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			288		362	266
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1251		637	778

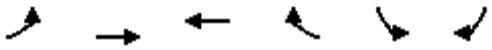
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	288	90	6
Volume Left	0	7	5
Volume Right	45	0	1
cSH	1700	1251	661
Volume to Capacity	0.17	0.01	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.7	10.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	10.5
Approach LOS			B

Intersection Summary			
Average Delay		0.3	
Intersection Capacity Utilization		23.4%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NEL	NER
Lane Configurations						
Volume (veh/h)	159	51	1	58	19	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	183	59	1	67	22	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)				409		
pX, platoon unblocked						
vC, conflicting volume			241		281	212
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			241		281	212
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		97	100
cM capacity (veh/h)			1302		713	833

Direction, Lane #	EB 1	WB 1	NE 1
Volume Total	241	68	22
Volume Left	0	1	22
Volume Right	59	0	0
cSH	1700	1302	713
Volume to Capacity	0.14	0.00	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.1	10.2
Lane LOS		A	B
Approach Delay (s)	0.0	0.1	10.2
Approach LOS			B

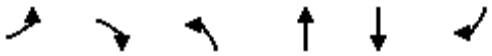
Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		21.5%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	69	45	4	39	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	75	49	4	42	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	53				128	51
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	53				128	51
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				95	99
cM capacity (veh/h)	1546				858	1008

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	76	53	49
Volume Left	1	0	42
Volume Right	0	4	7
cSH	1546	1700	876
Volume to Capacity	0.00	0.03	0.06
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.1	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	0.1	0.0	9.4
Approach LOS			A

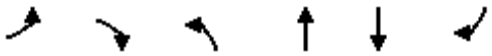
Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	14.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	17	91	36	582	447	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	19	100	40	640	491	14
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					1155	
pX, platoon unblocked						
vC, conflicting volume	897	253	505			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	897	253	505			
tC, single (s)	6.8	6.9	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	87	96			
cM capacity (veh/h)	269	747	1048			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	119	253	426	327	178
Volume Left	19	40	0	0	0
Volume Right	100	0	0	0	14
cSH	583	1048	1700	1700	1700
Volume to Capacity	0.20	0.04	0.25	0.19	0.10
Queue Length 95th (ft)	19	3	0	0	0
Control Delay (s)	12.7	1.7	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	12.7	0.6		0.0	
Approach LOS	B				

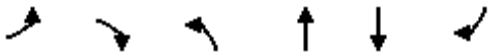
Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	46.5%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	49	18	581	411	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	3	55	20	653	462	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)					799	
pX, platoon unblocked						
vC, conflicting volume	829	231	462			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	829	231	462			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	93	98			
cM capacity (veh/h)	297	762	1082			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	58	238	435	308	155
Volume Left	3	20	0	0	0
Volume Right	55	0	0	0	1
cSH	699	1082	1700	1700	1700
Volume to Capacity	0.08	0.02	0.26	0.18	0.09
Queue Length 95th (ft)	7	1	0	0	0
Control Delay (s)	10.6	0.9	0.0	0.0	0.0
Lane LOS	B	A			
Approach Delay (s)	10.6	0.3		0.0	
Approach LOS	B				

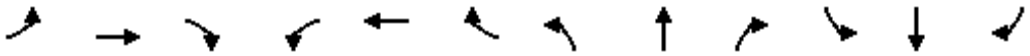
Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	36	25	125	100	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	3	49	34	171	137	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1105		
pX, platoon unblocked						
vC, conflicting volume	377	137	137			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	377	137	137			
tC, single (s)	6.9	6.7	4.3			
tC, 2 stage (s)						
tF (s)	4.0	3.8	2.3			
p0 queue free %	99	94	97			
cM capacity (veh/h)	527	798	1365			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	52	205	137
Volume Left	3	34	0
Volume Right	49	0	0
cSH	777	1365	1700
Volume to Capacity	0.07	0.03	0.08
Queue Length 95th (ft)	5	2	0
Control Delay (s)	10.0	1.5	0.0
Lane LOS	A	A	
Approach Delay (s)	10.0	1.5	0.0
Approach LOS	A		

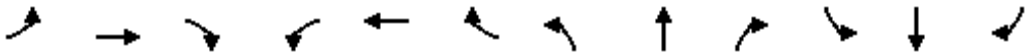
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	33	34	24	36	4	61	134	34	4	125	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	14	38	40	28	42	5	71	156	40	5	145	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								659				
pX, platoon unblocked												
vC, conflicting volume	502	496	149	535	480	176	153			195		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	502	496	149	535	480	176	153			195		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.3		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.4		
p0 queue free %	97	91	96	93	91	99	95			100		
cM capacity (veh/h)	424	448	895	383	450	852	1385			1293		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	92	74	266	158
Volume Left	14	28	71	5
Volume Right	40	5	40	8
cSH	564	434	1385	1293
Volume to Capacity	0.16	0.17	0.05	0.00
Queue Length 95th (ft)	14	15	4	0
Control Delay (s)	12.6	15.0	2.4	0.3
Lane LOS	B	B	A	A
Approach Delay (s)	12.6	15.0	2.4	0.3
Approach LOS	B	B		

Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	36.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	100	6	34	123	195	0	0	154	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Hourly flow rate (vph)	0	0	0	127	8	43	156	247	0	0	195	37
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								576				
pX, platoon unblocked												
vC, conflicting volume	818	772	213	772	790	247	232			247		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	818	772	213	772	790	247	232			247		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.3		
p0 queue free %	100	100	100	55	97	94	88			100		
cM capacity (veh/h)	250	294	832	279	276	773	1319			1247		

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	177	403	232
Volume Left	127	156	0
Volume Right	43	0	37
cSH	331	1319	1700
Volume to Capacity	0.54	0.12	0.14
Queue Length 95th (ft)	75	10	0
Control Delay (s)	27.8	3.8	0.0
Lane LOS	D	A	
Approach Delay (s)	27.8	3.8	0.0
Approach LOS	D		

Intersection Summary				
Average Delay	8.0			
Intersection Capacity Utilization	44.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	WBR2	SBL	SBR	SBR2	SEL2	SEL	SER
Lane Configurations											
Volume (vph)	227	406	272	37	27	51	181	22	64	80	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Lane Util. Factor	1.00	1.00	1.00	1.00		1.00		0.95		1.00	
Frt	1.00	1.00	1.00	0.85		0.88		0.85		0.99	
Flt Protected	0.95	1.00	1.00	1.00		0.99		1.00		0.96	
Satd. Flow (prot)	1752	1845	1827	1553		1455		1346		1677	
Flt Permitted	0.53	1.00	1.00	1.00		0.99		1.00		0.84	
Satd. Flow (perm)	973	1845	1827	1553		1455		1346		1465	
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	258	461	309	42	31	58	206	25	73	91	17
RTOR Reduction (vph)	0	0	0	46	0	86	0	17	0	91	0
Lane Group Flow (vph)	258	461	309	27	0	181	0	5	0	90	0
Heavy Vehicles (%)	3%	3%	4%	4%	4%	14%	14%	14%	7%	7%	7%
Turn Type	Perm	NA	NA	Perm		Prot		Perm	Perm	Prot	
Protected Phases		2	6			8				4	
Permitted Phases	2			6				8	4		
Actuated Green, G (s)	23.3	23.3	23.3	23.3		13.2		13.2		10.3	
Effective Green, g (s)	23.3	23.3	23.3	23.3		13.2		13.2		10.3	
Actuated g/C Ratio	0.36	0.36	0.36	0.36		0.21		0.21		0.16	
Clearance Time (s)	6.6	6.6	6.6	6.6		5.3		5.3		5.3	
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0		3.0		3.0	
Lane Grp Cap (vph)	354	671	665	565		300		277		235	
v/s Ratio Prot		0.25	0.17			c0.12					
v/s Ratio Perm	c0.27			0.02				0.00		c0.06	
v/c Ratio	0.73	0.69	0.46	0.05		0.60		0.02		0.38	
Uniform Delay, d1	17.6	17.3	15.6	13.2		23.0		20.2		24.0	
Progression Factor	1.00	1.00	1.00	1.00		1.00		1.00		1.00	
Incremental Delay, d2	7.3	2.9	0.5	0.0		3.4		0.0		1.0	
Delay (s)	24.9	20.2	16.1	13.2		26.4		20.3		25.1	
Level of Service	C	C	B	B		C		C		C	
Approach Delay (s)		21.9	15.5			26.0				25.1	
Approach LOS		C	B			C				C	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	64.0	Sum of lost time (s)	17.2
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

No Build Exit 96

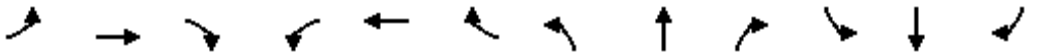
AM Peak Hour

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Volume (veh/h)	267	0	0	0	0	0	3	37	42	2
Sign Control	Yield			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	297	0	0	0	0	0	3	41	47	2
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type				None			None			
Median storage veh)										
Upstream signal (ft)										
pX, platoon unblocked										
vC, conflicting volume	49	44	44			0			24	24
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	49	44	44			0			24	24
tC, single (s)	7.2	6.6	4.1			4.2			6.5	6.2
tC, 2 stage (s)										
tF (s)	3.6	4.1	2.2			2.3			4.0	3.3
p0 queue free %	66	100	100			100			95	100
cM capacity (veh/h)	884	826	1577			1554			868	1050

Direction, Lane #	WB 1	SB 1	SE 1
Volume Total	297	44	49
Volume Left	297	0	0
Volume Right	0	41	2
cSH	884	1700	874
Volume to Capacity	0.34	0.03	0.06
Queue Length 95th (ft)	37	0	4
Control Delay (s)	11.1	0.0	9.4
Lane LOS	B		A
Approach Delay (s)	11.1	0.0	9.4
Approach LOS	B		A

Intersection Summary				
Average Delay	9.6			
Intersection Capacity Utilization	31.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection has too many legs for HCM analysis.

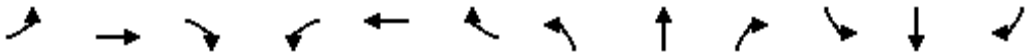


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	33	69	8	12	132	241	3	0	233	170
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	0	35	73	9	13	140	256	3	0	248	181
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	804	788	248	822	787	258	248			260		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	804	788	248	822	787	258	248			260		
tC, single (s)	7.2	6.7	6.4	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	91	100	95	70	97	98	89			100		
cM capacity (veh/h)	252	274	760	248	280	762	1273			1282		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	57	95	400	248	181
Volume Left	22	73	140	0	0
Volume Right	35	13	3	0	181
cSH	426	276	1273	1282	1700
Volume to Capacity	0.13	0.34	0.11	0.00	0.11
Queue Length 95th (ft)	12	37	9	0	0
Control Delay (s)	14.8	24.7	3.6	0.0	0.0
Lane LOS	B	C	A		
Approach Delay (s)	14.8	24.7	3.6	0.0	
Approach LOS	B	C			

Intersection Summary				
Average Delay	4.7			
Intersection Capacity Utilization	51.6%	ICU Level of Service	A	
Analysis Period (min)	15			

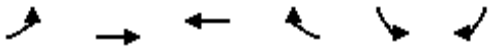
Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	96	1	148	0	0	0	0	280	164	42	293	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	108	1	166	0	0	0	0	315	184	47	329	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	738	738	329	905	738	315	329			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	738	738	329	905	738	315	329			315		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	65	100	76	100	100	100	100			96		
cM capacity (veh/h)	306	315	679	190	334	730	1171			1218		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	275	315	184	47	329
Volume Left	108	0	0	47	0
Volume Right	166	0	184	0	0
cSH	458	1700	1700	1218	1700
Volume to Capacity	0.60	0.19	0.11	0.04	0.19
Queue Length 95th (ft)	97	0	0	3	0
Control Delay (s)	24.0	0.0	0.0	8.1	0.0
Lane LOS	C			A	
Approach Delay (s)	24.0	0.0		1.0	
Approach LOS	C				

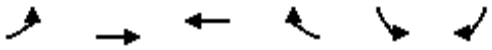
Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	42.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	268	197	269	176	232	209
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	288	212	289	189	249	225
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	289				1077	289
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	289				1077	289
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	76				0	69
cM capacity (veh/h)	1202				177	729

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	288	212	289	189	249	225
Volume Left	288	0	0	0	249	0
Volume Right	0	0	0	189	0	225
cSH	1202	1700	1700	1700	177	729
Volume to Capacity	0.24	0.12	0.17	0.11	1.41	0.31
Queue Length 95th (ft)	23	0	0	0	380	33
Control Delay (s)	8.9	0.0	0.0	0.0	263.6	12.1
Lane LOS	A				F	B
Approach Delay (s)	5.2		0.0		144.4	
Approach LOS					F	

Intersection Summary			
Average Delay	48.9		
Intersection Capacity Utilization	51.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	3	426	441	0	1	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	3	453	469	0	1	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	469				929	235
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	469				929	235
tC, single (s)	4.3				7.5	7.6
tC, 2 stage (s)						
tF (s)	2.3				3.8	3.6
p0 queue free %	100				100	99
cM capacity (veh/h)	1048				215	680

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	3	453	313	156	5
Volume Left	3	0	0	0	1
Volume Right	0	0	0	0	4
cSH	1048	1700	1700	1700	475
Volume to Capacity	0.00	0.27	0.18	0.09	0.01
Queue Length 95th (ft)	0	0	0	0	1
Control Delay (s)	8.4	0.0	0.0	0.0	12.7
Lane LOS	A				B
Approach Delay (s)	0.1		0.0		12.7
Approach LOS					B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	32.4%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

HCM Unsignalized Intersection Capacity Analysis
9601: SB On-Ramp & Wilcox Avenue

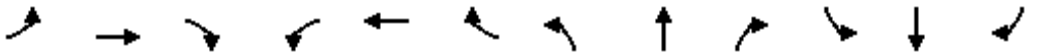
10/20/2015

Movement	WBL	WBR	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SER
Lane Configurations										
Volume (veh/h)	266	0	0	0	0	0	21	36	56	1
Sign Control	Yield			Free			Free		Stop	
Grade	0%			0%			0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	289	0	0	0	0	0	23	39	61	1
Pedestrians										
Lane Width (ft)										
Walking Speed (ft/s)										
Percent Blockage										
Right turn flare (veh)										
Median type				None			None			
Median storage veh)										
Upstream signal (ft)										
pX, platoon unblocked										
vC, conflicting volume	74	62	62			0			42	42
vC1, stage 1 conf vol										
vC2, stage 2 conf vol										
vCu, unblocked vol	74	62	62			0			42	42
tC, single (s)	7.2	6.6	4.1			4.2			6.6	6.3
tC, 2 stage (s)										
tF (s)	3.6	4.1	2.2			2.3			4.1	3.4
p0 queue free %	66	100	100			100			93	100
cM capacity (veh/h)	842	810	1554			1560			842	1017

Direction, Lane #	WB 1	SB 1	SE 1
Volume Total	289	62	62
Volume Left	289	0	0
Volume Right	0	39	1
cSH	842	1700	844
Volume to Capacity	0.34	0.04	0.07
Queue Length 95th (ft)	38	0	6
Control Delay (s)	11.5	0.0	9.6
Lane LOS	B		A
Approach Delay (s)	11.5	0.0	9.6
Approach LOS	B		A

Intersection Summary				
Average Delay	9.5			
Intersection Capacity Utilization	31.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection has too many legs for HCM analysis.

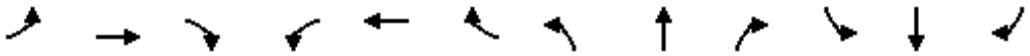


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	1	39	99	12	13	146	441	2	0	176	169
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	24	1	43	109	13	14	160	485	2	0	193	186
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1021	1001	193	1043	1000	486	193			487		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1021	1001	193	1043	1000	486	193			487		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	87	99	95	37	94	97	88			100		
cM capacity (veh/h)	180	212	843	171	207	564	1362			1066		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2
Volume Total	68	136	647	193	186
Volume Left	24	109	160	0	0
Volume Right	43	14	2	0	186
cSH	358	188	1362	1066	1700
Volume to Capacity	0.19	0.72	0.12	0.00	0.11
Queue Length 95th (ft)	17	115	10	0	0
Control Delay (s)	17.4	62.4	3.0	0.0	0.0
Lane LOS	C	F	A		
Approach Delay (s)	17.4	62.4	3.0	0.0	
Approach LOS	C	F			

Intersection Summary				
Average Delay	9.4			
Intersection Capacity Utilization	64.2%	ICU Level of Service	C	
Analysis Period (min)	15			

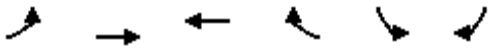
Intersection Sign configuration not allowed in HCM analysis.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	214	1	130	0	0	0	0	375	196	27	287	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	233	1	141	0	0	0	0	408	213	29	312	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	778	778	312	920	778	408	312			408		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	778	778	312	920	778	408	312			408		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	23	100	80	100	100	100	100			97		
cM capacity (veh/h)	300	312	714	199	321	648	1232			1140		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	375	408	213	29	312
Volume Left	233	0	0	29	0
Volume Right	141	0	213	0	0
cSH	384	1700	1700	1140	1700
Volume to Capacity	0.98	0.24	0.13	0.03	0.18
Queue Length 95th (ft)	282	0	0	2	0
Control Delay (s)	73.3	0.0	0.0	8.2	0.0
Lane LOS	F			A	
Approach Delay (s)	73.3	0.0		0.7	
Approach LOS	F				

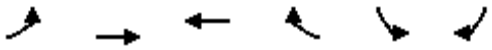
Intersection Summary				
Average Delay	20.7			
Intersection Capacity Utilization	49.0%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	383	208	220	188	143	274
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	461	251	265	227	172	330
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	265				1439	265
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	265				1439	265
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	64				0	56
cM capacity (veh/h)	1270				89	752

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	461	251	265	227	172	330
Volume Left	461	0	0	0	172	0
Volume Right	0	0	0	227	0	330
cSH	1270	1700	1700	1700	89	752
Volume to Capacity	0.36	0.15	0.16	0.13	1.93	0.44
Queue Length 95th (ft)	42	0	0	0	369	56
Control Delay (s)	9.4	0.0	0.0	0.0	537.2	13.5
Lane LOS	A				F	B
Approach Delay (s)	6.1		0.0		193.1	
Approach LOS					F	

Intersection Summary			
Average Delay	59.4		
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	7	344	399	1	0	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	9	453	525	1	0	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	526				997	263
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	526				997	263
tC, single (s)	4.2				7.5	7.6
tC, 2 stage (s)						
tF (s)	2.3				3.8	3.6
p0 queue free %	99				100	98
cM capacity (veh/h)	1003				192	650

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	9	453	350	176	12
Volume Left	9	0	0	0	0
Volume Right	0	0	0	1	12
cSH	1003	1700	1700	1700	650
Volume to Capacity	0.01	0.27	0.21	0.10	0.02
Queue Length 95th (ft)	1	0	0	0	1
Control Delay (s)	8.6	0.0	0.0	0.0	10.6
Lane LOS	A				B
Approach Delay (s)	0.2		0.0		10.6
Approach LOS					B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	28.1%	ICU Level of Service	A
Analysis Period (min)	15		

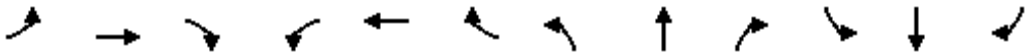
No Build Exit 100

AM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	5	0	0	176	4
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	4	6	0	0	215	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	217	217	215			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	217	217	215			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	758	808	1367			

Direction, Lane #	EB 1	SB 1
Volume Total	10	220
Volume Left	4	0
Volume Right	6	5
cSH	788	1700
Volume to Capacity	0.01	0.13
Queue Length 95th (ft)	1	0
Control Delay (s)	9.6	0.0
Lane LOS	A	
Approach Delay (s)	9.6	0.0
Approach LOS	A	

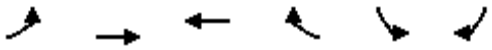
Intersection Summary				
Average Delay	0.4			
Intersection Capacity Utilization	19.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	3	40	7	37	134	85	4	0	198	39
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	3	44	8	41	149	94	4	0	220	43
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	681	638	242	639	658	97	263			99		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	681	638	242	639	658	97	263			99		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	98	96	89			100		
cM capacity (veh/h)	315	351	802	354	341	962	1295			1475		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	3	93	248	263
Volume Left	0	44	149	0
Volume Right	3	41	4	43
cSH	802	489	1295	1475
Volume to Capacity	0.00	0.19	0.11	0.00
Queue Length 95th (ft)	0	17	10	0
Control Delay (s)	9.5	14.1	5.3	0.0
Lane LOS	A	B	A	
Approach Delay (s)	9.5	14.1	5.3	0.0
Approach LOS	A	B		

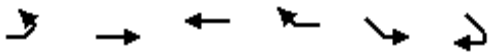
Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	46.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	4	0	84	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	5	0	100	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100				110	100
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100				110	100
tC, single (s)	4.4				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.5				3.6	3.4
p0 queue free %	100				100	100
cM capacity (veh/h)	1330				870	939

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	5	100	0
Volume Left	5	0	0
Volume Right	0	0	0
cSH	1330	1700	1700
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	7.7	0.0	0.0
Lane LOS	A		A
Approach Delay (s)	7.7	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	7.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↑	↑		Y	
Volume (veh/h)	0	1	0	0	311	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	0	2	0	0	478	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	957	957	957	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	957	957	957	0	0	
tC, single (s)	7.7	7.1	7.5	7.2	4.1	
tC, 2 stage (s)						
tF (s)	4.0	4.5	4.9	4.2	2.2	
p0 queue free %	100	99	100	100	70	
cM capacity (veh/h)	146	147	126	857	1604	

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	2	0	478
Volume Left	0	0	478
Volume Right	0	0	0
cSH	147	1700	1604
Volume to Capacity	0.01	0.00	0.30
Queue Length 95th (ft)	1	0	32
Control Delay (s)	29.8	0.0	8.2
Lane LOS	D	A	A
Approach Delay (s)	29.8	0.0	8.2
Approach LOS	D	A	

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	27.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	202	21	63	178	0	21	3	288	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	0	243	25	76	214	0	25	4	347	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	214			269			622	635	214	971	622	256
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	214			269			622	635	214	971	622	256
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	100			94			93	99	57	100	100	100
cM capacity (veh/h)	1338			1245			375	367	816	127	381	788

Direction, Lane #	NB 1	SB 1	NE 1
Volume Total	269	290	376
Volume Left	0	76	25
Volume Right	25	0	347
cSH	1338	1245	748
Volume to Capacity	0.00	0.06	0.50
Queue Length 95th (ft)	0	5	71
Control Delay (s)	0.0	2.5	14.6
Lane LOS		A	B
Approach Delay (s)	0.0	2.5	14.6
Approach LOS			B

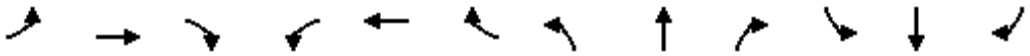
Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	53.9%	ICU Level of Service	A	
Analysis Period (min)	15			

PM Peak Hour

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	9	6	0	0	262	24
Sign Control	Yield			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.73	0.73	0.73	0.73	0.73	0.73
Hourly flow rate (vph)	12	8	0	0	359	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	375	375	359			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	375	375	359			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	618	662	1211			

Direction, Lane #	EB 1	SB 1
Volume Total	21	392
Volume Left	12	0
Volume Right	8	33
cSH	635	1700
Volume to Capacity	0.03	0.23
Queue Length 95th (ft)	3	0
Control Delay (s)	10.9	0.0
Lane LOS	B	
Approach Delay (s)	10.9	0.0
Approach LOS	B	

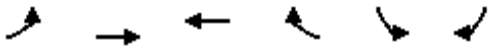
Intersection Summary				
Average Delay	0.5			
Intersection Capacity Utilization	25.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	2	3	27	26	34	217	138	10	4	115	43
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	4	2	3	30	29	38	241	153	11	4	128	48
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	854	807	152	806	826	159	176			164		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	854	807	152	806	826	159	176			164		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	98	99	100	88	88	96	83			100		
cM capacity (veh/h)	212	262	900	251	248	871	1395			1396		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	10	97	406	180
Volume Left	4	30	241	4
Volume Right	3	38	11	48
cSH	302	346	1395	1396
Volume to Capacity	0.03	0.28	0.17	0.00
Queue Length 95th (ft)	3	28	16	0
Control Delay (s)	17.3	19.4	5.5	0.2
Lane LOS	C	C	A	A
Approach Delay (s)	17.3	19.4	5.5	0.2
Approach LOS	C	C		

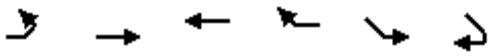
Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	44.4%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	16	0	87	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	20	0	107	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	107				147	107
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	107				147	107
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				100	100
cM capacity (veh/h)	1496				827	938

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	20	107	0
Volume Left	20	0	0
Volume Right	0	0	0
cSH	1496	1700	1700
Volume to Capacity	0.01	0.06	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	7.4	0.0	0.0
Lane LOS	A		A
Approach Delay (s)	7.4	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	10.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	6	0	0	214	0
Sign Control		Yield	Yield		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	7	0	0	249	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	498	498	498	0	0	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	498	498	498	0	0	
tC, single (s)	7.1	6.5	6.5	6.2	4.2	
tC, 2 stage (s)						
tF (s)	3.5	4.0	4.0	3.3	2.3	
p0 queue free %	100	98	100	100	84	
cM capacity (veh/h)	428	403	403	1091	1597	

Direction, Lane #	EB 1	WB 1	SE 1
Volume Total	7	0	249
Volume Left	0	0	249
Volume Right	0	0	0
cSH	403	1700	1597
Volume to Capacity	0.02	0.00	0.16
Queue Length 95th (ft)	1	0	14
Control Delay (s)	14.1	0.0	7.7
Lane LOS	B	A	A
Approach Delay (s)	14.1	0.0	7.7
Approach LOS	B	A	

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	314	27	39	106	0	51	4	165	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	0	383	33	48	129	0	62	5	201	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	129			416			624	640	129	827	624	399
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	129			416			624	640	129	827	624	399
tC, single (s)	4.1			4.2			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	100			96			84	99	78	100	100	100
cM capacity (veh/h)	1444			1112			378	370	907	218	387	655

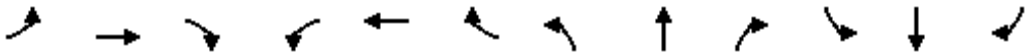
Direction, Lane #	NB 1	SB 1	NE 1
Volume Total	416	177	268
Volume Left	0	48	62
Volume Right	33	0	201
cSH	1444	1112	672
Volume to Capacity	0.00	0.04	0.40
Queue Length 95th (ft)	0	3	48
Control Delay (s)	0.0	2.5	13.9
Lane LOS		A	B
Approach Delay (s)	0.0	2.5	13.9
Approach LOS			B

Intersection Summary				
Average Delay	4.8			
Intersection Capacity Utilization	49.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Build Exit 83

AM Peak Hour

Alternative 1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	35	82	0	5	56	230	64	19	411	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	1	39	91	0	6	62	256	71	21	457	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	898	969	476	954	914	291	457			327		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	898	969	476	954	914	291	457			327		
tC, single (s)	7.2	6.6	6.3	7.3	6.7	6.4	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.7	4.2	3.5	2.3			2.2		
p0 queue free %	95	100	93	53	100	99	94			98		
cM capacity (veh/h)	232	224	565	193	235	705	1083			1216		

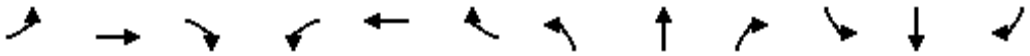
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	51	97	62	327	21	494
Volume Left	11	91	62	0	21	0
Volume Right	39	6	0	71	0	38
cSH	420	201	1083	1700	1216	1700
Volume to Capacity	0.12	0.48	0.06	0.19	0.02	0.29
Queue Length 95th (ft)	10	59	5	0	1	0
Control Delay (s)	14.7	38.4	8.5	0.0	8.0	0.0
Lane LOS	B	E	A		A	
Approach Delay (s)	14.7	38.4	1.4		0.3	
Approach LOS	B	E				

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	29	55	1	34	53	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	35	65	1	40	63	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			100		110	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			100		110	67
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		93	100
cM capacity (veh/h)			1456		849	953

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	100	42	63
Volume Left	0	1	63
Volume Right	65	0	0
cSH	1700	1456	849
Volume to Capacity	0.06	0.00	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.2	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	9.6
Approach LOS			A

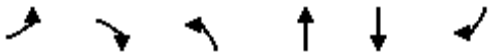
Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		14.9%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	11	1	10	0	0	12	4	590	3	2	500	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.9		5.9	5.9	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.94			0.86			1.00		1.00	1.00	
Flt Protected		0.98			1.00			1.00		0.95	1.00	
Satd. Flow (prot)		1739			1255			1710		1671	1754	
Flt Permitted		1.00			1.00			1.00		0.47	1.00	
Satd. Flow (perm)		1782			1255			1706		822	1754	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	12	1	11	0	0	13	4	663	3	2	562	12
RTOR Reduction (vph)	0	11	0	0	13	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	13	0	0	0	0	0	670	0	2	573	0
Heavy Vehicles (%)	0%	0%	0%	31%	31%	31%	11%	11%	11%	8%	8%	8%
Turn Type	Perm	NA			NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		1.3			1.3			32.2		32.2	32.2	
Effective Green, g (s)		1.3			1.3			32.2		32.2	32.2	
Actuated g/C Ratio		0.03			0.03			0.73		0.73	0.73	
Clearance Time (s)		5.0			5.0			5.9		5.9	5.9	
Vehicle Extension (s)		4.0			4.0			2.5		2.5	2.5	
Lane Grp Cap (vph)		52			36			1237		596	1272	
v/s Ratio Prot					0.00						0.33	
v/s Ratio Perm		c0.01						c0.39		0.00		
v/c Ratio		0.26			0.01			0.54		0.00	0.45	
Uniform Delay, d1		21.1			20.9			2.8		1.7	2.5	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		3.5			0.2			0.4		0.0	0.2	
Delay (s)		24.6			21.1			3.1		1.7	2.7	
Level of Service		C			C			A		A	A	
Approach Delay (s)		24.6			21.1			3.1			2.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	10.9
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

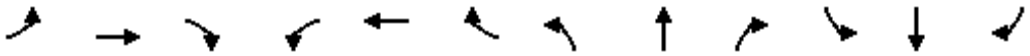
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	6	12	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	7	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1082		
pX, platoon unblocked						
vC, conflicting volume	20	13	13			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20	13	13			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	997	1067	1605			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	7	13
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1605	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	53	0	53	286	297	0	0	319	209
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	59	0	59	318	330	0	0	354	232
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						6						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1466	1436	471	1436	1320	330	354			330		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1466	1436	471	1436	1320	330	354			330		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.3			2.2		
p0 queue free %	100	100	100	26	100	91	73			100		
cM capacity (veh/h)	77	98	593	80	105	668	1182			1241		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	118	318	330	587
Volume Left	59	318	0	0
Volume Right	59	0	0	232
cSH	159	1182	1700	1700
Volume to Capacity	0.74	0.27	0.19	0.35
Queue Length 95th (ft)	114	27	0	0
Control Delay (s)	69.3	9.2	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	69.3	4.5		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	8.2			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	71	0	192	0	0	0	0	512	101	51	321	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	0	213	0	0	0	0	569	112	57	357	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1095	1039	357	1308	1095	625	357			569		
vC1, stage 1 conf vol	470	470		625	625							
vC2, stage 2 conf vol	625	569		683	470							
vCu, unblocked vol	1095	1039	357	1308	1095	625	357			569		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.3		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	78	100	68	100	100	100	100			94		
cM capacity (veh/h)	352	377	676	248	390	485	1213			937		

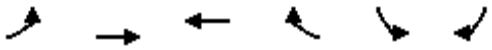
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	79	213	681	57	357
Volume Left	79	0	0	57	0
Volume Right	0	213	112	0	0
cSH	352	676	1700	937	1700
Volume to Capacity	0.22	0.32	0.40	0.06	0.21
Queue Length 95th (ft)	21	34	0	5	0
Control Delay (s)	18.2	12.8	0.0	9.1	0.0
Lane LOS	C	B		A	
Approach Delay (s)	14.2		0.0	1.2	
Approach LOS	B				

Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	0	24	5	0	30
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	27	6	0	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	63	29			32	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	63	29			32	
tC, single (s)	6.4	6.2			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.3	
p0 queue free %	99	100			100	
cM capacity (veh/h)	943	1045			1542	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	32	33
Volume Left	6	0	0
Volume Right	0	6	0
cSH	943	1700	1542
Volume to Capacity	0.01	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.8	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.8	0.0	0.0
Approach LOS	A		

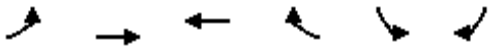
Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	5	0	0	0	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	0	0	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	6	0	6
Volume Left (vph)	6	0	0
Volume Right (vph)	0	0	6
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.3
Degree Utilization, x	0.01	0.00	0.01
Capacity (veh/h)	861	913	1070
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



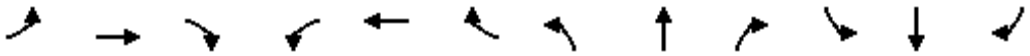
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	22	15	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	24	17	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	17				41	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				41	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1614				970	1062

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	17	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1614	1700	1700
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

Alternative 1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	2	57	68	2	10	26	392	72	13	284	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	2	63	76	2	11	29	436	80	14	316	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	847	926	323	942	878	476	316			516		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	847	926	323	942	878	476	316			516		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.2			2.2		
p0 queue free %	93	99	91	62	99	98	98			99		
cM capacity (veh/h)	267	259	718	201	261	560	1239			1035		

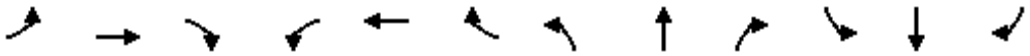
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	89	29	516	14	331
Volume Left	18	76	29	0	14	0
Volume Right	63	11	0	80	0	16
cSH	510	220	1239	1700	1035	1700
Volume to Capacity	0.16	0.40	0.02	0.30	0.01	0.19
Queue Length 95th (ft)	14	46	2	0	1	0
Control Delay (s)	13.4	32.1	8.0	0.0	8.5	0.0
Lane LOS	B	D	A		A	
Approach Delay (s)	13.4	32.1	0.4		0.4	
Approach LOS	B	D				

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	42.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	33	54	2	37	43	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	39	64	2	44	51	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			104		120	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104		120	71
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		94	100
cM capacity (veh/h)			1416		830	940

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	104	46	51
Volume Left	0	2	51
Volume Right	64	0	0
cSH	1700	1416	830
Volume to Capacity	0.06	0.00	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.4	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	9.6
Approach LOS			A

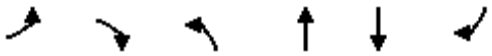
Intersection Summary				
Average Delay		2.5		
Intersection Capacity Utilization		15.0%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	0	13	3	1	13	13	523	4	8	555	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0			5.9		5.9	5.9	
Lane Util. Factor		1.00			1.00			1.00		1.00	1.00	
Frt		0.95			0.89			1.00		1.00	0.99	
Flt Protected		0.97			0.99			1.00		0.95	1.00	
Satd. Flow (prot)		1751			1517			1789		1687	1765	
Flt Permitted		1.00			1.00			0.98		0.50	1.00	
Satd. Flow (perm)		1806			1529			1759		890	1765	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	26	0	15	3	1	15	15	588	4	9	624	27
RTOR Reduction (vph)	0	40	0	0	15	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	1	0	0	4	0	0	607	0	9	649	0
Heavy Vehicles (%)	0%	0%	0%	11%	11%	11%	6%	6%	6%	7%	7%	7%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)		1.3			1.3			29.8		29.8	29.8	
Effective Green, g (s)		1.3			1.3			29.8		29.8	29.8	
Actuated g/C Ratio		0.03			0.03			0.71		0.71	0.71	
Clearance Time (s)		5.0			5.0			5.9		5.9	5.9	
Vehicle Extension (s)		4.0			4.0			2.5		2.5	2.5	
Lane Grp Cap (vph)		55			47			1248		631	1252	
v/s Ratio Prot											c0.37	
v/s Ratio Perm		0.00			c0.00			0.34		0.01		
v/c Ratio		0.02			0.09			0.49		0.01	0.52	
Uniform Delay, d1		19.7			19.8			2.7		1.8	2.8	
Progression Factor		1.00			1.00			1.00		1.00	1.00	
Incremental Delay, d2		0.2			1.2			0.2		0.0	0.3	
Delay (s)		20.0			21.0			2.9		1.8	3.1	
Level of Service		B			C			A		A	A	
Approach Delay (s)		20.0			21.0			2.9			3.1	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	3.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	42.0	Sum of lost time (s)	10.9
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		

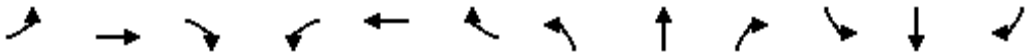
c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	12	17	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	13	19	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1082		
pX, platoon unblocked						
vC, conflicting volume	32	19	19			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	32	19	19			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	100			
cM capacity (veh/h)	981	1059	1572			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	13	19
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1572	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

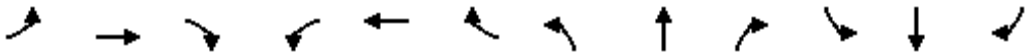
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	85	0	72	171	418	0	0	275	134
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	94	0	80	190	464	0	0	306	149
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						6						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1264	1224	380	1224	1150	464	306			464		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1264	1224	380	1224	1150	464	306			464		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.2			2.2		
p0 queue free %	100	100	100	26	100	86	85			100		
cM capacity (veh/h)	111	152	667	128	158	568	1250			1092		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	174	190	464	454
Volume Left	94	190	0	0
Volume Right	80	0	0	149
cSH	237	1250	1700	1700
Volume to Capacity	0.74	0.15	0.27	0.27
Queue Length 95th (ft)	127	13	0	0
Control Delay (s)	52.8	8.4	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	52.8	2.4		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	8.4			
Intersection Capacity Utilization	60.5%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	131	0	274	0	0	0	0	458	101	47	313	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	146	0	304	0	0	0	0	509	112	52	348	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1017	961	348	1322	1017	565	348			509		
vC1, stage 1 conf vol	452	452		565	565							
vC2, stage 2 conf vol	565	509		757	452							
vCu, unblocked vol	1017	961	348	1322	1017	565	348			509		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	62	100	56	100	100	100	100			95		
cM capacity (veh/h)	385	405	686	196	414	524	1178			1026		

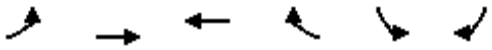
Direction, Lane #	EB 1	EB 2	NB 1	SB 1	SB 2
Volume Total	146	304	621	52	348
Volume Left	146	0	0	52	0
Volume Right	0	304	112	0	0
cSH	385	686	1700	1026	1700
Volume to Capacity	0.38	0.44	0.37	0.05	0.20
Queue Length 95th (ft)	43	57	0	4	0
Control Delay (s)	19.9	14.4	0.0	8.7	0.0
Lane LOS	C	B		A	
Approach Delay (s)	16.2		0.0	1.1	
Approach LOS	C				

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	60.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	5	0	28	5	0	34
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	31	6	0	38
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	72	34			37	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	72	34			37	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	932	1039			1574	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	37	38
Volume Left	6	0	0
Volume Right	0	6	0
cSH	932	1700	1574
Volume to Capacity	0.01	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.9	0.0	0.0
Approach LOS	A		

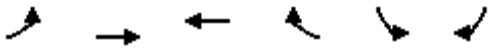
Intersection Summary			
Average Delay		0.6	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	5	0	0	0	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	0	0	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	6	0	6
Volume Left (vph)	6	0	0
Volume Right (vph)	0	0	6
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.3
Degree Utilization, x	0.01	0.00	0.01
Capacity (veh/h)	861	913	1070
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



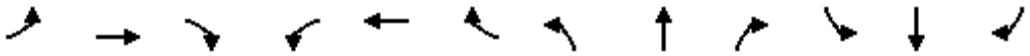
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	36	38	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	40	42	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	42				82	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	42				82	42
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1580				920	1028

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	42	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1580	1700	1700
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service A
Analysis Period (min)		15	

AM Peak Hour

Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	35	82	0	5	56	230	64	19	411	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	1	39	91	0	6	62	256	71	21	457	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	898	969	476	954	914	291	457			327		
vC1, stage 1 conf vol	518	518		416	416							
vC2, stage 2 conf vol	380	451		538	499							
vCu, unblocked vol	898	969	476	954	914	291	457			327		
tC, single (s)	7.2	6.6	6.3	7.3	6.7	6.4	4.2			4.1		
tC, 2 stage (s)	6.2	5.6		6.3	5.7							
tF (s)	3.6	4.1	3.4	3.7	4.2	3.5	2.3			2.2		
p0 queue free %	97	100	93	74	100	99	94			98		
cM capacity (veh/h)	421	399	565	348	386	705	1083			1216		

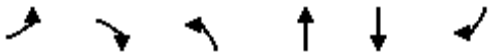
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	51	97	62	327	21	494
Volume Left	11	91	62	0	21	0
Volume Right	39	6	0	71	0	38
cSH	522	359	1083	1700	1216	1700
Volume to Capacity	0.10	0.27	0.06	0.19	0.02	0.29
Queue Length 95th (ft)	8	27	5	0	1	0
Control Delay (s)	12.6	18.7	8.5	0.0	8.0	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.6	18.7	1.4		0.3	
Approach LOS	B	C				

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	29	55	1	34	53	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	35	65	1	40	63	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			100		110	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			100		110	67
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		93	100
cM capacity (veh/h)			1456		849	953

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	100	42	63
Volume Left	0	1	63
Volume Right	65	0	0
cSH	1700	1456	849
Volume to Capacity	0.06	0.00	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.2	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	9.6
Approach LOS			A

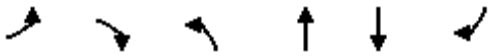
Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		14.9%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	11	11	4	602	502	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	12	4	669	558	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)				738		
pX, platoon unblocked	0.84					
vC, conflicting volume	1242	564	570			
vC1, stage 1 conf vol	564					
vC2, stage 2 conf vol	678					
vCu, unblocked vol	1191	564	570			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.3			
p0 queue free %	97	98	100			
cM capacity (veh/h)	403	529	959			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	24	673	570
Volume Left	12	4	0
Volume Right	12	0	12
cSH	807	959	1700
Volume to Capacity	0.03	0.00	0.34
Queue Length 95th (ft)	2	0	0
Control Delay (s)	13.1	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	13.1	0.1	0.0
Approach LOS	B		

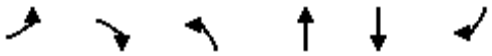
Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	44.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	6	12	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	7	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1114		
pX, platoon unblocked						
vC, conflicting volume	20	13	13			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20	13	13			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	997	1067	1605			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	7	13
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1605	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

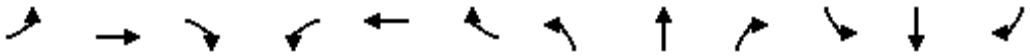
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	53	0	286	297	319	209
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	59	0	318	330	354	232
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1436	471	354			
vC1, stage 1 conf vol	471					
vC2, stage 2 conf vol	966					
vCu, unblocked vol	1436	471	354			
tC, single (s)	6.6	6.4	4.2			
tC, 2 stage (s)	5.6					
tF (s)	3.7	3.5	2.3			
p0 queue free %	75	100	73			
cM capacity (veh/h)	233	554	1182			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	59	318	330	587
Volume Left	59	318	0	0
Volume Right	0	0	0	232
cSH	233	1182	1700	1700
Volume to Capacity	0.25	0.27	0.19	0.35
Queue Length 95th (ft)	24	27	0	0
Control Delay (s)	25.6	9.2	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	25.6	4.5		0.0
Approach LOS	D			

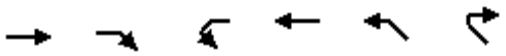
Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	58.7%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	71	0	192	0	0	0	0	512	101	51	321	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	0	213	0	0	0	0	569	112	57	357	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			6									
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1095	1151	178	917	1095	625	357			681		
vC1, stage 1 conf vol	470	470		625	625							
vC2, stage 2 conf vol	625	681		292	470							
vCu, unblocked vol	1095	1151	178	917	1095	625	357			681		
tC, single (s)	7.6	6.6	7.0	7.5	6.5	6.9	4.4			4.4		
tC, 2 stage (s)	6.6	5.6		6.5	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.4			2.4		
p0 queue free %	75	100	74	100	100	100	100			93		
cM capacity (veh/h)	319	333	818	349	387	428	1104			820		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2	SB 3
Volume Total	292	681	57	178	178
Volume Left	79	0	57	0	0
Volume Right	213	112	0	0	0
cSH	1121	1700	820	1700	1700
Volume to Capacity	0.26	0.40	0.07	0.10	0.10
Queue Length 95th (ft)	26	0	6	0	0
Control Delay (s)	13.4	0.0	9.7	0.0	0.0
Lane LOS	B		A		
Approach Delay (s)	13.4	0.0	1.3		
Approach LOS	B				

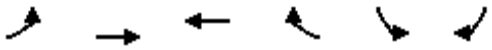
Intersection Summary				
Average Delay	3.2			
Intersection Capacity Utilization	50.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	24	5	0	30	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	6	0	33	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			32		63	29
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		63	29
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			100		99	100
cM capacity (veh/h)			1506		928	1028

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	32	33	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1506	928
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.9
Approach LOS			A

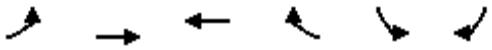
Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	5	0	0	0	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	0	0	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	6	0	6
Volume Left (vph)	6	0	0
Volume Right (vph)	0	0	6
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.3
Degree Utilization, x	0.01	0.00	0.01
Capacity (veh/h)	861	913	1070
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

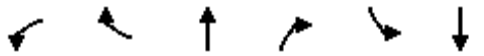
Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	22	15	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	24	17	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	17				41	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				41	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1614				970	1062

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	17	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1614	1700	1700
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

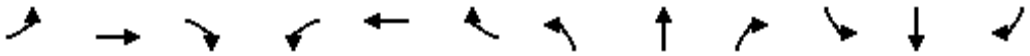
Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service A
Analysis Period (min)		15	



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	12	594	3	3	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.9		5.9	5.9
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1411		1711		1671	1759
Flt Permitted	1.00		1.00		0.39	1.00
Satd. Flow (perm)	1411		1711		688	1759
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	13	667	3	3	573
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	0	0	670	0	3	573
Heavy Vehicles (%)	2%	2%	11%	11%	8%	8%
Bus Blockages (#/hr)	31	31	0	0	0	0
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	0.6		32.8		32.8	32.8
Effective Green, g (s)	0.6		32.8		32.8	32.8
Actuated g/C Ratio	0.01		0.72		0.72	0.72
Clearance Time (s)	6.0		5.9		5.9	5.9
Vehicle Extension (s)	3.0		2.5		2.5	2.5
Lane Grp Cap (vph)	18		1238		498	1273
v/s Ratio Prot	c0.00		c0.39			0.33
v/s Ratio Perm					0.00	
v/c Ratio	0.01		0.54		0.01	0.45
Uniform Delay, d1	22.1		2.8		1.7	2.6
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.2		0.4		0.0	0.2
Delay (s)	22.3		3.2		1.7	2.7
Level of Service	C		A		A	A
Approach Delay (s)	22.3		3.2			2.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	11.9
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

PM Peak Hour
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	2	57	68	2	10	26	392	72	13	284	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	2	63	76	2	11	29	436	80	14	316	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	847	926	323	942	878	476	316			516		
vC1, stage 1 conf vol	352	352		533	533							
vC2, stage 2 conf vol	494	573		409	344							
vCu, unblocked vol	847	926	323	942	878	476	316			516		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.3	5.7							
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.2			2.2		
p0 queue free %	96	99	91	81	99	98	98			99		
cM capacity (veh/h)	455	427	718	389	425	560	1239			1035		

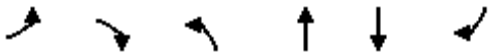
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	89	29	516	14	331
Volume Left	18	76	29	0	14	0
Volume Right	63	11	0	80	0	16
cSH	629	405	1239	1700	1035	1700
Volume to Capacity	0.13	0.22	0.02	0.30	0.01	0.19
Queue Length 95th (ft)	11	21	2	0	1	0
Control Delay (s)	11.6	16.4	8.0	0.0	8.5	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	11.6	16.4	0.4		0.4	
Approach LOS	B	C				

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	33	54	2	37	43	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	39	64	2	44	51	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			104		120	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104		120	71
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		94	100
cM capacity (veh/h)			1416		830	940

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	104	46	51
Volume Left	0	2	51
Volume Right	64	0	0
cSH	1700	1416	830
Volume to Capacity	0.06	0.00	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.4	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	9.6
Approach LOS			A

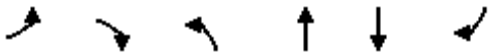
Intersection Summary				
Average Delay		2.5		
Intersection Capacity Utilization		15.0%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	23	13	14	536	563	24
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	26	14	16	596	626	27
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)		6				
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)				738		
pX, platoon unblocked	0.89					
vC, conflicting volume	1266	639	652			
vC1, stage 1 conf vol	639					
vC2, stage 2 conf vol	627					
vCu, unblocked vol	1236	639	652			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.3			
p0 queue free %	94	97	98			
cM capacity (veh/h)	399	480	916			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	40	16	596	652
Volume Left	26	16	0	0
Volume Right	14	0	0	27
cSH	625	916	1700	1700
Volume to Capacity	0.06	0.02	0.35	0.38
Queue Length 95th (ft)	5	1	0	0
Control Delay (s)	13.9	9.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	13.9	0.2		0.0
Approach LOS	B			

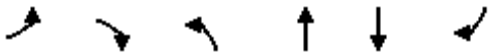
Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	12	17	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	13	19	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1114		
pX, platoon unblocked						
vC, conflicting volume	32	19	19			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	32	19	19			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	100			
cM capacity (veh/h)	981	1059	1572			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	13	19
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1572	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

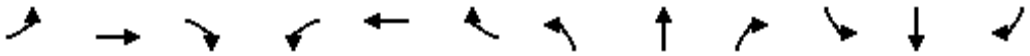
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	72	0	171	418	275	134
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	80	0	190	464	306	149
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1224	380	306			
vC1, stage 1 conf vol	380					
vC2, stage 2 conf vol	844					
vCu, unblocked vol	1224	380	306			
tC, single (s)	6.6	6.4	4.1			
tC, 2 stage (s)	5.6					
tF (s)	3.7	3.5	2.2			
p0 queue free %	74	100	85			
cM capacity (veh/h)	314	635	1250			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	80	190	464	454
Volume Left	80	190	0	0
Volume Right	0	0	0	149
cSH	314	1250	1700	1700
Volume to Capacity	0.26	0.15	0.27	0.27
Queue Length 95th (ft)	25	13	0	0
Control Delay (s)	20.4	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.4	2.4		0.0
Approach LOS	C			

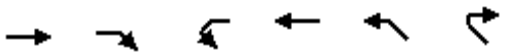
Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	131	0	274	0	0	0	0	458	101	47	313	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	146	0	304	0	0	0	0	509	112	52	348	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)			6									
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1017	1073	174	843	1017	565	348			621		
vC1, stage 1 conf vol	452	452		565	565							
vC2, stage 2 conf vol	565	621		278	452							
vCu, unblocked vol	1017	1073	174	843	1017	565	348			621		
tC, single (s)	7.6	6.6	7.0	7.5	6.5	6.9	4.3			4.3		
tC, 2 stage (s)	6.6	5.6		6.5	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	59	100	63	100	100	100	100			94		
cM capacity (veh/h)	353	362	827	340	411	468	1166			916		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2	SB 3
Volume Total	450	621	52	174	174
Volume Left	146	0	52	0	0
Volume Right	304	112	0	0	0
cSH	1091	1700	916	1700	1700
Volume to Capacity	0.41	0.37	0.06	0.10	0.10
Queue Length 95th (ft)	51	0	5	0	0
Control Delay (s)	15.2	0.0	9.2	0.0	0.0
Lane LOS	C		A		
Approach Delay (s)	15.2	0.0	1.2		
Approach LOS	C				

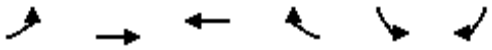
Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	50.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	28	5	0	34	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	31	6	0	38	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			37		72	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			37		72	34
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1506		932	1039

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	37	38	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1506	932
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.9
Approach LOS			A

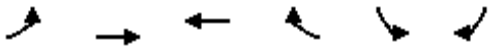
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	5	0	0	0	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	0	0	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	6	0	6
Volume Left (vph)	6	0	0
Volume Right (vph)	0	0	6
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.3
Degree Utilization, x	0.01	0.00	0.01
Capacity (veh/h)	861	913	1070
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

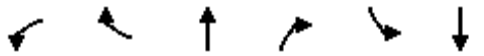
Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	36	38	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	40	42	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	42				82	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	42				82	42
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1580				920	1028

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	42	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1580	1700	1700
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service A
Analysis Period (min)		15	



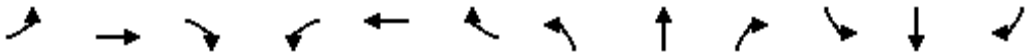
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	14	536	4	8	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.9		5.9	5.9
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.89		1.00		1.00	1.00
Flt Protected	0.99		1.00		0.95	1.00
Satd. Flow (prot)	1505		1791		1687	1776
Flt Permitted	0.99		1.00		0.43	1.00
Satd. Flow (perm)	1505		1791		759	1776
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	3	16	602	4	9	638
RTOR Reduction (vph)	16	0	0	0	0	0
Lane Group Flow (vph)	3	0	606	0	9	638
Heavy Vehicles (%)	11%	11%	6%	6%	7%	7%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	0.9		32.5		32.5	32.5
Effective Green, g (s)	0.9		32.5		32.5	32.5
Actuated g/C Ratio	0.02		0.72		0.72	0.72
Clearance Time (s)	6.0		5.9		5.9	5.9
Vehicle Extension (s)	3.0		2.5		2.5	2.5
Lane Grp Cap (vph)	29		1284		544	1274
v/s Ratio Prot	c0.00		0.34			c0.36
v/s Ratio Perm					0.01	
v/c Ratio	0.11		0.47		0.02	0.50
Uniform Delay, d1	21.8		2.7		1.8	2.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.8		0.2		0.0	0.2
Delay (s)	23.6		2.9		1.8	3.0
Level of Service	C		A		A	A
Approach Delay (s)	23.6		2.9			3.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	11.9
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

AM Peak Hour

Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	35	82	0	5	56	230	64	19	411	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	1	39	91	0	6	62	256	71	21	457	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	898	969	476	954	914	291	457			327		
vC1, stage 1 conf vol	518	518		416	416							
vC2, stage 2 conf vol	380	451		538	499							
vCu, unblocked vol	898	969	476	954	914	291	457			327		
tC, single (s)	7.2	6.6	6.3	7.3	6.7	6.4	4.2			4.1		
tC, 2 stage (s)	6.2	5.6		6.3	5.7							
tF (s)	3.6	4.1	3.4	3.7	4.2	3.5	2.3			2.2		
p0 queue free %	97	100	93	74	100	99	94			98		
cM capacity (veh/h)	421	399	565	348	386	705	1083			1216		

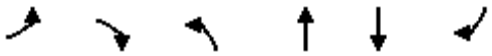
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	51	97	62	327	21	494
Volume Left	11	91	62	0	21	0
Volume Right	39	6	0	71	0	38
cSH	522	359	1083	1700	1216	1700
Volume to Capacity	0.10	0.27	0.06	0.19	0.02	0.29
Queue Length 95th (ft)	8	27	5	0	1	0
Control Delay (s)	12.6	18.7	8.5	0.0	8.0	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	12.6	18.7	1.4		0.3	
Approach LOS	B	C				

Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	24	60	1	29	58	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	29	71	1	35	69	0
Pedestrians					60	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					5	
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			160		161	124
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			160		161	124
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		91	100
cM capacity (veh/h)			1314		753	841

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	100	36	69
Volume Left	0	1	69
Volume Right	71	0	0
cSH	1700	1314	753
Volume to Capacity	0.06	0.00	0.09
Queue Length 95th (ft)	0	0	8
Control Delay (s)	0.0	0.3	10.3
Lane LOS		A	B
Approach Delay (s)	0.0	0.3	10.3
Approach LOS			B

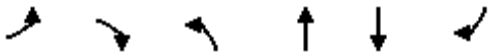
Intersection Summary			
Average Delay	3.5		
Intersection Capacity Utilization	22.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	6	12	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	7	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1191		
pX, platoon unblocked						
vC, conflicting volume	20	13	13			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20	13	13			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	997	1067	1605			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	7	13
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1605	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

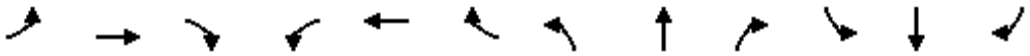
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	53	53	286	297	319	209
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	59	59	318	330	354	232
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1436	471	354			
vC1, stage 1 conf vol	471					
vC2, stage 2 conf vol	966					
vCu, unblocked vol	1436	471	354			
tC, single (s)	6.6	6.4	4.1			
tC, 2 stage (s)	5.6					
tF (s)	3.7	3.5	2.2			
p0 queue free %	75	89	74			
cM capacity (veh/h)	234	554	1204			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	118	318	330	587
Volume Left	59	318	0	0
Volume Right	59	0	0	232
cSH	329	1204	1700	1700
Volume to Capacity	0.36	0.26	0.19	0.35
Queue Length 95th (ft)	39	27	0	0
Control Delay (s)	21.9	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	21.9	4.4		0.0
Approach LOS	C			

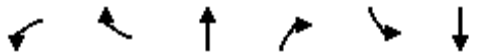
Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	3	11	183	9	71	4	504	98	51	319	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	3	12	203	10	79	4	560	109	57	354	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)								1229				
pX, platoon unblocked	0.92	0.92		0.92	0.92	0.92				0.92		
vC, conflicting volume	1122	1147	356	1105	1093	614	357			669		
vC1, stage 1 conf vol	469	469		623	623							
vC2, stage 2 conf vol	653	678		482	470							
vCu, unblocked vol	1089	1117	356	1071	1059	539	357			598		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.3			4.3		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	97	99	98	45	97	84	100			93		
cM capacity (veh/h)	293	344	693	369	378	491	1128			842		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	24	203	89	4	669	57	357
Volume Left	9	203	0	4	0	57	0
Volume Right	12	0	79	0	109	0	2
cSH	423	369	475	1128	1700	842	1700
Volume to Capacity	0.06	0.55	0.19	0.00	0.39	0.07	0.21
Queue Length 95th (ft)	5	80	17	0	0	5	0
Control Delay (s)	14.0	26.1	14.3	8.2	0.0	9.6	0.0
Lane LOS	B	D	B	A		A	
Approach Delay (s)	14.0	22.5		0.1		1.3	
Approach LOS	B	C					

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	62.6%	ICU Level of Service	B	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	12	594	3	3	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.9		5.9	5.9
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1611		1711		1671	1759
Flt Permitted	1.00		1.00		0.39	1.00
Satd. Flow (perm)	1611		1711		688	1759
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	13	667	3	3	573
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	0	0	670	0	3	573
Heavy Vehicles (%)	2%	2%	11%	11%	8%	8%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	0.6		32.8		32.8	32.8
Effective Green, g (s)	0.6		32.8		32.8	32.8
Actuated g/C Ratio	0.01		0.72		0.72	0.72
Clearance Time (s)	6.0		5.9		5.9	5.9
Vehicle Extension (s)	3.0		2.5		2.5	2.5
Lane Grp Cap (vph)	21		1238		498	1273
v/s Ratio Prot	c0.00		c0.39			0.33
v/s Ratio Perm					0.00	
v/c Ratio	0.01		0.54		0.01	0.45
Uniform Delay, d1	22.1		2.8		1.7	2.6
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.2		0.4		0.0	0.2
Delay (s)	22.2		3.2		1.7	2.7
Level of Service	C		A		A	A
Approach Delay (s)	22.2		3.2			2.7
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	45.3	Sum of lost time (s)	11.9
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

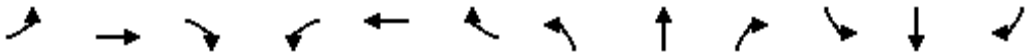
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	0	0	6	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	0	0	7	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3	3			7	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3	3			7	
tC, single (s)	6.7	6.5			4.1	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	939	991			1614	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	13	7	0
Volume Left	13	0	0
Volume Right	0	7	0
cSH	939	1700	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	2	57	68	2	10	26	392	72	13	284	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	2	63	76	2	11	29	436	80	14	316	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	847	926	323	942	878	476	316			516		
vC1, stage 1 conf vol	352	352		533	533							
vC2, stage 2 conf vol	494	573		409	344							
vCu, unblocked vol	847	926	323	942	878	476	316			516		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	99	91	82	100	98	98			99		
cM capacity (veh/h)	456	427	718	409	446	589	1239			1035		

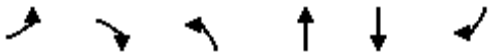
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	89	29	516	14	331
Volume Left	18	76	29	0	14	0
Volume Right	63	11	0	80	0	16
cSH	629	427	1239	1700	1035	1700
Volume to Capacity	0.13	0.21	0.02	0.30	0.01	0.19
Queue Length 95th (ft)	11	19	2	0	1	0
Control Delay (s)	11.6	15.6	8.0	0.0	8.5	0.0
Lane LOS	B	C	A		A	
Approach Delay (s)	11.6	15.6	0.4		0.4	
Approach LOS	B	C				

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	28	59	2	32	48	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	33	70	2	38	57	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			104		111	68
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104		111	68
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		93	100
cM capacity (veh/h)			1416		840	944

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	104	40	57
Volume Left	0	2	57
Volume Right	70	0	0
cSH	1700	1416	840
Volume to Capacity	0.06	0.00	0.07
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.5	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	9.6
Approach LOS			A

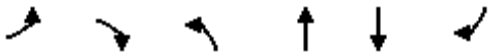
Intersection Summary			
Average Delay		2.8	
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	12	17	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	13	19	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1191		
pX, platoon unblocked						
vC, conflicting volume	32	19	19			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	32	19	19			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	100			
cM capacity (veh/h)	981	1059	1572			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	13	19
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1572	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	72	85	171	418	275	134
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	80	94	190	464	306	149
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	TWLTL	
Median storage veh)				2	2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1224	380	306			
vC1, stage 1 conf vol	380					
vC2, stage 2 conf vol	844					
vCu, unblocked vol	1224	380	306			
tC, single (s)	6.6	6.4	4.1			
tC, 2 stage (s)	5.6					
tF (s)	3.7	3.5	2.2			
p0 queue free %	74	85	85			
cM capacity (veh/h)	314	635	1250			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	174	190	464	454
Volume Left	80	190	0	0
Volume Right	94	0	0	149
cSH	432	1250	1700	1700
Volume to Capacity	0.40	0.15	0.27	0.27
Queue Length 95th (ft)	48	13	0	0
Control Delay (s)	18.9	8.4	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.9	2.4		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	9	0	256	18	131	14	444	92	47	307	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	10	0	284	20	146	16	493	102	52	341	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)								1229				
pX, platoon unblocked	0.99	0.99		0.99	0.99	0.99				0.99		
vC, conflicting volume	1129	1076	344	1026	1028	544	348			596		
vC1, stage 1 conf vol	449	449		576	576							
vC2, stage 2 conf vol	680	627		451	452							
vCu, unblocked vol	1126	1072	344	1022	1024	537	348			588		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	93	97	100	27	95	73	99			95		
cM capacity (veh/h)	239	369	703	392	397	532	1178			950		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	26	284	166	16	596	52	348
Volume Left	16	284	0	16	0	52	0
Volume Right	0	0	146	0	102	0	7
cSH	277	392	511	1178	1700	950	1700
Volume to Capacity	0.09	0.73	0.32	0.01	0.35	0.05	0.20
Queue Length 95th (ft)	8	140	35	1	0	4	0
Control Delay (s)	19.3	35.0	15.4	8.1	0.0	9.0	0.0
Lane LOS	C	D	C	A		A	
Approach Delay (s)	19.3	27.8		0.2		1.2	
Approach LOS	C	D					

Intersection Summary				
Average Delay	9.1			
Intersection Capacity Utilization	63.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	14	536	4	8	555
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.9		5.9	5.9
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.89		1.00		1.00	1.00
Flt Protected	0.99		1.00		0.95	1.00
Satd. Flow (prot)	1638		1791		1687	1776
Flt Permitted	0.99		1.00		0.43	1.00
Satd. Flow (perm)	1638		1791		759	1776
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	3	16	602	4	9	624
RTOR Reduction (vph)	16	0	0	0	0	0
Lane Group Flow (vph)	3	0	606	0	9	624
Heavy Vehicles (%)	2%	2%	6%	6%	7%	7%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	0.9		32.4		32.4	32.4
Effective Green, g (s)	0.9		32.4		32.4	32.4
Actuated g/C Ratio	0.02		0.72		0.72	0.72
Clearance Time (s)	6.0		5.9		5.9	5.9
Vehicle Extension (s)	3.0		2.5		2.5	2.5
Lane Grp Cap (vph)	32		1283		544	1273
v/s Ratio Prot	c0.00		0.34			c0.35
v/s Ratio Perm					0.01	
v/c Ratio	0.10		0.47		0.02	0.49
Uniform Delay, d1	21.8		2.7		1.8	2.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.4		0.2		0.0	0.2
Delay (s)	23.2		2.9		1.8	3.0
Level of Service	C		A		A	A
Approach Delay (s)	23.2		2.9			3.0
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	45.2	Sum of lost time (s)	11.9
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

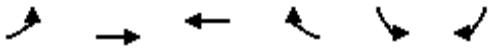
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	17	0	0	12	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	0	0	13	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	7	7			13	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7	7			13	
tC, single (s)	6.5	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	999	1059			1605	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	19	13	0
Volume Left	19	0	0
Volume Right	0	13	0
cSH	999	1700	1700
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.7	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.7	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

AM Peak Hour

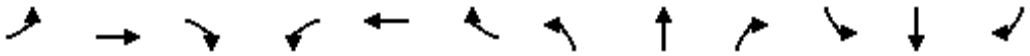
Alternative 4



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	19	13	3	0	42
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	1	25	17	4	0	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	21				47	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				47	19
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	1608				962	1059

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	27	21	56
Volume Left	1	0	0
Volume Right	0	4	56
cSH	1608	1700	1059
Volume to Capacity	0.00	0.01	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.4	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.4	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	35	82	0	5	56	230	64	19	411	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	1	39	91	0	6	62	256	71	21	457	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	898	969	476	954	914	291	457			327		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	898	969	476	954	914	291	457			327		
tC, single (s)	7.2	6.6	6.3	7.3	6.7	6.4	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.7	4.2	3.5	2.3			2.2		
p0 queue free %	95	100	93	53	100	99	94			98		
cM capacity (veh/h)	232	224	565	193	235	705	1083			1216		

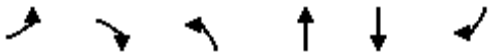
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	51	97	62	327	21	494
Volume Left	11	91	62	0	21	0
Volume Right	39	6	0	71	0	38
cSH	420	201	1083	1700	1216	1700
Volume to Capacity	0.12	0.48	0.06	0.19	0.02	0.29
Queue Length 95th (ft)	10	59	5	0	1	0
Control Delay (s)	14.7	38.4	8.5	0.0	8.0	0.0
Lane LOS	B	E	A		A	
Approach Delay (s)	14.7	38.4	1.4		0.3	
Approach LOS	B	E				

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	29	55	1	34	53	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	35	65	1	40	63	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			100		110	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			100		110	67
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		93	100
cM capacity (veh/h)			1456		849	953

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	100	42	63
Volume Left	0	1	63
Volume Right	65	0	0
cSH	1700	1456	849
Volume to Capacity	0.06	0.00	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.2	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	9.6
Approach LOS			A

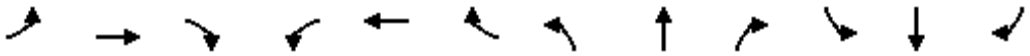
Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		14.9%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	6	12	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	7	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1102		
pX, platoon unblocked						
vC, conflicting volume	20	13	13			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20	13	13			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	997	1067	1605			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	7	13
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1605	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	53	0	53	286	297	0	0	319	209
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	59	0	59	318	330	0	0	354	232
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						6						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1466	1436	471	1436	1320	330	354			330		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1466	1436	471	1436	1320	330	354			330		
tC, single (s)	7.3	6.5	6.4	7.3	6.5	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.7	4.0	3.5	3.7	4.0	3.5	2.2			2.2		
p0 queue free %	100	100	100	26	100	91	74			100		
cM capacity (veh/h)	69	98	554	80	115	668	1204			1229		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	118	318	330	587
Volume Left	59	318	0	0
Volume Right	59	0	0	232
cSH	160	1204	1700	1700
Volume to Capacity	0.74	0.26	0.19	0.35
Queue Length 95th (ft)	113	27	0	0
Control Delay (s)	68.7	9.1	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	68.7	4.4		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	8.1			
Intersection Capacity Utilization	58.7%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	3	11	183	9	71	4	504	98	51	319	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	3	12	203	10	79	4	560	109	57	354	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)								1104				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1122	1147	356	1105	1093	614	357			669		
vC1, stage 1 conf vol	469	469		623	623							
vC2, stage 2 conf vol	653	678		482	470							
vCu, unblocked vol	1076	1104	356	1057	1044	508	357			569		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.3			4.3		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	97	99	98	45	97	84	100			93		
cM capacity (veh/h)	294	342	693	370	377	495	1128			837		

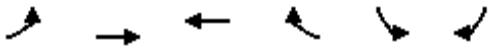
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	24	203	89	4	669	57	357
Volume Left	9	203	0	4	0	57	0
Volume Right	12	0	79	0	109	0	2
cSH	424	370	479	1128	1700	837	1700
Volume to Capacity	0.06	0.55	0.19	0.00	0.39	0.07	0.21
Queue Length 95th (ft)	5	80	17	0	0	5	0
Control Delay (s)	14.0	26.0	14.2	8.2	0.0	9.6	0.0
Lane LOS	B	D	B	A		A	
Approach Delay (s)	14.0	22.4		0.1		1.3	
Approach LOS	B	C					

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	62.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	24	5	0	30	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	6	0	33	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			32		63	29
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		63	29
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1542		943	1045

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	33	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1542	943
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

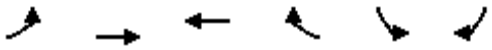
Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	5	0	0	0	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	0	0	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	6	0	6
Volume Left (vph)	6	0	0
Volume Right (vph)	0	0	6
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.3
Degree Utilization, x	0.01	0.00	0.01
Capacity (veh/h)	861	913	1070
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	22	15	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	24	17	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	17				41	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				41	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1614				975	1068

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	17	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1614	1700	1700
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	12	594	3	3	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.9		5.9	5.9
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1611		1711		1671	1759
Flt Permitted	1.00		1.00		0.39	1.00
Satd. Flow (perm)	1611		1711		687	1759
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	13	667	3	3	573
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	0	0	670	0	3	573
Heavy Vehicles (%)	2%	2%	11%	11%	8%	8%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	0.7		33.1		33.1	33.1
Effective Green, g (s)	0.7		33.1		33.1	33.1
Actuated g/C Ratio	0.02		0.72		0.72	0.72
Clearance Time (s)	6.0		5.9		5.9	5.9
Vehicle Extension (s)	3.0		2.5		2.5	2.5
Lane Grp Cap (vph)	24		1239		497	1274
v/s Ratio Prot	c0.00		c0.39			0.33
v/s Ratio Perm					0.00	
v/c Ratio	0.01		0.54		0.01	0.45
Uniform Delay, d1	22.2		2.9		1.7	2.6
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.1		0.4		0.0	0.2
Delay (s)	22.3		3.2		1.7	2.8
Level of Service	C		A		A	A
Approach Delay (s)	22.3		3.2			2.8
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	11.9
Intersection Capacity Utilization	44.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

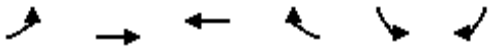
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	0	0	6	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	0	0	7	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3	3			7	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3	3			7	
tC, single (s)	6.7	6.5			4.1	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	939	991			1614	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	13	7	0
Volume Left	13	0	0
Volume Right	0	7	0
cSH	939	1700	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

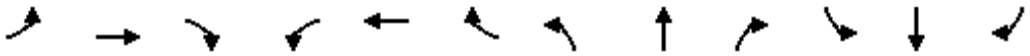
Alternative 4



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	19	13	3	0	42
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	1	25	17	4	0	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	21				47	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				47	19
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	1594				962	1059

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	27	21	56
Volume Left	1	0	0
Volume Right	0	4	56
cSH	1594	1700	1059
Volume to Capacity	0.00	0.01	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.4	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.4	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay		4.7	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	2	57	68	2	10	26	392	72	13	284	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	2	63	76	2	11	29	436	80	14	316	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	847	926	323	942	878	476	316			516		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	847	926	323	942	878	476	316			516		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.2			2.2		
p0 queue free %	93	99	91	62	99	98	98			99		
cM capacity (veh/h)	267	259	718	201	261	560	1239			1035		

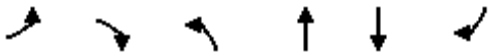
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	89	29	516	14	331
Volume Left	18	76	29	0	14	0
Volume Right	63	11	0	80	0	16
cSH	510	220	1239	1700	1035	1700
Volume to Capacity	0.16	0.40	0.02	0.30	0.01	0.19
Queue Length 95th (ft)	14	46	2	0	1	0
Control Delay (s)	13.4	32.1	8.0	0.0	8.5	0.0
Lane LOS	B	D	A		A	
Approach Delay (s)	13.4	32.1	0.4		0.4	
Approach LOS	B	D				

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	33	54	2	37	43	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	39	64	2	44	51	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			104		120	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104		120	71
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		94	100
cM capacity (veh/h)			1416		830	940

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	104	46	51
Volume Left	0	2	51
Volume Right	64	0	0
cSH	1700	1416	830
Volume to Capacity	0.06	0.00	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.4	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	9.6
Approach LOS			A

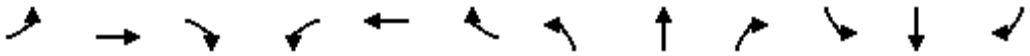
Intersection Summary				
Average Delay		2.5		
Intersection Capacity Utilization		15.0%	ICU Level of Service	A
Analysis Period (min)		15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	12	17	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	13	19	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1102		
pX, platoon unblocked						
vC, conflicting volume	32	19	19			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	32	19	19			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	100			
cM capacity (veh/h)	981	1059	1572			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	13	19
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1572	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

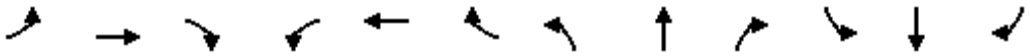
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	85	0	72	171	418	0	0	275	134
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	94	0	80	190	464	0	0	306	149
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)						6						
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1264	1224	380	1224	1150	464	306			464		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1264	1224	380	1224	1150	464	306			464		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.2			2.2		
p0 queue free %	100	100	100	26	100	86	85			100		
cM capacity (veh/h)	112	153	671	128	158	568	1250			1092		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	174	190	464	454
Volume Left	94	190	0	0
Volume Right	80	0	0	149
cSH	237	1250	1700	1700
Volume to Capacity	0.74	0.15	0.27	0.27
Queue Length 95th (ft)	127	13	0	0
Control Delay (s)	52.8	8.4	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	52.8	2.4		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	8.4			
Intersection Capacity Utilization	46.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	9	13	256	18	131	14	444	92	47	307	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	10	14	284	20	146	16	493	102	52	341	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)								1104				
pX, platoon unblocked	0.96	0.96		0.96	0.96	0.96				0.96		
vC, conflicting volume	1129	1076	344	1041	1028	544	348			596		
vC1, stage 1 conf vol	449	449		576	576							
vC2, stage 2 conf vol	680	627		465	452							
vCu, unblocked vol	1112	1057	344	1020	1007	502	348			556		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	93	97	98	27	95	73	99			94		
cM capacity (veh/h)	235	360	689	389	401	545	1178			944		

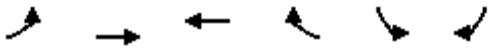
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	40	284	166	16	596	52	348
Volume Left	16	284	0	16	0	52	0
Volume Right	14	0	146	0	102	0	7
cSH	348	389	522	1178	1700	944	1700
Volume to Capacity	0.11	0.73	0.32	0.01	0.35	0.06	0.20
Queue Length 95th (ft)	10	142	34	1	0	4	0
Control Delay (s)	16.7	35.6	15.1	8.1	0.0	9.0	0.0
Lane LOS	C	E	C	A		A	
Approach Delay (s)	16.7	28.0		0.2		1.2	
Approach LOS	C	D					

Intersection Summary				
Average Delay	9.3			
Intersection Capacity Utilization	63.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	28	5	0	34	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	31	6	0	38	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			37		72	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			37		72	34
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1536		932	1039

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	37	38	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1536	932
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.9
Approach LOS			A

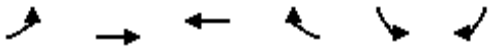
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	5	0	0	0	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	0	0	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	6	0	6
Volume Left (vph)	6	0	0
Volume Right (vph)	0	0	6
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.3
Degree Utilization, x	0.01	0.00	0.01
Capacity (veh/h)	861	913	1070
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	36	38	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	40	42	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	42				82	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	42				82	42
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1580				920	1028

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	42	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1580	1700	1700
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	14	536	4	8	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		5.9		5.9	5.9
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.89		1.00		1.00	1.00
Flt Protected	0.99		1.00		0.95	1.00
Satd. Flow (prot)	1505		1791		1687	1776
Flt Permitted	0.99		1.00		0.43	1.00
Satd. Flow (perm)	1505		1791		758	1776
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	3	16	602	4	9	638
RTOR Reduction (vph)	16	0	0	0	0	0
Lane Group Flow (vph)	3	0	606	0	9	638
Heavy Vehicles (%)	11%	11%	6%	6%	7%	7%
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	1.0		32.8		32.8	32.8
Effective Green, g (s)	1.0		32.8		32.8	32.8
Actuated g/C Ratio	0.02		0.72		0.72	0.72
Clearance Time (s)	6.0		5.9		5.9	5.9
Vehicle Extension (s)	3.0		2.5		2.5	2.5
Lane Grp Cap (vph)	32		1285		544	1274
v/s Ratio Prot	c0.00		0.34			c0.36
v/s Ratio Perm					0.01	
v/c Ratio	0.10		0.47		0.02	0.50
Uniform Delay, d1	21.9		2.8		1.8	2.8
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.4		0.2		0.0	0.2
Delay (s)	23.4		3.0		1.9	3.1
Level of Service	C		A		A	A
Approach Delay (s)	23.4		3.0			3.1
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	45.7	Sum of lost time (s)	11.9
Intersection Capacity Utilization	43.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	17	0	0	12	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	0	0	13	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	7	7			13	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7	7			13	
tC, single (s)	6.7	6.5			4.1	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	935	987			1605	

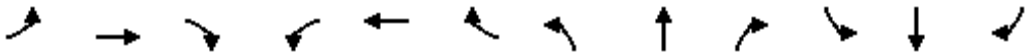
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	19	13	0
Volume Left	19	0	0
Volume Right	0	13	0
cSH	935	1700	1700
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Build Exit 87

AM Peak Hour

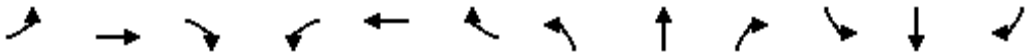
Alternative 1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	66	61	9	17	70	149	36	4	263	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	9	20	81	75	11	21	86	184	44	5	325	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	751	747	336	816	736	206	347			228		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	751	747	336	816	736	206	347			228		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	94	89	68	97	97	93			100		
cM capacity (veh/h)	295	318	711	236	322	837	1212			1340		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	107	315	352
Volume Left	9	75	86	5
Volume Right	81	21	44	22
cSH	533	284	1212	1340
Volume to Capacity	0.21	0.38	0.07	0.00
Queue Length 95th (ft)	19	42	6	0
Control Delay (s)	13.5	25.2	2.7	0.1
Lane LOS	B	D	A	A
Approach Delay (s)	13.5	25.2	2.7	0.1
Approach LOS	B	D		

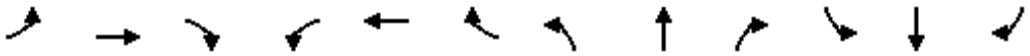
Intersection Summary				
Average Delay	5.8			
Intersection Capacity Utilization	50.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	25	12	0	34	112	5	150	10	164	55	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	77	34	16	0	46	151	7	203	14	222	74	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	947	780	107	806	805	209	139			216		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	947	780	107	806	805	209	139			216		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	88	98	100	83	82	100			84		
cM capacity (veh/h)	151	274	953	234	264	833	1426			1348		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	127	197	223	361
Volume Left	77	0	7	222
Volume Right	16	151	14	65
cSH	195	554	1426	1348
Volume to Capacity	0.65	0.36	0.00	0.16
Queue Length 95th (ft)	97	40	0	15
Control Delay (s)	52.6	15.0	0.3	5.6
Lane LOS	F	C	A	A
Approach Delay (s)	52.6	15.0	0.3	5.6
Approach LOS	F	C		

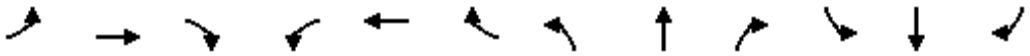
Intersection Summary				
Average Delay	12.9			
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	20	0	50	126	205	0	0	271	119
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	22	0	56	140	228	0	0	301	132
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	931	875	367	875	941	228	433			228		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	931	875	367	875	941	228	433			228		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	100	100	100	91	100	93	88			100		
cM capacity (veh/h)	208	252	678	239	226	799	1121			1335		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	78	140	228	433
Volume Left	22	140	0	0
Volume Right	56	0	0	132
cSH	479	1121	1700	1700
Volume to Capacity	0.16	0.12	0.13	0.25
Queue Length 95th (ft)	14	11	0	0
Control Delay (s)	14.0	8.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.0	3.3		0.0
Approach LOS	B			

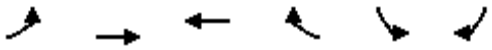
Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	0	69	0	0	0	0	286	33	93	198	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	0	77	0	0	0	0	318	37	103	220	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	763	781	220	839	763	336	220			354		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	763	781	220	839	763	336	220			354		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	100	91	100	100	100	100			91		
cM capacity (veh/h)	300	298	820	241	306	706	1349			1204		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	127	354	103	220
Volume Left	50	0	103	0
Volume Right	77	37	0	0
cSH	487	1700	1204	1700
Volume to Capacity	0.26	0.21	0.09	0.13
Queue Length 95th (ft)	26	0	7	0
Control Delay (s)	15.0	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	15.0	0.0	2.6	
Approach LOS	B			

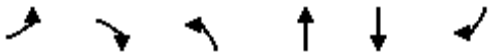
Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	94	87	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	104	97	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				201	97
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				201	97
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1509				787	960

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	97	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1509	1700	1700
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	84	92	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	93	102	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198	105	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	105	108			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	790	949	1464			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	93	108
Volume Left	6	0	0
Volume Right	0	0	6
cSH	790	1464	1700
Volume to Capacity	0.01	0.00	0.06
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

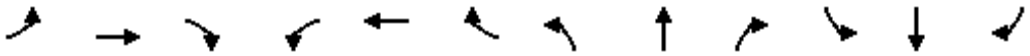
PM Peak Hour

Alternative 1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	20	73	53	11	26	86	146	97	13	96	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	30	25	90	65	14	32	106	180	120	16	119	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	647	668	123	710	613	240	128			300		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	647	668	123	710	613	240	128			300		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	93	90	77	96	96	93			99		
cM capacity (veh/h)	332	344	919	280	376	804	1457			1261		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	144	111	406	144
Volume Left	30	65	106	16
Volume Right	90	32	120	10
cSH	557	359	1457	1261
Volume to Capacity	0.26	0.31	0.07	0.01
Queue Length 95th (ft)	26	32	6	1
Control Delay (s)	13.7	19.5	2.5	1.0
Lane LOS	B	C	A	A
Approach Delay (s)	13.7	19.5	2.5	1.0
Approach LOS	B	C		

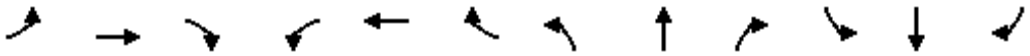
Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	43.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	72	9	18	6	49	112	6	92	8	93	119	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	97	12	24	8	66	151	8	124	11	126	161	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	774	595	192	620	620	130	223			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	774	595	192	620	620	130	223			135		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	97	97	98	82	84	99			91		
cM capacity (veh/h)	214	382	855	356	369	925	1328			1449		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	226	143	349
Volume Left	97	8	8	126
Volume Right	24	151	11	62
cSH	260	617	1328	1449
Volume to Capacity	0.52	0.37	0.01	0.09
Queue Length 95th (ft)	68	42	0	7
Control Delay (s)	32.8	14.2	0.5	3.3
Lane LOS	D	B	A	A
Approach Delay (s)	32.8	14.2	0.5	3.3
Approach LOS	D	B		

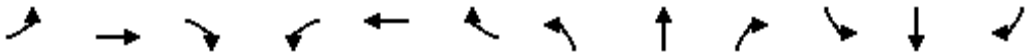
Intersection Summary				
Average Delay	10.3			
Intersection Capacity Utilization	46.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	37	0	61	90	268	0	0	176	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	41	0	68	100	298	0	0	196	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	787	719	221	719	744	298	247			298		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	787	719	221	719	744	298	247			298		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	100	91	92			100		
cM capacity (veh/h)	265	327	818	325	318	744	1313			1258		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	109	100	298	247
Volume Left	41	100	0	0
Volume Right	68	0	0	51
cSH	500	1313	1700	1700
Volume to Capacity	0.22	0.08	0.18	0.15
Queue Length 95th (ft)	21	6	0	0
Control Delay (s)	14.2	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.2	2.0		0.0
Approach LOS	B			

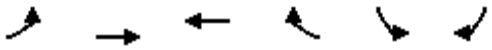
Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	118	0	106	0	0	0	0	240	36	61	152	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	131	0	118	0	0	0	0	267	40	68	169	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	591	611	169	709	591	287	169			307		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	591	611	169	709	591	287	169			307		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	67	100	87	100	100	100	100			95		
cM capacity (veh/h)	403	388	878	290	397	752	1409			1254		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	249	307	68	169
Volume Left	131	0	68	0
Volume Right	118	40	0	0
cSH	541	1700	1254	1700
Volume to Capacity	0.46	0.18	0.05	0.10
Queue Length 95th (ft)	60	0	4	0
Control Delay (s)	17.2	0.0	8.0	0.0
Lane LOS	C		A	
Approach Delay (s)	17.2	0.0	2.3	
Approach LOS	C			

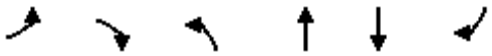
Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	99	101	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	110	112	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	112				222	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112				222	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1490				766	941

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	110	112	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1490	1700	1700
Volume to Capacity	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.6%	ICU Level of Service	A
Analysis Period (min)	15		



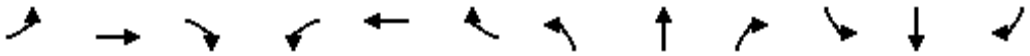
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	112	100	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	124	111	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	238	114	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	114	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	750	939	1472			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	124	117
Volume Left	6	0	0
Volume Right	0	0	6
cSH	750	1472	1700
Volume to Capacity	0.01	0.00	0.07
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.8	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.8	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

AM Peak Hour

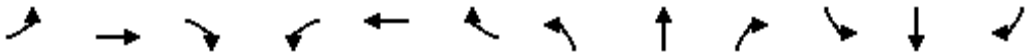
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	22	66	230	21	5	70	24	161	6	94	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	1	27	81	284	26	6	86	30	199	7	116	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	456	536	120	531	440	129	123			228		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	456	536	120	531	440	129	123			228		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	94	91	25	95	99	94			99		
cM capacity (veh/h)	470	425	937	380	480	924	1463			1340		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	316	315	131
Volume Left	1	284	86	7
Volume Right	81	6	199	7
cSH	716	391	1463	1340
Volume to Capacity	0.15	0.81	0.06	0.01
Queue Length 95th (ft)	14	179	5	0
Control Delay (s)	10.9	43.1	2.5	0.5
Lane LOS	B	E	A	A
Approach Delay (s)	10.9	43.1	2.5	0.5
Approach LOS	B	E		

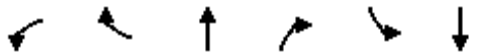
Intersection Summary				
Average Delay	18.0			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	25	12	0	34	112	5	150	10	164	55	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	77	34	16	0	46	151	7	203	14	222	74	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	947	780	107	806	805	209	139			216		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	947	780	107	806	805	209	139			216		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	88	98	100	83	82	100			84		
cM capacity (veh/h)	151	274	953	234	264	833	1426			1348		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	127	197	223	361
Volume Left	77	0	7	222
Volume Right	16	151	14	65
cSH	195	554	1426	1348
Volume to Capacity	0.65	0.36	0.00	0.16
Queue Length 95th (ft)	97	40	0	15
Control Delay (s)	52.6	15.0	0.3	5.6
Lane LOS	F	C	A	A
Approach Delay (s)	52.6	15.0	0.3	5.6
Approach LOS	F	C		

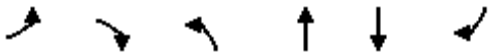
Intersection Summary				
Average Delay	12.9			
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	20	50	205	126	119	271
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	22	56	228	140	132	301
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	863	298			228	
vC1, stage 1 conf vol	298					
vC2, stage 2 conf vol	566					
vCu, unblocked vol	863	298			228	
tC, single (s)	6.5	6.3			4.1	
tC, 2 stage (s)	5.5					
tF (s)	3.6	3.4			2.2	
p0 queue free %	95	92			90	
cM capacity (veh/h)	463	730			1335	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	78	368	132	301
Volume Left	22	0	132	0
Volume Right	56	140	0	0
cSH	627	1700	1335	1700
Volume to Capacity	0.12	0.22	0.10	0.18
Queue Length 95th (ft)	11	0	8	0
Control Delay (s)	11.6	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	11.6	0.0	2.4	
Approach LOS	B			

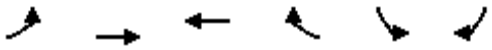
Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	45	69	33	286	198	93
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	77	37	318	220	103
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	663	272	220			
vC1, stage 1 conf vol	272					
vC2, stage 2 conf vol	391					
vCu, unblocked vol	663	272	220			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	90	97			
cM capacity (veh/h)	595	767	1349			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	127	37	318	323
Volume Left	50	37	0	0
Volume Right	77	0	0	103
cSH	688	1349	1700	1700
Volume to Capacity	0.18	0.03	0.19	0.19
Queue Length 95th (ft)	17	2	0	0
Control Delay (s)	11.4	7.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.4	0.8		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	36.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	94	87	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	104	97	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				201	97
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				201	97
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1509				787	960

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	97	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1509	1700	1700
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	84	92	5	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	93	102	6	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	108				198	105
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	108				198	105
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1464				790	949

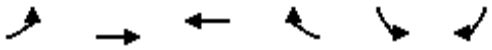
Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	93	108	6
Volume Left	0	0	6
Volume Right	0	6	0
cSH	1464	1700	790
Volume to Capacity	0.00	0.06	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.6
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.6
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	5	79	0	5	87
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	6	88	0	6	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	196	88			88	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	196	88			88	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	790	971			1508	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	88	102
Volume Left	0	0	6
Volume Right	6	0	0
cSH	971	1700	1508
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.7	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		18.7%	ICU Level of Service A
Analysis Period (min)		15	

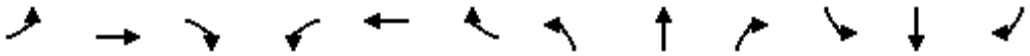


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	137	52	73	14	4	183
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	199	75	106	20	6	265
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	126				588	116
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126				588	116
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	86				99	72
cM capacity (veh/h)	1467				407	936

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	274	126	271
Volume Left	199	0	6
Volume Right	0	20	265
cSH	1467	1700	911
Volume to Capacity	0.14	0.07	0.30
Queue Length 95th (ft)	12	0	31
Control Delay (s)	6.0	0.0	10.6
Lane LOS	A		B
Approach Delay (s)	6.0	0.0	10.6
Approach LOS			B

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

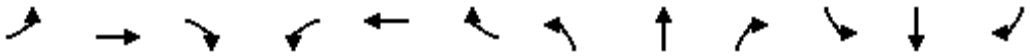
PM Peak Hour
Alternative 2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	28	73	88	14	17	86	96	147	8	61	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	20	35	90	109	17	21	106	119	181	10	75	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	549	610	78	627	523	209	81			300		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	549	610	78	627	523	209	81			300		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	91	91	66	96	97	93			99		
cM capacity (veh/h)	393	374	974	317	426	836	1516			1261		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	144	147	406	91
Volume Left	20	109	106	10
Volume Right	90	21	181	6
cSH	614	359	1516	1261
Volume to Capacity	0.24	0.41	0.07	0.01
Queue Length 95th (ft)	23	48	6	1
Control Delay (s)	12.7	21.8	2.4	0.9
Lane LOS	B	C	A	A
Approach Delay (s)	12.7	21.8	2.4	0.9
Approach LOS	B	C		

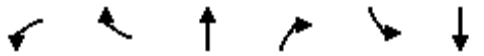
Intersection Summary				
Average Delay	7.7			
Intersection Capacity Utilization	45.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	72	9	18	6	49	112	6	92	8	93	119	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	97	12	24	8	66	151	8	124	11	126	161	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	774	595	192	620	620	130	223			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	774	595	192	620	620	130	223			135		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	97	97	98	82	84	99			91		
cM capacity (veh/h)	214	382	855	356	369	925	1328			1449		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	226	143	349
Volume Left	97	8	8	126
Volume Right	24	151	11	62
cSH	260	617	1328	1449
Volume to Capacity	0.52	0.37	0.01	0.09
Queue Length 95th (ft)	68	42	0	7
Control Delay (s)	32.8	14.2	0.5	3.3
Lane LOS	D	B	A	A
Approach Delay (s)	32.8	14.2	0.5	3.3
Approach LOS	D	B		

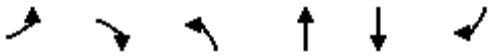
Intersection Summary				
Average Delay	10.3			
Intersection Capacity Utilization	46.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	37	61	268	90	46	176
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	41	68	298	100	51	196
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			TWLTL			None
Median storage veh)			2			
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	646	348			298	
vC1, stage 1 conf vol	348					
vC2, stage 2 conf vol	298					
vCu, unblocked vol	646	348			298	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	90			96	
cM capacity (veh/h)	606	698			1258	

Direction, Lane #	WB 1	NB 1	SB 1	SB 2
Volume Total	109	398	51	196
Volume Left	41	0	51	0
Volume Right	68	100	0	0
cSH	660	1700	1258	1700
Volume to Capacity	0.16	0.23	0.04	0.12
Queue Length 95th (ft)	15	0	3	0
Control Delay (s)	11.5	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	11.5	0.0	1.7	
Approach LOS	B			

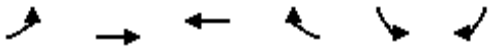
Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	Err%	ICU Level of Service	H
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	118	106	36	240	152	61
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	131	118	40	267	169	68
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	549	203	169			
vC1, stage 1 conf vol	203					
vC2, stage 2 conf vol	347					
vCu, unblocked vol	549	203	169			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	80	86	97			
cM capacity (veh/h)	642	841	1409			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	249	40	267	237
Volume Left	131	40	0	0
Volume Right	118	0	0	68
cSH	723	1409	1700	1700
Volume to Capacity	0.34	0.03	0.16	0.14
Queue Length 95th (ft)	38	2	0	0
Control Delay (s)	12.6	7.6	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.6	1.0		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	4.3		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	99	101	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	110	112	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	112				222	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112				222	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1490				766	941

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	110	112	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1490	1700	1700
Volume to Capacity	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		8.6%	ICU Level of Service A
Analysis Period (min)		15	

Movement	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Volume (veh/h)	0	112	100	5	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	124	111	6	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	117				238	114
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	117				238	114
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1472				750	939

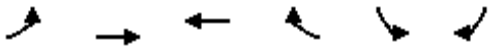
Direction, Lane #	NB 1	SB 1	SE 1
Volume Total	124	117	6
Volume Left	0	0	6
Volume Right	0	6	0
cSH	1472	1700	750
Volume to Capacity	0.00	0.07	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		15.9%	ICU Level of Service A
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	5	107	0	5	95
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	6	119	0	6	106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	236	119			119	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	236	119			119	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	750	933			1463	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	119	111
Volume Left	0	0	6
Volume Right	6	0	0
cSH	933	1700	1463
Volume to Capacity	0.01	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.9	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		19.1%	ICU Level of Service A
Analysis Period (min)		15	



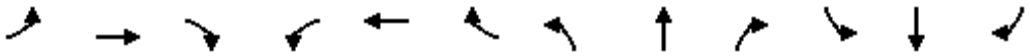
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	58	125	81	9	5	38
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	62	133	86	10	5	40
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	96				347	91
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	96				347	91
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				99	96
cM capacity (veh/h)	1498				623	967

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	195	96	46
Volume Left	62	0	5
Volume Right	0	10	40
cSH	1498	1700	908
Volume to Capacity	0.04	0.06	0.05
Queue Length 95th (ft)	3	0	4
Control Delay (s)	2.6	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	2.6	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

AM Peak Hour

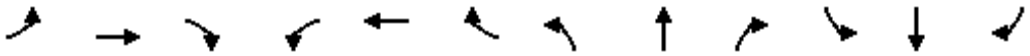
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	66	61	9	17	70	149	36	4	263	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	9	20	81	75	11	21	86	184	44	5	325	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	751	747	336	816	736	206	347			228		
vC1, stage 1 conf vol	346	346		379	379							
vC2, stage 2 conf vol	406	401		437	357							
vCu, unblocked vol	751	747	336	816	736	206	347			228		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	96	89	81	98	97	93			100		
cM capacity (veh/h)	485	487	711	389	466	837	1212			1340		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	107	315	352
Volume Left	9	75	86	5
Volume Right	81	21	44	22
cSH	635	443	1212	1340
Volume to Capacity	0.17	0.24	0.07	0.00
Queue Length 95th (ft)	16	23	6	0
Control Delay (s)	11.9	15.7	2.7	0.1
Lane LOS	B	C	A	A
Approach Delay (s)	11.9	15.7	2.7	0.1
Approach LOS	B	C		

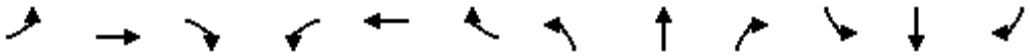
Intersection Summary				
Average Delay	4.4			
Intersection Capacity Utilization	50.6%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	25	12	0	34	112	5	150	10	164	55	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	77	34	16	0	46	151	7	203	14	222	74	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	947	780	107	806	805	209	139			216		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	947	780	107	806	805	209	139			216		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	88	98	100	83	82	100			84		
cM capacity (veh/h)	151	274	953	234	264	833	1426			1348		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	127	197	223	361
Volume Left	77	0	7	222
Volume Right	16	151	14	65
cSH	195	554	1426	1348
Volume to Capacity	0.65	0.36	0.00	0.16
Queue Length 95th (ft)	97	40	0	15
Control Delay (s)	52.6	15.0	0.3	5.6
Lane LOS	F	C	A	A
Approach Delay (s)	52.6	15.0	0.3	5.6
Approach LOS	F	C		

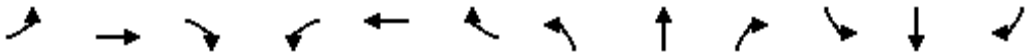
Intersection Summary				
Average Delay	12.9			
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	20	0	50	126	205	0	0	271	119
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	22	0	56	140	228	0	0	301	132
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	931	875	367	875	941	228	433			228		
vC1, stage 1 conf vol	367	367		508	508							
vC2, stage 2 conf vol	563	508		367	433							
vCu, unblocked vol	931	875	367	875	941	228	433			228		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	100	100	100	94	100	93	88			100		
cM capacity (veh/h)	380	421	678	394	365	799	1121			1335		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	78	140	228	433
Volume Left	22	140	0	0
Volume Right	56	0	0	132
cSH	617	1121	1700	1700
Volume to Capacity	0.13	0.12	0.13	0.25
Queue Length 95th (ft)	11	11	0	0
Control Delay (s)	11.7	8.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.7	3.3		0.0
Approach LOS	B			

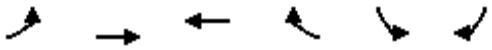
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	0	69	0	0	0	0	286	33	93	198	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	0	77	0	0	0	0	318	37	103	220	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	763	781	220	839	763	336	220			354		
vC1, stage 1 conf vol	427	427		336	336							
vC2, stage 2 conf vol	336	354		503	427							
vCu, unblocked vol	763	781	220	839	763	336	220			354		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	91	100	100	100	100			91		
cM capacity (veh/h)	465	443	820	416	474	706	1349			1204		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	127	354	103	220
Volume Left	50	0	103	0
Volume Right	77	37	0	0
cSH	630	1700	1204	1700
Volume to Capacity	0.20	0.21	0.09	0.13
Queue Length 95th (ft)	19	0	7	0
Control Delay (s)	12.2	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	12.2	0.0	2.6	
Approach LOS	B			

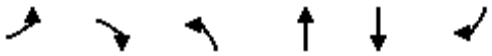
Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	94	87	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	104	97	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				201	97
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				201	97
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1509				787	960

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	97	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1509	1700	1700
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	84	92	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	93	102	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198	105	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	105	108			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	790	949	1464			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	93	108
Volume Left	6	0	0
Volume Right	0	0	6
cSH	790	1464	1700
Volume to Capacity	0.01	0.00	0.06
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	5	79	0	5	87
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	6	88	0	6	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	196	88			88	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	196	88			88	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	790	971			1508	

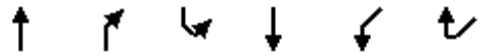
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	88	102
Volume Left	0	0	6
Volume Right	6	0	0
cSH	971	1700	1508
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.7	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		18.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	51	5	0	82	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	57	6	0	91	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			62		151	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			62		151	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1547		841	1006

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	62	91	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1547	841
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		

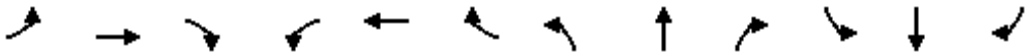


Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (veh/h)	28	145	6	100	185	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	37	191	8	132	243	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			228		280	132
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			228		280	132
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		66	100
cM capacity (veh/h)			1347		706	917

Direction, Lane #	NB 1	SB 1	SW 1
Volume Total	228	139	246
Volume Left	0	8	243
Volume Right	191	0	3
cSH	1700	1347	708
Volume to Capacity	0.13	0.01	0.35
Queue Length 95th (ft)	0	0	39
Control Delay (s)	0.0	0.5	12.8
Lane LOS		A	B
Approach Delay (s)	0.0	0.5	12.8
Approach LOS			B

Intersection Summary			
Average Delay		5.2	
Intersection Capacity Utilization		27.5%	ICU Level of Service A
Analysis Period (min)		15	

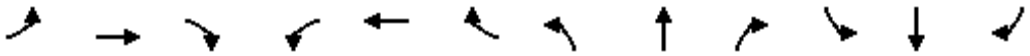
PM Peak Hour
Alternative 3



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	20	73	53	11	26	86	146	97	13	96	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	30	25	90	65	14	32	106	180	120	16	119	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	647	668	123	710	613	240	128			300		
vC1, stage 1 conf vol	156	156		452	452							
vC2, stage 2 conf vol	491	512		258	160							
vCu, unblocked vol	647	668	123	710	613	240	128			300		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	95	90	85	97	96	93			99		
cM capacity (veh/h)	446	456	919	446	493	804	1457			1261		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	144	111	406	144
Volume Left	30	65	106	16
Volume Right	90	32	120	10
cSH	661	519	1457	1261
Volume to Capacity	0.22	0.21	0.07	0.01
Queue Length 95th (ft)	21	20	6	1
Control Delay (s)	12.0	13.8	2.5	1.0
Lane LOS	B	B	A	A
Approach Delay (s)	12.0	13.8	2.5	1.0
Approach LOS	B	B		

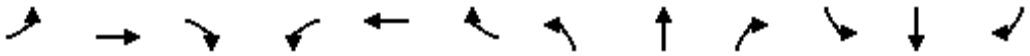
Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	43.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	72	9	18	6	49	112	6	92	8	93	119	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	97	12	24	8	66	151	8	124	11	126	161	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	774	595	192	620	620	130	223			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	774	595	192	620	620	130	223			135		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	97	97	98	82	84	99			91		
cM capacity (veh/h)	214	382	855	356	369	925	1328			1449		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	226	143	349
Volume Left	97	8	8	126
Volume Right	24	151	11	62
cSH	260	617	1328	1449
Volume to Capacity	0.52	0.37	0.01	0.09
Queue Length 95th (ft)	68	42	0	7
Control Delay (s)	32.8	14.2	0.5	3.3
Lane LOS	D	B	A	A
Approach Delay (s)	32.8	14.2	0.5	3.3
Approach LOS	D	B		

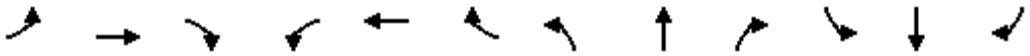
Intersection Summary				
Average Delay	10.3			
Intersection Capacity Utilization	46.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	37	0	61	90	268	0	0	176	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	41	0	68	100	298	0	0	196	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	787	719	221	719	744	298	247			298		
vC1, stage 1 conf vol	221	221		498	498							
vC2, stage 2 conf vol	566	498		221	247							
vCu, unblocked vol	787	719	221	719	744	298	247			298		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	91	92			100		
cM capacity (veh/h)	406	470	818	473	455	744	1313			1258		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	109	100	298	247
Volume Left	41	100	0	0
Volume Right	68	0	0	51
cSH	612	1313	1700	1700
Volume to Capacity	0.18	0.08	0.18	0.15
Queue Length 95th (ft)	16	6	0	0
Control Delay (s)	12.2	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.2	2.0		0.0
Approach LOS	B			

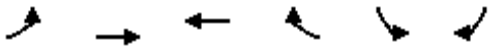
Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	118	0	106	0	0	0	0	240	36	61	152	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	131	0	118	0	0	0	0	267	40	68	169	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	591	611	169	709	591	287	169			307		
vC1, stage 1 conf vol	304	304		287	287							
vC2, stage 2 conf vol	287	307		422	304							
vCu, unblocked vol	591	611	169	709	591	287	169			307		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	100	87	100	100	100	100			95		
cM capacity (veh/h)	562	523	878	459	551	752	1409			1254		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	249	307	68	169
Volume Left	131	0	68	0
Volume Right	118	40	0	0
cSH	677	1700	1254	1700
Volume to Capacity	0.37	0.18	0.05	0.10
Queue Length 95th (ft)	42	0	4	0
Control Delay (s)	13.4	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	13.4	0.0	2.3	
Approach LOS	B			

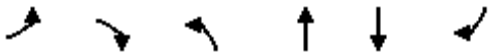
Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	99	101	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	110	112	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	112				222	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112				222	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1490				766	941

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	110	112	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1490	1700	1700
Volume to Capacity	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	112	100	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	124	111	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	238	114	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	114	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	750	939	1472			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	124	117
Volume Left	6	0	0
Volume Right	0	0	6
cSH	750	1472	1700
Volume to Capacity	0.01	0.00	0.07
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.8	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.8	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	5	107	0	5	95
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	6	119	0	6	106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	236	119			119	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	236	119			119	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	750	933			1463	

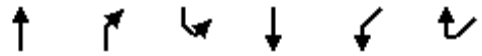
Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	119	111
Volume Left	0	0	6
Volume Right	6	0	0
cSH	933	1700	1463
Volume to Capacity	0.01	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.9	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		19.1%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	125	5	0	85	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	6	0	94	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			144		236	142
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			144		236	142
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1450		757	911

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	144	94	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1450	757
Volume to Capacity	0.08	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		16.9%	ICU Level of Service A
Analysis Period (min)		15	



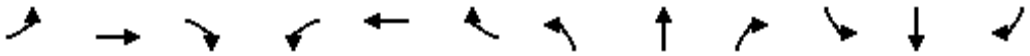
Movement	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations						
Volume (veh/h)	129	67	0	74	43	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	136	71	0	78	45	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			206		249	171
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			206		249	171
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		94	100
cM capacity (veh/h)			1359		744	878

Direction, Lane #	NB 1	SB 1	SW 1
Volume Total	206	78	45
Volume Left	0	0	45
Volume Right	71	0	0
cSH	1700	1359	744
Volume to Capacity	0.12	0.00	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.0	10.2
Lane LOS			B
Approach Delay (s)	0.0	0.0	10.2
Approach LOS			B

Intersection Summary			
Average Delay		1.4	
Intersection Capacity Utilization		20.9%	ICU Level of Service A
Analysis Period (min)		15	

AM Peak Hour

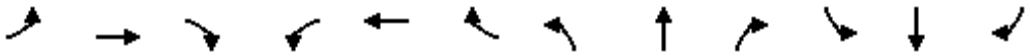
Alternative 4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	22	66	230	21	5	70	24	161	6	94	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	1	27	81	284	26	6	86	30	199	7	116	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	456	536	120	531	440	129	123			228		
vC1, stage 1 conf vol	135	135		302	302							
vC2, stage 2 conf vol	321	401		230	138							
vCu, unblocked vol	456	536	120	531	440	129	123			228		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	95	91	46	96	99	94			99		
cM capacity (veh/h)	589	535	937	531	580	924	1463			1340		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	316	315	131
Volume Left	1	284	86	7
Volume Right	81	6	199	7
cSH	786	539	1463	1340
Volume to Capacity	0.14	0.59	0.06	0.01
Queue Length 95th (ft)	12	94	5	0
Control Delay (s)	10.3	20.7	2.5	0.5
Lane LOS	B	C	A	A
Approach Delay (s)	10.3	20.7	2.5	0.5
Approach LOS	B	C		

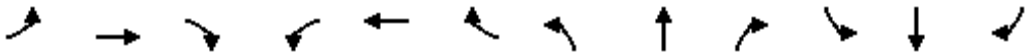
Intersection Summary				
Average Delay	9.8			
Intersection Capacity Utilization	49.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	25	12	0	34	112	5	150	10	164	55	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	77	34	16	0	46	151	7	203	14	222	74	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	947	780	107	806	805	209	139			216		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	947	780	107	806	805	209	139			216		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	88	98	100	83	82	100			84		
cM capacity (veh/h)	151	274	953	234	264	833	1426			1348		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	127	197	223	361
Volume Left	77	0	7	222
Volume Right	16	151	14	65
cSH	195	554	1426	1348
Volume to Capacity	0.65	0.36	0.00	0.16
Queue Length 95th (ft)	97	40	0	15
Control Delay (s)	52.6	15.0	0.3	5.6
Lane LOS	F	C	A	A
Approach Delay (s)	52.6	15.0	0.3	5.6
Approach LOS	F	C		

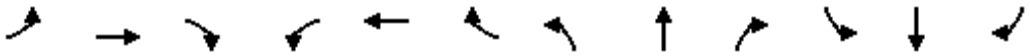
Intersection Summary				
Average Delay	12.9			
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	20	0	50	126	205	0	0	271	119
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	22	0	56	140	228	0	0	301	132
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	931	875	367	875	941	228	433			228		
vC1, stage 1 conf vol	367	367		508	508							
vC2, stage 2 conf vol	563	508		367	433							
vCu, unblocked vol	931	875	367	875	941	228	433			228		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	100	100	100	94	100	93	88			100		
cM capacity (veh/h)	380	421	678	394	365	799	1121			1335		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	78	140	228	433
Volume Left	22	140	0	0
Volume Right	56	0	0	132
cSH	617	1121	1700	1700
Volume to Capacity	0.13	0.12	0.13	0.25
Queue Length 95th (ft)	11	11	0	0
Control Delay (s)	11.7	8.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.7	3.3		0.0
Approach LOS	B			

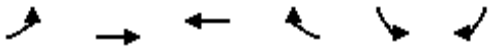
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	0	69	0	0	0	0	286	33	93	198	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	0	77	0	0	0	0	318	37	103	220	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	763	781	220	839	763	336	220			354		
vC1, stage 1 conf vol	427	427		336	336							
vC2, stage 2 conf vol	336	354		503	427							
vCu, unblocked vol	763	781	220	839	763	336	220			354		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	91	100	100	100	100			91		
cM capacity (veh/h)	465	443	820	416	474	706	1349			1204		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	127	354	103	220
Volume Left	50	0	103	0
Volume Right	77	37	0	0
cSH	630	1700	1204	1700
Volume to Capacity	0.20	0.21	0.09	0.13
Queue Length 95th (ft)	19	0	7	0
Control Delay (s)	12.2	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	12.2	0.0	2.6	
Approach LOS	B			

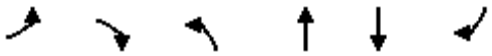
Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	94	87	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	104	97	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				201	97
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				201	97
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1509				787	960

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	97	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1509	1700	1700
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	84	92	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	93	102	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198	105	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	105	108			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	790	949	1464			

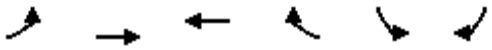
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	93	108
Volume Left	6	0	0
Volume Right	0	0	6
cSH	790	1464	1700
Volume to Capacity	0.01	0.00	0.06
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	5	79	0	5	87
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	6	88	0	6	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	196	88			88	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	196	88			88	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	790	971			1508	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	88	102
Volume Left	0	0	6
Volume Right	6	0	0
cSH	971	1700	1508
Volume to Capacity	0.01	0.05	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.7	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.7	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		18.7%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	137	52	73	14	4	183
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	152	58	81	16	4	203
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				451	89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				451	89
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	90				99	79
cM capacity (veh/h)	1497				508	969

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	210	97	208
Volume Left	152	0	4
Volume Right	0	16	203
cSH	1497	1700	951
Volume to Capacity	0.10	0.06	0.22
Queue Length 95th (ft)	8	0	21
Control Delay (s)	5.8	0.0	9.8
Lane LOS	A		A
Approach Delay (s)	5.8	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	35.2%	ICU Level of Service	A
Analysis Period (min)	15		

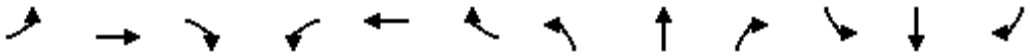
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	51	5	0	82	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	57	6	0	91	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			62		151	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			62		151	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1547		841	1006

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	62	91	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1547	841
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

Alternative 4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	28	73	88	14	17	86	96	147	8	61	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	20	35	90	109	17	21	106	119	181	10	75	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	549	610	78	627	523	209	81			300		
vC1, stage 1 conf vol	98	98		422	422							
vC2, stage 2 conf vol	451	512		206	101							
vCu, unblocked vol	549	610	78	627	523	209	81			300		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	96	93	91	77	97	97	93			99		
cM capacity (veh/h)	485	467	974	480	522	836	1516			1261		

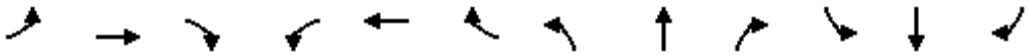
Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	144	147	406	91
Volume Left	20	109	106	10
Volume Right	90	21	181	6
cSH	697	517	1516	1261
Volume to Capacity	0.21	0.28	0.07	0.01
Queue Length 95th (ft)	19	29	6	1
Control Delay (s)	11.5	14.7	2.4	0.9
Lane LOS	B	B	A	A
Approach Delay (s)	11.5	14.7	2.4	0.9
Approach LOS	B	B		

Intersection Summary				
Average Delay	6.2			
Intersection Capacity Utilization	45.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL2	SBL	SBR	NWL	NWR	NWR2
Lane Configurations												
Volume (veh/h)	72	9	18	6	49	112	93	119	46	6	92	8
Sign Control		Stop			Stop			Free		Free		
Grade		0%			0%			0%		0%		
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	97	12	24	8	66	151	126	161	62	8	124	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None		None		
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	774	595	192	620	620	130	135			223		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	774	595	192	620	620	130	135			223		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	97	97	98	82	84	91			99		
cM capacity (veh/h)	213	381	855	354	368	923	1443			1328		

Direction, Lane #	EB 1	WB 1	SB 1	NW 1
Volume Total	134	226	349	143
Volume Left	97	8	126	8
Volume Right	24	151	62	11
cSH	259	615	1443	1328
Volume to Capacity	0.52	0.37	0.09	0.01
Queue Length 95th (ft)	68	42	7	0
Control Delay (s)	32.8	14.2	3.3	0.5
Lane LOS	D	B	A	A
Approach Delay (s)	32.8	14.2	3.3	0.5
Approach LOS	D	B		

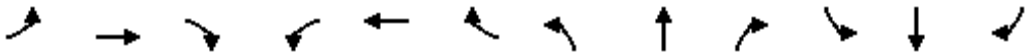
Intersection Summary				
Average Delay	10.4			
Intersection Capacity Utilization	Err%	ICU Level of Service	H	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	37	0	61	90	268	0	0	176	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	41	0	68	100	298	0	0	196	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	787	719	221	719	744	298	247			298		
vC1, stage 1 conf vol	221	221		498	498							
vC2, stage 2 conf vol	566	498		221	247							
vCu, unblocked vol	787	719	221	719	744	298	247			298		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	91	92			100		
cM capacity (veh/h)	406	470	818	473	455	744	1313			1258		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	109	100	298	247
Volume Left	41	100	0	0
Volume Right	68	0	0	51
cSH	612	1313	1700	1700
Volume to Capacity	0.18	0.08	0.18	0.15
Queue Length 95th (ft)	16	6	0	0
Control Delay (s)	12.2	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.2	2.0		0.0
Approach LOS	B			

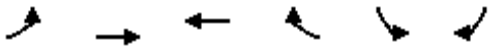
Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	118	0	106	0	0	0	0	240	36	61	152	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	131	0	118	0	0	0	0	267	40	68	169	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	591	611	169	709	591	287	169			307		
vC1, stage 1 conf vol	304	304		287	287							
vC2, stage 2 conf vol	287	307		422	304							
vCu, unblocked vol	591	611	169	709	591	287	169			307		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	100	87	100	100	100	100			95		
cM capacity (veh/h)	562	523	878	459	551	752	1409			1254		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	249	307	68	169
Volume Left	131	0	68	0
Volume Right	118	40	0	0
cSH	677	1700	1254	1700
Volume to Capacity	0.37	0.18	0.05	0.10
Queue Length 95th (ft)	42	0	4	0
Control Delay (s)	13.4	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	13.4	0.0	2.3	
Approach LOS	B			

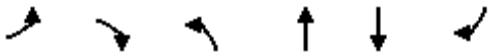
Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	99	101	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	110	112	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	112				222	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112				222	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1490				766	941

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	110	112	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1490	1700	1700
Volume to Capacity	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	112	100	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	124	111	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	238	114	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	114	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	750	939	1472			

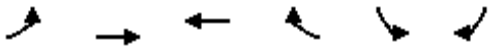
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	124	117
Volume Left	6	0	0
Volume Right	0	0	6
cSH	750	1472	1700
Volume to Capacity	0.01	0.00	0.07
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.8	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.8	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	0	5	107	0	5	95
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	6	119	0	6	106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	236	119			119	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	236	119			119	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	99			100	
cM capacity (veh/h)	750	933			1463	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	6	119	111
Volume Left	0	0	6
Volume Right	6	0	0
cSH	933	1700	1463
Volume to Capacity	0.01	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	8.9	0.0	0.4
Lane LOS	A		A
Approach Delay (s)	8.9	0.0	0.4
Approach LOS	A		

Intersection Summary			
Average Delay		0.4	
Intersection Capacity Utilization		19.1%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	58	125	81	9	5	38
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	64	139	90	10	6	42
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100				363	95
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100				363	95
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				99	96
cM capacity (veh/h)	1493				609	962

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	203	100	48
Volume Left	64	0	6
Volume Right	0	10	42
cSH	1493	1700	901
Volume to Capacity	0.04	0.06	0.05
Queue Length 95th (ft)	3	0	4
Control Delay (s)	2.6	0.0	9.2
Lane LOS	A		A
Approach Delay (s)	2.6	0.0	9.2
Approach LOS			A

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	26.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	125	5	0	85	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	6	0	94	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			144		236	142
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			144		236	142
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1450		757	911

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	144	94	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1450	757
Volume to Capacity	0.08	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

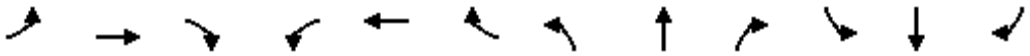
Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)		15	

AM Peak Hour

Alternative 5

HCM Unsignalized Intersection Capacity Analysis
8703: Macedonia Road & Webber Road/Old Post Road

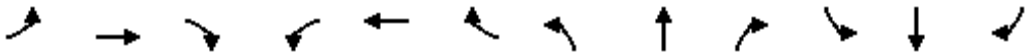
7/16/2015



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	66	61	9	3	70	149	36	2	263	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	9	20	81	75	11	4	86	184	44	2	325	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	729	742	336	811	731	206	347			228		
vC1, stage 1 conf vol	341	341		379	379							
vC2, stage 2 conf vol	388	401		432	352							
vCu, unblocked vol	729	742	336	811	731	206	347			228		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	98	96	89	81	98	100	93			100		
cM capacity (veh/h)	504	490	711	392	469	837	1212			1340		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	110	90	315	349
Volume Left	9	75	86	2
Volume Right	81	4	44	22
cSH	638	409	1212	1340
Volume to Capacity	0.17	0.22	0.07	0.00
Queue Length 95th (ft)	15	21	6	0
Control Delay (s)	11.8	16.3	2.7	0.1
Lane LOS	B	C	A	A
Approach Delay (s)	11.8	16.3	2.7	0.1
Approach LOS	B	C		

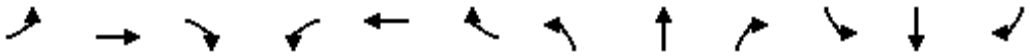
Intersection Summary				
Average Delay			4.2	
Intersection Capacity Utilization			49.6%	ICU Level of Service
Analysis Period (min)			15	



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	57	25	12	0	34	112	5	150	10	164	55	48
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	77	34	16	0	46	151	7	203	14	222	74	65
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	947	780	107	806	805	209	139			216		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	947	780	107	806	805	209	139			216		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	49	88	98	100	83	82	100			84		
cM capacity (veh/h)	151	274	953	234	264	833	1426			1348		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	127	197	223	361
Volume Left	77	0	7	222
Volume Right	16	151	14	65
cSH	195	554	1426	1348
Volume to Capacity	0.65	0.36	0.00	0.16
Queue Length 95th (ft)	97	40	0	15
Control Delay (s)	52.6	15.0	0.3	5.6
Lane LOS	F	C	A	A
Approach Delay (s)	52.6	15.0	0.3	5.6
Approach LOS	F	C		

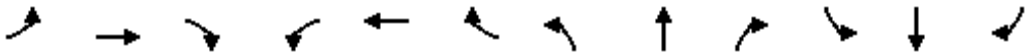
Intersection Summary				
Average Delay	12.9			
Intersection Capacity Utilization	50.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	20	0	50	126	205	0	0	271	119
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	22	0	56	140	228	0	0	301	132
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	931	875	367	875	941	228	433			228		
vC1, stage 1 conf vol	367	367		508	508							
vC2, stage 2 conf vol	563	508		367	433							
vCu, unblocked vol	931	875	367	875	941	228	433			228		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	100	100	100	94	100	93	88			100		
cM capacity (veh/h)	380	421	678	394	365	799	1121			1335		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	78	140	228	433
Volume Left	22	140	0	0
Volume Right	56	0	0	132
cSH	617	1121	1700	1700
Volume to Capacity	0.13	0.12	0.13	0.25
Queue Length 95th (ft)	11	11	0	0
Control Delay (s)	11.7	8.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	11.7	3.3		0.0
Approach LOS	B			

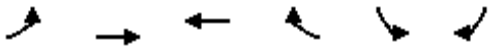
Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	0	69	0	0	0	0	286	33	93	198	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	0	77	0	0	0	0	318	37	103	220	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	763	781	220	839	763	336	220			354		
vC1, stage 1 conf vol	427	427		336	336							
vC2, stage 2 conf vol	336	354		503	427							
vCu, unblocked vol	763	781	220	839	763	336	220			354		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	100	91	100	100	100	100			91		
cM capacity (veh/h)	465	443	820	416	474	706	1349			1204		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	127	354	103	220
Volume Left	50	0	103	0
Volume Right	77	37	0	0
cSH	630	1700	1204	1700
Volume to Capacity	0.20	0.21	0.09	0.13
Queue Length 95th (ft)	19	0	7	0
Control Delay (s)	12.2	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	12.2	0.0	2.6	
Approach LOS	B			

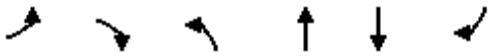
Intersection Summary				
Average Delay	3.0			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	94	87	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	104	97	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				201	97
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				201	97
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1509				787	960

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	97	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1509	1700	1700
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

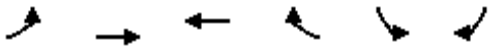
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	84	92	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	93	102	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198	105	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	105	108			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	790	949	1464			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	93	108
Volume Left	6	0	0
Volume Right	0	0	6
cSH	790	1464	1700
Volume to Capacity	0.01	0.00	0.06
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	54	73	14	2	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	60	81	16	2	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				149	89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				149	89
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1497				843	969

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	60	97	2
Volume Left	0	0	2
Volume Right	0	16	0
cSH	1497	1700	843
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		14.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	51	5	0	82	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	57	6	0	91	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			62		151	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			62		151	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1547		841	1006

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	62	91	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1547	841
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		

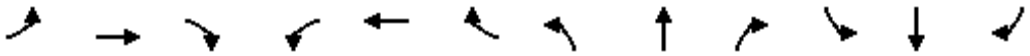
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	183	2	28	131	6	100
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	241	3	37	172	8	132
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	270	123			209	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	270	123			209	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	66	100			99	
cM capacity (veh/h)	717	931			1362	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	243	209	139
Volume Left	241	0	8
Volume Right	3	172	0
cSH	719	1700	1362
Volume to Capacity	0.34	0.12	0.01
Queue Length 95th (ft)	37	0	0
Control Delay (s)	12.6	0.0	0.5
Lane LOS	B		A
Approach Delay (s)	12.6	0.0	0.5
Approach LOS	B		

Intersection Summary			
Average Delay	5.3		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

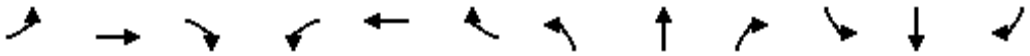
Alternative 5



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	20	73	53	11	17	86	146	97	8	96	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	30	25	90	65	14	21	106	180	120	10	119	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	623	656	123	698	601	240	128			300		
vC1, stage 1 conf vol	143	143		452	452							
vC2, stage 2 conf vol	480	512		246	148							
vCu, unblocked vol	623	656	123	698	601	240	128			300		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	95	90	86	97	97	93			99		
cM capacity (veh/h)	466	462	919	453	497	804	1457			1261		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	144	100	406	138
Volume Left	30	65	106	10
Volume Right	90	21	120	10
cSH	672	505	1457	1261
Volume to Capacity	0.22	0.20	0.07	0.01
Queue Length 95th (ft)	20	18	6	1
Control Delay (s)	11.8	13.9	2.5	0.6
Lane LOS	B	B	A	A
Approach Delay (s)	11.8	13.9	2.5	0.6
Approach LOS	B	B		

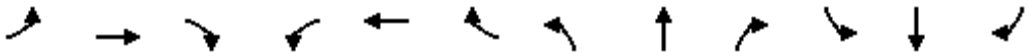
Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	42.9%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	72	9	18	6	49	112	6	92	8	93	119	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Hourly flow rate (vph)	97	12	24	8	66	151	8	124	11	126	161	62
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	774	595	192	620	620	130	223			135		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	774	595	192	620	620	130	223			135		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	54	97	97	98	82	84	99			91		
cM capacity (veh/h)	213	381	855	354	368	923	1328			1443		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	134	226	143	349
Volume Left	97	8	8	126
Volume Right	24	151	11	62
cSH	259	615	1328	1443
Volume to Capacity	0.52	0.37	0.01	0.09
Queue Length 95th (ft)	68	42	0	7
Control Delay (s)	32.8	14.2	0.5	3.3
Lane LOS	D	B	A	A
Approach Delay (s)	32.8	14.2	0.5	3.3
Approach LOS	D	B		

Intersection Summary				
Average Delay	10.4			
Intersection Capacity Utilization	46.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	37	0	61	90	268	0	0	176	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	41	0	68	100	298	0	0	196	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	787	719	221	719	744	298	247			298		
vC1, stage 1 conf vol	221	221		498	498							
vC2, stage 2 conf vol	566	498		221	247							
vCu, unblocked vol	787	719	221	719	744	298	247			298		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	91	100	91	92			100		
cM capacity (veh/h)	406	470	818	473	455	744	1313			1258		

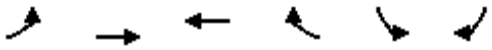
Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	109	100	298	247
Volume Left	41	100	0	0
Volume Right	68	0	0	51
cSH	612	1313	1700	1700
Volume to Capacity	0.18	0.08	0.18	0.15
Queue Length 95th (ft)	16	6	0	0
Control Delay (s)	12.2	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	12.2	2.0		0.0
Approach LOS	B			

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	118	0	106	0	0	0	0	240	36	61	152	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	131	0	118	0	0	0	0	267	40	68	169	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	591	611	169	709	591	287	169			307		
vC1, stage 1 conf vol	304	304		287	287							
vC2, stage 2 conf vol	287	307		422	304							
vCu, unblocked vol	591	611	169	709	591	287	169			307		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	100	87	100	100	100	100			95		
cM capacity (veh/h)	562	523	878	459	551	752	1409			1254		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	249	307	68	169
Volume Left	131	0	68	0
Volume Right	118	40	0	0
cSH	677	1700	1254	1700
Volume to Capacity	0.37	0.18	0.05	0.10
Queue Length 95th (ft)	42	0	4	0
Control Delay (s)	13.4	0.0	8.0	0.0
Lane LOS	B		A	
Approach Delay (s)	13.4	0.0	2.3	
Approach LOS	B			

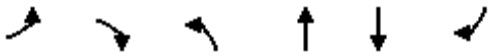
Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	99	101	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	110	112	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	112				222	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112				222	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1490				766	941

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	110	112	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1490	1700	1700
Volume to Capacity	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

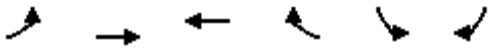
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	112	100	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	124	111	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	238	114	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	114	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	750	939	1472			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	124	117
Volume Left	6	0	0
Volume Right	0	0	6
cSH	750	1472	1700
Volume to Capacity	0.01	0.00	0.07
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.8	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.8	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	125	81	9	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	139	90	10	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100				234	95
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100				234	95
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1493				754	962

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	139	100	6
Volume Left	0	0	6
Volume Right	0	10	0
cSH	1493	1700	754
Volume to Capacity	0.00	0.06	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		16.6%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	125	5	0	85	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	6	0	94	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			144		236	142
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			144		236	142
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1450		757	911

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	144	94	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1450	757
Volume to Capacity	0.08	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	38	0	129	58	0	74
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	50	0	170	76	0	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	305	208			246	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	208			246	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	689	835			1320	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	50	246	97
Volume Left	50	0	0
Volume Right	0	76	0
cSH	689	1700	1320
Volume to Capacity	0.07	0.14	0.00
Queue Length 95th (ft)	6	0	0
Control Delay (s)	10.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.6	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Build Exit 95

AM Peak Hour

Alternative 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	51	0	0	120	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	59	0	0	140	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			59		199	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		199	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1538		790	1006

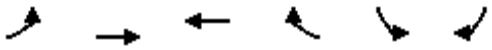
Direction, Lane #	EB 1	WB 1
Volume Total	59	140
Volume Left	0	0
Volume Right	0	0
cSH	1700	1700
Volume to Capacity	0.03	0.08
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	9.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	40	11	8	119	1	20
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	50	14	10	149	1	25
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			64		226	57
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		226	57
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.4
p0 queue free %			99		100	97
cM capacity (veh/h)			1532		742	990

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	159	26
Volume Left	0	10	1
Volume Right	14	0	25
cSH	1700	1532	975
Volume to Capacity	0.04	0.01	0.03
Queue Length 95th (ft)	0	0	2
Control Delay (s)	0.0	0.5	8.8
Lane LOS		A	A
Approach Delay (s)	0.0	0.5	8.8
Approach LOS			A

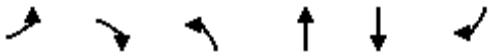
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	22.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	153	163	20	13	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	247	263	32	21	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	295				529	279
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	295				529	279
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	99
cM capacity (veh/h)	1249				510	760

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	248	295	31
Volume Left	2	0	21
Volume Right	0	32	10
cSH	1249	1700	569
Volume to Capacity	0.00	0.17	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.1	0.0	11.7
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	11.7
Approach LOS			B

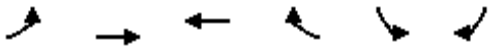
Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		19.8%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	39	127	139	371	616	44
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	51	165	181	482	800	57
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1431	429	857			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1431	429	857			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	46	71	76			
cM capacity (veh/h)	94	569	754			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	216	181	241	241	533	324
Volume Left	51	181	0	0	0	0
Volume Right	165	0	0	0	0	57
cSH	259	754	1700	1700	1700	1700
Volume to Capacity	0.83	0.24	0.14	0.14	0.31	0.19
Queue Length 95th (ft)	166	23	0	0	0	0
Control Delay (s)	62.3	11.3	0.0	0.0	0.0	0.0
Lane LOS	F	B				
Approach Delay (s)	62.3	3.1			0.0	
Approach LOS	F					

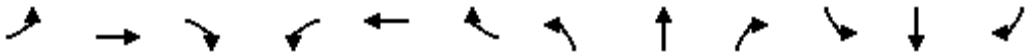
Intersection Summary			
Average Delay	8.9		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	11	399	618	116	18	42
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	13	481	745	140	22	51
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			848			
pX, platoon unblocked						
vC, conflicting volume	745				1081	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	745				1081	442
tC, single (s)	4.3				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	98				90	91
cM capacity (veh/h)	821				209	563

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	13	240	240	496	388	72
Volume Left	13	0	0	0	0	22
Volume Right	0	0	0	0	140	51
cSH	821	1700	1700	1700	1700	373
Volume to Capacity	0.02	0.14	0.14	0.29	0.23	0.19
Queue Length 95th (ft)	1	0	0	0	0	18
Control Delay (s)	9.5	0.0	0.0	0.0	0.0	16.9
Lane LOS	A					C
Approach Delay (s)	0.3			0.0		16.9
Approach LOS						C

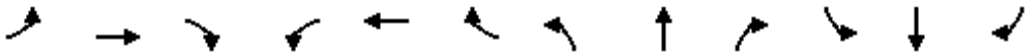
Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	102	19	13	1	91	52	21	15	81	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	8	19	123	23	16	1	110	63	25	18	98	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	434	451	107	561	448	75	117			88		
vC1, stage 1 conf vol	143	143		295	295							
vC2, stage 2 conf vol	291	307		266	153							
vCu, unblocked vol	434	451	107	561	448	75	117			88		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.3			4.2		
tC, 2 stage (s)	6.1	5.5		6.3	5.7							
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.4			2.3		
p0 queue free %	99	97	87	95	97	100	92			99		
cM capacity (veh/h)	591	558	941	447	535	943	1351			1459		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	8	142	23	17	110	88	18	117
Volume Left	8	0	23	0	110	0	18	0
Volume Right	0	123	0	1	0	25	0	19
cSH	591	861	447	553	1351	1700	1459	1700
Volume to Capacity	0.01	0.17	0.05	0.03	0.08	0.05	0.01	0.07
Queue Length 95th (ft)	1	15	4	2	7	0	1	0
Control Delay (s)	11.2	10.0	13.5	11.7	7.9	0.0	7.5	0.0
Lane LOS	B	B	B	B	A		A	
Approach Delay (s)	10.1		12.7		4.4		1.0	
Approach LOS	B		B					

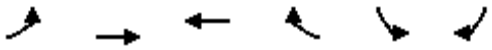
Intersection Summary				
Average Delay	5.8			
Intersection Capacity Utilization	26.1%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	134	0	29	102	135	0	0	174	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	156	0	34	119	157	0	0	202	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)								1308				
pX, platoon unblocked												
vC, conflicting volume	647	613	219	613	629	157	235			157		
vC1, stage 1 conf vol	219	219		394	394							
vC2, stage 2 conf vol	428	394		219	235							
vCu, unblocked vol	647	613	219	613	629	157	235			157		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	69	100	96	91			100		
cM capacity (veh/h)	499	514	826	498	470	858	1304			1393		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	190	119	157	235
Volume Left	156	119	0	0
Volume Right	34	0	0	33
cSH	538	1304	1700	1700
Volume to Capacity	0.35	0.09	0.09	0.14
Queue Length 95th (ft)	39	7	0	0
Control Delay (s)	15.3	8.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.3	3.5		0.0
Approach LOS	C			

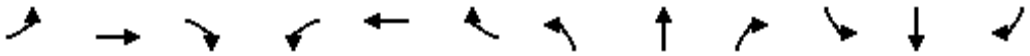
Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	228	189	338	69	110	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6		5.3	5.3
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1671	3343	3351		1570	1404
Flt Permitted	0.48	1.00	1.00		0.95	1.00
Satd. Flow (perm)	846	3343	3351		1570	1404
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	265	220	393	80	128	460
RTOR Reduction (vph)	0	0	21	0	0	296
Lane Group Flow (vph)	265	220	452	0	128	164
Heavy Vehicles (%)	8%	8%	5%	5%	15%	15%
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		8	
Permitted Phases	2					8
Actuated Green, G (s)	19.7	19.7	19.7		11.9	11.9
Effective Green, g (s)	19.7	19.7	19.7		11.9	11.9
Actuated g/C Ratio	0.45	0.45	0.45		0.27	0.27
Clearance Time (s)	6.6	6.6	6.6		5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	383	1513	1517		429	384
v/s Ratio Prot		0.07	0.13		0.08	
v/s Ratio Perm	c0.31					c0.12
v/c Ratio	0.69	0.15	0.30		0.30	0.43
Uniform Delay, d1	9.5	7.0	7.5		12.5	13.0
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	5.3	0.0	0.1		0.4	0.8
Delay (s)	14.8	7.0	7.6		12.9	13.8
Level of Service	B	A	A		B	B
Approach Delay (s)		11.3	7.6		13.6	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	43.5	Sum of lost time (s)	11.9
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

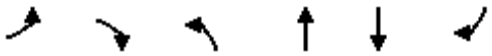
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	0	198	0	0	0	0	204	85	14	294	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	37	0	220	0	0	0	0	227	94	16	327	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								796				
pX, platoon unblocked												
vC, conflicting volume	632	679	327	852	632	274	327			321		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	632	679	327	852	632	274	327			321		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.3			4.3		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.4			2.4		
p0 queue free %	90	100	69	100	100	100	100			99		
cM capacity (veh/h)	382	363	703	190	392	765	1153			1159		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	257	321	16	327
Volume Left	37	0	16	0
Volume Right	220	94	0	0
cSH	628	1700	1159	1700
Volume to Capacity	0.41	0.19	0.01	0.19
Queue Length 95th (ft)	50	0	1	0
Control Delay (s)	14.6	0.0	8.1	0.0
Lane LOS	B		A	
Approach Delay (s)	14.6	0.0	0.4	
Approach LOS	B			

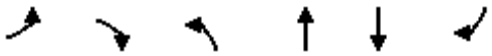
Intersection Summary				
Average Delay	4.2			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	35	0	0	90	106	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	0	0	100	118	16
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	226	126	133			
vC1, stage 1 conf vol	126					
vC2, stage 2 conf vol	100					
vCu, unblocked vol	226	126	133			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	100	100			
cM capacity (veh/h)	834	917	1451			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	39	100	133
Volume Left	39	0	0
Volume Right	0	0	16
cSH	834	1700	1700
Volume to Capacity	0.05	0.06	0.08
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

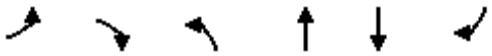
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	16.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	31	0	0	59	78	28
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	41	0	0	78	103	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	199	121	139			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	199	121	139			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	100	100			
cM capacity (veh/h)	783	922	1450			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	41	78	139
Volume Left	41	0	0
Volume Right	0	0	37
cSH	783	1450	1700
Volume to Capacity	0.05	0.00	0.08
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.8	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.8	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	27	33	35	262	473	19
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	30	37	39	291	526	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				480		
pX, platoon unblocked						
vC, conflicting volume	905	536	547			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	905	536	547			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	90	93	96			
cM capacity (veh/h)	295	545	998			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	67	330	547
Volume Left	30	39	0
Volume Right	37	0	21
cSH	394	998	1700
Volume to Capacity	0.17	0.04	0.32
Queue Length 95th (ft)	15	3	0
Control Delay (s)	16.0	1.4	0.0
Lane LOS	C	A	
Approach Delay (s)	16.0	1.4	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	53.4%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

Alternative 1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	85	0	0	79	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	99	0	0	92	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		191	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		191	99
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1507		798	957

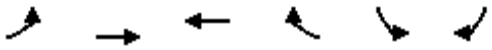
Direction, Lane #	EB 1	WB 1
Volume Total	99	92
Volume Left	0	0
Volume Right	0	0
cSH	1700	1700
Volume to Capacity	0.06	0.05
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	7.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	72	13	9	75	4	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	90	16	11	94	5	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			106		214	98
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		214	98
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		99	100
cM capacity (veh/h)			1497		773	963

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	106	105	8
Volume Left	0	11	5
Volume Right	16	0	2
cSH	1700	1497	827
Volume to Capacity	0.06	0.01	0.01
Queue Length 95th (ft)	0	1	1
Control Delay (s)	0.0	0.8	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	0.8	9.4
Approach LOS			A

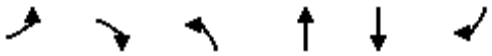
Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		21.1%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	69	45	5	16	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	111	73	8	26	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	81				191	77
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	81				191	77
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1498				802	990

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	113	81	35
Volume Left	2	0	26
Volume Right	0	8	10
cSH	1498	1700	845
Volume to Capacity	0.00	0.05	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.1	0.0	9.4
Lane LOS	A		A
Approach Delay (s)	0.1	0.0	9.4
Approach LOS			A

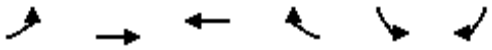
Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	14.4%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	17	68	36	582	470	14
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.77	0.77	0.77	0.77	0.77	0.77
Hourly flow rate (vph)	22	88	47	756	610	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1091	314	629			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1091	314	629			
tC, single (s)	6.9	7.0	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	89	87	95			
cM capacity (veh/h)	194	673	943			

Direction, Lane #	EB 1	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	110	47	378	378	407	222
Volume Left	22	47	0	0	0	0
Volume Right	88	0	0	0	0	18
cSH	451	943	1700	1700	1700	1700
Volume to Capacity	0.24	0.05	0.22	0.22	0.24	0.13
Queue Length 95th (ft)	24	4	0	0	0	0
Control Delay (s)	15.6	9.0	0.0	0.0	0.0	0.0
Lane LOS	C	A				
Approach Delay (s)	15.6	0.5			0.0	
Approach LOS	C					

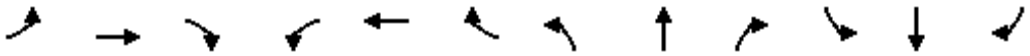
Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	31.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	18	581	453	66	43	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	22	700	546	80	52	37
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			848			
pX, platoon unblocked						
vC, conflicting volume	546				979	313
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	546				979	313
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				79	95
cM capacity (veh/h)	1013				246	689

Direction, Lane #	EB 1	EB 2	EB 3	WB 1	WB 2	SB 1
Volume Total	22	350	350	364	261	89
Volume Left	22	0	0	0	0	52
Volume Right	0	0	0	0	80	37
cSH	1013	1700	1700	1700	1700	336
Volume to Capacity	0.02	0.21	0.21	0.21	0.15	0.27
Queue Length 95th (ft)	2	0	0	0	0	26
Control Delay (s)	8.6	0.0	0.0	0.0	0.0	19.5
Lane LOS	A					C
Approach Delay (s)	0.3			0.0		19.5
Approach LOS						C

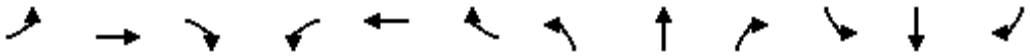
Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	27.0%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	33	70	24	36	4	86	109	34	4	89	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	17	40	84	29	43	5	104	131	41	5	107	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			TWLTL	
Median storage veh)								2			2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	486	501	111	580	484	152	116			172		
vC1, stage 1 conf vol	121	121		359	359							
vC2, stage 2 conf vol	365	380		221	125							
vCu, unblocked vol	486	501	111	580	484	152	116			172		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.1		
tC, 2 stage (s)	6.3	5.7		6.2	5.6							
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.2		
p0 queue free %	97	92	91	94	92	99	93			100		
cM capacity (veh/h)	507	516	900	482	535	879	1402			1399		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	17	124	29	48	104	172	5	116
Volume Left	17	0	29	0	104	0	5	0
Volume Right	0	84	0	5	0	41	0	8
cSH	507	727	482	557	1402	1700	1399	1700
Volume to Capacity	0.03	0.17	0.06	0.09	0.07	0.10	0.00	0.07
Queue Length 95th (ft)	3	15	5	7	6	0	0	0
Control Delay (s)	12.4	11.0	12.9	12.1	7.8	0.0	7.6	0.0
Lane LOS	B	B	B	B	A		A	
Approach Delay (s)	11.1		12.4		2.9		0.3	
Approach LOS	B		B					

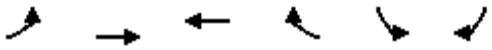
Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	26.1%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	100	6	34	123	195	0	0	154	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	116	7	40	143	227	0	0	179	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)								1308				
pX, platoon unblocked												
vC, conflicting volume	752	709	196	709	726	227	213			227		
vC1, stage 1 conf vol	196	196		513	513							
vC2, stage 2 conf vol	556	513		196	213							
vCu, unblocked vol	752	709	196	709	726	227	213			227		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	73	98	95	89			100		
cM capacity (veh/h)	410	451	845	438	424	793	1284			1269		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	163	143	227	213
Volume Left	116	143	0	0
Volume Right	40	0	0	34
cSH	491	1284	1700	1700
Volume to Capacity	0.33	0.11	0.13	0.13
Queue Length 95th (ft)	36	9	0	0
Control Delay (s)	15.9	8.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.9	3.2		0.0
Approach LOS	C			

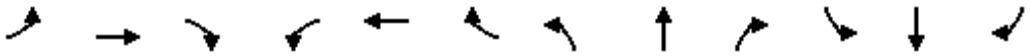
Intersection Summary				
Average Delay	5.0			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	346	278	273	70	135	246
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.6	6.6	6.6		5.3	5.3
Lane Util. Factor	1.00	0.95	0.95		1.00	1.00
Frt	1.00	1.00	0.97		1.00	0.85
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1752	3505	3365		1770	1583
Flt Permitted	0.52	1.00	1.00		0.95	1.00
Satd. Flow (perm)	954	3505	3365		1770	1583
Peak-hour factor, PHF	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	402	323	317	81	157	286
RTOR Reduction (vph)	0	0	28	0	0	223
Lane Group Flow (vph)	402	323	370	0	157	63
Heavy Vehicles (%)	3%	3%	4%	4%	2%	2%
Turn Type	Perm	NA	NA		Prot	Perm
Protected Phases		2	6		8	
Permitted Phases	2					8
Actuated Green, G (s)	28.1	28.1	28.1		11.4	11.4
Effective Green, g (s)	28.1	28.1	28.1		11.4	11.4
Actuated g/C Ratio	0.55	0.55	0.55		0.22	0.22
Clearance Time (s)	6.6	6.6	6.6		5.3	5.3
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0
Lane Grp Cap (vph)	521	1916	1839		392	351
v/s Ratio Prot		0.09	0.11		c0.09	
v/s Ratio Perm	c0.42					0.04
v/c Ratio	0.77	0.17	0.20		0.40	0.18
Uniform Delay, d1	9.1	5.8	5.9		17.1	16.2
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	7.0	0.0	0.1		0.7	0.2
Delay (s)	16.1	5.9	6.0		17.8	16.5
Level of Service	B	A	A		B	B
Approach Delay (s)		11.5	6.0		16.9	
Approach LOS		B	A		B	

Intersection Summary			
HCM 2000 Control Delay	11.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	51.4	Sum of lost time (s)	11.9
Intersection Capacity Utilization	51.8%	ICU Level of Service	A
Analysis Period (min)	15		

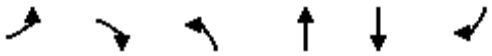
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	0	121	0	0	0	0	272	118	13	241	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	51	0	134	0	0	0	0	302	131	14	268	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								796				
pX, platoon unblocked												
vC, conflicting volume	664	730	268	799	664	368	268			433		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	664	730	268	799	664	368	268			433		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	82	100	100	100	100			99		
cM capacity (veh/h)	358	334	750	247	376	678	1279			1110		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	186	433	14	268
Volume Left	51	0	14	0
Volume Right	134	131	0	0
cSH	576	1700	1110	1700
Volume to Capacity	0.32	0.25	0.01	0.16
Queue Length 95th (ft)	35	0	1	0
Control Delay (s)	14.2	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	14.2	0.0	0.4	
Approach LOS	B			

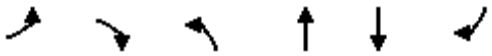
Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	10	0	0	107	110	19
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	0	0	119	122	21
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	252	133	143			
vC1, stage 1 conf vol	133					
vC2, stage 2 conf vol	119					
vCu, unblocked vol	252	133	143			
tC, single (s)	6.9	6.7	4.2			
tC, 2 stage (s)	5.9					
tF (s)	4.0	3.8	2.3			
p0 queue free %	98	100	100			
cM capacity (veh/h)	726	803	1363			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	11	119	143
Volume Left	11	0	0
Volume Right	0	0	21
cSH	726	1700	1700
Volume to Capacity	0.02	0.07	0.08
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.0	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.0	0.0	0.0
Approach LOS	B		

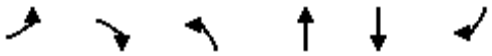
Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	16.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	0	0	79	104	6
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	37	0	0	104	137	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	245	141	145			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	245	141	145			
tC, single (s)	6.9	6.7	4.1			
tC, 2 stage (s)						
tF (s)	4.0	3.8	2.2			
p0 queue free %	94	100	100			
cM capacity (veh/h)	650	794	1431			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	37	104	145
Volume Left	37	0	0
Volume Right	0	0	8
cSH	650	1431	1700
Volume to Capacity	0.06	0.00	0.09
Queue Length 95th (ft)	4	0	0
Control Delay (s)	10.9	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.9	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	15.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	34	51	60	356	330	32
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	38	57	67	396	367	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				480		
pX, platoon unblocked						
vC, conflicting volume	913	384	402			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	913	384	402			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	87	92	94			
cM capacity (veh/h)	288	668	1135			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	94	462	402
Volume Left	38	67	0
Volume Right	57	0	36
cSH	437	1135	1700
Volume to Capacity	0.22	0.06	0.24
Queue Length 95th (ft)	20	5	0
Control Delay (s)	15.5	1.8	0.0
Lane LOS	C	A	
Approach Delay (s)	15.5	1.8	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

AM Peak Hour

Alternative 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	51	0	0	120	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	59	0	0	140	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			59		199	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		199	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1544		790	1006

Direction, Lane #	EB 1	WB 1
Volume Total	59	140
Volume Left	0	0
Volume Right	0	0
cSH	1700	1700
Volume to Capacity	0.03	0.08
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	9.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	0	51	28	0	120	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	64	35	0	150	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			64		102	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		102	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		83	97
cM capacity (veh/h)			1539		876	1042

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	35	185
Volume Left	0	35	150
Volume Right	64	0	35
cSH	1700	1539	903
Volume to Capacity	0.04	0.02	0.20
Queue Length 95th (ft)	0	2	19
Control Delay (s)	0.0	7.4	10.0
Lane LOS		A	B
Approach Delay (s)	0.0	7.4	10.0
Approach LOS			B

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	153	163	147	73	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	247	263	237	118	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	500				631	381
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	500				631	381
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				73	99
cM capacity (veh/h)	1064				444	666

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	248	500	127
Volume Left	2	0	118
Volume Right	0	237	10
cSH	1064	1700	456
Volume to Capacity	0.00	0.29	0.28
Queue Length 95th (ft)	0	0	28
Control Delay (s)	0.1	0.0	15.9
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	15.9
Approach LOS			C

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	26	169	299	49	76	150	182	178	106	275	111
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.90	0.77	0.90	0.90	0.90	0.77	0.77	0.90	0.90	0.77	0.77
Hourly flow rate (vph)	40	29	219	332	54	84	195	236	198	118	357	144
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1402	1489	429	1453	1363	236	501			434		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1402	1489	429	1453	1363	236	501			434		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	22	68	65	0	50	89	82			90		
cM capacity (veh/h)	51	91	626	43	108	803	1063			1126		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	40	248	332	139	195	236	198	118	501
Volume Left	40	0	332	0	195	0	0	118	0
Volume Right	0	219	0	84	0	0	198	0	144
cSH	51	371	43	228	1063	1700	1700	1126	1700
Volume to Capacity	0.78	0.67	7.81	0.61	0.18	0.14	0.12	0.10	0.29
Queue Length 95th (ft)	81	116	Err	89	17	0	0	9	0
Control Delay (s)	190.9	32.3	Err	42.7	9.1	0.0	0.0	8.6	0.0
Lane LOS	F	D	F	E	A			A	
Approach Delay (s)	54.4		7063.8		2.8			1.6	
Approach LOS	F		F						

Intersection Summary				
Average Delay	1666.7			
Intersection Capacity Utilization	71.2%	ICU Level of Service	C	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	102	19	13	1	91	52	21	15	81	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	8	19	123	23	16	1	110	63	25	18	98	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	434	451	107	561	448	75	117			88		
vC1, stage 1 conf vol	143	143		295	295							
vC2, stage 2 conf vol	291	307		266	153							
vCu, unblocked vol	434	451	107	561	448	75	117			88		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	87	95	97	100	93			99		
cM capacity (veh/h)	599	565	947	474	563	986	1472			1508		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	8	142	23	17	110	88	18	117
Volume Left	8	0	23	0	110	0	18	0
Volume Right	0	123	0	1	0	25	0	19
cSH	599	867	474	581	1472	1700	1508	1700
Volume to Capacity	0.01	0.16	0.05	0.03	0.07	0.05	0.01	0.07
Queue Length 95th (ft)	1	15	4	2	6	0	1	0
Control Delay (s)	11.1	10.0	13.0	11.4	7.6	0.0	7.4	0.0
Lane LOS	B	A	B	B	A		A	
Approach Delay (s)	10.0		12.3		4.2		1.0	
Approach LOS	B		B					

Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	26.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	134	0	29	102	135	0	0	174	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	156	0	34	119	157	0	0	202	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	647	613	219	613	629	157	235			157		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	647	613	219	613	629	157	235			157		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	59	100	96	91			100		
cM capacity (veh/h)	345	371	821	377	364	889	1332			1423		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	190	119	157	235
Volume Left	156	119	0	0
Volume Right	34	0	0	33
cSH	420	1332	1700	1700
Volume to Capacity	0.45	0.09	0.09	0.14
Queue Length 95th (ft)	57	7	0	0
Control Delay (s)	20.4	8.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.4	3.4		0.0
Approach LOS	C			

Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	0	198	0	0	0	0	204	85	14	294	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	37	0	220	0	0	0	0	227	94	16	327	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	632	679	327	852	632	274	327			321		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	632	679	327	852	632	274	327			321		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	69	100	100	100	100			99		
cM capacity (veh/h)	389	369	715	192	393	765	1233			1239		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	257	321	16	327
Volume Left	37	0	16	0
Volume Right	220	94	0	0
cSH	638	1700	1239	1700
Volume to Capacity	0.40	0.19	0.01	0.19
Queue Length 95th (ft)	48	0	1	0
Control Delay (s)	14.4	0.0	7.9	0.0
Lane LOS	B		A	
Approach Delay (s)	14.4	0.0	0.4	
Approach LOS	B			

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	66	0	0	59	78	42
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	73	0	0	66	87	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	110	133			
vC1, stage 1 conf vol	110					
vC2, stage 2 conf vol	66					
vCu, unblocked vol	176	110	133			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	100	100			
cM capacity (veh/h)	864	935	1458			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	73	66	133
Volume Left	73	0	0
Volume Right	0	0	47
cSH	864	1458	1700
Volume to Capacity	0.08	0.00	0.08
Queue Length 95th (ft)	7	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour
Alternative 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	85	0	0	79	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	99	0	0	92	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		191	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		191	99
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1507		798	957

Direction, Lane #	EB 1	WB 1
Volume Total	99	92
Volume Left	0	0
Volume Right	0	0
cSH	1700	1700
Volume to Capacity	0.06	0.05
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	7.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	0	85	11	0	80	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	106	14	0	100	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			106		81	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		81	53
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		89	99
cM capacity (veh/h)			1497		918	1020

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	106	14	112
Volume Left	0	14	100
Volume Right	106	0	12
cSH	1700	1497	928
Volume to Capacity	0.06	0.01	0.12
Queue Length 95th (ft)	0	1	10
Control Delay (s)	0.0	7.4	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	7.4	9.4
Approach LOS			A

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	69	45	89	90	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	111	73	144	145	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	216				259	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216				259	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				80	99
cM capacity (veh/h)	1336				733	908

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	113	216	155
Volume Left	2	0	145
Volume Right	0	144	10
cSH	1336	1700	742
Volume to Capacity	0.00	0.13	0.21
Queue Length 95th (ft)	0	0	20
Control Delay (s)	0.1	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	11.1
Approach LOS			B

Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	35	25	99	241	44	72	54	283	281	128	198	36
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.77	0.90	0.77	0.90	0.90	0.90	0.77	0.77	0.90	0.90	0.77	0.77
Hourly flow rate (vph)	45	28	129	268	49	80	70	368	312	142	257	47
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1177	1385	281	1192	1096	368	304			680		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1177	1385	281	1192	1096	368	304			680		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	53	76	83	0	71	88	94			84		
cM capacity (veh/h)	98	114	756	94	170	678	1257			913		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	NB 3	SB 1	SB 2
Volume Total	45	156	268	129	70	368	312	142	304
Volume Left	45	0	268	0	70	0	0	142	0
Volume Right	0	129	0	80	0	0	312	0	47
cSH	98	377	94	318	1257	1700	1700	913	1700
Volume to Capacity	0.47	0.41	2.85	0.41	0.06	0.22	0.18	0.16	0.18
Queue Length 95th (ft)	50	50	641	47	4	0	0	14	0
Control Delay (s)	70.6	21.1	931.7	23.8	8.0	0.0	0.0	9.7	0.0
Lane LOS	F	C	F	C	A			A	
Approach Delay (s)	32.3		636.7		0.8			3.1	
Approach LOS	D		F						

Intersection Summary				
Average Delay	145.5			
Intersection Capacity Utilization	56.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	33	70	24	36	4	86	109	34	4	89	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	17	40	84	29	43	5	104	131	41	5	107	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	486	501	111	580	484	152	116			172		
vC1, stage 1 conf vol	121	121		359	359							
vC2, stage 2 conf vol	365	380		221	125							
vCu, unblocked vol	486	501	111	580	484	152	116			172		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.1		
tC, 2 stage (s)	6.3	5.7		6.2	5.6							
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.2		
p0 queue free %	97	92	91	94	92	99	93			100		
cM capacity (veh/h)	507	516	900	482	535	879	1402			1399		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	17	124	29	48	104	172	5	116
Volume Left	17	0	29	0	104	0	5	0
Volume Right	0	84	0	5	0	41	0	8
cSH	507	727	482	557	1402	1700	1399	1700
Volume to Capacity	0.03	0.17	0.06	0.09	0.07	0.10	0.00	0.07
Queue Length 95th (ft)	3	15	5	7	6	0	0	0
Control Delay (s)	12.4	11.0	12.9	12.1	7.8	0.0	7.6	0.0
Lane LOS	B	B	B	B	A		A	
Approach Delay (s)	11.1		12.4		2.9		0.3	
Approach LOS	B		B					

Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	26.1%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	100	6	34	123	195	0	0	154	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	116	7	40	143	227	0	0	179	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	752	709	196	709	726	227	213			227		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	752	709	196	709	726	227	213			227		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	62	98	95	89			100		
cM capacity (veh/h)	279	319	845	310	304	793	1284			1269		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	163	143	227	213
Volume Left	116	143	0	0
Volume Right	40	0	0	34
cSH	363	1284	1700	1700
Volume to Capacity	0.45	0.11	0.13	0.13
Queue Length 95th (ft)	56	9	0	0
Control Delay (s)	22.7	8.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	22.7	3.2		0.0
Approach LOS	C			

Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	0	121	0	0	0	0	272	118	13	241	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	51	0	134	0	0	0	0	302	131	14	268	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	664	730	268	799	664	368	268			433		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	664	730	268	799	664	368	268			433		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	86	100	82	100	100	100	100			99		
cM capacity (veh/h)	358	334	750	247	376	678	1279			1110		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	186	433	14	268
Volume Left	51	0	14	0
Volume Right	134	131	0	0
cSH	576	1700	1110	1700
Volume to Capacity	0.32	0.25	0.01	0.16
Queue Length 95th (ft)	35	0	1	0
Control Delay (s)	14.2	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	14.2	0.0	0.4	
Approach LOS	B			

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	38	0	0	79	104	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	42	0	0	88	116	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	217	129	143			
vC1, stage 1 conf vol	129					
vC2, stage 2 conf vol	88					
vCu, unblocked vol	217	129	143			
tC, single (s)	6.9	6.7	4.1			
tC, 2 stage (s)	5.9					
tF (s)	4.0	3.8	2.2			
p0 queue free %	94	100	100			
cM capacity (veh/h)	744	806	1433			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	88	143
Volume Left	42	0	0
Volume Right	0	0	28
cSH	744	1433	1700
Volume to Capacity	0.06	0.00	0.08
Queue Length 95th (ft)	5	0	0
Control Delay (s)	10.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.1	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

Build Exit 96

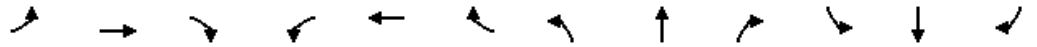
AM Peak Hour

Alternative 1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	9	3	41	28	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	32	10	3	47	32	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	99	46	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	99	46	60			
tC, single (s)	6.7	6.5	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	842	959	1537			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	50	60
Volume Left	32	3	0
Volume Right	10	0	28
cSH	868	1537	1700
Volume to Capacity	0.05	0.00	0.04
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.4	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	48	1	0	0	28	253	3	0	378	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	0	51	1	0	0	30	269	3	0	402	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	744	747	415	784	732	271	402			272		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	744	747	415	784	732	271	402			272		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	93	100	92	100	100	100	97			100		
cM capacity (veh/h)	312	321	616	279	339	768	1130			1268		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	22	51	1	0	30	272	0	429
Volume Left	22	0	1	0	30	0	0	0
Volume Right	0	51	0	0	0	3	0	27
cSH	312	616	279	1700	1130	1700	1700	1700
Volume to Capacity	0.07	0.08	0.00	0.00	0.03	0.16	0.00	0.25
Queue Length 95th (ft)	6	7	0	0	2	0	0	0
Control Delay (s)	17.4	11.4	17.9	0.0	8.3	0.0	0.0	0.0
Lane LOS	C	B	C	A	A			
Approach Delay (s)	13.2		17.9		0.8		0.0	
Approach LOS	B		C					

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	37.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	96	1	148	0	0	0	0	280	76	42	293	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	108	1	166	0	0	0	0	315	85	47	329	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	781	738	329	948	781	357	329			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	781	738	329	948	781	357	329			315		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	62	100	76	100	100	100	100			96		
cM capacity (veh/h)	286	315	679	177	316	691	1181			1196		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	275	400	47	329
Volume Left	108	0	47	0
Volume Right	166	85	0	0
cSH	440	1700	1196	1700
Volume to Capacity	0.63	0.24	0.04	0.19
Queue Length 95th (ft)	104	0	3	0
Control Delay (s)	25.9	0.0	8.1	0.0
Lane LOS	D		A	
Approach Delay (s)	25.9	0.0	1.0	
Approach LOS	D			

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	170	197	269	186	232	209
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	183	212	289	200	249	225
Pedestrians					197	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					16	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	486				1064	486
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	486				1064	486
tC, single (s)	4.2				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.3				3.6	3.4
p0 queue free %	79				0	52
cM capacity (veh/h)	874				157	471

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	183	212	289	200	249	225
Volume Left	183	0	0	0	249	0
Volume Right	0	0	0	200	0	225
cSH	874	1700	1700	1700	157	471
Volume to Capacity	0.21	0.12	0.17	0.12	1.59	0.48
Queue Length 95th (ft)	20	0	0	0	426	63
Control Delay (s)	10.2	0.0	0.0	0.0	345.1	19.4
Lane LOS	B				F	C
Approach Delay (s)	4.7		0.0		190.7	
Approach LOS					F	

Intersection Summary				
Average Delay	68.0			
Intersection Capacity Utilization	46.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	3	426	451	0	1	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	3	453	480	0	1	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	480				939	240
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	480				939	240
tC, single (s)	4.3				7.5	7.6
tC, 2 stage (s)						
tF (s)	2.3				3.8	3.6
p0 queue free %	100				99	99
cM capacity (veh/h)	1038				212	675

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	456	320	160	5
Volume Left	3	0	0	1
Volume Right	0	0	0	4
cSH	1038	1700	1700	469
Volume to Capacity	0.00	0.19	0.09	0.01
Queue Length 95th (ft)	0	0	0	1
Control Delay (s)	0.1	0.0	0.0	12.8
Lane LOS	A			B
Approach Delay (s)	0.1	0.0		12.8
Approach LOS				B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	34.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	68	0	20	112	264	0	0	267	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	76	0	22	124	293	0	0	297	178
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	950	928	386	928	1017	293	474			293		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	950	928	386	928	1017	293	474			293		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	65	100	97	88			100		
cM capacity (veh/h)	211	236	662	215	199	718	1033			1208		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	98	124	293	474
Volume Left	76	124	0	0
Volume Right	22	0	0	178
cSH	255	1033	1700	1700
Volume to Capacity	0.38	0.12	0.17	0.28
Queue Length 95th (ft)	43	10	0	0
Control Delay (s)	27.6	9.0	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	27.6	2.7		0.0
Approach LOS	D			

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A	
Analysis Period (min)	15			

PM Peak Hour

Alternative 1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	24	0	7	50	36	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	27	0	8	57	41	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	49	58			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	49	58			
tC, single (s)	6.7	6.5	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.2			
p0 queue free %	97	100	99			
cM capacity (veh/h)	815	955	1540			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	27	65	58
Volume Left	27	8	0
Volume Right	0	0	17
cSH	815	1540	1700
Volume to Capacity	0.03	0.01	0.03
Queue Length 95th (ft)	3	0	0
Control Delay (s)	9.6	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	9.6	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	1	51	1	0	0	30	454	2	0	324	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	23	1	54	1	0	0	32	483	2	0	345	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	903	905	356	947	893	484	345			485		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	903	905	356	947	893	484	345			485		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	92	100	100	100	97			100		
cM capacity (veh/h)	251	267	684	219	276	587	1203			1067		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	23	55	1	0	32	485	0	367
Volume Left	23	0	1	0	32	0	0	0
Volume Right	0	54	0	0	0	2	0	22
cSH	251	664	219	1700	1203	1700	1700	1700
Volume to Capacity	0.09	0.08	0.00	0.00	0.03	0.29	0.00	0.22
Queue Length 95th (ft)	8	7	0	0	2	0	0	0
Control Delay (s)	20.8	10.9	21.6	0.0	8.1	0.0	0.0	0.0
Lane LOS	C	B	C	A	A			
Approach Delay (s)	13.9		21.6		0.5		0.0	
Approach LOS	B		C					

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	39.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	214	1	130	0	0	0	0	375	75	27	287	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	240	1	146	0	0	0	0	421	84	30	322	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	847	804	322	993	847	463	322			421		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	847	804	322	993	847	463	322			421		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	11	100	79	100	100	100	100			97		
cM capacity (veh/h)	270	301	705	174	291	599	1221			1122		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	388	506	30	322
Volume Left	240	0	30	0
Volume Right	146	84	0	0
cSH	351	1700	1122	1700
Volume to Capacity	1.10	0.30	0.03	0.19
Queue Length 95th (ft)	363	0	2	0
Control Delay (s)	113.3	0.0	8.3	0.0
Lane LOS	F		A	
Approach Delay (s)	113.3	0.0	0.7	
Approach LOS	F			

Intersection Summary				
Average Delay	35.5			
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	253	208	220	197	143	274
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	272	224	237	212	154	295
Pedestrians					197	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					16	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	434				1201	434
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	434				1201	434
tC, single (s)	4.1				6.5	6.3
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.4
p0 queue free %	71				0	42
cM capacity (veh/h)	928				116	505

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	SB 2
Volume Total	272	224	237	212	154	295
Volume Left	272	0	0	0	154	0
Volume Right	0	0	0	212	0	295
cSH	928	1700	1700	1700	116	505
Volume to Capacity	0.29	0.13	0.14	0.12	1.33	0.58
Queue Length 95th (ft)	31	0	0	0	259	92
Control Delay (s)	10.5	0.0	0.0	0.0	265.6	21.7
Lane LOS	B				F	C
Approach Delay (s)	5.8		0.0		105.3	
Approach LOS					F	

Intersection Summary				
Average Delay	36.0			
Intersection Capacity Utilization	43.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	7	344	408	1	10	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	7	366	434	1	11	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	435				815	218
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	435				815	218
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				97	99
cM capacity (veh/h)	1121				313	787

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	373	289	146	20
Volume Left	7	0	0	11
Volume Right	0	0	1	10
cSH	1121	1700	1700	438
Volume to Capacity	0.01	0.17	0.09	0.05
Queue Length 95th (ft)	1	0	0	4
Control Delay (s)	0.2	0.0	0.0	13.6
Lane LOS	A			B
Approach Delay (s)	0.2	0.0		13.6
Approach LOS				B

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	33.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	98	0	25	128	461	0	0	216	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	109	0	28	142	512	0	0	240	178
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1153	1126	329	1126	1214	512	418			512		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1153	1126	329	1126	1214	512	418			512		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	31	100	95	87			100		
cM capacity (veh/h)	149	178	713	157	151	542	1090			1004		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	137	142	512	418
Volume Left	109	142	0	0
Volume Right	28	0	0	178
cSH	183	1090	1700	1700
Volume to Capacity	0.75	0.13	0.30	0.25
Queue Length 95th (ft)	121	11	0	0
Control Delay (s)	66.8	8.8	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	66.8	1.9		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

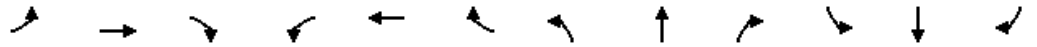
AM Peak Hour

Alternative 2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	9	3	41	28	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	32	10	3	47	32	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	99	46	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	99	46	60			
tC, single (s)	6.7	6.5	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	842	959	1537			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	50	60
Volume Left	32	3	0
Volume Right	10	0	28
cSH	868	1537	1700
Volume to Capacity	0.05	0.00	0.04
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.4	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	48	1	0	0	28	253	3	0	378	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	0	51	1	0	0	30	269	3	0	402	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	744	747	415	784	732	271	402			272		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	744	747	415	784	732	271	402			272		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	93	100	92	100	100	100	97			100		
cM capacity (veh/h)	312	321	616	279	339	768	1130			1268		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	22	51	1	0	30	272	0	429
Volume Left	22	0	1	0	30	0	0	0
Volume Right	0	51	0	0	0	3	0	27
cSH	312	616	279	1700	1130	1700	1700	1700
Volume to Capacity	0.07	0.08	0.00	0.00	0.03	0.16	0.00	0.25
Queue Length 95th (ft)	6	7	0	0	2	0	0	0
Control Delay (s)	17.4	11.4	17.9	0.0	8.3	0.0	0.0	0.0
Lane LOS	C	B	C	A	A			
Approach Delay (s)	13.2		17.9		0.8		0.0	
Approach LOS	B		C					

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	37.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	96	1	148	0	0	0	0	280	76	42	293	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	108	1	166	0	0	0	0	315	85	47	329	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	781	738	329	948	781	357	329			315		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	781	738	329	948	781	357	329			315		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	62	100	76	100	100	100	100			96		
cM capacity (veh/h)	286	315	679	177	316	691	1181			1196		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	275	400	47	329
Volume Left	108	0	47	0
Volume Right	166	85	0	0
cSH	440	1700	1196	1700
Volume to Capacity	0.63	0.24	0.04	0.19
Queue Length 95th (ft)	104	0	3	0
Control Delay (s)	25.9	0.0	8.1	0.0
Lane LOS	D		A	
Approach Delay (s)	25.9	0.0	1.0	
Approach LOS	D			

Intersection Summary				
Average Delay	7.1			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	170	197	232	209	269	186
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	183	212	249	225	289	200
Pedestrians				197		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				16		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			395		906	380
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			395		906	380
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			78		0	64
cM capacity (veh/h)			1117		234	550

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	NW 1	NW 2
Volume Total	183	212	249	225	289	200
Volume Left	0	0	249	0	289	0
Volume Right	0	212	0	0	0	200
cSH	1700	1700	1117	1700	234	550
Volume to Capacity	0.11	0.12	0.22	0.13	1.24	0.36
Queue Length 95th (ft)	0	0	21	0	361	41
Control Delay (s)	0.0	0.0	9.1	0.0	180.1	15.2
Lane LOS			A		F	C
Approach Delay (s)	0.0		4.8		112.7	
Approach LOS					F	

Intersection Summary				
Average Delay	42.3			
Intersection Capacity Utilization	46.7%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	68	0	20	112	264	0	0	267	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	76	0	22	124	293	0	0	297	178
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	950	928	386	928	1017	293	474			293		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	950	928	386	928	1017	293	474			293		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	65	100	97	88			100		
cM capacity (veh/h)	211	236	662	215	199	718	1033			1208		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	98	124	293	474
Volume Left	76	124	0	0
Volume Right	22	0	0	178
cSH	255	1033	1700	1700
Volume to Capacity	0.38	0.12	0.17	0.28
Queue Length 95th (ft)	43	10	0	0
Control Delay (s)	27.6	9.0	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	27.6	2.7		0.0
Approach LOS	D			

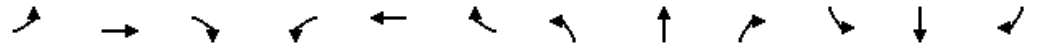
Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A	
Analysis Period (min)	15			

PM Peak Hour
Alternative 2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	24	0	7	50	36	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	27	0	8	57	41	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	49	58			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	49	58			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	97	100	99			
cM capacity (veh/h)	866	1016	1521			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	27	65	58
Volume Left	27	8	0
Volume Right	0	0	17
cSH	866	1521	1700
Volume to Capacity	0.03	0.01	0.03
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	1	51	1	0	0	30	454	2	0	324	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	23	1	54	1	0	0	32	483	2	0	345	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	903	905	356	947	893	484	345			485		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	903	905	356	947	893	484	345			485		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	92	100	100	100	97			100		
cM capacity (veh/h)	251	267	684	219	276	587	1203			1067		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	23	55	1	0	32	485	0	367
Volume Left	23	0	1	0	32	0	0	0
Volume Right	0	54	0	0	0	2	0	22
cSH	251	664	219	1700	1203	1700	1700	1700
Volume to Capacity	0.09	0.08	0.00	0.00	0.03	0.29	0.00	0.22
Queue Length 95th (ft)	8	7	0	0	2	0	0	0
Control Delay (s)	20.8	10.9	21.6	0.0	8.1	0.0	0.0	0.0
Lane LOS	C	B	C	A	A			
Approach Delay (s)	13.9		21.6		0.5		0.0	
Approach LOS	B		C					

Intersection Summary					
Average Delay	1.4				
Intersection Capacity Utilization	39.5%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	214	1	130	0	0	0	0	375	75	27	287	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	240	1	146	0	0	0	0	421	84	30	322	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	847	804	322	993	847	463	322			421		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	847	804	322	993	847	463	322			421		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	11	100	79	100	100	100	100			97		
cM capacity (veh/h)	270	301	705	174	291	599	1221			1122		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	388	506	30	322
Volume Left	240	0	30	0
Volume Right	146	84	0	0
cSH	351	1700	1122	1700
Volume to Capacity	1.10	0.30	0.03	0.19
Queue Length 95th (ft)	363	0	2	0
Control Delay (s)	113.3	0.0	8.3	0.0
Lane LOS	F		A	
Approach Delay (s)	113.3	0.0	0.7	
Approach LOS	F			

Intersection Summary				
Average Delay	35.5			
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	253	208	143	274	220	197
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	272	224	154	295	237	212
Pedestrians				197		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				16		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			496		874	469
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			496		874	469
tC, single (s)			4.2		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.4
p0 queue free %			85		11	57
cM capacity (veh/h)			1023		267	488

Direction, Lane #	NB 1	NB 2	SB 1	SB 2	NW 1	NW 2
Volume Total	272	224	154	295	237	212
Volume Left	0	0	154	0	237	0
Volume Right	0	224	0	0	0	212
cSH	1700	1700	1023	1700	267	488
Volume to Capacity	0.16	0.13	0.15	0.17	0.89	0.43
Queue Length 95th (ft)	0	0	13	0	193	54
Control Delay (s)	0.0	0.0	9.1	0.0	70.8	17.9
Lane LOS			A		F	C
Approach Delay (s)	0.0		3.1		45.8	
Approach LOS					E	

Intersection Summary				
Average Delay	15.8			
Intersection Capacity Utilization	43.4%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	98	0	25	128	461	0	0	216	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	109	0	28	142	512	0	0	240	178
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1153	1126	329	1126	1214	512	418			512		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1153	1126	329	1126	1214	512	418			512		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	31	100	95	87			100		
cM capacity (veh/h)	149	178	713	157	151	542	1090			1004		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	137	142	512	418
Volume Left	109	142	0	0
Volume Right	28	0	0	178
cSH	183	1090	1700	1700
Volume to Capacity	0.75	0.13	0.30	0.25
Queue Length 95th (ft)	121	11	0	0
Control Delay (s)	66.8	8.8	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	66.8	1.9		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

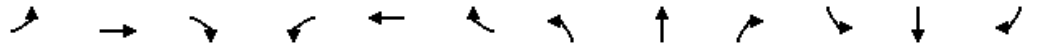
AM Peak Hour

Alternative 3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	9	3	41	28	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	32	10	3	47	32	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	99	46	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	99	46	60			
tC, single (s)	6.7	6.5	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	842	959	1537			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	50	60
Volume Left	32	3	0
Volume Right	10	0	28
cSH	868	1537	1700
Volume to Capacity	0.05	0.00	0.04
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.4	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	0.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	48	1	0	0	28	253	3	0	378	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	0	51	1	0	0	30	269	3	0	402	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	744	747	415	784	732	271	402			272		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	744	747	415	784	732	271	402			272		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	93	100	92	100	100	100	97			100		
cM capacity (veh/h)	312	321	616	279	339	768	1130			1268		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	22	51	1	0	30	272	0	429
Volume Left	22	0	1	0	30	0	0	0
Volume Right	0	51	0	0	0	3	0	27
cSH	312	616	279	1700	1130	1700	1700	1700
Volume to Capacity	0.07	0.08	0.00	0.00	0.03	0.16	0.00	0.25
Queue Length 95th (ft)	6	7	0	0	2	0	0	0
Control Delay (s)	17.4	11.4	17.9	0.0	8.3	0.0	0.0	0.0
Lane LOS	C	B	C	A	A			
Approach Delay (s)	13.2		17.9		0.8		0.0	
Approach LOS	B		C					

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	37.8%	ICU Level of Service		A
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	96	1	148	0	0	0	0	280	76	42	293	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	108	1	166	0	0	0	0	315	85	47	329	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	781	824	329	948	781	357	329			400		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	781	824	329	948	781	357	329			400		
tC, single (s)	7.3	6.7	6.4	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.7	4.2	3.5	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	62	100	76	100	100	100	100			96		
cM capacity (veh/h)	285	280	679	177	315	691	1181			1111		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	275	400	47	329
Volume Left	108	0	47	0
Volume Right	166	85	0	0
cSH	439	1700	1111	1700
Volume to Capacity	0.63	0.24	0.04	0.19
Queue Length 95th (ft)	105	0	3	0
Control Delay (s)	26.0	0.0	8.4	0.0
Lane LOS	D		A	
Approach Delay (s)	26.0	0.0	1.1	
Approach LOS	D			

Intersection Summary				
Average Delay	7.2			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	170	197	269	186	232	209
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	183	212	289	200	249	225
Pedestrians					197	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					16	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1337	362	474			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1337	362	474			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	0	68	73			
cM capacity (veh/h)	100	670	1067			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	183	212	289	200	474
Volume Left	183	0	289	0	0
Volume Right	0	212	0	0	225
cSH	100	670	1067	1700	1700
Volume to Capacity	1.83	0.32	0.27	0.12	0.28
Queue Length 95th (ft)	374	34	28	0	0
Control Delay (s)	481.8	12.8	9.6	0.0	0.0
Lane LOS	F	B	A		
Approach Delay (s)	230.1		5.7		0.0
Approach LOS	F				

Intersection Summary			
Average Delay	68.9		
Intersection Capacity Utilization	59.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	68	0	20	112	264	0	0	267	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	76	0	22	124	293	0	0	297	178
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	950	928	386	928	1017	293	474			293		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	950	928	386	928	1017	293	474			293		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	65	100	97	88			100		
cM capacity (veh/h)	211	236	662	215	199	718	1033			1208		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	98	124	293	474
Volume Left	76	124	0	0
Volume Right	22	0	0	178
cSH	255	1033	1700	1700
Volume to Capacity	0.38	0.12	0.17	0.28
Queue Length 95th (ft)	43	10	0	0
Control Delay (s)	27.6	9.0	0.0	0.0
Lane LOS	D	A		
Approach Delay (s)	27.6	2.7		0.0
Approach LOS	D			

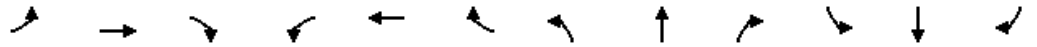
Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	47.2%	ICU Level of Service	A	
Analysis Period (min)	15			

PM Peak Hour
Alternative 3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	24	0	7	50	36	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	27	0	8	57	41	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	49	58			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	49	58			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	97	100	99			
cM capacity (veh/h)	866	1016	1521			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	27	65	58
Volume Left	27	8	0
Volume Right	0	0	17
cSH	866	1521	1700
Volume to Capacity	0.03	0.01	0.03
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.9	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	1	51	1	0	0	30	454	2	0	324	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	23	1	54	1	0	0	32	483	2	0	345	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	903	905	356	947	893	484	345			485		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	903	905	356	947	893	484	345			485		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	92	100	100	100	97			100		
cM capacity (veh/h)	251	267	684	219	276	587	1203			1067		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	23	55	1	0	32	485	0	367
Volume Left	23	0	1	0	32	0	0	0
Volume Right	0	54	0	0	0	2	0	22
cSH	251	664	219	1700	1203	1700	1700	1700
Volume to Capacity	0.09	0.08	0.00	0.00	0.03	0.29	0.00	0.22
Queue Length 95th (ft)	8	7	0	0	2	0	0	0
Control Delay (s)	20.8	10.9	21.6	0.0	8.1	0.0	0.0	0.0
Lane LOS	C	B	C	A	A			
Approach Delay (s)	13.9		21.6		0.5		0.0	
Approach LOS	B		C					

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	39.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	214	1	130	0	0	0	0	375	75	27	287	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	240	1	146	0	0	0	0	421	84	30	322	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	847	889	322	993	847	463	322			506		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	847	889	322	993	847	463	322			506		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	11	100	79	100	100	100	100			97		
cM capacity (veh/h)	269	268	705	173	290	599	1221			1044		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	388	506	30	322
Volume Left	240	0	30	0
Volume Right	146	84	0	0
cSH	351	1700	1044	1700
Volume to Capacity	1.10	0.30	0.03	0.19
Queue Length 95th (ft)	364	0	2	0
Control Delay (s)	114.0	0.0	8.6	0.0
Lane LOS	F		A	
Approach Delay (s)	114.0	0.0	0.7	
Approach LOS	F			

Intersection Summary				
Average Delay	35.7			
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	253	208	220	197	143	274
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	272	224	237	212	154	295
Pedestrians					197	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					4.0	
Percent Blockage					16	
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1183	301	448			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1183	301	448			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	0	69	78			
cM capacity (veh/h)	135	732	1086			

Direction, Lane #	EB 1	EB 2	NB 1	NB 2	SB 1
Volume Total	272	224	237	212	448
Volume Left	272	0	237	0	0
Volume Right	0	224	0	0	295
cSH	135	732	1086	1700	1700
Volume to Capacity	2.02	0.31	0.22	0.12	0.26
Queue Length 95th (ft)	545	32	21	0	0
Control Delay (s)	536.5	12.1	9.2	0.0	0.0
Lane LOS	F	B	A		
Approach Delay (s)	299.9		4.9		0.0
Approach LOS	F				

Intersection Summary			
Average Delay	108.3		
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

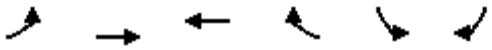
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	98	0	25	128	461	0	0	216	160
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	109	0	28	142	512	0	0	240	178
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1153	1126	329	1126	1214	512	418			512		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1153	1126	329	1126	1214	512	418			512		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	31	100	95	87			100		
cM capacity (veh/h)	149	178	713	157	151	542	1090			1004		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	137	142	512	418
Volume Left	109	142	0	0
Volume Right	28	0	0	178
cSH	183	1090	1700	1700
Volume to Capacity	0.75	0.13	0.30	0.25
Queue Length 95th (ft)	121	11	0	0
Control Delay (s)	66.8	8.8	0.0	0.0
Lane LOS	F	A		
Approach Delay (s)	66.8	1.9		0.0
Approach LOS	F			

Intersection Summary				
Average Delay	8.6			
Intersection Capacity Utilization	57.5%	ICU Level of Service	B	
Analysis Period (min)	15			

Build Preferred Alternative Exit 83

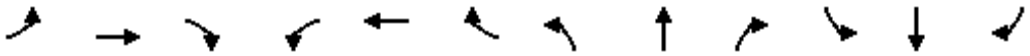
AM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	19	13	3	0	42
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	1	25	17	4	0	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	21				47	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				47	19
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	1608				962	1059

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	27	21	56
Volume Left	1	0	0
Volume Right	0	4	56
cSH	1608	1700	1059
Volume to Capacity	0.00	0.01	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.4	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.4	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	10	1	35	82	0	5	56	230	64	19	411	34
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	11	1	39	91	0	6	62	256	71	21	457	38
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								885				
pX, platoon unblocked												
vC, conflicting volume	903	969	476	954	952	291	494			327		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	903	969	476	954	952	291	494			327		
tC, single (s)	7.2	6.6	6.3	7.3	6.7	6.4	4.2			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.7	4.2	3.5	2.3			2.2		
p0 queue free %	95	100	93	53	100	99	94			98		
cM capacity (veh/h)	230	224	565	193	223	705	1049			1216		

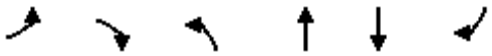
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	51	97	62	327	21	494
Volume Left	11	91	62	0	21	0
Volume Right	39	6	0	71	0	38
cSH	419	201	1049	1700	1216	1700
Volume to Capacity	0.12	0.48	0.06	0.19	0.02	0.29
Queue Length 95th (ft)	10	59	5	0	1	0
Control Delay (s)	14.8	38.4	8.6	0.0	8.0	0.0
Lane LOS	B	E	A		A	
Approach Delay (s)	14.8	38.4	1.4		0.3	
Approach LOS	B	E				

Intersection Summary				
Average Delay	4.9			
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	29	55	1	34	53	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	35	65	1	40	63	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			100		110	67
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			100		110	67
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		93	100
cM capacity (veh/h)			1456		849	953

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	100	42	63
Volume Left	0	1	63
Volume Right	65	0	0
cSH	1700	1456	849
Volume to Capacity	0.06	0.00	0.07
Queue Length 95th (ft)	0	0	6
Control Delay (s)	0.0	0.2	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.2	9.6
Approach LOS			A

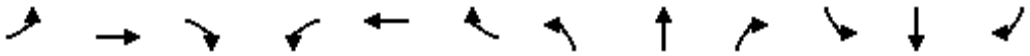
Intersection Summary			
Average Delay		3.0	
Intersection Capacity Utilization		14.9%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	6	12	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	7	13	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1102		
pX, platoon unblocked						
vC, conflicting volume	20	13	13			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	20	13	13			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	997	1067	1605			

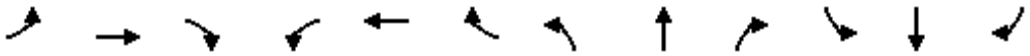
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	7	13
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1605	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	53	0	53	286	297	0	0	319	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					6.0	6.0	6.0	6.0			6.0	
Lane Util. Factor					1.00	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.95	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1480	1324	1770	1863			1697	
Flt Permitted					0.95	1.00	0.19	1.00			1.00	
Satd. Flow (perm)					1480	1324	360	1863			1697	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	59	0	59	318	330	0	0	354	232
RTOR Reduction (vph)	0	0	0	0	0	52	0	0	0	0	28	0
Lane Group Flow (vph)	0	0	0	0	59	7	318	330	0	0	558	0
Heavy Vehicles (%)	22%	2%	22%	22%	2%	22%	2%	2%	2%	2%	6%	6%
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4		4	6					
Actuated Green, G (s)					6.9	6.9	41.9	41.9			24.8	
Effective Green, g (s)					6.9	6.9	41.9	41.9			24.8	
Actuated g/C Ratio					0.11	0.11	0.69	0.69			0.41	
Clearance Time (s)					6.0	6.0	6.0	6.0			6.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					167	150	505	1283			692	
v/s Ratio Prot							c0.11	0.18			c0.33	
v/s Ratio Perm					0.04	0.01	0.32					
v/c Ratio					0.35	0.04	0.63	0.26			0.81	
Uniform Delay, d1					24.9	24.0	7.6	3.6			15.9	
Progression Factor					1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2					1.3	0.1	2.5	0.1			6.8	
Delay (s)					26.2	24.1	10.1	3.7			22.7	
Level of Service					C	C	B	A			C	
Approach Delay (s)		0.0			25.2			6.8			22.7	
Approach LOS		A			C			A			C	

Intersection Summary			
HCM 2000 Control Delay	15.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	3	11	183	9	71	4	504	98	51	319	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	9	3	12	203	10	79	4	560	109	57	354	2
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)								1104			827	
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	1122	1147	356	1105	1093	614	357			669		
vC1, stage 1 conf vol	469	469		623	623							
vC2, stage 2 conf vol	653	678		482	470							
vCu, unblocked vol	1073	1101	356	1054	1041	499	357			561		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.3			4.3		
tC, 2 stage (s)	6.1	5.5		6.2	5.6							
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	97	99	98	45	97	84	100			93		
cM capacity (veh/h)	295	342	693	370	377	497	1128			835		

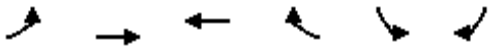
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	24	203	89	4	669	57	357
Volume Left	9	203	0	4	0	57	0
Volume Right	12	0	79	0	109	0	2
cSH	425	370	480	1128	1700	835	1700
Volume to Capacity	0.06	0.55	0.19	0.00	0.39	0.07	0.21
Queue Length 95th (ft)	5	79	17	0	0	5	0
Control Delay (s)	14.0	26.0	14.2	8.2	0.0	9.6	0.0
Lane LOS	B	D	B	A		A	
Approach Delay (s)	14.0	22.4		0.1		1.3	
Approach LOS	B	C					

Intersection Summary				
Average Delay	5.3			
Intersection Capacity Utilization	62.6%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	24	5	0	30	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	27	6	0	33	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			32		63	29
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			32		63	29
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1542		943	1045

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	32	33	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1542	943
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.8
Approach LOS			A

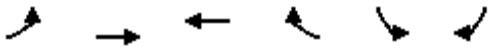
Intersection Summary			
Average Delay		0.7	
Intersection Capacity Utilization		13.3%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	5	0	0	0	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	0	0	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	6	0	6
Volume Left (vph)	6	0	0
Volume Right (vph)	0	0	6
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.3
Degree Utilization, x	0.01	0.00	0.01
Capacity (veh/h)	861	913	1070
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	22	15	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	24	17	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	17				41	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	17				41	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1614				975	1068

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	24	17	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1614	1700	1700
Volume to Capacity	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	0	12	594	3	3	510
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.86		1.00		1.00	1.00
Flt Protected	1.00		1.00		0.95	1.00
Satd. Flow (prot)	1611		1711		1671	1759
Flt Permitted	1.00		1.00		0.39	1.00
Satd. Flow (perm)	1611		1711		685	1759
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	13	667	3	3	573
RTOR Reduction (vph)	13	0	0	0	0	0
Lane Group Flow (vph)	0	0	670	0	3	573
Heavy Vehicles (%)	2%	2%	11%	11%	8%	8%
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		6			2
Permitted Phases					2	
Actuated Green, G (s)	1.0		34.0		34.0	34.0
Effective Green, g (s)	1.0		34.0		34.0	34.0
Actuated g/C Ratio	0.02		0.72		0.72	0.72
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	34		1237		495	1272
v/s Ratio Prot	c0.00		c0.39			0.33
v/s Ratio Perm					0.00	
v/c Ratio	0.01		0.54		0.01	0.45
Uniform Delay, d1	22.5		3.0		1.8	2.7
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	0.1		0.5		0.0	0.3
Delay (s)	22.6		3.4		1.8	2.9
Level of Service	C		A		A	A
Approach Delay (s)	22.6		3.4			2.9
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	47.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

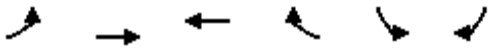
c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	12	0	0	6	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	0	0	7	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	3	3			7	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3	3			7	
tC, single (s)	6.7	6.5			4.1	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.2	
p0 queue free %	99	100			100	
cM capacity (veh/h)	939	991			1614	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	13	7	0
Volume Left	13	0	0
Volume Right	0	7	0
cSH	939	1700	1700
Volume to Capacity	0.01	0.00	0.00
Queue Length 95th (ft)	1	0	0
Control Delay (s)	8.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	19	13	3	0	42
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.75	0.75	0.75	0.75	0.75	0.75
Hourly flow rate (vph)	1	25	17	4	0	56
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	21				47	19
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	21				47	19
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	95
cM capacity (veh/h)	1594				962	1059

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	27	21	56
Volume Left	1	0	0
Volume Right	0	4	56
cSH	1594	1700	1059
Volume to Capacity	0.00	0.01	0.05
Queue Length 95th (ft)	0	0	4
Control Delay (s)	0.4	0.0	8.6
Lane LOS	A		A
Approach Delay (s)	0.4	0.0	8.6
Approach LOS			A

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	2	57	68	2	10	26	392	72	13	284	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	18	2	63	76	2	11	29	436	80	14	316	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								885				
pX, platoon unblocked	0.93	0.93		0.93	0.93	0.93				0.93		
vC, conflicting volume	858	926	323	942	878	476	316			516		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	811	884	323	902	833	401	316			444		
tC, single (s)	7.1	6.5	6.2	7.3	6.7	6.4	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.7	4.2	3.5	2.2			2.2		
p0 queue free %	93	99	91	62	99	98	98			99		
cM capacity (veh/h)	263	255	718	200	259	576	1239			1026		

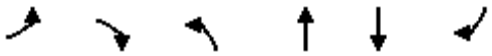
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	83	89	29	516	14	331
Volume Left	18	76	29	0	14	0
Volume Right	63	11	0	80	0	16
cSH	506	219	1239	1700	1026	1700
Volume to Capacity	0.16	0.41	0.02	0.30	0.01	0.19
Queue Length 95th (ft)	15	46	2	0	1	0
Control Delay (s)	13.5	32.3	8.0	0.0	8.6	0.0
Lane LOS	B	D	A		A	
Approach Delay (s)	13.5	32.3	0.4		0.4	
Approach LOS	B	D				

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	42.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	33	54	2	37	43	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	39	64	2	44	51	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			104		120	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			104		120	71
tC, single (s)			4.2		6.6	6.4
tC, 2 stage (s)						
tF (s)			2.3		3.7	3.5
p0 queue free %			100		94	100
cM capacity (veh/h)			1416		830	940

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	104	46	51
Volume Left	0	2	51
Volume Right	64	0	0
cSH	1700	1416	830
Volume to Capacity	0.06	0.00	0.06
Queue Length 95th (ft)	0	0	5
Control Delay (s)	0.0	0.4	9.6
Lane LOS		A	A
Approach Delay (s)	0.0	0.4	9.6
Approach LOS			A

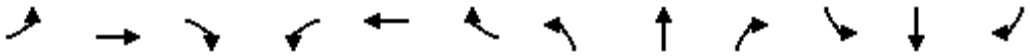
Intersection Summary			
Average Delay		2.5	
Intersection Capacity Utilization		15.0%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	0	0	12	17	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	13	19	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)				1102		
pX, platoon unblocked						
vC, conflicting volume	32	19	19			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	32	19	19			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	100	100	100			
cM capacity (veh/h)	981	1059	1572			

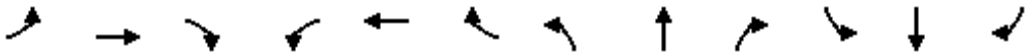
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	13	19
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1572	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	6.7%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	85	0	72	171	418	0	0	275	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)					6.0	6.0	6.0	6.0			6.0	
Lane Util. Factor					1.00	1.00	1.00	1.00			1.00	
Frt					1.00	0.85	1.00	1.00			0.96	
Flt Protected					0.95	1.00	0.95	1.00			1.00	
Satd. Flow (prot)					1543	1380	1752	1845			1763	
Flt Permitted					0.95	1.00	0.31	1.00			1.00	
Satd. Flow (perm)					1543	1380	567	1845			1763	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	94	0	80	190	464	0	0	306	149
RTOR Reduction (vph)	0	0	0	0	0	69	0	0	0	0	22	0
Lane Group Flow (vph)	0	0	0	0	94	11	190	464	0	0	433	0
Heavy Vehicles (%)	0%	0%	0%	17%	17%	17%	3%	3%	3%	3%	3%	3%
Turn Type				Perm	NA	Perm	pm+pt	NA			NA	
Protected Phases					4		1	6			2	
Permitted Phases				4		4	6					
Actuated Green, G (s)					7.2	7.2	34.5	34.5			21.9	
Effective Green, g (s)					7.2	7.2	34.5	34.5			21.9	
Actuated g/C Ratio					0.13	0.13	0.64	0.64			0.41	
Clearance Time (s)					6.0	6.0	6.0	6.0			6.0	
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	
Lane Grp Cap (vph)					206	185	509	1185			718	
v/s Ratio Prot							0.05	c0.25			c0.25	
v/s Ratio Perm					0.06	0.01	0.19					
v/c Ratio					0.46	0.06	0.37	0.39			0.60	
Uniform Delay, d1					21.4	20.3	5.2	4.6			12.5	
Progression Factor					1.00	1.00	1.00	1.00			1.00	
Incremental Delay, d2					1.6	0.1	0.5	0.2			1.4	
Delay (s)					23.0	20.4	5.7	4.8			13.9	
Level of Service					C	C	A	A			B	
Approach Delay (s)		0.0			21.8			5.1			13.9	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	53.7	Sum of lost time (s)	18.0
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	9	13	256	18	131	14	444	92	47	307	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	10	14	284	20	146	16	493	102	52	341	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								TWLTL			None	
Median storage veh)								2				
Upstream signal (ft)								1104			827	
pX, platoon unblocked	0.95	0.95		0.95	0.95	0.95				0.95		
vC, conflicting volume	1129	1076	344	1041	1028	544	348			596		
vC1, stage 1 conf vol	449	449		576	576							
vC2, stage 2 conf vol	680	627		465	452							
vCu, unblocked vol	1111	1055	344	1018	1005	498	348			551		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)	6.2	5.6		6.1	5.5							
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	93	97	98	27	95	73	99			94		
cM capacity (veh/h)	236	360	689	389	401	546	1178			943		

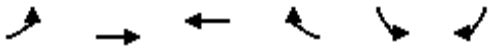
Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	40	284	166	16	596	52	348
Volume Left	16	284	0	16	0	52	0
Volume Right	14	0	146	0	102	0	7
cSH	348	389	523	1178	1700	943	1700
Volume to Capacity	0.11	0.73	0.32	0.01	0.35	0.06	0.20
Queue Length 95th (ft)	10	142	34	1	0	4	0
Control Delay (s)	16.7	35.6	15.0	8.1	0.0	9.0	0.0
Lane LOS	C	E	C	A		A	
Approach Delay (s)	16.7	28.0		0.2		1.2	
Approach LOS	C	D					

Intersection Summary				
Average Delay	9.2			
Intersection Capacity Utilization	63.1%	ICU Level of Service	B	
Analysis Period (min)	15			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	28	5	0	34	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	31	6	0	38	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			37		72	34
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			37		72	34
tC, single (s)			4.2		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1536		932	1039

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	37	38	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1536	932
Volume to Capacity	0.02	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	8.9
Lane LOS			A
Approach Delay (s)	0.0	0.0	8.9
Approach LOS			A

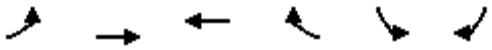
Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Stop	Stop		Stop	
Volume (vph)	5	0	0	0	0	5
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	0	0	6

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total (vph)	6	0	6
Volume Left (vph)	6	0	0
Volume Right (vph)	0	0	6
Hadj (s)	0.23	0.00	-0.57
Departure Headway (s)	4.1	3.9	3.3
Degree Utilization, x	0.01	0.00	0.01
Capacity (veh/h)	861	913	1070
Control Delay (s)	7.2	6.9	6.4
Approach Delay (s)	7.2	0.0	6.4
Approach LOS	A	A	A

Intersection Summary			
Delay	6.8		
Level of Service	A		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	36	38	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	40	42	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	42				82	42
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	42				82	42
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1580				920	1028

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	40	42	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1580	1700	1700
Volume to Capacity	0.00	0.02	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		6.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	3	14	536	4	8	568
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0		6.0		6.0	6.0
Lane Util. Factor	1.00		1.00		1.00	1.00
Frt	0.89		1.00		1.00	1.00
Flt Protected	0.99		1.00		0.95	1.00
Satd. Flow (prot)	1505		1791		1687	1776
Flt Permitted	0.99		1.00		0.43	1.00
Satd. Flow (perm)	1505		1791		758	1776
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	3	16	602	4	9	638
RTOR Reduction (vph)	16	0	0	0	0	0
Lane Group Flow (vph)	3	0	606	0	9	638
Heavy Vehicles (%)	11%	11%	6%	6%	7%	7%
Turn Type	Prot		NA		Perm	NA
Protected Phases	4		2			6
Permitted Phases					6	
Actuated Green, G (s)	1.1		33.3		33.3	33.3
Effective Green, g (s)	1.1		33.3		33.3	33.3
Actuated g/C Ratio	0.02		0.72		0.72	0.72
Clearance Time (s)	6.0		6.0		6.0	6.0
Vehicle Extension (s)	3.0		3.0		3.0	3.0
Lane Grp Cap (vph)	35		1285		543	1274
v/s Ratio Prot	c0.00		0.34			c0.36
v/s Ratio Perm					0.01	
v/c Ratio	0.10		0.47		0.02	0.50
Uniform Delay, d1	22.2		2.8		1.9	2.9
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	1.2		0.3		0.0	0.3
Delay (s)	23.4		3.1		1.9	3.2
Level of Service	C		A		A	A
Approach Delay (s)	23.4		3.1			3.2
Approach LOS	C		A			A

Intersection Summary			
HCM 2000 Control Delay	3.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	46.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

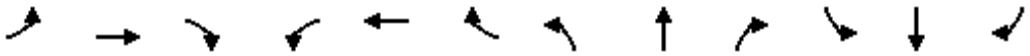
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	17	0	0	12	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	19	0	0	13	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	7	7			13	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	7	7			13	
tC, single (s)	6.7	6.5			4.1	
tC, 2 stage (s)						
tF (s)	3.8	3.6			2.2	
p0 queue free %	98	100			100	
cM capacity (veh/h)	935	987			1605	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	19	13	0
Volume Left	19	0	0
Volume Right	0	13	0
cSH	935	1700	1700
Volume to Capacity	0.02	0.01	0.00
Queue Length 95th (ft)	2	0	0
Control Delay (s)	8.9	0.0	0.0
Lane LOS	A		
Approach Delay (s)	8.9	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Build Preferred Alternative Exit 87

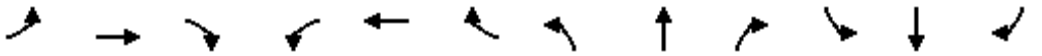
AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	66	61	9	3	70	149	36	2	263	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	9	20	81	75	11	4	86	184	44	2	325	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	707	742	336	811	731	206	347			228		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	707	742	336	811	731	206	347			228		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	94	89	68	97	100	93			100		
cM capacity (veh/h)	323	321	711	238	324	837	1212			1340		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	110	75	15	86	228	349
Volume Left	9	75	0	86	0	2
Volume Right	81	0	4	0	44	22
cSH	541	238	383	1212	1700	1340
Volume to Capacity	0.20	0.32	0.04	0.07	0.13	0.00
Queue Length 95th (ft)	19	33	3	6	0	0
Control Delay (s)	13.3	26.9	14.8	8.2	0.0	0.1
Lane LOS	B	D	B	A		A
Approach Delay (s)	13.3	24.9		2.3		0.1
Approach LOS	B	C				

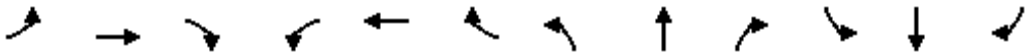
Intersection Summary				
Average Delay	5.1			
Intersection Capacity Utilization	46.4%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	25	12	0	34	112	5	150	10	164	55	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00		0.95	0.95	
Frt	1.00	0.95			1.00	0.85		0.99		1.00	0.95	
Flt Protected	0.95	1.00			1.00	1.00		1.00		0.95	0.99	
Satd. Flow (prot)	1805	1809			1881	1599		1791		1665	1641	
Flt Permitted	0.73	1.00			1.00	1.00		0.99		0.62	0.86	
Satd. Flow (perm)	1381	1809			1881	1599		1775		1084	1435	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	77	34	16	0	46	151	7	203	14	222	74	65
RTOR Reduction (vph)	0	13	0	0	0	123	0	4	0	0	26	0
Lane Group Flow (vph)	77	37	0	0	46	28	0	220	0	166	169	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	5%	5%	5%	3%	3%	3%
Turn Type	Perm	NA			NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	6.7	6.7			6.7	6.7		18.0		18.0	18.0	
Effective Green, g (s)	6.7	6.7			6.7	6.7		18.0		18.0	18.0	
Actuated g/C Ratio	0.18	0.18			0.18	0.18		0.49		0.49	0.49	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	252	330			343	291		870		531	703	
v/s Ratio Prot		0.02			0.02							
v/s Ratio Perm	c0.06					0.02		0.12		c0.15	0.12	
v/c Ratio	0.31	0.11			0.13	0.09		0.25		0.31	0.24	
Uniform Delay, d1	13.0	12.5			12.6	12.5		5.4		5.6	5.4	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	0.7	0.2			0.2	0.1		0.2		0.3	0.2	
Delay (s)	13.7	12.7			12.7	12.6		5.6		6.0	5.6	
Level of Service	B	B			B	B		A		A	A	
Approach Delay (s)		13.3			12.6			5.6			5.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.31		
Actuated Cycle Length (s)	36.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

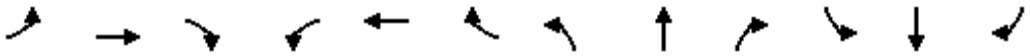
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	20	0	50	126	205	0	0	271	119
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	22	0	56	140	228	0	0	301	132
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	931	875	367	875	941	228	433			228		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	931	875	367	875	941	228	433			228		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.2		
p0 queue free %	100	100	100	91	100	93	88			100		
cM capacity (veh/h)	208	252	678	239	226	799	1121			1335		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	78	140	228	433
Volume Left	22	140	0	0
Volume Right	56	0	0	132
cSH	479	1121	1700	1700
Volume to Capacity	0.16	0.12	0.13	0.25
Queue Length 95th (ft)	14	11	0	0
Control Delay (s)	14.0	8.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.0	3.3		0.0
Approach LOS	B			

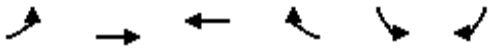
Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	45	0	69	0	0	0	0	286	33	93	198	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	50	0	77	0	0	0	0	318	37	103	220	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	763	781	220	839	763	336	220			354		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	763	781	220	839	763	336	220			354		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	83	100	91	100	100	100	100			91		
cM capacity (veh/h)	300	298	820	241	306	706	1349			1204		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	127	354	103	220
Volume Left	50	0	103	0
Volume Right	77	37	0	0
cSH	487	1700	1204	1700
Volume to Capacity	0.26	0.21	0.09	0.13
Queue Length 95th (ft)	26	0	7	0
Control Delay (s)	15.0	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	15.0	0.0	2.6	
Approach LOS	B			

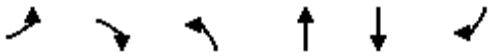
Intersection Summary				
Average Delay	3.4			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	94	87	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	104	97	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				201	97
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				201	97
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1509				787	960

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	104	97	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1509	1700	1700
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

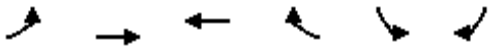
Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	8.3%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	84	92	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	93	102	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	198	105	108			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	198	105	108			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	790	949	1464			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	93	108
Volume Left	6	0	0
Volume Right	0	0	6
cSH	790	1464	1700
Volume to Capacity	0.01	0.00	0.06
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	15.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	54	73	14	2	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	60	81	16	2	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	97				149	89
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	97				149	89
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1497				843	969

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	60	97	2
Volume Left	0	0	2
Volume Right	0	16	0
cSH	1497	1700	843
Volume to Capacity	0.00	0.06	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay		0.1	
Intersection Capacity Utilization		14.7%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	51	5	0	82	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	57	6	0	91	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			62		151	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			62		151	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1547		841	1006

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	62	91	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1547	841
Volume to Capacity	0.04	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	9.3
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.3
Approach LOS			A

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	14.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	183	2	28	131	6	100
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	241	3	37	172	8	132
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	270	123			209	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	270	123			209	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	66	100			99	
cM capacity (veh/h)	717	931			1362	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	243	209	139
Volume Left	241	0	8
Volume Right	3	172	0
cSH	719	1700	1362
Volume to Capacity	0.34	0.12	0.01
Queue Length 95th (ft)	37	0	0
Control Delay (s)	12.6	0.0	0.5
Lane LOS	B		A
Approach Delay (s)	12.6	0.0	0.5
Approach LOS	B		

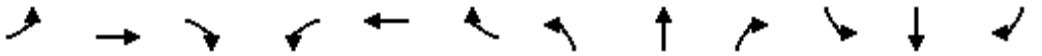
Intersection Summary			
Average Delay		5.3	
Intersection Capacity Utilization		27.1%	ICU Level of Service A
Analysis Period (min)		15	

PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	20	73	53	11	17	86	146	97	8	96	8
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	30	25	90	65	14	21	106	180	120	10	119	10
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	564	656	123	698	601	240	128			300		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	564	656	123	698	601	240	128			300		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	93	90	77	96	97	93			99		
cM capacity (veh/h)	384	351	919	287	384	804	1457			1261		

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2	SB 1
Volume Total	144	65	35	106	300	138
Volume Left	30	65	0	106	0	10
Volume Right	90	0	21	0	120	10
cSH	588	287	562	1457	1700	1261
Volume to Capacity	0.25	0.23	0.06	0.07	0.18	0.01
Queue Length 95th (ft)	24	22	5	6	0	1
Control Delay (s)	13.1	21.2	11.8	7.7	0.0	0.6
Lane LOS	B	C	B	A		A
Approach Delay (s)	13.1	18.0		2.0		0.6
Approach LOS	B	C				

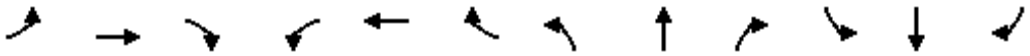
Intersection Summary				
Average Delay	5.8			
Intersection Capacity Utilization	33.8%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	72	9	18	6	49	112	6	92	8	93	119	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Frt	1.00	0.90			1.00	0.85		0.99		1.00	0.96	
Flt Protected	0.95	1.00			0.99	1.00		1.00		0.95	1.00	
Satd. Flow (prot)	1805	1710			1871	1599		1786		1752	1768	
Flt Permitted	0.71	1.00			0.96	1.00		0.98		0.67	1.00	
Satd. Flow (perm)	1347	1710			1798	1599		1755		1228	1768	
Peak-hour factor, PHF	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74	0.74
Adj. Flow (vph)	97	12	24	8	66	151	8	124	11	126	161	62
RTOR Reduction (vph)	0	19	0	0	0	122	0	5	0	0	21	0
Lane Group Flow (vph)	97	17	0	0	74	29	0	138	0	126	202	0
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	5%	5%	5%	3%	3%	3%
Turn Type	Perm	NA		Perm	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		8			4			6			2	
Permitted Phases	8			4		4	6			2		
Actuated Green, G (s)	7.0	7.0			7.0	7.0		18.0		18.0	18.0	
Effective Green, g (s)	7.0	7.0			7.0	7.0		18.0		18.0	18.0	
Actuated g/C Ratio	0.19	0.19			0.19	0.19		0.49		0.49	0.49	
Clearance Time (s)	6.0	6.0			6.0	6.0		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0			3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	254	323			340	302		853		597	860	
v/s Ratio Prot		0.01									c0.11	
v/s Ratio Perm	c0.07				0.04	0.02		0.08		0.10		
v/c Ratio	0.38	0.05			0.22	0.09		0.16		0.21	0.24	
Uniform Delay, d1	13.1	12.3			12.7	12.4		5.3		5.4	5.5	
Progression Factor	1.00	1.00			1.00	1.00		1.00		1.00	1.00	
Incremental Delay, d2	1.0	0.1			0.3	0.1		0.1		0.2	0.1	
Delay (s)	14.1	12.3			13.0	12.5		5.4		5.6	5.7	
Level of Service	B	B			B	B		A		A	A	
Approach Delay (s)		13.6			12.7			5.4			5.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.28		
Actuated Cycle Length (s)	37.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

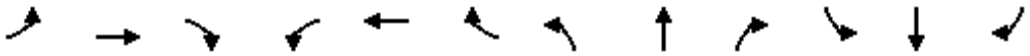
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	37	0	61	90	268	0	0	176	46
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	41	0	68	100	298	0	0	196	51
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	787	719	221	719	744	298	247			298		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	787	719	221	719	744	298	247			298		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	87	100	91	92			100		
cM capacity (veh/h)	265	327	818	325	318	744	1313			1258		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	109	100	298	247
Volume Left	41	100	0	0
Volume Right	68	0	0	51
cSH	500	1313	1700	1700
Volume to Capacity	0.22	0.08	0.18	0.15
Queue Length 95th (ft)	21	6	0	0
Control Delay (s)	14.2	8.0	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.2	2.0		0.0
Approach LOS	B			

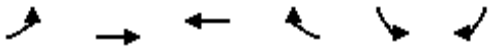
Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	118	0	106	0	0	0	0	240	36	61	152	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	131	0	118	0	0	0	0	267	40	68	169	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	591	611	169	709	591	287	169			307		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	591	611	169	709	591	287	169			307		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	67	100	87	100	100	100	100			95		
cM capacity (veh/h)	403	388	878	290	397	752	1409			1254		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	249	307	68	169
Volume Left	131	0	68	0
Volume Right	118	40	0	0
cSH	541	1700	1254	1700
Volume to Capacity	0.46	0.18	0.05	0.10
Queue Length 95th (ft)	60	0	4	0
Control Delay (s)	17.2	0.0	8.0	0.0
Lane LOS	C		A	
Approach Delay (s)	17.2	0.0	2.3	
Approach LOS	C			

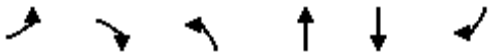
Intersection Summary				
Average Delay	6.1			
Intersection Capacity Utilization	41.2%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	99	101	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	110	112	0	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	112				222	112
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	112				222	112
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	1490				766	941

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	110	112	0
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1490	1700	1700
Volume to Capacity	0.00	0.07	0.00
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS			A
Approach Delay (s)	0.0	0.0	0.0
Approach LOS			A

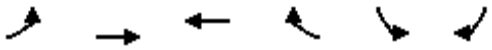
Intersection Summary			
Average Delay		0.0	
Intersection Capacity Utilization		8.6%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	0	0	112	100	5
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	6	0	0	124	111	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	238	114	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	114	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	750	939	1472			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	6	124	117
Volume Left	6	0	0
Volume Right	0	0	6
cSH	750	1472	1700
Volume to Capacity	0.01	0.00	0.07
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.8	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.8	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	15.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	0	125	81	9	5	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	139	90	10	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	100				234	95
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	100				234	95
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				99	100
cM capacity (veh/h)	1493				754	962

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	139	100	6
Volume Left	0	0	6
Volume Right	0	10	0
cSH	1493	1700	754
Volume to Capacity	0.00	0.06	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		16.6%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	125	5	0	85	5	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	139	6	0	94	6	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			144		236	142
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			144		236	142
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		99	100
cM capacity (veh/h)			1450		757	911

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	144	94	6
Volume Left	0	0	6
Volume Right	6	0	0
cSH	1700	1450	757
Volume to Capacity	0.08	0.00	0.01
Queue Length 95th (ft)	0	0	1
Control Delay (s)	0.0	0.0	9.8
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.8
Approach LOS			A

Intersection Summary			
Average Delay		0.2	
Intersection Capacity Utilization		16.9%	ICU Level of Service A
Analysis Period (min)		15	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	38	0	129	58	0	74
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	50	0	170	76	0	97
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	305	208			246	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	305	208			246	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	100			100	
cM capacity (veh/h)	689	835			1320	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	50	246	97
Volume Left	50	0	0
Volume Right	0	76	0
cSH	689	1700	1320
Volume to Capacity	0.07	0.14	0.00
Queue Length 95th (ft)	6	0	0
Control Delay (s)	10.6	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.6	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	20.3%	ICU Level of Service	A
Analysis Period (min)	15		

Build Preferred Alternative Exit 95

AM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	51	0	0	120	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	59	0	0	140	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			59		199	59
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			59		199	59
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1544		790	1006

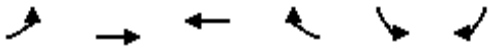
Direction, Lane #	EB 1	WB 1
Volume Total	59	140
Volume Left	0	0
Volume Right	0	0
cSH	1700	1700
Volume to Capacity	0.03	0.08
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	9.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	0	51	28	0	120	28
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	64	35	0	150	35
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			64		102	32
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			64		102	32
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		83	97
cM capacity (veh/h)			1539		876	1042

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	64	35	185
Volume Left	0	35	150
Volume Right	64	0	35
cSH	1700	1539	903
Volume to Capacity	0.04	0.02	0.20
Queue Length 95th (ft)	0	2	19
Control Delay (s)	0.0	7.4	10.0
Lane LOS		A	B
Approach Delay (s)	0.0	7.4	10.0
Approach LOS			B

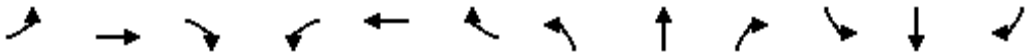
Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	23.2%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	153	163	147	73	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	247	263	237	118	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	500				631	381
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	500				631	381
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				73	99
cM capacity (veh/h)	1064				444	666

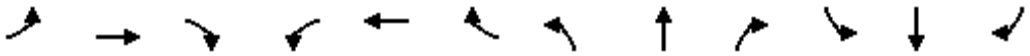
Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	248	500	127
Volume Left	2	0	118
Volume Right	0	237	10
cSH	1064	1700	456
Volume to Capacity	0.00	0.29	0.28
Queue Length 95th (ft)	0	0	28
Control Delay (s)	0.1	0.0	15.9
Lane LOS	A		C
Approach Delay (s)	0.1	0.0	15.9
Approach LOS			C

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	28.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	31	26	169	299	49	76	150	182	178	106	275	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.87		1.00	0.91		1.00	1.00	0.85	1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1770	1616		1770	1693		1770	1863	1583	1770	1782	
Flt Permitted	0.67	1.00		0.25	1.00		0.17	1.00	1.00	0.61	1.00	
Satd. Flow (perm)	1246	1616		472	1693		309	1863	1583	1140	1782	
Peak-hour factor, PHF	0.77	0.90	0.77	0.90	0.90	0.90	0.77	0.77	0.90	0.90	0.77	0.77
Adj. Flow (vph)	40	29	219	332	54	84	195	236	198	118	357	144
RTOR Reduction (vph)	0	192	0	0	54	0	0	0	99	0	17	0
Lane Group Flow (vph)	40	56	0	332	84	0	195	236	99	118	484	0
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases		8		7	4		1	6	7	5	2	
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)	9.8	9.8		28.7	28.7		36.0	27.1	40.0	31.4	24.8	
Effective Green, g (s)	9.8	9.8		28.7	28.7		36.0	27.1	40.0	31.4	24.8	
Actuated g/C Ratio	0.12	0.12		0.36	0.36		0.45	0.34	0.50	0.39	0.31	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	151	196		376	604		300	627	905	496	549	
v/s Ratio Prot		0.03		c0.14	0.05		c0.07	0.13	0.02	0.02	c0.27	
v/s Ratio Perm	0.03			c0.17			0.22		0.04	0.07		
v/c Ratio	0.26	0.28		0.88	0.14		0.65	0.38	0.11	0.24	0.88	
Uniform Delay, d1	32.0	32.1		21.5	17.5		16.3	20.2	10.7	16.0	26.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.9	0.8		20.9	0.1		5.0	0.4	0.1	0.2	15.4	
Delay (s)	33.0	32.9		42.3	17.6		21.3	20.6	10.8	16.2	41.8	
Level of Service	C	C		D	B		C	C	B	B	D	
Approach Delay (s)		32.9			35.1			17.7			36.9	
Approach LOS		C			D			B			D	

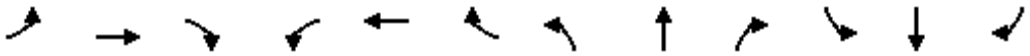
Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	80.4	Sum of lost time (s)	24.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	16	102	19	13	1	91	52	21	15	81	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	8	19	123	23	16	1	110	63	25	18	98	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	434	451	107	561	448	75	117			88		
vC1, stage 1 conf vol	143	143		295	295							
vC2, stage 2 conf vol	291	307		266	153							
vCu, unblocked vol	434	451	107	561	448	75	117			88		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)	6.1	5.5		6.1	5.5							
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	97	87	95	97	100	93			99		
cM capacity (veh/h)	599	565	947	474	563	986	1472			1508		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	8	142	23	17	110	88	18	117
Volume Left	8	0	23	0	110	0	18	0
Volume Right	0	123	0	1	0	25	0	19
cSH	599	867	474	581	1472	1700	1508	1700
Volume to Capacity	0.01	0.16	0.05	0.03	0.07	0.05	0.01	0.07
Queue Length 95th (ft)	1	15	4	2	6	0	1	0
Control Delay (s)	11.1	10.0	13.0	11.4	7.6	0.0	7.4	0.0
Lane LOS	B	A	B	B	A		A	
Approach Delay (s)	10.0		12.3		4.2		1.0	
Approach LOS	B		B					

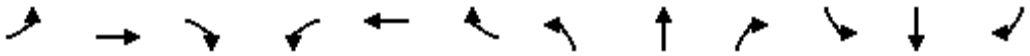
Intersection Summary				
Average Delay	5.7			
Intersection Capacity Utilization	26.1%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	134	0	29	102	135	0	0	174	28
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	156	0	34	119	157	0	0	202	33
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	647	613	219	613	629	157	235			157		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	647	613	219	613	629	157	235			157		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	100	100	100	59	100	96	91			100		
cM capacity (veh/h)	345	371	821	377	364	889	1332			1423		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	190	119	157	235
Volume Left	156	119	0	0
Volume Right	34	0	0	33
cSH	420	1332	1700	1700
Volume to Capacity	0.45	0.09	0.09	0.14
Queue Length 95th (ft)	57	7	0	0
Control Delay (s)	20.4	8.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	20.4	3.4		0.0
Approach LOS	C			

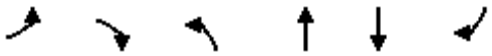
Intersection Summary				
Average Delay	6.9			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	33	0	198	0	0	0	0	204	85	14	294	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	37	0	220	0	0	0	0	227	94	16	327	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								815				
pX, platoon unblocked	0.94	0.94		0.94	0.94	0.94				0.94		
vC, conflicting volume	632	679	327	852	632	274	327			321		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	577	627	327	811	577	197	327			247		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	69	100	100	100	100			99		
cM capacity (veh/h)	398	372	715	192	397	794	1233			1241		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	257	321	16	327
Volume Left	37	0	16	0
Volume Right	220	94	0	0
cSH	642	1700	1241	1700
Volume to Capacity	0.40	0.19	0.01	0.19
Queue Length 95th (ft)	48	0	1	0
Control Delay (s)	14.3	0.0	7.9	0.0
Lane LOS	B		A	
Approach Delay (s)	14.3	0.0	0.4	
Approach LOS	B			

Intersection Summary				
Average Delay	4.1			
Intersection Capacity Utilization	43.3%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	66	0	0	59	78	42
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	73	0	0	66	87	47
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	176	110	133			
vC1, stage 1 conf vol	110					
vC2, stage 2 conf vol	66					
vCu, unblocked vol	176	110	133			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	92	100	100			
cM capacity (veh/h)	864	935	1458			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	73	66	133
Volume Left	73	0	0
Volume Right	0	0	47
cSH	864	1458	1700
Volume to Capacity	0.08	0.00	0.08
Queue Length 95th (ft)	7	0	0
Control Delay (s)	9.6	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.6	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

PM Peak Hour

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	85	0	0	79	0	0
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	99	0	0	92	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			99		191	99
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			99		191	99
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	100
cM capacity (veh/h)			1507		798	957

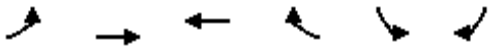
Direction, Lane #	EB 1	WB 1
Volume Total	99	92
Volume Left	0	0
Volume Right	0	0
cSH	1700	1700
Volume to Capacity	0.06	0.05
Queue Length 95th (ft)	0	0
Control Delay (s)	0.0	0.0
Lane LOS		
Approach Delay (s)	0.0	0.0
Approach LOS		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	7.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	0	85	11	0	80	10
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80
Hourly flow rate (vph)	0	106	14	0	100	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			106		81	53
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			106		81	53
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		89	99
cM capacity (veh/h)			1497		918	1020

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	106	14	112
Volume Left	0	14	100
Volume Right	106	0	12
cSH	1700	1497	928
Volume to Capacity	0.06	0.01	0.12
Queue Length 95th (ft)	0	1	10
Control Delay (s)	0.0	7.4	9.4
Lane LOS		A	A
Approach Delay (s)	0.0	7.4	9.4
Approach LOS			A

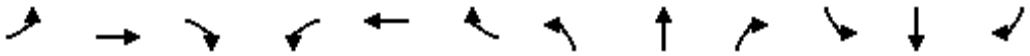
Intersection Summary			
Average Delay		5.0	
Intersection Capacity Utilization		19.0%	ICU Level of Service A
Analysis Period (min)		15	



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	1	69	45	89	90	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.62	0.62	0.62	0.62	0.62	0.62
Hourly flow rate (vph)	2	111	73	144	145	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	216				259	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	216				259	144
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				80	99
cM capacity (veh/h)	1336				733	908

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	113	216	155
Volume Left	2	0	145
Volume Right	0	144	10
cSH	1336	1700	742
Volume to Capacity	0.00	0.13	0.21
Queue Length 95th (ft)	0	0	20
Control Delay (s)	0.1	0.0	11.1
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	11.1
Approach LOS			B

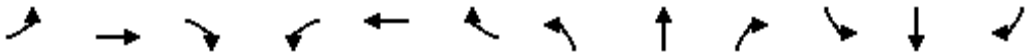
Intersection Summary			
Average Delay	3.6		
Intersection Capacity Utilization	19.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	35	25	99	241	44	72	54	283	281	128	198	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.88		1.00	0.91		1.00	1.00	0.85	1.00	0.98	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1752	1617		1770	1689		1770	1863	1583	1770	1820	
Flt Permitted	0.67	1.00		0.39	1.00		0.57	1.00	1.00	0.31	1.00	
Satd. Flow (perm)	1244	1617		735	1689		1069	1863	1583	570	1820	
Peak-hour factor, PHF	0.77	0.90	0.77	0.90	0.90	0.90	0.77	0.77	0.90	0.90	0.77	0.77
Adj. Flow (vph)	45	28	129	268	49	80	70	368	312	142	257	47
RTOR Reduction (vph)	0	112	0	0	53	0	0	0	183	0	8	0
Lane Group Flow (vph)	45	45	0	268	76	0	70	368	129	142	296	0
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases		8		7	4		1	6	7	5	2	
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)	9.0	9.0		23.8	23.8		24.6	20.0	28.8	31.4	23.4	
Effective Green, g (s)	9.0	9.0		23.8	23.8		24.6	20.0	28.8	31.4	23.4	
Actuated g/C Ratio	0.13	0.13		0.34	0.34		0.35	0.29	0.41	0.45	0.34	
Clearance Time (s)	6.0	6.0		6.0	6.0		6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	160	208		381	575		422	533	789	393	610	
v/s Ratio Prot		0.03		c0.09	0.05		0.01	c0.20	0.02	c0.04	c0.16	
v/s Ratio Perm	0.04			c0.15			0.05		0.06	0.12		
v/c Ratio	0.28	0.21		0.70	0.13		0.17	0.69	0.16	0.36	0.49	
Uniform Delay, d1	27.5	27.2		18.2	15.9		15.2	22.1	12.9	12.4	18.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.0	0.5		5.8	0.1		0.2	3.8	0.1	0.6	0.6	
Delay (s)	28.4	27.8		24.0	16.0		15.4	26.0	13.0	12.9	19.0	
Level of Service	C	C		C	B		B	C	B	B	B	
Approach Delay (s)		27.9			21.4			19.6			17.1	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	69.8	Sum of lost time (s)	24.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		

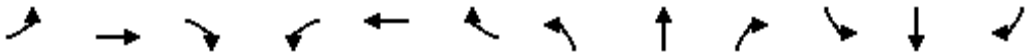
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	33	70	24	36	4	86	109	34	4	89	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Hourly flow rate (vph)	17	40	84	29	43	5	104	131	41	5	107	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			TWLTL	
Median storage veh)											2	
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	486	501	111	580	484	152	116			172		
vC1, stage 1 conf vol	121	121		359	359							
vC2, stage 2 conf vol	365	380		221	125							
vCu, unblocked vol	486	501	111	580	484	152	116			172		
tC, single (s)	7.3	6.7	6.4	7.2	6.6	6.3	4.2			4.1		
tC, 2 stage (s)	6.3	5.7		6.2	5.6							
tF (s)	3.7	4.2	3.5	3.6	4.1	3.4	2.3			2.2		
p0 queue free %	97	92	91	94	92	99	93			100		
cM capacity (veh/h)	507	516	900	482	535	879	1402			1399		

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	17	124	29	48	104	172	5	116
Volume Left	17	0	29	0	104	0	5	0
Volume Right	0	84	0	5	0	41	0	8
cSH	507	727	482	557	1402	1700	1399	1700
Volume to Capacity	0.03	0.17	0.06	0.09	0.07	0.10	0.00	0.07
Queue Length 95th (ft)	3	15	5	7	6	0	0	0
Control Delay (s)	12.4	11.0	12.9	12.1	7.8	0.0	7.6	0.0
Lane LOS	B	B	B	B	A		A	
Approach Delay (s)	11.1		12.4		2.9		0.3	
Approach LOS	B		B					

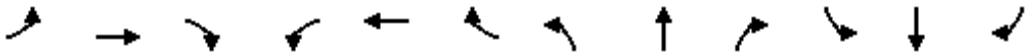
Intersection Summary				
Average Delay	5.5			
Intersection Capacity Utilization	26.1%	ICU Level of Service		A
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	100	6	34	123	195	0	0	154	29
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	0	0	0	116	7	40	143	227	0	0	179	34
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	752	709	196	709	726	227	213			227		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	752	709	196	709	726	227	213			227		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.3			2.3		
p0 queue free %	100	100	100	62	98	95	89			100		
cM capacity (veh/h)	279	319	845	310	304	793	1284			1269		

Direction, Lane #	WB 1	NB 1	NB 2	SB 1
Volume Total	163	143	227	213
Volume Left	116	143	0	0
Volume Right	40	0	0	34
cSH	363	1284	1700	1700
Volume to Capacity	0.45	0.11	0.13	0.13
Queue Length 95th (ft)	56	9	0	0
Control Delay (s)	22.7	8.2	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	22.7	3.2		0.0
Approach LOS	C			

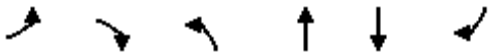
Intersection Summary				
Average Delay	6.5			
Intersection Capacity Utilization	44.8%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	46	0	121	0	0	0	0	272	118	13	241	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	51	0	134	0	0	0	0	302	131	14	268	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								815				
pX, platoon unblocked	0.85	0.85		0.85	0.85	0.85				0.85		
vC, conflicting volume	664	730	268	799	664	368	268			433		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	520	597	268	678	520	173	268			249		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	87	100	82	100	100	100	100			99		
cM capacity (veh/h)	382	340	750	254	387	743	1279			1108		

Direction, Lane #	EB 1	NB 1	SB 1	SB 2
Volume Total	186	433	14	268
Volume Left	51	0	14	0
Volume Right	134	131	0	0
cSH	593	1700	1108	1700
Volume to Capacity	0.31	0.25	0.01	0.16
Queue Length 95th (ft)	33	0	1	0
Control Delay (s)	13.8	0.0	8.3	0.0
Lane LOS	B		A	
Approach Delay (s)	13.8	0.0	0.4	
Approach LOS	B			

Intersection Summary				
Average Delay			3.0	
Intersection Capacity Utilization			44.8%	ICU Level of Service
Analysis Period (min)			15	



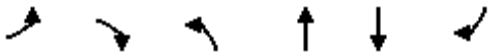
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	38	0	0	79	104	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	42	0	0	88	116	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	TWLTL	
Median storage veh)					2	
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	217	129	143			
vC1, stage 1 conf vol	129					
vC2, stage 2 conf vol	88					
vCu, unblocked vol	217	129	143			
tC, single (s)	6.9	6.7	4.1			
tC, 2 stage (s)	5.9					
tF (s)	4.0	3.8	2.2			
p0 queue free %	94	100	100			
cM capacity (veh/h)	744	806	1433			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	88	143
Volume Left	42	0	0
Volume Right	0	0	28
cSH	744	1433	1700
Volume to Capacity	0.06	0.00	0.08
Queue Length 95th (ft)	5	0	0
Control Delay (s)	10.1	0.0	0.0
Lane LOS	B		
Approach Delay (s)	10.1	0.0	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	17.0%	ICU Level of Service	A
Analysis Period (min)	15		

Build Preferred Alternative Exit 96

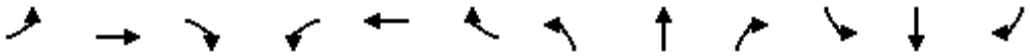
AM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	28	9	3	41	28	25
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	32	10	3	47	32	28
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	99	46	60			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	99	46	60			
tC, single (s)	6.7	6.5	4.1			
tC, 2 stage (s)						
tF (s)	3.7	3.5	2.2			
p0 queue free %	96	99	100			
cM capacity (veh/h)	842	959	1537			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	42	50	60
Volume Left	32	3	0
Volume Right	10	0	28
cSH	868	1537	1700
Volume to Capacity	0.05	0.00	0.04
Queue Length 95th (ft)	4	0	0
Control Delay (s)	9.4	0.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	0.5	0.0
Approach LOS	A		

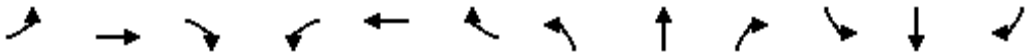
Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	14.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	21	0	48	1	0	0	28	253	3	0	378	25
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	22	0	51	1	0	0	30	269	3	0	402	27
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								579				
pX, platoon unblocked	0.99	0.99		0.99	0.99	0.99				0.99		
vC, conflicting volume	744	747	415	784	732	271	402			272		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	735	738	415	774	723	255	402			257		
tC, single (s)	7.2	6.6	6.3	7.1	6.5	6.2	4.2			4.2		
tC, 2 stage (s)												
tF (s)	3.6	4.1	3.4	3.5	4.0	3.3	2.3			2.3		
p0 queue free %	93	100	92	100	100	100	97			100		
cM capacity (veh/h)	313	321	616	280	339	774	1130			1269		

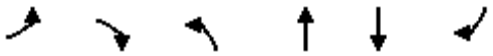
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	22	51	1	0	30	272	0	429
Volume Left	22	0	1	0	30	0	0	0
Volume Right	0	51	0	0	0	3	0	27
cSH	313	616	280	1700	1130	1700	1700	1700
Volume to Capacity	0.07	0.08	0.00	0.00	0.03	0.16	0.00	0.25
Queue Length 95th (ft)	6	7	0	0	2	0	0	0
Control Delay (s)	17.4	11.4	17.9	0.0	8.3	0.0	0.0	0.0
Lane LOS	C	B	C	A	A			
Approach Delay (s)	13.2		17.9		0.8		0.0	
Approach LOS	B		C					

Intersection Summary				
Average Delay	1.5			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A	
Analysis Period (min)	15			



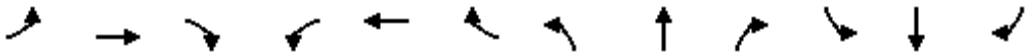
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	96	1	148	0	0	0	0	280	76	42	293	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.0						6.0		6.0	6.0	
Lane Util. Factor		1.00						1.00		1.00	1.00	
Frt		0.92						0.97		1.00	1.00	
Flt Protected		0.98						1.00		0.95	1.00	
Satd. Flow (prot)		1658						1663		1626	1712	
Flt Permitted		0.98						1.00		0.51	1.00	
Satd. Flow (perm)		1658						1663		865	1712	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	108	1	166	0	0	0	0	315	85	47	329	0
RTOR Reduction (vph)	0	76	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	199	0	0	0	0	0	393	0	47	329	0
Heavy Vehicles (%)	17%	17%	17%	0%	0%	0%	11%	11%	11%	11%	11%	11%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		8						6			2	
Permitted Phases	8									2		
Actuated Green, G (s)		17.6						60.4		60.4	60.4	
Effective Green, g (s)		17.6						60.4		60.4	60.4	
Actuated g/C Ratio		0.20						0.67		0.67	0.67	
Clearance Time (s)		6.0						6.0		6.0	6.0	
Vehicle Extension (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		324						1116		580	1148	
v/s Ratio Prot								c0.24			0.19	
v/s Ratio Perm		0.12								0.05		
v/c Ratio		0.61						0.35		0.08	0.29	
Uniform Delay, d1		33.1						6.4		5.1	6.0	
Progression Factor		1.00						0.71		0.83	0.82	
Incremental Delay, d2		3.4						0.9		0.3	0.6	
Delay (s)		36.5						5.4		4.6	5.5	
Level of Service		D						A		A	A	
Approach Delay (s)		36.5			0.0			5.4			5.4	
Approach LOS		D			A			A			A	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	170	197	269	186	232	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.94	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1671	1495	1703	1792	1602	
Flt Permitted	0.95	1.00	0.33	1.00	1.00	
Satd. Flow (perm)	1671	1495	588	1792	1602	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	183	212	289	200	249	225
RTOR Reduction (vph)	0	173	0	0	30	0
Lane Group Flow (vph)	183	39	289	200	444	0
Confl. Peds. (#/hr)	197					
Heavy Vehicles (%)	8%	8%	6%	6%	11%	11%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	8		1	6	2	
Permitted Phases		8	6			
Actuated Green, G (s)	16.7	16.7	61.3	61.3	43.7	
Effective Green, g (s)	16.7	16.7	61.3	61.3	43.7	
Actuated g/C Ratio	0.19	0.19	0.68	0.68	0.49	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	310	277	544	1220	777	
v/s Ratio Prot	c0.11		c0.07	0.11	c0.28	
v/s Ratio Perm		0.03	0.29			
v/c Ratio	0.59	0.14	0.53	0.16	0.57	
Uniform Delay, d1	33.5	30.7	7.8	5.2	16.5	
Progression Factor	1.00	1.00	1.00	1.00	1.19	
Incremental Delay, d2	3.0	0.2	1.0	0.3	2.9	
Delay (s)	36.5	30.9	8.8	5.4	22.6	
Level of Service	D	C	A	A	C	
Approach Delay (s)	33.5			7.4	22.6	
Approach LOS	C			A	C	

Intersection Summary			
HCM 2000 Control Delay	20.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

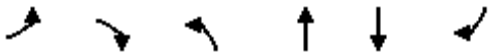


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	68	0	20	112	264	0	0	267	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0			6.0	
Lane Util. Factor					1.00		1.00	1.00			1.00	
Frt					0.97		1.00	1.00			0.95	
Flt Protected					0.96		0.95	1.00			1.00	
Satd. Flow (prot)					1556		1597	1681			1596	
Flt Permitted					0.96		0.47	1.00			1.00	
Satd. Flow (perm)					1556		794	1681			1596	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	76	0	22	124	293	0	0	297	178
RTOR Reduction (vph)	0	0	0	0	31	0	0	0	0	0	17	0
Lane Group Flow (vph)	0	0	0	0	67	0	124	293	0	0	458	0
Heavy Vehicles (%)	2%	2%	2%	14%	14%	14%	13%	13%	13%	13%	13%	13%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					4			6			2	
Permitted Phases				4			6					
Actuated Green, G (s)					12.0		66.0	66.0			66.0	
Effective Green, g (s)					12.0		66.0	66.0			66.0	
Actuated g/C Ratio					0.13		0.73	0.73			0.73	
Clearance Time (s)					6.0		6.0	6.0			6.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					207		582	1232			1170	
v/s Ratio Prot								0.17			c0.29	
v/s Ratio Perm					0.04		0.16					
v/c Ratio					0.32		0.21	0.24			0.39	
Uniform Delay, d1					35.3		3.8	3.9			4.5	
Progression Factor					1.00		0.83	0.84			1.00	
Incremental Delay, d2					0.9		0.8	0.4			1.0	
Delay (s)					36.2		3.9	3.7			5.5	
Level of Service					D		A	A			A	
Approach Delay (s)		0.0			36.2			3.8			5.5	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM 2000 Control Delay	7.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

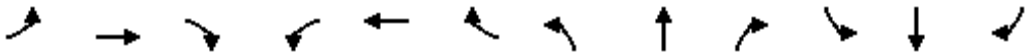
PM Peak Hour



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	24	0	7	50	36	15
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	27	0	8	57	41	17
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	49	58			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	49	58			
tC, single (s)	6.4	6.2	4.2			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.3			
p0 queue free %	97	100	99			
cM capacity (veh/h)	866	1016	1521			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	27	65	58
Volume Left	27	8	0
Volume Right	0	0	17
cSH	866	1521	1700
Volume to Capacity	0.03	0.01	0.03
Queue Length 95th (ft)	2	0	0
Control Delay (s)	9.3	0.9	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.9	0.0
Approach LOS	A		

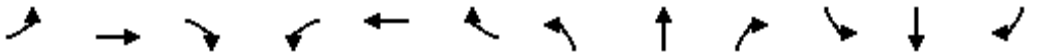
Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	18.5%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	1	51	1	0	0	30	454	2	0	324	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	23	1	54	1	0	0	32	483	2	0	345	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								579				
pX, platoon unblocked	0.89	0.89		0.89	0.89	0.89				0.89		
vC, conflicting volume	903	905	356	947	893	484	345			485		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	827	829	356	877	816	355	345			356		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	91	100	92	100	100	100	97			100		
cM capacity (veh/h)	251	262	684	216	271	615	1203			1057		

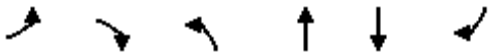
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	23	55	1	0	32	485	0	367
Volume Left	23	0	1	0	32	0	0	0
Volume Right	0	54	0	0	0	2	0	22
cSH	251	663	216	1700	1203	1700	1700	1700
Volume to Capacity	0.09	0.08	0.00	0.00	0.03	0.29	0.00	0.22
Queue Length 95th (ft)	8	7	0	0	2	0	0	0
Control Delay (s)	20.8	10.9	21.7	0.0	8.1	0.0	0.0	0.0
Lane LOS	C	B	C	A	A			
Approach Delay (s)	13.9		21.7		0.5		0.0	
Approach LOS	B		C					

Intersection Summary				
Average Delay	1.4			
Intersection Capacity Utilization	39.5%	ICU Level of Service	A	
Analysis Period (min)	15			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	214	1	130	0	0	0	0	375	75	27	287	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	16	12	12	12	12	12	12	12	12	12	12
Total Lost time (s)		6.0						6.0		6.0	6.0	
Lane Util. Factor		1.00						1.00		1.00	1.00	
Frt		0.95						0.98		1.00	1.00	
Flt Protected		0.97						1.00		0.95	1.00	
Satd. Flow (prot)		1835						1769		1719	1810	
Flt Permitted		0.97						1.00		0.41	1.00	
Satd. Flow (perm)		1835						1769		746	1810	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	240	1	146	0	0	0	0	421	84	30	322	0
RTOR Reduction (vph)	0	28	0	0	0	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	359	0	0	0	0	0	499	0	30	322	0
Heavy Vehicles (%)	8%	8%	8%	2%	2%	2%	5%	5%	5%	5%	5%	5%
Turn Type	Perm	NA						NA		Perm	NA	
Protected Phases		8						6			2	
Permitted Phases	8									2		
Actuated Green, G (s)		22.8						55.2		55.2	55.2	
Effective Green, g (s)		22.8						55.2		55.2	55.2	
Actuated g/C Ratio		0.25						0.61		0.61	0.61	
Clearance Time (s)		6.0						6.0		6.0	6.0	
Vehicle Extension (s)		3.0						3.0		3.0	3.0	
Lane Grp Cap (vph)		464						1084		457	1110	
v/s Ratio Prot								c0.28			0.18	
v/s Ratio Perm		0.20								0.04		
v/c Ratio		0.77						0.46		0.07	0.29	
Uniform Delay, d1		31.2						9.4		7.0	8.2	
Progression Factor		1.00						0.74		0.91	0.92	
Incremental Delay, d2		7.8						1.3		0.3	0.6	
Delay (s)		39.0						8.3		6.6	8.2	
Level of Service		D						A		A	A	
Approach Delay (s)		39.0			0.0			8.3			8.0	
Approach LOS		D			A			A			A	

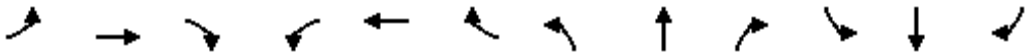
Intersection Summary			
HCM 2000 Control Delay	17.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (vph)	253	208	220	197	143	274
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.0	6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.91	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1719	1538	1687	1776	1560	
Flt Permitted	0.95	1.00	0.34	1.00	1.00	
Satd. Flow (perm)	1719	1538	597	1776	1560	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	272	224	237	212	154	295
RTOR Reduction (vph)	0	176	0	0	67	0
Lane Group Flow (vph)	272	48	237	212	382	0
Confl. Peds. (#/hr)	197					
Heavy Vehicles (%)	5%	5%	7%	7%	11%	11%
Turn Type	Prot	Perm	pm+pt	NA	NA	
Protected Phases	8		1	6	2	
Permitted Phases		8	6			
Actuated Green, G (s)	19.4	19.4	58.6	58.6	42.0	
Effective Green, g (s)	19.4	19.4	58.6	58.6	42.0	
Actuated g/C Ratio	0.22	0.22	0.65	0.65	0.47	
Clearance Time (s)	6.0	6.0	6.0	6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	370	331	517	1156	728	
v/s Ratio Prot	c0.16		c0.05	0.12	c0.25	
v/s Ratio Perm		0.03	0.24			
v/c Ratio	0.74	0.15	0.46	0.18	0.53	
Uniform Delay, d1	32.9	28.6	8.3	6.2	17.0	
Progression Factor	1.00	1.00	1.00	1.00	1.49	
Incremental Delay, d2	7.4	0.2	0.6	0.3	2.5	
Delay (s)	40.3	28.8	8.9	6.6	27.9	
Level of Service	D	C	A	A	C	
Approach Delay (s)	35.1			7.8	27.9	
Approach LOS	D			A	C	

Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	65.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	98	0	25	128	461	0	0	216	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					6.0		6.0	6.0			6.0	
Lane Util. Factor					1.00		1.00	1.00			1.00	
Frt					0.97		1.00	1.00			0.94	
Flt Protected					0.96		0.95	1.00			1.00	
Satd. Flow (prot)					1587		1612	1696			1599	
Flt Permitted					0.96		0.50	1.00			1.00	
Satd. Flow (perm)					1587		847	1696			1599	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	0	0	0	109	0	28	142	512	0	0	240	178
RTOR Reduction (vph)	0	0	0	0	30	0	0	0	0	0	24	0
Lane Group Flow (vph)	0	0	0	0	107	0	142	512	0	0	394	0
Heavy Vehicles (%)	2%	2%	2%	12%	12%	12%	12%	12%	12%	12%	12%	12%
Turn Type				Perm	NA		Perm	NA			NA	
Protected Phases					4			6			2	
Permitted Phases				4			6					
Actuated Green, G (s)					15.3		62.7	62.7			62.7	
Effective Green, g (s)					15.3		62.7	62.7			62.7	
Actuated g/C Ratio					0.17		0.70	0.70			0.70	
Clearance Time (s)					6.0		6.0	6.0			6.0	
Vehicle Extension (s)					3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)					269		590	1181			1113	
v/s Ratio Prot								c0.30			0.25	
v/s Ratio Perm					0.07		0.17					
v/c Ratio					0.40		0.24	0.43			0.35	
Uniform Delay, d1					33.3		5.0	5.9			5.5	
Progression Factor					1.00		1.15	1.18			1.00	
Incremental Delay, d2					1.0		0.8	1.0			0.9	
Delay (s)					34.2		6.6	8.0			6.4	
Level of Service					C		A	A			A	
Approach Delay (s)		0.0			34.2			7.7			6.4	
Approach LOS		A			C			A			A	

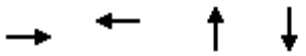
Intersection Summary			
HCM 2000 Control Delay	10.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Appendix J

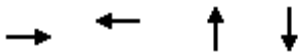
Intersection Queuing Synchro Outputs

Existing Exit 83



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	213	9	378	280
v/c Ratio	0.48	0.01	0.47	0.37
Control Delay	8.4	0.0	9.7	8.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	8.4	0.0	9.7	8.7
Queue Length 50th (ft)	9	0	43	30
Queue Length 95th (ft)	45	0	112	82
Internal Link Dist (ft)	35	421	479	960
Turn Bay Length (ft)				
Base Capacity (vph)	840	894	1670	1566
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.25	0.01	0.23	0.18

Intersection Summary



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	307	13	331	262
v/c Ratio	0.60	0.03	0.46	0.40
Control Delay	12.1	6.0	11.9	11.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.1	6.0	11.9	11.3
Queue Length 50th (ft)	30	1	46	35
Queue Length 95th (ft)	80	7	120	96
Internal Link Dist (ft)	35	421	479	960
Turn Bay Length (ft)				
Base Capacity (vph)	812	776	1729	1591
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.38	0.02	0.19	0.16

Intersection Summary

Existing Exit 95

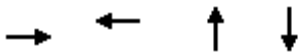
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR2	SEL
Lane Group Flow (vph)	125	216	252	56	212	27	85
v/c Ratio	0.35	0.36	0.41	0.10	0.53	0.07	0.24
Control Delay	18.2	16.4	16.9	2.2	14.7	0.4	6.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.2	16.4	16.9	2.2	14.7	0.4	6.1
Queue Length 50th (ft)	28	49	58	0	24	0	0
Queue Length 95th (ft)	72	107	123	10	76	0	22
Internal Link Dist (ft)		1	1367		496		329
Turn Bay Length (ft)				60		25	
Base Capacity (vph)	794	1317	1355	1175	677	632	729
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.16	0.19	0.05	0.31	0.04	0.12

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR2	SEL
Lane Group Flow (vph)	173	309	207	48	179	15	121
v/c Ratio	0.45	0.50	0.34	0.08	0.48	0.04	0.35
Control Delay	19.5	18.3	16.1	1.5	13.9	0.2	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.5	18.3	16.1	1.5	13.9	0.2	9.9
Queue Length 50th (ft)	39	70	44	0	17	0	3
Queue Length 95th (ft)	98	153	103	7	67	0	42
Internal Link Dist (ft)		1	1367		496		329
Turn Bay Length (ft)				60		25	
Base Capacity (vph)	813	1296	1283	1118	666	620	678
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.24	0.16	0.04	0.27	0.02	0.18

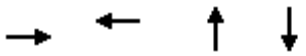
Intersection Summary

No Build Exit 83



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	319	13	564	417
v/c Ratio	0.63	0.02	0.71	0.58
Control Delay	13.3	0.1	15.9	13.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.3	0.1	15.9	13.0
Queue Length 50th (ft)	24	0	92	62
Queue Length 95th (ft)	111	0	245	172
Internal Link Dist (ft)	35	421	479	960
Turn Bay Length (ft)				
Base Capacity (vph)	815	787	1513	1366
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.39	0.02	0.37	0.31

Intersection Summary



Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	461	18	494	392
v/c Ratio	0.77	0.03	0.70	0.61
Control Delay	19.8	7.5	19.4	17.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	19.8	7.5	19.4	17.5
Queue Length 50th (ft)	60	1	106	80
Queue Length 95th (ft)	221	12	253	198
Internal Link Dist (ft)	35	421	479	960
Turn Bay Length (ft)				
Base Capacity (vph)	909	871	1183	1071
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.51	0.02	0.42	0.37

Intersection Summary

No Build Exit 95

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR2	SEL
Lane Group Flow (vph)	187	323	378	83	318	40	126
v/c Ratio	0.68	0.51	0.58	0.14	0.73	0.10	0.40
Control Delay	32.8	20.5	21.8	3.9	27.7	0.5	14.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.8	20.5	21.8	3.9	27.7	0.5	14.7
Queue Length 50th (ft)	61	97	117	0	70	0	6
Queue Length 95th (ft)	141	185	218	20	193	0	55
Internal Link Dist (ft)		1	1367		496		329
Turn Bay Length (ft)				60		25	
Base Capacity (vph)	509	1155	1188	1041	645	602	369
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.37	0.28	0.32	0.08	0.49	0.07	0.34

Intersection Summary

Lane Group	EBL	EBT	WBT	WBR	SBL	SBR2	SEL
Lane Group Flow (vph)	258	461	309	73	267	22	181
v/c Ratio	0.74	0.70	0.47	0.12	0.70	0.06	0.56
Control Delay	33.0	24.3	18.9	2.9	27.1	0.3	21.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	24.3	18.9	2.9	27.1	0.3	21.7
Queue Length 50th (ft)	80	140	85	0	52	0	25
Queue Length 95th (ft)	188	277	176	16	162	0	100
Internal Link Dist (ft)		1	1367		496		329
Turn Bay Length (ft)				60		25	
Base Capacity (vph)	628	1192	1180	1035	543	507	412
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.39	0.26	0.07	0.49	0.04	0.44

Intersection Summary

Build Exit 83

Alternative 1

without Improvements

Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	24	13	670	2	574
v/c Ratio	0.07	0.03	0.42	0.00	0.35
Control Delay	13.4	0.1	3.1	2.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	0.1	3.1	2.0	2.6
Queue Length 50th (ft)	2	0	0	0	0
Queue Length 95th (ft)	19	0	181	2	136
Internal Link Dist (ft)	2274	1002	461		1304
Turn Bay Length (ft)				100	
Base Capacity (vph)	459	556	1689	814	1738
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.02	0.40	0.00	0.33

Intersection Summary

Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	41	19	607	9	651
v/c Ratio	0.11	0.07	0.38	0.01	0.40
Control Delay	6.8	10.0	3.0	2.4	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	10.0	3.0	2.4	3.1
Queue Length 50th (ft)	0	1	0	0	0
Queue Length 95th (ft)	17	14	152	4	168
Internal Link Dist (ft)	2274	1002	461		1304
Turn Bay Length (ft)				100	
Base Capacity (vph)	514	418	1758	890	1765
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05	0.35	0.01	0.37

Intersection Summary

Alternative 1
Improved Option A

Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	24	13	670	2	574
v/c Ratio	0.07	0.03	0.42	0.00	0.35
Control Delay	13.4	0.1	3.1	2.0	2.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	13.4	0.1	3.1	2.0	2.6
Queue Length 50th (ft)	2	0	0	0	0
Queue Length 95th (ft)	19	0	181	2	136
Internal Link Dist (ft)	2274	1002	461		1304
Turn Bay Length (ft)				100	
Base Capacity (vph)	459	556	1689	814	1738
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.05	0.02	0.40	0.00	0.33

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	59	59	318	330	586
v/c Ratio	0.28	0.25	0.58	0.25	0.46
Control Delay	28.5	10.5	12.0	4.6	5.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	28.5	10.5	12.0	4.6	5.5
Queue Length 50th (ft)	22	0	55	40	70
Queue Length 95th (ft)	51	28	#166	81	151
Internal Link Dist (ft)	943			376	802
Turn Bay Length (ft)		150	100		
Base Capacity (vph)	434	430	549	1330	1281
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.14	0.58	0.25	0.46

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Lane Group	EBT	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	41	19	607	9	651
v/c Ratio	0.11	0.07	0.38	0.01	0.40
Control Delay	6.8	10.0	3.0	2.4	3.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	10.0	3.0	2.4	3.1
Queue Length 50th (ft)	0	1	0	0	0
Queue Length 95th (ft)	17	14	152	4	168
Internal Link Dist (ft)	2274	1002	461		1304
Turn Bay Length (ft)				100	
Base Capacity (vph)	514	418	1758	890	1765
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.08	0.05	0.35	0.01	0.37

Intersection Summary

Lane Group	WBT	WBR	NBL	NBT	SBT
Lane Group Flow (vph)	94	80	190	464	455
v/c Ratio	0.31	0.24	0.33	0.40	0.40
Control Delay	20.1	7.5	8.4	7.5	6.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.1	7.5	8.4	7.5	6.7
Queue Length 50th (ft)	18	0	23	60	50
Queue Length 95th (ft)	65	29	70	141	124
Internal Link Dist (ft)	943			376	802
Turn Bay Length (ft)		150	100		
Base Capacity (vph)	672	646	810	1645	1578
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.14	0.12	0.23	0.28	0.29

Intersection Summary

Alternative 2
without Improvements

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	670	3	573
v/c Ratio	0.03	0.42	0.00	0.35
Control Delay	0.2	2.2	1.3	1.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	2.2	1.3	1.8
Queue Length 50th (ft)	0	0	0	0
Queue Length 95th (ft)	0	136	2	103
Internal Link Dist (ft)	1034	461		658
Turn Bay Length (ft)			100	
Base Capacity (vph)	732	1616	650	1662
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.02	0.41	0.00	0.34

Intersection Summary

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	606	9	638
v/c Ratio	0.09	0.36	0.01	0.38
Control Delay	13.1	2.2	1.6	2.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.1	2.2	1.6	2.3
Queue Length 50th (ft)	1	0	0	0
Queue Length 95th (ft)	17	130	4	143
Internal Link Dist (ft)	1034	461		658
Turn Bay Length (ft)			100	
Base Capacity (vph)	628	1691	716	1677
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.36	0.01	0.38

Intersection Summary

Alternative 3
without Improvements

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	13	670	3	573
v/c Ratio	0.03	0.42	0.00	0.35
Control Delay	0.2	2.2	1.3	1.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	0.2	2.2	1.3	1.8
Queue Length 50th (ft)	0	0	0	0
Queue Length 95th (ft)	0	136	2	103
Internal Link Dist (ft)	1111	461		1149
Turn Bay Length (ft)			100	
Base Capacity (vph)	814	1616	650	1662
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.02	0.41	0.00	0.34

Intersection Summary

Lane Group	WBL	NBT	SBL	SBT
Lane Group Flow (vph)	19	606	9	624
v/c Ratio	0.09	0.36	0.01	0.38
Control Delay	12.8	2.2	1.6	2.3
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	12.8	2.2	1.6	2.3
Queue Length 50th (ft)	1	0	0	0
Queue Length 95th (ft)	17	129	4	136
Internal Link Dist (ft)	1111	461		1149
Turn Bay Length (ft)			100	
Base Capacity (vph)	684	1696	718	1682
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.03	0.36	0.01	0.37

Intersection Summary

Build Exit 87

Alternative 1

Improved Option B

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	127	197	224	361
v/c Ratio	0.42	0.40	0.26	0.60
Control Delay	18.5	8.1	7.6	12.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.5	8.1	7.6	12.7
Queue Length 50th (ft)	20	7	25	47
Queue Length 95th (ft)	58	36	53	96
Internal Link Dist (ft)	919	1910	39	766
Turn Bay Length (ft)				
Base Capacity (vph)	594	838	1627	1139
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.21	0.24	0.14	0.32

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	133	225	143	349
v/c Ratio	0.37	0.42	0.19	0.54
Control Delay	14.6	7.9	7.7	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	7.9	7.7	11.7
Queue Length 50th (ft)	17	11	15	43
Queue Length 95th (ft)	49	39	37	88
Internal Link Dist (ft)	919	1910	39	766
Turn Bay Length (ft)				
Base Capacity (vph)	880	1128	1585	1361
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.20	0.09	0.26

Intersection Summary

Alternative 2
Improved Option B

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	127	197	224	361
v/c Ratio	0.42	0.40	0.27	0.60
Control Delay	18.3	8.0	7.7	12.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.3	8.0	7.7	12.8
Queue Length 50th (ft)	19	7	25	47
Queue Length 95th (ft)	57	35	53	96
Internal Link Dist (ft)	1339	832	306	942
Turn Bay Length (ft)				
Base Capacity (vph)	632	883	1617	1132
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.20	0.22	0.14	0.32

Intersection Summary

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	133	225	143	349
v/c Ratio	0.37	0.42	0.19	0.54
Control Delay	14.6	7.9	7.7	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	7.9	7.7	11.7
Queue Length 50th (ft)	17	11	15	43
Queue Length 95th (ft)	49	39	37	88
Internal Link Dist (ft)	1339	832	306	942
Turn Bay Length (ft)				
Base Capacity (vph)	880	1128	1585	1361
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.20	0.09	0.26

Intersection Summary

Alternative 3
Improved Option B

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	127	197	224	361
v/c Ratio	0.42	0.40	0.27	0.60
Control Delay	18.3	8.0	7.7	12.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.3	8.0	7.7	12.8
Queue Length 50th (ft)	19	7	25	47
Queue Length 95th (ft)	57	35	53	96
Internal Link Dist (ft)	936	1864	340	737
Turn Bay Length (ft)				
Base Capacity (vph)	632	883	1617	1132
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.20	0.22	0.14	0.32

Intersection Summary

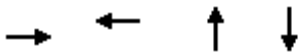
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	133	225	143	349
v/c Ratio	0.37	0.42	0.19	0.54
Control Delay	14.6	7.9	7.7	11.7
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	7.9	7.7	11.7
Queue Length 50th (ft)	17	11	15	43
Queue Length 95th (ft)	49	39	37	88
Internal Link Dist (ft)	936	1864	340	737
Turn Bay Length (ft)				
Base Capacity (vph)	880	1128	1585	1361
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.20	0.09	0.26

Intersection Summary

Alternative 4
Improved Option B

Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	127	197	224	361
v/c Ratio	0.42	0.40	0.27	0.60
Control Delay	18.3	8.0	7.7	12.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.3	8.0	7.7	12.8
Queue Length 50th (ft)	19	7	25	47
Queue Length 95th (ft)	57	35	53	96
Internal Link Dist (ft)	1504	1777	459	1296
Turn Bay Length (ft)				
Base Capacity (vph)	632	883	1617	1132
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.20	0.22	0.14	0.32

Intersection Summary



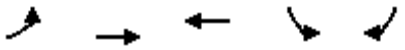
Lane Group	EBT	WBT	NBT	SBT
Lane Group Flow (vph)	133	225	143	349
v/c Ratio	0.38	0.42	0.19	0.55
Control Delay	14.6	8.0	7.7	11.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	8.0	7.7	11.8
Queue Length 50th (ft)	17	11	15	44
Queue Length 95th (ft)	49	40	37	88
Internal Link Dist (ft)	1504	1777	459	1296
Turn Bay Length (ft)				
Base Capacity (vph)	877	1115	1582	1346
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.20	0.09	0.26

Intersection Summary

Build Exit 95

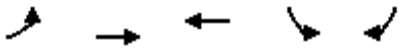
Alternative 1

without Improvements



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	265	220	473	128	460
v/c Ratio	0.72	0.15	0.32	0.31	0.68
Control Delay	22.6	7.7	7.9	17.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	7.7	7.9	17.7	9.4
Queue Length 50th (ft)	40	13	27	22	9
Queue Length 95th (ft)	149	41	77	82	80
Internal Link Dist (ft)		768	313	400	
Turn Bay Length (ft)	200			200	
Base Capacity (vph)	777	3072	3083	1217	1180
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.07	0.15	0.11	0.39

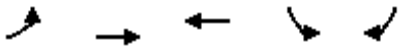
Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	402	323	398	157	286
v/c Ratio	0.79	0.17	0.22	0.41	0.50
Control Delay	21.8	6.0	5.2	24.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	6.0	5.2	24.9	7.2
Queue Length 50th (ft)	78	21	22	37	0
Queue Length 95th (ft)	193	42	45	119	52
Internal Link Dist (ft)		768	310	400	
Turn Bay Length (ft)	200			200	
Base Capacity (vph)	865	3177	3055	944	978
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.10	0.13	0.17	0.29

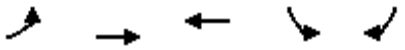
Intersection Summary

Alternative 1
Improved Option A



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	265	220	473	128	460
v/c Ratio	0.72	0.15	0.32	0.31	0.68
Control Delay	22.6	7.7	7.9	17.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	7.7	7.9	17.7	9.4
Queue Length 50th (ft)	40	13	27	22	9
Queue Length 95th (ft)	149	41	77	82	80
Internal Link Dist (ft)		768	313	400	
Turn Bay Length (ft)	200			200	
Base Capacity (vph)	777	3072	3083	1217	1180
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.07	0.15	0.11	0.39

Intersection Summary



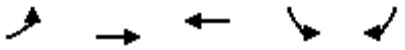
Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	402	323	398	157	286
v/c Ratio	0.79	0.17	0.22	0.41	0.50
Control Delay	21.8	6.0	5.2	24.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	6.0	5.2	24.9	7.2
Queue Length 50th (ft)	78	21	22	37	0
Queue Length 95th (ft)	193	42	45	119	52
Internal Link Dist (ft)		768	310	400	
Turn Bay Length (ft)	200			200	
Base Capacity (vph)	865	3177	3055	944	978
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.10	0.13	0.17	0.29

Intersection Summary

Alternative 1
Improved Option B

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	216	181	482	857
v/c Ratio	0.57	0.54	0.25	0.43
Control Delay	13.9	13.4	5.2	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	13.9	13.4	5.2	6.2
Queue Length 50th (ft)	10	22	24	48
Queue Length 95th (ft)	55	62	47	85
Internal Link Dist (ft)	1390		660	440
Turn Bay Length (ft)		150		
Base Capacity (vph)	723	569	3317	3346
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.30	0.32	0.15	0.26

Intersection Summary

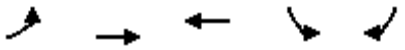


Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	265	220	473	128	460
v/c Ratio	0.72	0.15	0.32	0.31	0.68
Control Delay	22.6	7.7	7.9	17.7	9.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	7.7	7.9	17.7	9.4
Queue Length 50th (ft)	40	13	27	22	9
Queue Length 95th (ft)	149	41	77	82	80
Internal Link Dist (ft)		768	313	400	
Turn Bay Length (ft)	200			200	
Base Capacity (vph)	777	3072	3083	1217	1180
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.07	0.15	0.11	0.39

Intersection Summary

Lane Group	EBL	NBL	NBT	SBT
Lane Group Flow (vph)	110	47	756	628
v/c Ratio	0.38	0.09	0.32	0.27
Control Delay	10.9	4.8	4.8	4.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	10.9	4.8	4.8	4.5
Queue Length 50th (ft)	5	4	39	31
Queue Length 95th (ft)	28	13	61	50
Internal Link Dist (ft)	1390		660	440
Turn Bay Length (ft)		150		
Base Capacity (vph)	1012	764	3505	3457
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.11	0.06	0.22	0.18

Intersection Summary



Lane Group	EBL	EBT	WBT	SBL	SBR
Lane Group Flow (vph)	402	323	398	157	286
v/c Ratio	0.79	0.17	0.22	0.41	0.50
Control Delay	21.8	6.0	5.2	24.9	7.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.8	6.0	5.2	24.9	7.2
Queue Length 50th (ft)	78	21	22	37	0
Queue Length 95th (ft)	193	42	45	119	52
Internal Link Dist (ft)		768	310	400	
Turn Bay Length (ft)	200			200	
Base Capacity (vph)	865	3177	3055	944	978
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.10	0.13	0.17	0.29

Intersection Summary

Alternative 2
Improved Option B

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	40	248	332	138	195	236	198	118	501
v/c Ratio	0.09	0.33	0.79	0.20	0.78	0.31	0.26	0.26	0.68
Control Delay	15.4	5.0	33.8	8.0	42.2	15.3	3.4	15.9	20.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	5.0	33.8	8.0	42.2	15.3	3.4	15.9	20.9
Queue Length 50th (ft)	10	7	108	13	62	59	0	29	141
Queue Length 95th (ft)	28	54	257	53	139	111	37	78	239
Internal Link Dist (ft)		1252		463		629			735
Turn Bay Length (ft)	100		300		150			150	
Base Capacity (vph)	820	1139	741	1143	423	1271	1143	778	1225
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.22	0.45	0.12	0.46	0.19	0.17	0.15	0.41

Intersection Summary

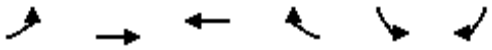
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	45	157	268	129	70	368	312	142	304
v/c Ratio	0.08	0.26	0.68	0.22	0.18	0.56	0.41	0.41	0.46
Control Delay	10.4	4.8	21.9	6.2	11.8	15.0	3.6	15.3	13.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.4	4.8	21.9	6.2	11.8	15.0	3.6	15.3	13.2
Queue Length 50th (ft)	6	4	43	6	9	56	0	20	42
Queue Length 95th (ft)	22	36	140	39	34	136	41	78	108
Internal Link Dist (ft)		1252		463		629			735
Turn Bay Length (ft)	100		300		150			150	
Base Capacity (vph)	1590	1481	1111	1541	956	1662	1446	874	1625
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.11	0.24	0.08	0.07	0.22	0.22	0.16	0.19

Intersection Summary

Build Exit 96

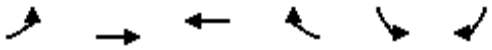
Alternative 1

Improved Option A



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	183	212	289	200	249	225
v/c Ratio	0.62	0.37	0.49	0.32	0.52	0.38
Control Delay	19.8	10.8	12.4	3.3	15.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	10.8	12.4	3.3	15.8	4.5
Queue Length 50th (ft)	25	26	37	0	33	0
Queue Length 95th (ft)	84	75	102	28	114	37
Internal Link Dist (ft)		790	382		432	
Turn Bay Length (ft)	150				150	
Base Capacity (vph)	904	1751	1784	1518	1316	1220
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.12	0.16	0.13	0.19	0.18

Intersection Summary



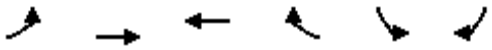
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	272	224	237	212	154	295
v/c Ratio	0.71	0.32	0.34	0.29	0.40	0.52
Control Delay	19.9	8.3	8.5	2.5	16.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	8.3	8.5	2.5	16.8	6.3
Queue Length 50th (ft)	36	25	26	0	23	0
Queue Length 95th (ft)	108	64	69	23	82	48
Internal Link Dist (ft)		790	382		432	
Turn Bay Length (ft)	150				150	
Base Capacity (vph)	977	1810	1776	1509	1153	1118
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.12	0.13	0.14	0.13	0.26

Intersection Summary

Alternative 1
Improved Option B

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	275	400	47	329
v/c Ratio	0.62	0.67	0.15	0.55
Control Delay	14.6	14.0	8.1	11.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	14.0	8.1	11.8
Queue Length 50th (ft)	23	42	4	35
Queue Length 95th (ft)	87	120	20	99
Internal Link Dist (ft)	978	432		316
Turn Bay Length (ft)			150	
Base Capacity (vph)	1504	1662	900	1712
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.24	0.05	0.19

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	183	212	289	200	249	225
v/c Ratio	0.62	0.37	0.49	0.32	0.52	0.38
Control Delay	19.8	10.8	12.4	3.3	15.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.8	10.8	12.4	3.3	15.8	4.5
Queue Length 50th (ft)	25	26	37	0	33	0
Queue Length 95th (ft)	84	75	102	28	114	37
Internal Link Dist (ft)		790	382		432	
Turn Bay Length (ft)	150				150	
Base Capacity (vph)	904	1751	1784	1518	1316	1220
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.12	0.16	0.13	0.19	0.18

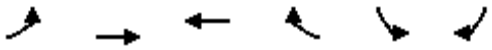
Intersection Summary

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	98	124	293	475
v/c Ratio	0.39	0.24	0.28	0.47
Control Delay	14.5	6.7	5.8	6.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.5	6.7	5.8	6.8
Queue Length 50th (ft)	11	10	25	39
Queue Length 95th (ft)	39	35	63	104
Internal Link Dist (ft)	249		316	507
Turn Bay Length (ft)		150		
Base Capacity (vph)	1061	826	1681	1596
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.15	0.17	0.30

Intersection Summary

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	387	505	30	322
v/c Ratio	0.70	0.72	0.11	0.46
Control Delay	20.3	17.3	9.9	12.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.3	17.3	9.9	12.0
Queue Length 50th (ft)	64	80	4	46
Queue Length 95th (ft)	187	218	19	129
Internal Link Dist (ft)	978	432		316
Turn Bay Length (ft)			150	
Base Capacity (vph)	1475	1657	642	1693
Starvation Cap Reductn	0	0	0	43
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.30	0.05	0.20

Intersection Summary



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	272	224	237	212	154	295
v/c Ratio	0.71	0.32	0.34	0.29	0.40	0.52
Control Delay	19.9	8.3	8.5	2.5	16.8	6.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	19.9	8.3	8.5	2.5	16.8	6.3
Queue Length 50th (ft)	36	25	26	0	23	0
Queue Length 95th (ft)	108	64	69	23	82	48
Internal Link Dist (ft)		790	382		432	
Turn Bay Length (ft)	150				150	
Base Capacity (vph)	977	1810	1776	1509	1153	1118
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.12	0.13	0.14	0.13	0.26

Intersection Summary

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	137	142	512	418
v/c Ratio	0.49	0.27	0.50	0.42
Control Delay	18.0	7.2	8.2	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.0	7.2	8.2	6.2
Queue Length 50th (ft)	15	13	55	32
Queue Length 95th (ft)	61	44	143	93
Internal Link Dist (ft)	249		316	507
Turn Bay Length (ft)		150		
Base Capacity (vph)	1037	879	1696	1600
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.16	0.30	0.26

Intersection Summary

Alternative 2
Improved Option A

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Group Flow (vph)	183	212	249	225	289	200
v/c Ratio	0.28	0.31	0.62	0.36	0.55	0.33
Control Delay	10.6	3.3	18.4	11.4	16.5	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	3.3	18.4	11.4	16.5	4.1
Queue Length 50th (ft)	25	0	39	31	45	0
Queue Length 95th (ft)	73	30	120	89	136	35
Internal Link Dist (ft)	294			479	539	
Turn Bay Length (ft)			150		150	
Base Capacity (vph)	1676	1434	1047	1631	1481	1351
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.15	0.24	0.14	0.20	0.15

Intersection Summary

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Group Flow (vph)	272	224	154	295	237	212
v/c Ratio	0.44	0.33	0.44	0.50	0.48	0.36
Control Delay	11.6	3.3	14.0	12.7	13.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	3.3	14.0	12.7	13.8	4.1
Queue Length 50th (ft)	34	0	19	38	31	0
Queue Length 95th (ft)	90	29	63	101	89	32
Internal Link Dist (ft)	294			479	539	
Turn Bay Length (ft)			150		150	
Base Capacity (vph)	1802	1533	1009	1705	1618	1456
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.15	0.15	0.17	0.15	0.15

Intersection Summary

Alternative 2
Improved Option B

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	275	400	47	329
v/c Ratio	0.62	0.67	0.15	0.55
Control Delay	14.6	14.0	8.1	11.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	14.0	8.1	11.8
Queue Length 50th (ft)	23	42	4	35
Queue Length 95th (ft)	87	120	20	99
Internal Link Dist (ft)	686	479		286
Turn Bay Length (ft)			100	
Base Capacity (vph)	1504	1662	900	1712
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.24	0.05	0.19

Intersection Summary

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Group Flow (vph)	183	212	249	225	289	200
v/c Ratio	0.28	0.31	0.62	0.36	0.55	0.33
Control Delay	10.6	3.3	18.4	11.4	16.5	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	3.3	18.4	11.4	16.5	4.1
Queue Length 50th (ft)	25	0	39	31	45	0
Queue Length 95th (ft)	73	30	120	89	136	35
Internal Link Dist (ft)	294			479	539	
Turn Bay Length (ft)			150		150	
Base Capacity (vph)	1676	1434	1047	1631	1481	1351
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.15	0.24	0.14	0.20	0.15

Intersection Summary

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	98	124	293	475
v/c Ratio	0.29	0.26	0.30	0.50
Control Delay	11.2	8.0	7.0	8.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	11.2	8.0	7.0	8.0
Queue Length 50th (ft)	8	13	32	49
Queue Length 95th (ft)	39	36	65	105
Internal Link Dist (ft)	338		286	500
Turn Bay Length (ft)		100		
Base Capacity (vph)	822	814	1681	1596
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.12	0.15	0.17	0.30

Intersection Summary

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	387	505	30	322
v/c Ratio	0.70	0.72	0.11	0.46
Control Delay	20.3	17.3	9.9	12.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.3	17.3	9.9	12.0
Queue Length 50th (ft)	64	80	4	46
Queue Length 95th (ft)	187	218	19	129
Internal Link Dist (ft)	686	479		286
Turn Bay Length (ft)			100	
Base Capacity (vph)	1475	1657	642	1693
Starvation Cap Reductn	0	0	0	56
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.30	0.05	0.20

Intersection Summary

Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Group Flow (vph)	272	224	154	295	237	212
v/c Ratio	0.44	0.33	0.44	0.50	0.48	0.36
Control Delay	11.6	3.3	14.0	12.7	13.8	4.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.6	3.3	14.0	12.7	13.8	4.1
Queue Length 50th (ft)	34	0	19	38	31	0
Queue Length 95th (ft)	90	29	63	101	89	32
Internal Link Dist (ft)	294			479	539	
Turn Bay Length (ft)			150		150	
Base Capacity (vph)	1802	1533	1009	1705	1618	1456
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.15	0.15	0.17	0.15	0.15

Intersection Summary

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	137	142	512	418
v/c Ratio	0.38	0.28	0.53	0.44
Control Delay	14.6	8.0	9.3	6.9
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	8.0	9.3	6.9
Queue Length 50th (ft)	15	15	66	38
Queue Length 95th (ft)	62	43	141	91
Internal Link Dist (ft)	338		286	497
Turn Bay Length (ft)		100		
Base Capacity (vph)	923	879	1696	1600
Starvation Cap Reductn	0	0	13	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.15	0.16	0.30	0.26

Intersection Summary

Alternative 3
Improved Option A

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	183	212	289	200	474
v/c Ratio	0.51	0.36	0.57	0.38	0.75
Control Delay	18.9	4.5	18.1	14.7	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.9	4.5	18.1	14.7	17.2
Queue Length 50th (ft)	30	0	49	31	63
Queue Length 95th (ft)	103	38	147	100	184
Internal Link Dist (ft)	343			435	514
Turn Bay Length (ft)	150		150		
Base Capacity (vph)	996	1270	1405	1478	1530
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.18	0.17	0.21	0.14	0.31

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	272	224	237	212	449
v/c Ratio	0.60	0.33	0.40	0.34	0.75
Control Delay	18.6	3.7	13.6	12.8	17.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	3.7	13.6	12.8	17.2
Queue Length 50th (ft)	45	0	36	31	51
Queue Length 95th (ft)	149	36	116	102	175
Internal Link Dist (ft)	343			435	514
Turn Bay Length (ft)	150		150		
Base Capacity (vph)	1108	1347	1442	1518	1431
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.25	0.17	0.16	0.14	0.31

Intersection Summary

Alternative 3
Improved Option B

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	275	400	47	329
v/c Ratio	0.62	0.67	0.15	0.55
Control Delay	14.6	14.0	8.1	11.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.6	14.0	8.1	11.8
Queue Length 50th (ft)	23	42	4	35
Queue Length 95th (ft)	87	120	20	99
Internal Link Dist (ft)	686	514		268
Turn Bay Length (ft)			150	
Base Capacity (vph)	1504	1662	900	1712
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.18	0.24	0.05	0.19

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	183	212	289	200	474
v/c Ratio	0.48	0.42	0.75	0.23	0.58
Control Delay	22.6	6.6	23.1	7.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	22.6	6.6	23.1	7.3	9.2
Queue Length 50th (ft)	36	0	48	24	51
Queue Length 95th (ft)	126	49	154	64	141
Internal Link Dist (ft)	343			435	514
Turn Bay Length (ft)	150		150		
Base Capacity (vph)	782	812	776	1731	1551
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.23	0.26	0.37	0.12	0.31

Intersection Summary

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	98	124	293	475
v/c Ratio	0.39	0.24	0.28	0.47
Control Delay	14.5	6.7	5.8	6.8
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	14.5	6.7	5.8	6.8
Queue Length 50th (ft)	11	10	25	39
Queue Length 95th (ft)	39	35	63	104
Internal Link Dist (ft)	268		268	499
Turn Bay Length (ft)		150		
Base Capacity (vph)	1061	826	1681	1596
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.09	0.15	0.17	0.30

Intersection Summary

Lane Group	EBT	NBT	SBL	SBT
Lane Group Flow (vph)	387	505	30	322
v/c Ratio	0.70	0.72	0.11	0.46
Control Delay	20.3	17.3	9.9	12.0
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	20.3	17.3	9.9	12.0
Queue Length 50th (ft)	64	80	4	46
Queue Length 95th (ft)	187	218	19	129
Internal Link Dist (ft)	686	514		268
Turn Bay Length (ft)			150	
Base Capacity (vph)	1475	1657	642	1693
Starvation Cap Reductn	0	0	0	70
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.26	0.30	0.05	0.20

Intersection Summary

Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	272	224	237	212	449
v/c Ratio	0.55	0.37	0.73	0.29	0.61
Control Delay	21.0	5.2	25.2	9.6	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	5.2	25.2	9.6	10.0
Queue Length 50th (ft)	52	0	42	30	44
Queue Length 95th (ft)	176	46	141	84	143
Internal Link Dist (ft)	343			435	514
Turn Bay Length (ft)	150		150		
Base Capacity (vph)	1269	1194	755	1708	1506
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.19	0.31	0.12	0.30

Intersection Summary

Lane Group	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	137	142	512	418
v/c Ratio	0.49	0.27	0.50	0.42
Control Delay	18.0	7.2	8.2	6.2
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	18.0	7.2	8.2	6.2
Queue Length 50th (ft)	15	13	55	32
Queue Length 95th (ft)	61	44	143	93
Internal Link Dist (ft)	268		268	499
Turn Bay Length (ft)		150		
Base Capacity (vph)	1037	879	1696	1600
Starvation Cap Reductn	0	0	26	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.13	0.16	0.31	0.26

Intersection Summary

Appendix K

VISSIM Freeway Segment Analysis

Calibration Summary - FHWA Criteria

Criterion	Measures	Calibaration Acceptance Targets	I-85 Model
GEH[1]			
Individual Link Flows (Model vs. Observed)	< 5	>85% of cases	100%
Sum of All Link Flows (Model vs. Observed)	< 4	All Cases	100%
Travel Times (Model vs. Observed)			
Within 15% (or 1 min, if higher) is acceptable; within 5 mph is		>85% of cases	100% (100%
Visual Audits			
Visually Acceptiable Speed-Flow Relationship		To Analyst's Satisfaction	Yes
Bottlenecks			
Visually Acceptable Queuing		To Analyst's Satisfaction	Yes

[1] GEH is a universal measure to compare simulation input and output data.

For hourly flows: $GEH = \sqrt{\frac{(E-V)^2}{0.5(E+V)}}$

V = input volume

E = output volume from the model

GEH Statistic Interpretation	
GEH<5.0	Acceptable
5.0≤GEH≥10.0	May warrant investigation
GEH>10.0	High probability of error

Location	Existing AM			Existing PM			NB AM			NB PM			Build AM			Build PM		
Northbound I-85	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**
Exit 80 Off-Ramp (Diverge)																		
Lane One	803	15.3	B	1185	23.2	C	1196	23.8	C	1344	129.2	F	1126	22.3	C	1670	38.3	E
Lane Two	722	13.9	B	1124	22.1	C	1042	20.9	C	1240	130.6	F	961	19.1	C	1535	35.8	E
Lane Three	509	9.7	A	868	17.0	B	804	15.7	B	1329	116.1	F	958	18.7	C	1574	35.3	E
Average	**2035**	**13.4**	B	**3177**	**21.1**	C	**3043**	**20.6**	C	**3914**	**125.2**	F	**3045**	**20.2**	C	**4779**	**36.5**	E
From Exit 80 Off-Ramp to Lane Merge (3 Lanes)																		
Lane One	753	14.5	B	1382	27.6	D	1188	23.7	C	1872	96.0	F	812	15.9	B	1379	30.4	D
Lane Two	971	18.7	C	1489	30.5	D	1365	27.7	D	1340	112.3	F	924	17.7	B	1504	32.5	D
Lane Three	26	0.5	A	84	1.9	A	67	1.4	A	430	63.9	F	911	17.8	B	1501	33.1	D
Average	**1749**	**16.6**	B	**2955**	**28.3**	D	**2620**	**25.2**	C	**3643**	**98.2**	F	**2647**	**17.2**	B	**4384**	**32.1**	D
From Lane Merge to Exit 80 On-Ramp (2 Lanes)																		
Lane One	814	15.7	B	1469	29.6	D	1280	25.6	C	2016	62.1	F	N/A					
Lane Two	935	18.2	C	1490	31.1	D	1338	27.5	D	1624	64.0	F						
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-						
Average	**1749**	**17.0**	B	**2958**	**30.4**	D	**2618**	**26.6**	D	**3640**	**62.9**	F						
From Exit 80 On-Ramp (Merge)																		
Lane One	35	0.7	A	25	0.5	A	65	1.4	A	48	1.1	A	50	1.1	A	38	0.8	A
Lane Two	883	16.9	B	1495	30.0	D	1355	27.3	D	1949	51.1	F	883	17.3	B	1452	30.1	D
Lane Three	969	18.9	C	1520	31.3	D	1406	28.9	D	1768	54.3	F	1003	19.2	C	1568	31.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	916	17.9	B	1457	30.4	D
Average	**1887**	**17.6**	B	**3040**	**30.4**	D	**2826**	**27.5**	D	**3766**	**52.0**	F	**2853**	**17.9**	B	**4515**	**30.4**	D
From Exit 80 On-Ramp to Exit 82 Off-Ramp																		
Lane One	944	18.5	C	1531	31.4	D	1426	29.0	D	1902	44.5	E	940	18.6	C	1472	30.5	D
Lane Two	945	19.1	C	1516	31.7	D	1404	29.1	D	1852	45.9	F	1029	19.9	C	1599	32.0	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	890	17.5	B	1461	30.1	D
Average	**1889**	**18.8**	C	**3047**	**31.5**	D	**2830**	**29.0**	D	**3754**	**45.2**	F	**2858**	**18.7**	C	**4532**	**30.9**	D
Exit 82 Off-Ramp (Diverge)																		
Lane One	29	0.6	A	51	1.1	A	42	0.9	A	63	1.4	A	N/A					
Lane Two	912	18.5	C	1479	30.8	D	1340	29.0	D	1804	43.4	E						
Lane Three	907	18.7	C	1507	31.6	D	1383	30.0	D	1845	45.3	F						
Average	**1847**	**18.3**	C	**3037**	**30.7**	D	**2765**	**29.1**	D	**3713**	**43.6**	E						
From Exit 82 Off-Ramp to Exit 83 Off-Ramp																		
Lane One	981	19.7	C	1542	32.4	D	1432	30.0	D	1831	47.1	F	N/A					
Lane Two	878	17.8	B	1457	30.6	D	1351	28.2	D	1809	45.7	F						
Average	**1859**	**18.8**	C	**2999**	**31.5**	D	**2784**	**29.1**	D	**3640**	**46.4**	F						
Exit 83 Off-Ramp (Diverge)																		
Lane One	865	18.3	C	1391	30.4	D	1274	28.3	D	1611	44.6	E	183	5.8	A	277	8.7	A
Lane Two	919	18.7	C	1496	31.5	D	1399	29.4	D	1874	45.9	F	520	12.9	B	1113	26.9	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1086	21.9	C	1591	33.2	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1062	21.6	C	1544	32.3	D
Average	**1784**	**18.5**	C	**2887**	**31.0**	D	**2673**	**28.9**	D	**3486**	**45.3**	F	**2851**	**19.1**	C	**4525**	**29.8**	D
From Exit 83 Off-Ramp to Exit 83 On-Ramp																		
Lane One	793	16.0	B	1325	27.6	D	1189	24.7	C	1610	34.8	D	528	11.0	B	1128	24.1	C
Lane Two	891	17.9	B	1414	29.6	D	1330	27.4	D	1695	37.2	E	1017	20.0	C	1487	30.3	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1038	20.8	C	1510	31.4	D
Average	**1684**	**17.0**	B	**2739**	**28.6**	D	**2519**	**26.1**	D	**3305**	**36.0**	E	**2583**	**18.5**	C	**4125**	**29.0**	D
Exit 83 On-Ramp (Merge)																		
Lane One	41	1.4	A	55	4.9	A	73	3.8	A	93	16.0	B	24	0.6	A	126	2.5	A
Lane Two	852	17.4	B	1328	28.3	D	1248	26.5	D	1580	36.3	E	648	13.0	B	1221	25.4	C
Lane Three	890	18.1	C	1426	30.1	D	1343	28.2	D	1744	39.2	E	1044	20.4	C	1461	29.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1013	20.5	C	1466	30.2	D
Average	**1783**	**17.4**	B	**2808**	**28.8**	D	**2664**	**26.7**	D	**3417**	**37.2**	E	**2728**	**18.5**	C	**4273**	**27.8**	D
From Exit 83 On-Ramp to Exit 87 Off-Ramp																		
Lane One	901	18.0	B	1418	29.5	D	1342	27.4	D	1732	37.1	E	799	15.6	B	1327	27.4	D
Lane Two	884	17.8	B	1413	29.7	D	1323	27.4	D	1722	37.4	E	998	19.3	C	1444	29.0	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	935	18.8	C	1370	28.2	D
Average	**1785**	**17.9**	B	**2831**	**29.6**	D	**2665**	**27.4**	D	**3455**	**37.3**	E	**2732**	**18.0**	C	**4141**	**28.2**	D
Exit 87 Off-Ramp (Diverge)																		
Lane One	65	1.5	A	127	2.9	A	97	2.2	A	156	3.6	A	96	2.1	A	177	4.1	A
Lane Two	845	16.9	B	1318	27.3	D	1261	25.9	C	1621	34.2	D	725	14.2	B	1149	23.9	C
Lane Three	870	17.5	B	1379	28.7	D	1304	27.3	D	1685	36.0	E	981	19.1	C	1430	28.7	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	919	18.3	C	1373	28.1	D
Average	**1780**	**16.6**	B	**2824**	**26.9**	D	**2663**	**25.7**	C	**3461**	**33.7**	D	**2720**	**16.9**	B	**4128**	**26.1**	D
From Exit 87 Off-Ramp to Exit 87 On-Ramp																		
Lane One	846	16.7	B	1324	27.3	D	1263	25.6	C	1635	34.2	D	731	14.4	B	1158	23.7	C
Lane Two	857	17.2	B	1355	28.1	D	1285	26.5	D	1645	35.0	D	956	18.7	C	1403	28.1	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	916	18.2	C	1353	27.7	D
Average	**1703**	**17.0**	B	**2679**	**27.7**	D	**2548**	**26.1**	D	**3279**	**34.6**	D	**2603**	**17.3**	B	**3913**	**26.7**	D
Exit 87 On-Ramp (Merge)																		
Lane One	49	3.7	A	35	7.2	A	81	13.1	B	49	19.5	C	28	0.5	A	34	0.7	A
Lane Two	866	17.7	B	1321	28.3	D	1277	27.5	D	1620	35.6	E	862	16.7	B	1288	26.5	D
Lane Three	867	17.5	B	1358	28.5	D	1313	27.9	D	1658	36.0	E	1062	20.8	C	1490	30.3	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	778	15.5	B	1195	24.4	C
Average	**1781**	**17.2**	B	**2714**	**28.1**	D	**2671**	**27.3**	D	**3328**	**35.6**	E	**2731**	**17.8**	B	**4008**	**27.1**	D
From Exit 87 On-Ramp to Exit 90 Off-Ramp																		
Lane One	920	18.2	C	1390	29.1	D	1350	27.6	D	1698	36.5	E	987	19.8	C	1386	29.1	D
Lane Two	860	17.1	B	1345	28.2	D	1323	27.2	D	1662	35.9	E	942	18.1	C	1368	27.6	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	808	15.8	B	1254	25.6	C
Average	**1780**	**17.7**	B	**2736**	**28.6**	D	**2673**	**27.4**	D	**3359**	**36.2**	E	**2738**	**18.0**	C	**4008**	**27.5**	D
Exit 90 Off-Ramp (Diverge)																		
Lane One	796	16.0	B	1211	26.2	D	1137	24.7	C	1456	33.1	D	372	20.2	C	461	16.2	B
Lane Two	798	15.9	B	1297	28.1	D	1259	27.0	D	1616	36.4	E	450	20.3	C	809	21.6	C
Lane Three	555	11.4	B	1039	27.0	D	854	20.6	C	1540	74.1	F	1063	20.6	C	1442	30.4	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	850	21.2	C	1299	27.0	D
Average	**2149**	**14.7**	B	**3546**	**27.1**	D	**3250**	**24.5**	C	**4613**	**47.9**	F	**2736**	**20.7**	C	**4012**	**25.9**	C
From Exit 90 Off-Ramp to Exit 90 On-Ramp																		
Lane One	663	12.9	B	1077	22.1	C	976	19.7	C	1324	28.0	D	368	7.6	A	780	16.3	B
Lane Two	754	14.8	B	1205	24.7	C	1150	23.2	C	1473	31.0	D	962	18.5	C	1299	26.3	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	848	16.6	B	1265	26.1	D
Average	**1417**	**13.9**	B	**2282**	**23.5**	C	**2126**	**21.6**	C	**2797**	**29.6**	D	**2177**	**15.9**	B	**3344**	**23.9**	C
Exit 90 On-Ramp (Merge)																		
Lane One	77	2.9	A	151	9.6	A	131	9.5	A	181	22.2	C	86	1.8	A	155	3.7	A
Lane Two	725	14.7	B	1156	25.9	C	1040	22.9	C	1373	33.8	D	569	11.0	A	1047	21.3	C
Lane Three	756	15.0	B	1287	27.1	D	1170	24.4	C	1598	36.3	E	950	18.3	C	1368	27.5	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	836	16.4	B	1229	25.2	C
Average	**1558**	**14.2**	B	**2593**	**25.5**	C	**2340**	**22.9**	C	**3153**	**34.4**	D	**2441**	**15.4**	B	**3798**	**24.1**	C
From Exit 90 On-Ramp to Exit 92 Off-Ramp																		
Lane One	827	15.8	B	1320	26.7	D	1211	24.0	C	1608	33.3	D	752	14.1	B	1220	23.9	C
Lane Two	766	14.8	B	1277	25.9	C	1174	23.4	C	1566	33.0	D	867	16.2	B	1316	25.7	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	829	16.1	B	1278	25.8	C
Average	**1593**	**15.4**	B	**2597**	**26.3**	D	**2385**	**23.7**	C	**3174**	**33.1**	D	**2448**	**15.5**	B	**3814**	**25.2**	C

Location	Existing AM			Existing PM			NB AM			NB PM			Build AM			Build PM		
Exit 92 Off-Ramp (Diverge)																		
Lane One	168	3.6	A	217	4.8	A	250	5.5	A	264	5.9	A	251	5.3	A	315	7.0	A
Lane Two	663	12.7	B	1134	22.4	C	982	19.3	C	1391	27.6	D	511	9.6	A	915	17.9	B
Lane Three	764	14.7	B	1241	24.7	C	1152	22.6	C	1522	31.1	D	866	16.1	B	1306	25.1	C
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	814	15.6	B	1277	25.6	C
Average	**1595**	**12.7**	B	**2592**	**22.0**	C	**2384**	**19.5**	C	**3177**	**27.4**	D	**2442**	**13.5**	B	**3813**	**22.0**	C
From Exit 92 Off-Ramp to Exit 92 On-Ramp (Chesnee Highway SB)																		
Lane One	646	12.2	B	1130	22.0	C	972	18.7	C	1398	27.2	D	479	8.9	A	899	17.2	B
Lane Two	741	14.3	B	1197	23.8	C	1105	21.5	C	1460	29.5	D	850	15.8	B	1274	24.5	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	810	15.6	B	1256	25.1	C
Average	**1388**	**13.3**	B	**2328**	**22.9**	C	**2077**	**20.1**	C	**2858**	**28.4**	D	**2140**	**14.2**	B	**3428**	**22.8**	C
Exit 92 On-Ramp (Merge) (Chesnee Highway SB)																		
Lane One	22	0.6	A	21	0.5	A	43	1.1	A	38	1.0	A	19	0.5	A	62	1.4	A
Lane Two	722	13.7	B	1170	23.0	C	1060	20.7	C	1437	28.6	D	556	10.3	A	935	17.9	B
Lane Three	740	14.3	B	1201	24.0	C	1121	21.9	C	1484	30.2	D	887	16.4	B	1290	24.9	C
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	824	15.8	B	1240	24.8	C
Average	**1484**	**13.8**	B	**2392**	**23.3**	C	**2224**	**20.9**	C	**2960**	**29.1**	D	**2287**	**14.6**	B	**3527**	**22.6**	C
From Exit 92 On-Ramp (Chesnee Highway SB) to Exit 92 On-Ramp (Chesnee Highway NB)																		
Lane One	757	14.3	B	1205	23.7	C	1119	21.7	C	1485	29.8	D	568	10.3	A	989	19.1	C
Lane Two	730	14.0	B	1190	23.7	C	1108	21.7	C	1479	30.4	D	886	16.3	B	1294	25.0	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	835	16.1	B	1247	25.0	C
Average	**1487**	**14.1**	B	**2395**	**23.7**	C	**2227**	**21.7**	C	**2964**	**30.1**	D	**2288**	**14.8**	B	**3530**	**23.3**	C
Exit 92 On-Ramp (Merge) (Chesnee Highway NB)																		
Lane One	15	0.3	A	38	0.7	A	29	0.5	A	65	1.2	A	40	0.7	A	49	0.9	A
Lane Two	804	14.9	B	1280	24.7	C	1194	22.6	C	1596	31.6	D	686	12.3	B	1136	21.3	C
Lane Three	766	14.6	B	1259	24.9	C	1154	22.2	C	1574	32.0	D	921	17.1	B	1381	26.5	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	789	15.2	B	1234	24.7	C
Average	**1585**	**14.6**	B	**2577**	**24.5**	C	**2377**	**22.2**	C	**3234**	**31.2**	D	**2436**	**14.9**	B	**3801**	**24.0**	C
From Exit 92 On-Ramp (Chesnee Highway NB) to Exit 95 Off-Ramp																		
Lane One	807	15.0	B	1308	25.2	C	1207	22.9	C	1638	32.1	D	752	13.4	B	1177	22.0	C
Lane Two	779	14.7	B	1274	25.2	C	1170	22.4	C	1592	32.1	D	896	16.4	B	1359	25.9	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	791	15.0	B	1261	25.0	C
Average	**1585**	**14.8**	B	**2582**	**25.2**	C	**2377**	**22.6**	C	**3230**	**32.1**	D	**2439**	**15.0**	B	**3797**	**24.4**	C
Exit 95 Off-Ramp (Diverge)																		
Lane One	104	3.0	A	76	2.3	A	156	4.5	A	95	2.8	A	823	15.3	B	1219	23.2	C
Lane Two	728	14.0	B	1256	25.2	C	1064	21.6	C	1551	32.0	D	859	16.1	B	1366	26.0	D
Lane Three	753	14.3	B	1240	24.7	C	1156	22.8	C	1568	31.9	D	751	14.3	B	1210	23.8	C
Average	**1585**	**13.4**	B	**2571**	**24.3**	C	**2376**	**21.1**	C	**3214**	**31.1**	D	**2433**	**15.3**	B	**3795**	**24.4**	C
From Exit 95 Off-Ramp to Exit 95 On-Ramp																		
Lane One													645	12.2	B	1084	20.4	C
Lane Two				N/A						N/A			796	15.1	B	1334	25.3	C
Lane Three													765	14.8	B	1216	23.9	C
Average													**2206**	**14.1**	B	**3633**	**23.4**	C
From Exit 95 On-Ramp Merge																		
Lane One													40	1.1	A	118	2.3	A
Lane Two													809	15.9	B	1213	23.0	C
Lane Three				N/A						N/A			699	13.6	B	1226	23.3	C
Lane Four													759	15.0	B	1208	23.6	C
Average													**2308**	**14.6**	B	**3765**	**22.7**	C
From Exit 95 Off-Ramp to Exit 96 Off-Ramp																		
Lane One	731	13.7	B	1260	24.5	C	1095	21.1	C	1574	31.1	D	797	15.4	B	1156	25.6	C
Lane Two	704	13.2	B	1215	23.9	C	1062	20.7	C	1522	30.4	D	718	13.6	B	1255	25.2	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	780	15.3	B	1235	25.2	C
Average	**1434**	**13.5**	B	**2475**	**24.2**	C	**2156**	**20.9**	C	**3097**	**30.7**	D	**2295**	**14.8**	B	**3646**	**25.3**	C
Exit 96 Off-Ramp (Diverge)																		
Lane One	128	2.7	A	186	4.1	A	196	4.3	A	233	5.1	A	733	14.3	B	829	25.3	C
Lane Two	598	11.4	B	1078	21.0	C	894	17.6	B	1359	26.7	D	724	13.8	B	1285	28.2	D
Lane Three	693	13.0	B	1213	23.7	C	1042	20.4	C	1504	29.9	D	782	15.5	B	1332	29.2	D
Average	**1419**	**11.4**	B	**2477**	**21.1**	C	**2132**	**17.7**	B	**3096**	**26.7**	D	**2240**	**14.5**	B	**3446**	**27.9**	D
From Exit 96 Off-Ramp to Exit 96 On-Ramp																		
Lane One	582	11.0	B	1076	20.6	C	882	17.1	B	1369	26.2	D	559	10.7	A	878	17.1	B
Lane Two	686	12.8	B	1165	22.6	C	1025	19.8	C	1436	28.4	D	708	13.1	B	1194	23.2	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	767	14.9	B	1222	24.5	C
Average	**1268**	**12.0**	B	**2241**	**21.6**	C	**1906**	**18.5**	C	**2805**	**27.3**	D	**2033**	**13.1**	B	**3294**	**22.1**	C
Exit 96 On-Ramp (Merge)																		
Lane One	40	1.0	A	58	2.1	A	71	2.2	A	100	4.8	A	18	0.5	A	22	0.8	A
Lane Two	644	12.4	B	1115	22.1	C	960	19.1	C	1387	28.6	D	736	13.8	B	1081	22.9	C
Lane Three	720	13.5	B	1213	23.8	C	1075	20.7	C	1539	31.3	D	936	17.4	B	1449	28.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	468	9.1	A	845	17.0	B
Average	**1404**	**12.7**	B	**2386**	**22.5**	C	**2107**	**19.4**	C	**3026**	**29.2**	D	455	18.9	C	**3397**	**23.7**	C
From Exit 96 On-Ramp to Exit 98 On-Ramp													From Exit 96 On-Ramp to Exit 100 Off Ramp (3 Lanes)					
Lane One	664	12.2	B	1177	22.5	C	1028	19.2	C	1494	29.2	D	955	17.5	B	1483	41.5	E
Lane Two	745	13.8	B	1215	23.7	C	1081	20.6	C	1537	31.1	D	1170	22.1	C	1776	44.3	E
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	34	0.7	A	143	3.4	A
Average	**1408**	**13.0**	B	**2392**	**23.2**	C	**2109**	**19.9**	C	**3031**	**30.2**	D	**2160**	**19.7**	C	**3401**	**41.4**	E
Exit 98 On-Ramp (Merge)													Merge from 3 to 2 lanes					
Lane One	687	12.5	B	1189	22.6	C	1063	19.7	C	1514	29.1	D	1004	18.3	C	1631	41.0	E
Lane Two	723	13.4	B	1201	23.4	C	1045	19.8	C	1517	30.3	D	1153	21.7	C	1745	44.6	E
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	3	0.0	A	30	0.9	A
Average	**1410**	**13.0**	B	**2390**	**23.0**	C	**2108**	**19.8**	C	**3032**	**29.7**	D	**2160**	**20.1**	C	**3406**	**42.5**	E
From Exit 98 On-Ramp to Exit 98 Off-Ramp																		
Lane One	694	12.7	B	1195	22.8	C	1067	19.8	C	1523	29.3	D						
Lane Two	723	13.4	B	1199	23.2	C	1048	19.8	C	1514	30.1	D			N/A			
Average	**1417**	**13.0**	B	**2394**	**23.0**	C	**2115**	**19.8**	C	**3037**	**29.7**	D						
Exit 98 Off-Ramp (Diverge)																		
Lane One	18	0.6	A	4	0.1	A	27	0.8	A	5	0.2	A						
Lane Two	665	12.3	B	1186	22.8	C	1009	19.3	C	1515	29.3	D			N/A			
Lane Three	734	13.6	B	1200	23.3	C	1073	20.3	C	1514	30.1	D						
Average	**1417**	**12.9**	B	**2391**	**23.0**	C	**2110**	**19.6**	C	**3034**	**29.6**	D						
From Exit 98 Off-Ramp to Exit 100 Off-Ramp													From Exit 96 On-Ramp to Exit 100 Off Ramp (2 Lanes)					
Lane One	714	13.2	B	1207	23.3	C	1069	20.3	C	1524	29.9	D	1019	18.5	C	1700	35.5	E
Lane Two	676	12.5	B	1177	22.8	C	998	18.7	C	1501	29.6	D	1138	21.3	C	1699	37.0	E
Average	**1390**	**12.8**	B	**2384**	**23.0**	C	**2067**	**19.5**	C	**3025**	**29.8**	D	**2157**	**20.0**	C	**3398**	**36.3**	E
Exit 100 Off-Ramp (Diverge)																		
Lane One	136	4.0	A	97	3.0	A	202	6.1	A	125	3.9	A	209	6.2	A	140	4.4	A
Lane Two	542	10.8	A	1056	21.9	C	803	17.2	B	1334	28.9	D	668	15.9	B	1514	33.3	D
Lane Three	713	13.3	B	1224	24.2	C	1060	20.4	C	1556	31.8	D	1275	25.5	C	1719	35.6	E
Average	**1391**	**11.4**	B	**2377**	**22.3**	C	**2065**	**17.8**	B	**3015**	**29.3**	D	**2153**	**20.6**	C	**3374**	**33.3**	D
From Exit 100 Off-Ramp to Exit 100 On-Ramp																		
Lane One	508	9.4	A	1053	20.4	C	776	14.8	B	1342	26.5	D	694	13.6	B	1525	30.7	D
Lane Two	679	12.5	B	1183	22.9	C	987	18.4	C	1492	29.5	D	1142	21.6	C	1645	33.3	D
Average	**1187**	**11.1**	B	**2236**	**21.7**	C	**1762**	**16.8**	B	**2833**	**28.1**	D	**1836**	**18.6**	C	**3170**	**32.1**	D
Exit 100 On-Ramp (Merge)																		
Lane One	12	12.5	B	14	0.3	A	22	18.4	C	23	0.5	A	22	0.5	A	24	0.5	A
Lane Two	545	10.3	A	1092	20.9	C	834	16.4	B	1396	27.0	D	778	15.0	B	1585	31.2	D
Lane Three	677	12.8	B	1177	22.6	C	980	18.7	C	1479	28.9	D	1110	21.0	C	1628	32.6	D
Average	**1234**	**11.7**	B	**2283**	**21.7**	C	**1836**	**17.7**	B	**2899**	**27.8**	D	**1910**	**18.3**	C	**3236**	**31.7**	D

Location	Existing AM			Existing PM			NB AM			NB PM			Build AM			Build PM		
Southbound I-85	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**	**Volume**	**Density (PC/M/L)**	**LOS**
Exit 100 Off-Ramp (Diverge)																		
Lane One	667	12.9	B	1186	23.6	C	978	20.0	C	1777	43.1	E	978	20.0	C	1777	43.1	E
Lane Two	679	13.2	B	1180	23.7	C	1038	20.7	C	1765	43.8	E	1038	20.7	C	1765	43.8	E
Average	**1346**	**13.0**	B	**2366**	**23.7**	C	**2015**	**20.3**	C	**3542**	**43.5**	E	**2015**	**20.3**	C	**3542**	**43.5**	E
From Exit 100 Off-Ramp to Exit 100 On-Ramp																		
Lane One	652	12.4	B	1162	22.6	C	961	19.0	C	1743	38.3	E	961	19.0	C	1743	38.3	E
Lane Two	668	12.8	B	1181	23.2	C	1016	20.1	C	1764	38.8	E	1016	20.0	C	1764	38.8	E
Average	**1320**	**12.6**	B	**2343**	**22.9**	C	**1977**	**19.6**	C	**3507**	**38.6**	E	**1977**	**19.5**	C	**3507**	**38.6**	E
Exit 100 On-Ramp (Merge)																		
Lane One	20	0.5	A	44	1.1	A	37	0.9	A	82	2.1	A	38	0.9	A	84	2.1	A
Lane Two	681	13.4	B	1179	23.7	C	1003	20.4	C	1784	40.8	E	1002	20.4	C	1784	40.3	E
Lane Three	740	14.7	B	1298	26.3	D	1118	22.9	C	1906	42.9	E	1119	22.9	C	1908	42.7	E
Average	**1441**	**13.9**	B	**2521**	**24.7**	C	**2158**	**21.4**	C	**3773**	**41.0**	E	**2159**	**21.4**	C	**3775**	**40.7**	E
From Exit 100 On-Ramp to Exit 96 Off-Ramp													From Exit 100 On-Ramp to Exit 96 Off-Ramp (2 Lane)					
Lane One	719	14.1	B	1255	25.2	C	1078	22.1	C	1868	53.2	F	1087	22.2	C	1885	40.8	E
Lane Two	725	14.5	B	1269	25.8	C	1083	22.4	C	1882	53.2	F	1073	22.6	C	1900	41.6	E
Average	**1444**	**14.3**	B	**2524**	**25.5**	C	**2161**	**22.3**	C	**3750**	**53.2**	F	**2160**	**22.4**	C	**3785**	**41.2**	E
From Exit 100 On-Ramp to Exit 96 Off-Ramp (3 Lane													From Exit 100 On-Ramp to Exit 96 Off-Ramp (3 Lane)					
Lane One													973	21.1	C	1448	30.0	D
Lane Two		N/A						N/A					639	14.4	B	1398	27.8	D
Lane Three													550	12.5	B	928	18.4	C
Average													**2161**	**16.9**	B	**3774**	**26.3**	D
Exit 96 Off-Ramp (Diverge)																		
Lane One	692	14.0	B	1237	25.4	C	1026	22.3	C	1793	76.4	F	826	18.4	C	1448	30.0	D
Lane Two	732	14.5	B	1265	25.8	C	1104	23.1	C	1857	76.9	F	674	15.2	B	1398	27.8	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	649	14.4	B	928	18.4	C
Average	**1424**	**14.3**	B	**2503**	**25.6**	C	**2130**	**22.7**	C	**3651**	**76.6**	F	**2149**	**16.2**	B	**3774**	**26.3**	D
From Exit 96 Off-Ramp to Exit 96 On-Ramp																		
Lane One	652	12.9	B	1177	24.0	C	981	20.3	C	1707	86.4	F	711	14.6	B	1138	23.6	C
Lane Two	732	14.5	B	1270	25.9	C	1089	22.2	C	1856	81.9	F	695	14.0	B	1299	26.0	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	668	13.7	B	1228	23.7	C
Average	**1384**	**13.7**	B	**2447**	**25.0**	C	**2070**	**21.3**	C	**3564**	**84.0**	F	**2073**	**14.1**	B	**3664**	**24.5**	C
Exit 96 On-Ramp (Merge)																		
Lane One	647	13.0	B	1153	24.5	C	955	20.5	C	1588	92.3	F	52	1.4	A	89	2.5	A
Lane Two	744	14.7	B	1301	26.9	D	1126	23.1	C	1984	78.9	F	690	17.2	B	1168	24.9	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	865	17.7	B	1368	27.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	738	15.1	B	1308	25.4	C
Average	**1391**	**13.9**	B	**2454**	**25.8**	C	**2081**	**21.9**	C	**3572**	**84.9**	F	**2346**	**16.4**	B	**3933**	**25.5**	C
From Exit 96 On-Ramp to Exit 95 Off-Ramp																		
Lane One	787	15.4	B	1316	26.9	D	1176	24.4	C	1900	47.7	F	614	12.8	B	1186	24.4	C
Lane Two	778	15.3	B	1323	27.3	D	1165	24.0	C	1923	48.0	F	858	16.8	B	1338	26.9	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	875	17.2	B	1414	27.6	D
Average	**1566**	**15.4**	B	**2639**	**27.1**	D	**2341**	**24.2**	C	**3823**	**47.9**	F	**2346**	**15.9**	B	**3938**	**26.4**	D
Exit 95 Off-Ramp (Diverge)																		
Lane One	762	14.7	B	1309	26.3	D	1128	23.9	C	1874	41.2	E	581	11.5	B	1108	22.7	C
Lane Two	777	15.1	B	1306	26.6	D	1165	23.9	C	1905	42.0	E	868	16.6	B	1362	27.3	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	790	15.4	B	1379	26.9	D
Average	**1539**	**14.9**	B	**2615**	**26.5**	D	**2293**	**23.9**	C	**3779**	**41.6**	E	**2240**	**9.4**	A	**3849**	**25.8**	C
From Exit 95 Off-Ramp to Exit 95 On-Ramp																		
Lane One	688	13.2	B	1248	24.9	C	1042	20.6	C	1815	38.0	E	551	10.8	A	1080	22.0	C
Lane Two	771	15.0	B	1296	26.3	D	1131	22.7	C	1858	39.5	E	843	16.1	B	1342	26.8	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	789	15.3	B	1381	26.8	D
Average	**1459**	**14.2**	B	**2543**	**25.6**	C	**2173**	**21.7**	C	**3673**	**38.8**	E	**2183**	**14.5**	B	**3802**	**25.4**	C
Exit 95 On-Ramp (Merge)																		
Lane One	30	0.8	A	46	1.6	A	50	1.6	A	72	4.2	A	29	0.8	A	44	1.6	A
Lane Two	724	14.4	B	1260	25.5	C	1072	22.7	C	1785	38.5	E	584	14.0	B	1033	24.0	C
Lane Three	795	15.7	B	1339	27.3	D	1179	24.4	C	1936	41.4	E	860	18.0	B	1431	29.3	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	832	17.0	B	1436	28.3	D
Average	**1548**	**14.8**	B	**2646**	**26.0**	C	**2300**	**23.1**	C	**3793**	**39.4**	E	**2305**	**16.4**	B	**3944**	**27.2**	D
From Exit 95 On-Ramp to Exit 92 Off-Ramp																		
Lane One	767	15.1	B	1348	27.2	D	1156	23.8	C	1920	40.9	E	748	16.4	B	1058	32.2	D
Lane Two	784	15.4	B	1306	26.5	D	1154	23.7	C	1887	39.9	E	720	15.2	B	1297	30.3	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	840	17.7	B	1591	34.6	D
Average	**1551**	**15.3**	B	**2655**	**26.8**	D	**2311**	**23.7**	C	**3808**	**40.4**	E	**2307**	**10.1**	A	**3946**	**32.6**	D
Exit 92 Off-Ramp (Diverge)																		
Lane One	142	4.0	A	199	5.2	A	214	6.3	A	280	7.4	A	211	6.1	A	310	10.3	A
Lane Two	482	11.6	B	1112	23.5	C	786	21.1	C	1622	35.9	E	476	12.7	B	873	23.1	C
Lane Three	927	19.1	C	1341	27.4	D	1316	29.4	D	1906	40.4	E	767	17.3	B	1275	29.5	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	858	18.8	C	1484	32.7	D
Average	**1551**	**15.4**	B	**2651**	**24.1**	C	**2316**	**24.5**	C	**3808**	**36.1**	E	**2311**	**15.9**	B	**3941**	**27.8**	D
From Exit 92 Off-Ramp to Exit 92 On-Ramp (Chesnee Highway NB)																		
Lane One	483	10.2	A	1100	22.2	C	809	18.4	C	1632	34.2	D	470	10.9	A	870	22.3	C
Lane Two	871	17.5	B	1285	25.9	C	1215	25.6	C	1808	38.1	E	727	15.7	B	1246	27.9	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	824	17.3	B	1442	31.1	D
Average	**1353**	**14.9**	B	**2386**	**24.1**	C	**2024**	**22.7**	C	**3439**	**36.3**	E	**2021**	**15.2**	B	**3558**	**27.8**	D
Exit 92 On-Ramp (Merge) (Chesnee Highway NB)																		
Lane One	20	0.5	A	56	1.3	A	40	0.9	A	118	3.1	A	24	0.6	A	60	1.4	A
Lane Two	575	11.4	B	1172	23.6	C	930	19.3	C	1688	37.2	E	577	11.8	B	1035	23.2	C
Lane Three	863	17.1	B	1345	27.0	D	1208	24.7	C	1915	41.6	E	777	15.5	B	1322	28.2	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	805	16.3	B	1428	30.6	D
Average	**1458**	**14.6**	B	**2573**	**24.9**	C	**2177**	**22.0**	C	**3721**	**38.4**	E	**2183**	**14.7**	B	**3845**	**27.3**	D
From Exit 92 On-Ramp (Chesnee Highway NB) to Exit 92 On-Ramp (Chesnee Highway SB)																		
Lane One	607	11.6	B	1219	24.1	C	996	19.9	C	1799	39.1	E	598	11.6	B	1098	22.5	C
Lane Two	856	16.8	B	1357	27.4	D	1193	24.2	C	1931	43.4	E	779	15.2	B	1325	26.9	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	807	16.1	B	1392	29.2	D
Average	**1463**	**14.7**	B	**2577**	**25.8**	C	**2189**	**22.3**	C	**3729**	**41.4**	E	**2183**	**14.5**	B	**3814**	**26.5**	D
Exit 92 On-Ramp (Merge) (Chesnee Highway SB)																		
Lane One	10	0.2	A	14	0.3	A	18	0.3	A	26	0.5	A	50	1.0	A	21	0.4	A
Lane Two	650	12.1	B	1262	24.7	C	1049	20.4	C	1873	39.2	E	695	13.1	B	1203	23.9	C
Lane Three	837	16.4	B	1358	27.2	D	1174	23.5	C	1919	41.9	E	726	13.8	B	1334	26.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	783	15.4	B	1379	28.7	D
Average	**1497**	**14.4**	B	**2634**	**25.8**	C	**2241**	**21.9**	C	**3818**	**40.3**	E	**2255**	**13.8**	B	**3937**	**26.3**	D
From Exit 92 On-Ramp (Chesnee Highway SB) to Exit 90 Off-Ramp																		
Lane One	746	13.9	B	1317	26.0	C	1157	22.1	C	1926	39.7	E	735	14.0	B	1301	25.5	C
Lane Two	767	14.7	B	1317	26.1	D	1107	21.6	C	1888	39.5	E	772	14.2	B	1353	25.9	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	755	14.6	B	1285	26.1	D
Average	**1513**	**14.3**	B	**2634**	**26.0**	D	**2264**	**21.8**	C	**3814**	**39.6**	E	**2263**	**14.3**	B	**3939**	**25.8**	C

Location	Existing AM			Existing PM			NB AM			NB PM			Build AM			Build PM		
Exit 90 Off-Ramp (Diverge)																		
Lane One	547	14.4	B	1044	27.6	D	877	22.9	C	1667	44.3	E	167	5.0	A	231	6.8	A
Lane Two	903	17.9	B	1510	31.0	D	1284	26.5	D	2027	44.9	E	358	8.6	A	983	21.1	C
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	898	16.9	B	1436	27.7	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	831	16.2	B	1284	26.1	D
Average	**1450**	**16.6**	B	**2554**	**29.6**	D	**2161**	**25.0**	C	**3695**	**44.6**	E	**2254**	**14.4**	B	**3934**	**24.3**	C
From Exit 90 Off-Ramp to Exit 90 On-Ramp																		
Lane One	485	9.7	A	984	21.1	C	788	16.2	B	1590	45.6	F	329	6.3	A	970	19.0	C
Lane Two	855	16.5	B	1427	28.9	D	1212	23.9	C	1896	49.1	F	849	15.6	B	1362	26.1	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	822	15.8	B	1269	25.6	C
Average	**1340**	**14.1**	B	**2411**	**25.7**	C	**2000**	**20.9**	C	**3486**	**47.5**	F	**2000**	**14.2**	B	**3601**	**24.0**	C
Exit 90 On-Ramp (Merge)																		
Lane One	555	11.4	B	1039	27.0	D	854	20.6	C	1540	74.1	F	246	10.8	A	344	75.8	F
Lane Two	835	16.3	B	1433	32.0	D	1224	25.7	C	1995	69.3	F	673	16.5	B	1211	36.6	E
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	863	16.4	B	1434	31.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	822	16.0	B	1356	29.6	D
Average	**1390**	**14.3**	B	**2472**	**29.9**	D	**2077**	**23.6**	C	**3536**	**71.4**	F	**2604**	**15.8**	B	**4344**	**35.9**	E
From Exit 90 On-Ramp to Exit 87 Off-Ramp																		
Lane One	846	15.2	B	1445	27.9	D	1307	24.2	C	1958	41.0	E	688	17.2	B	1401	27.0	D
Lane Two	896	16.6	B	1470	29.1	D	1308	25.0	C	1940	41.3	E	899	0.0	A	1511	29.1	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1022	0.0	A	1434	28.8	D
Average	**1743**	**15.9**	B	**2915**	**28.5**	D	**2615**	**24.6**	C	**3899**	**41.1**	E	**2608**	**4.5**	A	**4346**	**28.3**	D
Exit 87 Off-Ramp (Diverge)																		
Lane One	29	0.8	A	43	1.3	A	46	1.4	A	57	1.9	A	59	1.4	A	63	2.1	A
Lane Two	820	15.0	B	1371	27.6	D	1232	23.8	C	1848	41.1	E	573	13.4	B	1283	26.3	D
Lane Three	878	16.1	B	1495	29.4	D	1317	25.3	C	1973	41.8	E	900	19.3	C	1553	29.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1040	22.0	C	1434	28.2	D
Average	**1727**	**15.4**	B	**2909**	**28.1**	D	**2595**	**24.2**	C	**3878**	**40.9**	E	**2572**	**18.7**	C	**4333**	**27.8**	D
From Exit 87 Off-Ramp to Exit 87 On-Ramp																		
Lane One	820	14.7	B	1375	26.6	D	1240	23.0	C	1853	39.1	E	680	15.3	B	1289	25.0	C
Lane Two	873	16.0	B	1468	28.7	D	1301	24.5	C	1938	40.5	E	854	18.2	C	1513	28.6	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	999	21.1	C	1438	28.2	D
Average	**1693**	**15.3**	B	**2844**	**27.7**	D	**2541**	**23.8**	C	**3791**	**39.8**	E	**2533**	**18.6**	C	**4240**	**27.4**	D
Exit 87 On-Ramp (Merge)																		
Lane One	42	0.9	A	31	0.8	A	79	2.0	A	55	1.8	A	78	2.1	A	64	2.8	A
Lane Two	820	14.8	B	1409	27.2	D	1200	22.7	C	1885	40.1	E	818	17.5	B	1309	26.1	D
Lane Three	853	15.7	B	1491	29.0	D	1290	24.5	C	1980	41.7	E	866	18.0	C	1574	29.8	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1021	21.1	C	1430	28.3	D
Average	**1715**	**14.9**	B	**2932**	**27.8**	D	**2569**	**23.0**	C	**3919**	**40.4**	E	**2783**	**11.2**	B	**4377**	**27.8**	D
From Exit 87 On-Ramp to Exit 83 Off-Ramp																		
Lane One	950	16.9	B	1468	28.1	D	1420	26.3	D	1971	40.2	E	859	15.3	B	1415	27.1	D
Lane Two	916	16.6	B	1465	28.3	D	1370	25.5	C	1954	40.1	E	1002	17.6	B	1530	28.8	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	931	17.1	B	1437	28.0	D
Average	**1866**	**16.8**	B	**2933**	**28.2**	D	**2790**	**25.9**	C	**3925**	**40.2**	E	**2792**	**16.7**	B	**4382**	**28.0**	D
Exit 83 Off-Ramp (Diverge)																		
Lane One	52	1.4	A	77	2.2	A	77	2.1	A	106	3.0	A	89	2.0	A	132	2.9	A
Lane Two	881	16.6	B	1364	26.9	D	1307	26.9	D	1846	41.3	E	552	11.4	B	1288	25.0	C
Lane Three	925	17.0	B	1480	28.6	D	1392	27.4	D	1953	43.1	E	1060	19.5	C	1522	28.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1089	20.2	C	1433	27.8	D
Average	**1858**	**16.4**	B	**2921**	**27.1**	D	**2777**	**26.5**	D	**3905**	**41.2**	E	**2789**	**17.6**	B	**4375**	**26.5**	D
From Exit 83 Off-Ramp to Exit 83 On-Ramp																		
Lane One	879	16.0	B	1372	26.3	D	1309	25.3	C	1852	47.4	F	572	10.8	A	1301	24.9	C
Lane Two	910	16.5	B	1449	27.8	D	1365	25.8	C	1913	47.8	F	1032	18.4	C	1497	28.0	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1076	19.7	C	1408	27.2	D
Average	**1789**	**16.3**	B	**2820**	**27.1**	D	**2673**	**25.6**	C	**3765**	**47.6**	F	**2680**	**17.3**	B	**4206**	**26.7**	D
Exit 83 On-Ramp (Merge)																		
Lane One	128	5.4	A	105	7.4	A	241	21.0	C	195	24.1	C	100	2.4	A	92	2.3	A
Lane Two	936	19.3	C	1326	28.4	D	1317	34.2	D	1746	64.5	F	770	16.7	B	1378	27.7	D
Lane Three	1035	19.5	C	1567	31.5	D	1579	33.8	D	2072	62.2	F	1208	21.9	C	1606	30.6	D
Lane Four	-	-	-	-	-	-	-	-	-	-	-	-	1091	20.1	C	1437	28.2	D
Average	**2099**	**18.6**	C	**2998**	**29.3**	D	**3137**	**33.0**	D	**4012**	**61.3**	F	**3169**	**19.4**	C	**4513**	**28.4**	D
From Exit 83 On-Ramp to Exit 80 Off-Ramp																		
Lane One	1048	19.0	C	1502	28.5	D	1588	29.9	D	2012	41.3	E	938	16.6	B	1413	27.0	D
Lane Two	1068	19.3	C	1520	29.5	D	1568	29.6	D	2012	41.8	E	1116	19.4	C	1574	29.5	D
Lane Three	-	-	-	-	-	-	-	-	-	-	-	-	1110	20.0	C	1503	29.0	D
Average	**2116**	**19.2**	C	**3022**	**29.0**	D	**3155**	**29.8**	D	**4024**	**41.5**	E	**3164**	**18.8**	C	**4490**	**28.5**	D
Exit 80 Off-Ramp (Diverge)																		
Lane One	237	5.4	A	420	8.2	A	432	9.7	A	682	13.7	B	919	15.8	B	1442	28.3	D
Lane Two	663	12.8	B	1177	20.8	C	1030	20.5	C	1460	27.4	D	1021	17.3	B	1455	28.4	D
Lane Three	1146	20.5	C	1379	25.3	C	1592	30.1	D	1802	34.8	D	1119	19.7	C	1529	30.0	D
Average	**2046**	**16.2**	B	**2975**	**21.1**	C	**3055**	**24.0**	C	**3943**	**28.4**	D	**3058**	**17.7**	B	**4426**	**28.9**	D
Exit 80 Off-Ramp to Exit 80 On-Ramp (Gossett Road NB)																		
Lane One	394	7.1	A	651	11.6	B	724	12.9	B	1031	18.6	C	832	14.0	B	1350	25.2	C
Lane Two	641	10.8	A	1086	18.6	C	972	16.6	B	1356	23.9	C	1008	17.0	B	1457	26.9	D
Lane Three	927	15.9	B	1164	20.9	C	1233	21.7	C	1462	27.1	D	1093	19.2	C	1510	28.8	D
Average	**1962**	**12.5**	B	**2902**	**17.9**	B	**2928**	**17.8**	B	**3850**	**23.7**	C	**2932**	**17.0**	B	**4317**	**27.0**	D
Exit 80 On-Ramp (Gossett Road NB) (Merge)																		
Lane One	64	1.5	A	32	0.7	A	117	2.9	A	58	1.3	A	118	2.8	A	63	1.5	A
Lane Two	579	10.5	A	820	14.4	B	922	16.9	B	1219	21.8	C	1029	18.5	C	1408	26.9	D
Lane Three	712	12.0	B	1100	19.0	C	1086	18.7	C	1403	24.9	C	1198	20.3	C	1563	28.7	D
Lane Four	796	13.8	B	1071	19.3	C	1076	19.1	C	1351	25.1	C	1040	18.0	C	1469	27.4	D
Average	**2151**	**12.0**	B	**3023**	**17.7**	B	**3200**	**17.7**	B	**4031**	**23.7**	C	**3384**	**18.5**	C	**4503**	**27.3**	D
Exit 80 On-Ramp (Gossett Road NB) to Exit 80 On-Ramp (Gossett Road SB)																		
Lane One	640	11.0	A	883	15.1	B	1030	18.0	C	1285	22.6	C	1024	17.8	B	1399	26.2	D
Lane Two	791	13.2	B	1079	18.7	C	1164	20.3	C	1383	24.7	C	1199	20.3	C	1549	28.4	D
Lane Three	832	14.4	B	1038	18.8	C	1169	20.9	C	1333	24.8	C	1137	19.6	C	1517	28.2	D
Average	**2262**	**13.0**	B	**3000**	**17.7**	B	**3363**	**19.8**	C	**4001**	**24.0**	C	**3360**	**19.3**	C	**4466**	**27.6**	D
Exit 80 On-Ramp (Merge)																		
Lane One	12	0.3	A	35	1.6	A	20	0.9	A	57	4.9	A	20	0.9	A	57	4.9	A
Lane Two	660	11.3	B	920	16.0	B	1050	18.2	C	1289	23.3	C	1020	17.6	B	1386	26.4	D
Lane Three	794	13.2	B	1095	19.0	C	1164	19.9	C	1438	25.9	C	1188	20.0	C	1599	29.2	D
Lane Three	797	13.8	B	1018	18.5	C	1125	20.1	C	1315	24.6	C	1125	19.4	C	1523	28.3	D
Average	**2263**	**12.8**	B	**3067**	**17.7**	B	**3359**	**19.3**	C	**4099**	**24.3**	C	**3354**	**19.0**	C	**4565**	**27.7**	D

Appendix L

VISSIM Ramp Merge/Diverge Outputs

Existing AM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,286	2,282	-4	0.1	Y	A	0	0
	Approach	***2,286***	***2,282***	***-4***	***0.1***	***Y***	***A***	***0.2***	***0***
SB: I-85 SB On-Ramp	Through	28	28	0	0.0	Y	A	2	0
	Approach	***28***	***28***	***0***	***0.0***	***Y***	***A***	***1.5***	***0***
Overall	**-**	**2,314**	**2,310**	**-4**	**0.1**	**Y**	**A**	**1.5**	**-**

80002: Interstate 85 at SB On-Ramp Loop									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,974	1,963	-11	0.2	Y	A	0	0
	Approach	***1,974***	***1,963***	***-11***	***0.2***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	312	317	5	0.3	Y	A	1	0
	Approach	***312***	***317***	***5***	***0.3***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**2,286**	**2,280**	**-6**	**0.1**	**Y**	**A**	**0.6**	**-**

80003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,974	1,961	-13	0.3	Y	A	2	0
	Approach	***1,974***	***1,961***	***-13***	***0.3***	***Y***	***A***	***1.8***	***0***
SB: I-85 SB Off-Ramp	Through	151	148	-3	0.2	Y	A	6	0
	Approach	***151***	***148***	***-3***	***0.2***	***Y***	***A***	***6.5***	***0***
Overall	**-**	**2,125**	**2,109**	**-16**	**0.3**	**Y**	**A**	**6.5**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,758	1,749	-9	0.2	Y	A	0	13
	Approach	***1,758***	***1,749***	***-9***	***0.2***	***Y***	***A***	***0.1***	***13***
NB: I-85 NB Off-Ramp	Through	300	308	8	0.5	Y	A	0	13
	Approach	***300***	***308***	***8***	***0.5***	***Y***	***A***	***0.5***	***13***
Overall	**-**	**2,058**	**2,057**	**-1**	**0.0**	**Y**	**A**	**0.5**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,758	1,749	-9	0.2	Y	A	0	0
	Approach	***1,758***	***1,749***	***-9***	***0.2***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	141	140	-1	0.1	Y	A	0	0
	Approach	***141***	***140***	***-1***	***0.1***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**1,899**	**1,889**	**-10**	**0.2**	**Y**	**A**	**0.3**	**-**

82001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,870	1,860	-10	0.2	Y	A	0	0
	Approach	***1,870***	***1,860***	***-10***	***0.2***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB Off-Ramp	Through	29	29	0	0.0	Y	A	0	0
	Approach	***29***	***29***	***0***	***0.0***	***Y***	***A***	***0.0***	***0***
Overall	**-**	**1,899**	**1,889**	**-10**	**0.2**	**Y**	**A**	**0.4**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,794	1,788	-6	0.1	Y	A	0	0
	Approach	***1,794***	***1,788***	***-6***	***0.1***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	331	330	-1	0.0	Y	A	2	8
	Approach	***331***	***330***	***-1***	***0.0***	***Y***	***A***	***1.9***	***8***
Overall	**-**	**2,125**	**2,118**	**-7**	**0.1**	**Y**	**A**	**1.9**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,794	1,791	-3	0.1	Y	A	0	0
	Approach	***1,794***	***1,791***	***-3***	***0.1***	***Y***	***A***	***0.5***	***0***
SB: I-85 SB Off-Ramp	Through	71	74	3	0.4	Y	A	4	0
	Approach	***71***	***74***	***3***	***0.4***	***Y***	***A***	***3.9***	***0***
Overall	**-**	**1,865**	**1,865**	**0**	**0.0**	**Y**	**A**	**3.9**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,695	1,684	-11	0.3	Y	A	0	35
	Approach	***1,695***	***1,684***	***-11***	***0.3***	***Y***	***A***	***0.3***	***35***
NB: I-85 NB Off-Ramp	Through	175	175	0	0.0	Y	A	2	35
	Approach	***175***	***175***	***0***	***0.0***	***Y***	***A***	***2.3***	***35***
Overall	**-**	**1,870**	**1,859**	**-11**	**0.3**	**Y**	**A**	**2.3**	**-**

83004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,695	1,684	-11	0.3	Y	A	0	0
	Approach	***1,695***	***1,684***	***-11***	***0.3***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	102	100	-2	0.2	Y	A	2	0
	Approach	***102***	***100***	***-2***	***0.2***	***Y***	***A***	***1.7***	***0***
Overall	**-**	**1,797**	**1,784**	**-13**	**0.3**	**Y**	**A**	**1.7**	**-**

87001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,701	1,699	-2	0.0	Y	A	0	0
	Approach	***1,701***	***1,699***	***-2***	***0.0***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	164	165	1	0.1	Y	A	1	0
	Approach	***164***	***165***	***1***	***0.1***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**1,865**	**1,864**	**-1**	**0.0**	**Y**	**A**	**0.6**	**-**

87002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,701	1,696	-5	0.1	Y	A	0	0
	Approach	***1,701***	***1,696***	***-5***	***0.1***	***Y***	***A***	***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	47	45	-2	0.2	Y	A	4	0
	Approach	***47***	***45***	***-2***	***0.2***	***Y***	***A***	***3.7***	***0***
Overall	**-**	**1,748**	**1,741**	**-7**	**0.2**	**Y**	**A**	**3.7**	**-**

87003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,721	1,704	-17	0.4	Y	A	1	0
	Approach	***1,721***	***1,704***	***-17***	***0.4***	***Y***	***A***	***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	76	79	3	0.3	Y	A	2	0
	Approach	***76***	***79***	***3***	***0.3***	***Y***	***A***	***2.3***	***0***
Overall	**-**	**1,797**	**1,783**	**-14**	**0.3**	**Y**	**A**	**2.3**	**-**

87004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,721	1,704	-17	0.4	Y	A	0	0
	Approach	***1,721***	***1,704***	***-17***	***0.4***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	84	80	-4	0.4	Y	A	1	0
	Approach	***84***	***80***	***-4***	***0.4***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**1,805**	**1,784**	**-21**	**0.5**	**Y**	**A**	**0.5**	**-**

90001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,342	1,339	-3	0.1	Y	A	0	0
	Approach	***1,342***	***1,339***	***-3***	***0.1***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB On-Ramp	Through	406	408	2	0.1	Y	A	3	159
	Approach	***406***	***408***	***2***	***0.1***	***Y***	***A***	***2.8***	***159***
Overall	**-**	**1,748**	**1,747**	**-1**	**0.0**	**Y**	**A**	**2.8**	**-**

90002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,342	1,340	-2	0.1	Y	A	1	0
	Approach	***1,342***	***1,340***	***-2***	***0.1***	***Y***	***A***	***1.3***	***0***
SB: I-85 SB Off-Ramp	Through	173	175	2	0.2	Y	A	4	0
	Approach	***173***	***175***	***2***	***0.2***	***Y***	***A***	***3.5***	***0***
Overall	**-**	**1,515**	**1,515**	**0**	**0.0**	**Y**	**A**	**3.5**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,435	1,417	-18	0.5	Y	A	0	0
	Approach	***1,435***	***1,417***	***-18***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	370	362	-8	0.4	Y	A	1	0
	Approach	***370***	***362***	***-8***	***0.4***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**1,805**	**1,779**	**-26**	**0.6**	**Y**	**A**	**0.5**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,435	1,415	-20	0.5	Y	A	0	0
	Approach	***1,435***	***1,415***	***-20***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	177	176	-1	0.1	Y	A	3	0
	Approach	***177***	***176***	***-1***	***0.1***	***Y***	***A***	***2.7***	***0***
Overall	**-**	**1,612**	**1,591**	**-21**	**0.5**	**Y**	**A**	**2.7**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,463	1,462	-1	0.0	Y	A	1	0
	Approach	***1,463***	***1,462***	***-1***	***0.0***	***Y***	***A***	***0.6***	***0***
SB: I-85 SB Off-Ramp	Through	52	51	-1	0.2	Y	A	0	0
	Approach	***52***	***51***	***-1***	***0.2***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**1,515**	**1,513**	**-2**	**0.1**	**Y**	**A**	**0.6**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,358	1,353	-5	0.1	Y	A	1	0
	Approach	***1,358***	***1,353***	***-5***	***0.1***	***Y***	***A***	***0.6***	***0***
SB: I-85 SB Off-Ramp	Through	105	110	5	0.5	Y	A	0	0
	Approach	***105***	***110***	***5***	***0.5***	***Y***	***A***	***0.2***	***0***
Overall	**-**	**1,463**	**1,463**	**0**	**0.0**	**Y**	**A**	**0.6**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,358	1,353	-5	0.1	Y	A	2	23
	Approach	***1,358***	***1,353***	***-5***	***0.1***	***Y***	***A***	***1.7***	***23***
SB: I-85 SB Off-Ramp	Through	186	197	11	0.8	Y	A	4	23
	Approach	***186***	***197***	***11***	***0.8***	***Y***	***A***	***4.5***	***23***
Overall	**-**	**1,544**	**1,550**	**6**	**0.2**	**Y**	**A**	**4.5**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,406	1,388	-18	0.5	Y	A	0	0
	Approach	***1,406***	***1,388***	***-18***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	206	209	3	0.2	Y	A	1	0
	Approach	***206***	***209***	***3***	***0.2***	***Y***	***A***	***1.1***	***0***
Overall	**-**	**1,612**	**1,597**	**-15**	**0.4**	**Y**	**A**	**1.1**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,406	1,389	-17	0.5	Y	A	0	0
	Approach	***1,406***	***1,389***	***-17***	***0.5***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB On-Ramp	Through	103	98	-5	0.5	Y	A	0	0
	Approach	***103***	***98***	***-5***	***0.5***	***Y***	***A***	***0.0***	***0***
Overall	**-**	**1,509**	**1,487**	**-22**	**0.6**	**Y**	**A**	**0.2**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,509	1,488	-21	0.5	Y	A	0	0
	Approach	***1,509***	***1,488***	***-21***	***0.5***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB On-Ramp	Through	101	98	-3	0.3	Y	A	0	0
	Approach	***101***	***98***	***-3***	***0.3***	***Y***	***A***	***0.2***	***0***
Overall	**-**	**1,610**	**1,586**	**-24**	**0.6**	**Y**	**A**	**0.2**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,456	1,434	-22	0.6	Y	A	0	0
	Approach	***1,456***	***1,434***	***-22***	***0.6***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	154	151	-3	0.2	Y	A	3	0
	Approach	***154***	***151***	***-3***	***0.2***	***Y***	***A***	***3.2***	***0***
Overall	**-**	**1,610**	**1,585**	**-25**	**0.6**	**Y**	**A**	**3.2**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,457	1,461	4	0.1	Y	A	0	0
	Approach	***1,457***	***1,461***	***4***	***0.1***	***Y***	***A***	***0.3***	***0***
SB: I-85 SB On-Ramp	Through	87	92	5	0.5	Y	A	1	0
	Approach	***87***	***92***	***5***	***0.5***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**1,544**	**1,553**	**9**	**0.2**	**Y**	**A**	**0.6**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,457	1,459	2	0.0	Y	A	0	0
	Approach	***1,457***	***1,459***	***2***	***0.0***	***Y***	***A***	***0.1***	***0***
SB: I-85 SB Off-Ramp	Through	109	106	-3	0.3	Y	A	1	0
	Approach	***109***	***106***	***-3***	***0.3***	***Y***	***A***	***0.7***	***0***
Overall	**-**	**1,566**	**1,565**	**-1**	**0.0**	**Y**	**A**	**0.7**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,384	1,383	-1	0.0	Y	A	0	0
	Approach	***1,384***	***1,383***	***-1***	***0.0***	***Y***	***A***	***0.2***	***0***
SB: I-85 SB Off-Ramp	Through	182	180	-2	0.1	Y	A	2	73
	Approach	***182***	***180***	***-2***	***0.1***	***Y***	***A***	***2.2***	***73***
Overall	**-**	**1,566**	**1,563**	**-3**	**0.1**	**Y**	**A**	**2.2**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,384	1,385	1	0.0	Y	A	0	0
	Approach	***1,384***	***1,385***	***1***	***0.0***	***Y***	***A***	***0.2***	***0***
SB: I-85 SB Off-Ramp	Through	59	60	1	0.1	Y	A	2	0
	Approach	***59***	***60***	***1***	***0.1***	***Y***	***A***	***2.1***	***0***
Overall	**-**	**1,443**	**1,445**	**2**	**0.1**	**Y**	**A**	**2.1**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,292	1,269	-23	0.6	Y	A	0	0
	Approach	***1,292***	***1,269***	***-23***	***0.6***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB Off-Ramp	Through	164	166	2	0.2	Y	A	1	0
	Approach	***164***	***166***	***2***	***0.2***	***Y***	***A***	***1.3***	***0***
Overall	**-**	**1,456**	**1,435**	**-21**	**0.5**	**Y**	**A**	**1.3**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,292	1,268	-24	0.7	Y	A	0	0
	Approach	***1,292***	***1,268***	***-24***	***0.7***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	138	139	1	0.1	Y	A	1	0
	Approach	***138***	***139***	***1***	***0.1***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**1,430**	**1,407**	**-23**	**0.6**	**Y**	**A**	**0.5**	**-**

98004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,430	1,410	-20	0.5	Y	A	0	0
	Approach	***1,430***	***1,410***	***-20***	***0.5***	***Y***	***A***	***0.1***	***0***
NB: I-85 NB On-Ramp	Through	7	7	0	0.0	Y	A	3	20
	Approach	***7***	***7***	***0***	***0.0***	***Y***	***A***	***3.1***	***20***
Overall	**-**	**1,437**	**1,417**	**-20**	**0.5**	**Y**	**A**	**3.1**	**-**

98003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,437	1,389	-48	1.3	Y	A	0	0
	Approach	***1,437***	***1,389***	***-48***	***1.3***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB Off-Ramp	Through	28	29	1	0.2	Y	A	3	0
	Approach	***28***	***29***	***1***	***0.2***	***Y***	***A***	***3.5***	***0***
Overall	**-**	**1,465**	**1,418**	**-47**	**1.2**	**Y**	**A**	**3.5**	**-**

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,322	1,323	1	0.0	Y	A	0	0
	Approach	***1,322***	***1,323***	***1***	***0.0***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	121	120	-1	0.1	Y	A	0	0
	Approach	***121***	***120***	***-1***	***0.1***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**1,443**	**1,443**	**0**	**0.0**	**Y**	**A**	**0.5**	**-**

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,322	1,320	-2	0.1	Y	A	0	78
	Approach	***1,322***	***1,320***	***-2***	***0.1***	***Y***	***A***	***0.3***	***78***
SB: I-85 SB Off-Ramp	Through	56	57	1	0.1	Y	A	1	78
	Approach	***56***	***57***	***1***	***0.1***	***Y***	***A***	***0.7***	***78***
Overall	**-**	**1,378**	**1,377**	**-1**	**0.0**	**Y**	**A**	**0.7**	**-**

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,201	1,187	-14	0.4	Y	A	0	0
	Approach	***1,201***	***1,187***	***-14***	***0.4***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	208	203	-5	0.3	Y	A	4	0
	Approach	***208***	***203***	***-5***	***0.3***	***Y***	***A***	***3.5***	***0***
Overall	**-**	**1,409**	**1,390**	**-19**	**0.5**	**Y**	**A**	**3.5**	**-**

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,201	1,188	-13	0.4	Y	A	0	0
	Approach	***1,201***	***1,188***	***-13***	***0.4***	***Y***	***A***	***0.1***	***0***
NB: I-85 NB On-Ramp	Through	58	56	-2	0.3	Y	A	0	0
	Approach	***58***	***56***	***-2***	***0.3***	***Y***	***A***	***0.1***	***0***
Overall	**-**	**1,259**	**1,244**	**-15**	**0.4**	**Y**	**A**	**0.1**	**-**

Existing PM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,040	3,021	-19	0.3	Y	A	0	0
	Approach	***3,040***	***3,021***	***-19***	***0.3***	***Y***	***A***	***0.3***	***0***
SB: I-85 SB On-Ramp	Through	69	71	2	0.2	Y	A	4	0
	Approach	***69***	***71***	***2***	***0.2***	***Y***	***A***	***4.2***	***0***
Overall	**-**	**3,109**	**3,092**	**-17**	**0.3**	**Y**	**A**	**4.2**	**-**

80002: Interstate 85 at SB On-Ramp Loop									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,918	2,900	-18	0.3	Y	A	0	0
	Approach	***2,918***	***2,900***	***-18***	***0.3***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	122	126	4	0.4	Y	A	0	0
	Approach	***122***	***126***	***4***	***0.4***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**3,040**	**3,026**	**-14**	**0.3**	**Y**	**A**	**0.4**	**-**

80003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,918	2,903	-15	0.3	Y	A	1	0
	Approach	***2,918***	***2,903***	***-15***	***0.3***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	111	108	-3	0.3	Y	A	2	0
	Approach	***111***	***108***	***-3***	***0.3***	***Y***	***A***	***2.5***	***0***
Overall	**-**	**3,029**	**3,011**	**-18**	**0.3**	**Y**	**A**	**2.5**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,977	2,956	-21	0.4	Y	A	0	47
	Approach	***2,977***	***2,956***	***-21***	***0.4***	***Y***	***A***	***0.4***	***47***
NB: I-85 NB Off-Ramp	Through	237	238	1	0.1	Y	A	1	47
	Approach	***237***	***238***	***1***	***0.1***	***Y***	***A***	***1.0***	***47***
Overall	**-**	**3,214**	**3,194**	**-20**	**0.4**	**Y**	**A**	**1.0**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,977	2,960	-17	0.3	Y	A	1	0
	Approach	***2,977***	***2,960***	***-17***	***0.3***	***Y***	***A***	***1.0***	***0***
NB: I-85 NB On-Ramp	Through	91	88	-3	0.3	Y	A	0	0
	Approach	***91***	***88***	***-3***	***0.3***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**3,068**	**3,048**	**-20**	**0.4**	**Y**	**A**	**1.0**	**-**

82001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,015	2,997	-18	0.3	Y	A	0	0
	Approach	***3,015***	***2,997***	***-18***	***0.3***	***Y***	***A***	***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	53	51	-2	0.3	Y	A	0	0
	Approach	***53***	***51***	***-2***	***0.3***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**3,068**	**3,048**	**-20**	**0.4**	**Y**	**A**	**0.5**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,825	2,819	-6	0.1	Y	A	1	5
	Approach	***2,825***	***2,819***	***-6***	***0.1***	***Y***	***A***	***0.8***	***5***
SB: I-85 SB Off-Ramp	Through	204	208	4	0.3	Y	A	7	0
	Approach	***204***	***208***	***4***	***0.3***	***Y***	***A***	***6.7***	***0***
Overall	**-**	**3,029**	**3,027**	**-2**	**0.0**	**Y**	**A**	**6.7**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,825	2,821	-4	0.1	Y	A	1	0
	Approach	***2,825***	***2,821***	***-4***	***0.1***	***Y***	***A***	***0.8***	***0***
SB: I-85 SB Off-Ramp	Through	105	110	5	0.5	Y	A	4	0
	Approach	***105***	***110***	***5***	***0.5***	***Y***	***A***	***4.2***	***0***
Overall	**-**	**2,930**	**2,931**	**1**	**0.0**	**Y**	**A**	**4.2**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,753	2,738	-15	0.3	Y	A	1	14
	Approach	***2,753***	***2,738***	***-15***	***0.3***	***Y***	***A***	***0.5***	***14***
NB: I-85 NB Off-Ramp	Through	262	260	-2	0.1	Y	A	3	14
	Approach	***262***	***260***	***-2***	***0.1***	***Y***	***A***	***2.6***	***14***
Overall	**-**	**3,015**	**2,998**	**-17**	**0.3**	**Y**	**A**	**2.6**	**-**

83004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,753	2,739	-14	0.3	Y	A	1	0
	Approach	***2,753***	***2,739***	***-14***	***0.3***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	99	95	-4	0.4	Y	A	8	0
	Approach	***99***	***95***	***-4***	***0.4***	***Y***	***A***	***8.3***	***0***
Overall	**-**	**2,852**	**2,834**	**-18**	**0.3**	**Y**	**A**	**8.3**	**-**

87001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,839	2,847	8	0.2	Y	A	1	0
	Approach	***2,839***	***2,847***	***8***	***0.2***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	91	88	-3	0.3	Y	A	1	0
	Approach	***91***	***88***	***-3***	***0.3***	***Y***	***A***	***1.5***	***0***
Overall	**-**	**2,930**	**2,935**	**5**	**0.1**	**Y**	**A**	**1.5**	**-**

87002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,839	2,850	11	0.2	Y	A	1	0
	Approach	***2,839***	***2,850***	***11***	***0.2***	***Y***	***A***	***0.8***	***0***
SB: I-85 SB Off-Ramp	Through	66	67	1	0.1	Y	A	4	0
	Approach	***66***	***67***	***1***	***0.1***	***Y***	***A***	***4.3***	***0***
Overall	**-**	**2,905**	**2,917**	**12**	**0.2**	**Y**	**A**	**4.3**	**-**

87003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,702	2,677	-25	0.5	Y	A	1	0
	Approach	***2,702***	***2,677***	***-25***	***0.5***	***Y***	***A***	***1.0***	***0***
NB: I-85 NB Off-Ramp	Through	150	153	3	0.3	Y	A	2	0
	Approach	***150***	***153***	***3***	***0.3***	***Y***	***A***	***2.5***	***0***
Overall	**-**	**2,852**	**2,830**	**-22**	**0.4**	**Y**	**A**	**2.5**	**-**

87004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,702	2,681	-21	0.4	Y	A	1	0
	Approach	***2,702***	***2,681***	***-21***	***0.4***	***Y***	***A***	***0.5***	***0***
NB: I-85 NB On-Ramp	Through	65	61	-4	0.5	Y	C	15	0
	Approach	***65***	***61***	***-4***	***0.5***	***Y***	***C***	***15.5***	***0***
Overall	**-**	**2,767**	**2,742**	**-25**	**0.5**	**Y**	**C**	**15.5**	**-**

90001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,410	2,410	0	0.0	Y	A	1	37
	Approach	***2,410***	***2,410***	***0***	***0.0***	***Y***	***A***	***1.3***	***37***
SB: I-85 SB Off-Ramp	Through	495	505	10	0.4	Y	A	10	354
	Approach	***495***	***505***	***10***	***0.4***	***Y***	***A***	***9.9***	***354***
Overall	**-**	**2,905**	**2,915**	**10**	**0.2**	**Y**	**A**	**9.9**	**-**

90002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,410	2,411	1	0.0	Y	A	2	181
	Approach	***2,410***	***2,411***	***1***	***0.0***	***Y***	***A***	***1.6***	***181***
SB: I-85 SB Off-Ramp	Through	226	226	0	0.0	Y	A	4	181
	Approach	***226***	***226***	***0***	***0.0***	***Y***	***A***	***3.8***	***181***
Overall	**-**	**2,636**	**2,637**	**1**	**0.0**	**Y**	**A**	**3.8**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,306	2,281	-25	0.5	Y	A	1	337
	Approach	***2,306***	***2,281***	***-25***	***0.5***	***Y***	***A***	***0.9***	***337***
NB: I-85 NB Off-Ramp	Through	461	462	1	0.0	Y	A	1	337
	Approach	***461***	***462***	***1***	***0.0***	***Y***	***A***	***1.0***	***337***
Overall	**-**	**2,767**	**2,743**	**-24**	**0.5**	**Y**	**A**	**1.0**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,306	2,284	-22	0.5	Y	A	1	0
	Approach	***2,306***	***2,284***	***-22***	***0.5***	***Y***	***A***	***0.8***	***0***
NB: I-85 NB On-Ramp	Through	314	317	3	0.2	Y	A	6	0
	Approach	***314***	***317***	***3***	***0.2***	***Y***	***A***	***6.3***	***0***
Overall	**-**	**2,620**	**2,601**	**-19**	**0.4**	**Y**	**A**	**6.3**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,576	2,574	-2	0.0	Y	A	1	0
	Approach	***2,576***	***2,574***	***-2***	***0.0***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	60	59	-1	0.1	Y	A	1	0
	Approach	***60***	***59***	***-1***	***0.1***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**2,636**	**2,633**	**-3**	**0.1**	**Y**	**A**	**0.9**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,381	2,386	5	0.1	Y	A	1	0
	Approach	***2,381***	***2,386***	***5***	***0.1***	***Y***	***A***	***0.5***	***0***
SB: I-85 SB Off-Ramp	Through	195	193	-2	0.1	Y	A	0	0
	Approach	***195***	***193***	***-2***	***0.1***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**2,576**	**2,579**	**3**	**0.1**	**Y**	**A**	**0.5**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,381	2,386	5	0.1	Y	A	1	68
	Approach	***2,381***	***2,386***	***5***	***0.1***	***Y***	***A***	***0.9***	***68***
SB: I-85 SB Off-Ramp	Through	261	271	10	0.6	Y	A	3	68
	Approach	***261***	***271***	***10***	***0.6***	***Y***	***A***	***2.9***	***68***
Overall	**-**	**2,642**	**2,657**	**15**	**0.3**	**Y**	**A**	**2.9**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,352	2,328	-24	0.5	Y	A	1	0
	Approach	***2,352***	***2,328***	***-24***	***0.5***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB Off-Ramp	Through	268	267	-1	0.1	Y	A	1	0
	Approach	***268***	***267***	***-1***	***0.1***	***Y***	***A***	***1.3***	***0***
Overall	**-**	**2,620**	**2,595**	**-25**	**0.5**	**Y**	**A**	**1.3**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,352	2,328	-24	0.5	Y	A	1	0
	Approach	***2,352***	***2,328***	***-24***	***0.5***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	73	67	-6	0.7	Y	A	1	0
	Approach	***73***	***67***	***-6***	***0.7***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**2,425**	**2,395**	**-30**	**0.6**	**Y**	**A**	**0.6**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,425	2,393	-32	0.6	Y	A	0	0
	Approach	***2,425***	***2,393***	***-32***	***0.6***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB On-Ramp	Through	181	184	3	0.2	Y	A	0	0
	Approach	***181***	***184***	***3***	***0.2***	***Y***	***A***	***0.2***	***0***
Overall	**-**	**2,606**	**2,577**	**-29**	**0.6**	**Y**	**A**	**0.4**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,494	2,473	-21	0.4	Y	A	1	0
	Approach	***2,494***	***2,473***	***-21***	***0.4***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB Off-Ramp	Through	112	109	-3	0.3	Y	A	3	0
	Approach	***112***	***109***	***-3***	***0.3***	***Y***	***A***	***3.3***	***0***
Overall	**-**	**2,606**	**2,582**	**-24**	**0.5**	**Y**	**A**	**3.3**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,536	2,545	9	0.2	Y	A	1	0
	Approach	***2,536***	***2,545***	***9***	***0.2***	***Y***	***A***	***0.5***	***0***
SB: I-85 SB On-Ramp	Through	106	106	0	0.0	Y	A	2	0
	Approach	***106***	***106***	***0***	***0.0***	***Y***	***A***	***1.7***	***0***
Overall	**-**	**2,642**	**2,651**	**9**	**0.2**	**Y**	**A**	**1.7**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,536	2,543	7	0.1	Y	A	0	10
	Approach	***2,536***	***2,543***	***7***	***0.1***	***Y***	***A***	***0.3***	***10***
SB: I-85 SB Off-Ramp	Through	94	95	1	0.1	Y	A	1	10
	Approach	***94***	***95***	***1***	***0.1***	***Y***	***A***	***0.8***	***10***
Overall	**-**	**2,630**	**2,638**	**8**	**0.2**	**Y**	**A**	**0.8**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,437	2,446	9	0.2	Y	A	0	8
	Approach	***2,437***	***2,446***	***9***	***0.2***	***Y***	***A***	***0.4***	***8***
SB: I-85 SB Off-Ramp	Through	193	190	-3	0.2	Y	A	6	104
	Approach	***193***	***190***	***-3***	***0.2***	***Y***	***A***	***6.1***	***104***
Overall	**-**	**2,630**	**2,636**	**6**	**0.1**	**Y**	**A**	**6.1**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,437	2,448	11	0.2	Y	A	0	8
	Approach	***2,437***	***2,448***	***11***	***0.2***	***Y***	***A***	***0.4***	***8***
SB: I-85 SB Off-Ramp	Through	82	85	3	0.3	Y	A	2	8
	Approach	***82***	***85***	***3***	***0.3***	***Y***	***A***	***1.9***	***8***
Overall	**-**	**2,519**	**2,533**	**14**	**0.3**	**Y**	**A**	**1.9**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,263	2,242	-21	0.4	Y	A	1	0
	Approach	***2,263***	***2,242***	***-21***	***0.4***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB Off-Ramp	Through	231	238	7	0.5	Y	A	2	0
	Approach	***231***	***238***	***7***	***0.5***	***Y***	***A***	***1.5***	***0***
Overall	**-**	**2,494**	**2,480**	**-14**	**0.3**	**Y**	**A**	**1.5**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,263	2,241	-22	0.5	Y	A	1	0
	Approach	***2,263***	***2,241***	***-22***	***0.5***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	150	150	0	0.0	Y	A	2	0
	Approach	***150***	***150***	***0***	***0.0***	***Y***	***A***	***2.3***	***0***
Overall	**-**	**2,413**	**2,391**	**-22**	**0.4**	**Y**	**A**	**2.3**	**-**

98004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,413	2,390	-23	0.5	Y	A	0	0
	Approach	***2,413***	***2,390***	***-23***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	6	6	0	0.0	Y	A	6	34
	Approach	***6***	***6***	***0***	***0.0***	***Y***	***A***	***6.1***	***34***
Overall	**-**	**2,419**	**2,396**	**-23**	**0.5**	**Y**	**A**	**6.1**	**-**

98003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,419	2,384	-35	0.7	Y	A	0	0
	Approach	***2,419***	***2,384***	***-35***	***0.7***	***Y***	***A***	***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	7	7	0	0.0	Y	A	4	0
	Approach	***7***	***7***	***0***	***0.0***	***Y***	***A***	***3.7***	***0***
Overall	**-**	**2,426**	**2,391**	**-35**	**0.7**	**Y**	**A**	**3.7**	**-**

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,340	2,345	5	0.1	Y	A	1	0
	Approach	***2,340***	***2,345***	***5***	***0.1***	***Y***	***A***	***0.8***	***0***
SB: I-85 SB Off-Ramp	Through	179	177	-2	0.1	Y	A	1	6
	Approach	***179***	***177***	***-2***	***0.1***	***Y***	***A***	***0.6***	***6***
Overall	**-**	**2,519**	**2,522**	**3**	**0.1**	**Y**	**A**	**0.8**	**-**

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,340	2,342	2	0.0	Y	A	0	122
	Approach	***2,340***	***2,342***	***2***	***0.0***	***Y***	***A***	***0.5***	***122***
SB: I-85 SB Off-Ramp	Through	58	58	0	0.0	Y	A	1	122
	Approach	***58***	***58***	***0***	***0.0***	***Y***	***A***	***1.3***	***122***
Overall	**-**	**2,398**	**2,400**	**2**	**0.0**	**Y**	**A**	**1.3**	**-**

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,269	2,238	-31	0.7	Y	A	1	14
	Approach	***2,269***	***2,238***	***-31***	***0.7***	***Y***	***A***	***0.7***	***14***
NB: I-85 NB Off-Ramp	Through	143	143	0	0.0	Y	A	4	14
	Approach	***143***	***143***	***0***	***0.0***	***Y***	***A***	***3.8***	***14***
Overall	**-**	**2,412**	**2,381**	**-31**	**0.6**	**Y**	**A**	**3.8**	**-**

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,269	2,236	-33	0.7	Y	A	0	0
	Approach	***2,269***	***2,236***	***-33***	***0.7***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	47	47	0	0.0	Y	A	0	0
	Approach	***47***	***47***	***0***	***0.0***	***Y***	***A***	***0.1***	***0***
Overall	**-**	**2,316**	**2,283**	**-33**	**0.7**	**Y**	**A**	**0.3**	**-**

No Build AM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,417	3,387	-30	0.5	Y	A	0	0
	Approach	***3,417***	***3,387***	***-30***	***0.5***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB On-Ramp	Through	42	41	-1	0.2	Y	A	4	0
	Approach	***42***	***41***	***-1***	***0.2***	***Y***	***A***	***4.1***	***0***
Overall	**-**	**3,459**	**3,428**	**-31**	**0.5**	**Y**	**A**	**4.1**	**-**

80002: Interstate 85 at SB Off-Ramp Loop									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,951	2,927	-24	0.4	Y	A	1	0
	Approach	***2,951***	***2,927***	***-24***	***0.4***	***Y***	***A***	***0.6***	***0***
SB: I-85 SB Off-Ramp	Through	466	465	-1	0.0	Y	A	1	0
	Approach	***466***	***465***	***-1***	***0.0***	***Y***	***A***	***1.0***	***0***
Overall	**-**	**3,417**	**3,392**	**-25**	**0.4**	**Y**	**A**	**1.0**	**-**

80003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,951	2,929	-22	0.4	Y	A	2	0
	Approach	***2,951***	***2,929***	***-22***	***0.4***	***Y***	***A***	***2.4***	***0***
SB: I-85 SB Off-Ramp	Through	226	221	-5	0.3	Y	A	7	0
	Approach	***226***	***221***	***-5***	***0.3***	***Y***	***A***	***6.8***	***0***
Overall	**-**	**3,177**	**3,150**	**-27**	**0.5**	**Y**	**A**	**6.8**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,628	2,620	-8	0.2	Y	A	1	115
	Approach	***2,628***	***2,620***	***-8***	***0.2***	***Y***	***A***	***0.6***	***115***
NB: I-85 NB Off-Ramp	Through	448	456	8	0.4	Y	A	1	115
	Approach	***448***	***456***	***8***	***0.4***	***Y***	***A***	***1.4***	***115***
Overall	**-**	**3,076**	**3,076**	**0**	**0.0**	**Y**	**A**	**1.4**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,628	2,619	-9	0.2	Y	A	1	0
	Approach	***2,628***	***2,619***	***-9***	***0.2***	***Y***	***A***	***0.9***	***0***
NB: I-85 NB On-Ramp	Through	211	211	0	0.0	Y	A	0	0
	Approach	***211***	***211***	***0***	***0.0***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**2,839**	**2,830**	**-9**	**0.2**	**Y**	**A**	**0.9**	**-**

82001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,796	2,784	-12	0.2	Y	A	1	0
	Approach	***2,796***	***2,784***	***-12***	***0.2***	***Y***	***A***	***0.9***	***0***
NB: I-85 NB Off-Ramp	Through	43	42	-1	0.2	Y	A	0	0
	Approach	***43***	***42***	***-1***	***0.2***	***Y***	***A***	***0.0***	***0***
Overall	**-**	**2,839**	**2,826**	**-13**	**0.2**	**Y**	**A**	**0.9**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,682	2,671	-11	0.2	Y	A	1	71
	Approach	***2,682***	***2,671***	***-11***	***0.2***	***Y***	***A***	***1.5***	***71***
SB: I-85 SB Off-Ramp	Through	495	492	-3	0.1	Y	A	9	49
	Approach	***495***	***492***	***-3***	***0.1***	***Y***	***A***	***8.8***	***49***
Overall	**-**	**3,177**	**3,163**	**-14**	**0.2**	**Y**	**A**	**8.8**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,682	2,676	-6	0.1	Y	A	1	76
	Approach	***2,682***	***2,676***	***-6***	***0.1***	***Y***	***A***	***1.2***	***76***
SB: I-85 SB Off-Ramp	Through	106	109	3	0.3	Y	A	4	76
	Approach	***106***	***109***	***3***	***0.3***	***Y***	***A***	***4.3***	***76***
Overall	**-**	**2,788**	**2,785**	**-3**	**0.1**	**Y**	**A**	**4.3**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,534	2,520	-14	0.3	Y	A	1	70
	Approach	***2,534***	***2,520***	***-14***	***0.3***	***Y***	***A***	***0.7***	***70***
NB: I-85 NB Off-Ramp	Through	262	263	1	0.1	Y	A	2	70
	Approach	***262***	***263***	***1***	***0.1***	***Y***	***A***	***2.3***	***70***
Overall	**-**	**2,796**	**2,783**	**-13**	**0.2**	**Y**	**A**	**2.3**	**-**

83004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,534	2,515	-19	0.4	Y	A	1	0
	Approach	***2,534***	***2,515***	***-19***	***0.4***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	152	152	0	0.0	Y	A	4	0
	Approach	***152***	***152***	***0***	***0.0***	***Y***	***A***	***4.4***	***0***
Overall	**-**	**2,686**	**2,667**	**-19**	**0.4**	**Y**	**A**	**4.4**	**-**

87001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,543	2,545	2	0.0	Y	A	1	0
	Approach	***2,543***	***2,545***	***2***	***0.0***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	245	244	-1	0.1	Y	A	2	0
	Approach	***245***	***244***	***-1***	***0.1***	***Y***	***A***	***1.5***	***0***
Overall	**-**	**2,788**	**2,789**	**1**	**0.0**	**Y**	**A**	**1.5**	**-**

87002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,543	2,547	4	0.1	Y	A	1	0
	Approach	***2,543***	***2,547***	***4***	***0.1***	***Y***	***A***	***0.7***	***0***
SB: I-85 SB Off-Ramp	Through	70	71	1	0.2	Y	A	4	0
	Approach	***70***	***71***	***1***	***0.2***	***Y***	***A***	***4.0***	***0***
Overall	**-**	**2,613**	**2,618**	**5**	**0.1**	**Y**	**A**	**4.0**	**-**

87003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,572	2,549	-23	0.5	Y	A	1	0
	Approach	***2,572***	***2,549***	***-23***	***0.5***	***Y***	***A***	***1.2***	***0***
NB: I-85 NB Off-Ramp	Through	114	116	2	0.2	Y	A	3	0
	Approach	***114***	***116***	***2***	***0.2***	***Y***	***A***	***2.6***	***0***
Overall	**-**	**2,686**	**2,665**	**-21**	**0.4**	**Y**	**A**	**2.6**	**-**

87004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,572	2,545	-27	0.5	Y	A	1	0
	Approach	***2,572***	***2,545***	***-27***	***0.5***	***Y***	***A***	***0.7***	***0***
NB: I-85 NB On-Ramp	Through	126	126	0	0.0	Y	A	1	0
	Approach	***126***	***126***	***0***	***0.0***	***Y***	***A***	***1.2***	***0***
Overall	**-**	**2,698**	**2,671**	**-27**	**0.5**	**Y**	**A**	**1.2**	**-**

90001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,006	2,002	-4	0.1	Y	A	1	19
	Approach	***2,006***	***2,002***	***-4***	***0.1***	***Y***	***A***	***1.0***	***19***
SB: I-85 SB On-Ramp	Through	607	613	6	0.2	Y	A	7	367
	Approach	***607***	***613***	***6***	***0.2***	***Y***	***A***	***7.0***	***367***
Overall	**-**	**2,613**	**2,615**	**2**	**0.0**	**Y**	**A**	**7.0**	**-**

90002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,006	2,000	-6	0.1	Y	A	2	69
	Approach	***2,006***	***2,000***	***-6***	***0.1***	***Y***	***A***	***1.6***	***69***
SB: I-85 SB Off-Ramp	Through	259	259	0	0.0	Y	A	4	212
	Approach	***259***	***259***	***0***	***0.0***	***Y***	***A***	***3.6***	***212***
Overall	**-**	**2,265**	**2,259**	**-6**	**0.1**	**Y**	**A**	**3.6**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,145	2,126	-19	0.4	Y	A	1	212
	Approach	***2,145***	***2,126***	***-19***	***0.4***	***Y***	***A***	***0.9***	***212***
NB: I-85 NB Off-Ramp	Through	553	547	-6	0.3	Y	A	1	212
	Approach	***553***	***547***	***-6***	***0.3***	***Y***	***A***	***1.5***	***212***
Overall	**-**	**2,698**	**2,673**	**-25**	**0.5**	**Y**	**A**	**1.5**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,145	2,125	-20	0.4	Y	A	1	0
	Approach	***2,145***	***2,125***	***-20***	***0.4***	***Y***	***A***	***0.8***	***0***
NB: I-85 NB On-Ramp	Through	265	264	-1	0.1	Y	A	8	0
	Approach	***265***	***264***	***-1***	***0.1***	***Y***	***A***	***7.6***	***0***
Overall	**-**	**2,410**	**2,389**	**-21**	**0.4**	**Y**	**A**	**7.6**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,187	2,190	3	0.1	Y	A	1	0
	Approach	***2,187***	***2,190***	***3***	***0.1***	***Y***	***A***	***1.1***	***0***
SB: I-85 SB Off-Ramp	Through	78	76	-2	0.3	Y	A	1	0
	Approach	***78***	***76***	***-2***	***0.3***	***Y***	***A***	***0.5***	***0***
Overall	**-**	**2,265**	**2,266**	**1**	**0.0**	**Y**	**A**	**1.1**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,030	2,024	-6	0.1	Y	A	1	0
	Approach	***2,030***	***2,024***	***-6***	***0.1***	***Y***	***A***	***1.1***	***0***
SB: I-85 SB Off-Ramp	Through	157	160	3	0.2	Y	A	0	0
	Approach	***157***	***160***	***3***	***0.2***	***Y***	***A***	***0.3***	***0***
Overall	**-**	**2,187**	**2,184**	**-3**	**0.1**	**Y**	**A**	**1.1**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,030	2,024	-6	0.1	Y	A	3	110
	Approach	***2,030***	***2,024***	***-6***	***0.1***	***Y***	***A***	***2.8***	***110***
SB: I-85 SB Off-Ramp	Through	278	290	12	0.7	Y	A	6	110
	Approach	***278***	***290***	***12***	***0.7***	***Y***	***A***	***5.6***	***110***
Overall	**-**	**2,308**	**2,314**	**6**	**0.1**	**Y**	**A**	**5.6**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,102	2,077	-25	0.5	Y	A	1	0
	Approach	***2,102***	***2,077***	***-25***	***0.5***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB Off-Ramp	Through	308	307	-1	0.1	Y	A	1	0
	Approach	***308***	***307***	***-1***	***0.1***	***Y***	***A***	***1.4***	***0***
Overall	**-**	**2,410**	**2,384**	**-26**	**0.5**	**Y**	**A**	**1.4**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,102	2,077	-25	0.5	Y	A	0	0
	Approach	***2,102***	***2,077***	***-25***	***0.5***	***Y***	***A***	***0.3***	***0***
NB: I-85 NB On-Ramp	Through	154	150	-4	0.3	Y	A	0	0
	Approach	***154***	***150***	***-4***	***0.3***	***Y***	***A***	***0.1***	***0***
Overall	**-**	**2,256**	**2,227**	**-29**	**0.6**	**Y**	**A**	**0.3**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,256	2,226	-30	0.6	Y	A	0	0
	Approach	***2,256***	***2,226***	***-30***	***0.6***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB On-Ramp	Through	151	150	-1	0.0	Y	A	0	0
	Approach	***151***	***150***	***-1***	***0.0***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**2,407**	**2,376**	**-31**	**0.6**	**Y**	**A**	**0.4**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,176	2,153	-23	0.5	Y	A	1	0
	Approach	***2,176***	***2,153***	***-23***	***0.5***	***Y***	***A***	***0.7***	***0***
NB: I-85 NB Off-Ramp	Through	231	224	-7	0.5	Y	A	3	0
	Approach	***231***	***224***	***-7***	***0.5***	***Y***	***A***	***3.3***	***0***
Overall	**-**	**2,407**	**2,377**	**-30**	**0.6**	**Y**	**A**	**3.3**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,178	2,173	-5	0.1	Y	A	1	19
	Approach	***2,178***	***2,173***	***-5***	***0.1***	***Y***	***A***	***0.7***	***19***
SB: I-85 SB On-Ramp	Through	130	132	2	0.2	Y	A	1	0
	Approach	***130***	***132***	***2***	***0.2***	***Y***	***A***	***1.4***	***0***
Overall	**-**	**2,308**	**2,305**	**-3**	**0.1**	**Y**	**A**	**1.4**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,178	2,176	-2	0.1	Y	A	0	170
	Approach	***2,178***	***2,176***	***-2***	***0.1***	***Y***	***A***	***0.5***	***170***
SB: I-85 SB Off-Ramp	Through	163	155	-8	0.6	Y	A	1	170
	Approach	***163***	***155***	***-8***	***0.6***	***Y***	***A***	***0.8***	***170***
Overall	**-**	**2,341**	**2,331**	**-10**	**0.2**	**Y**	**A**	**0.8**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,069	2,070	1	0.0	Y	A	0	0
	Approach	***2,069***	***2,070***	***1***	***0.0***	***Y***	***A***	***0.4***	***0***
SB: I-85 SB Off-Ramp	Through	272	272	0	0.0	Y	A	5	109
	Approach	***272***	***272***	***0***	***0.0***	***Y***	***A***	***4.5***	***109***
Overall	**-**	**2,341**	**2,342**	**1**	**0.0**	**Y**	**A**	**4.5**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,069	2,070	1	0.0	Y	A	1	0
	Approach	***2,069***	***2,070***	***1***	***0.0***	***Y***	***A***	***0.7***	***0***
SB: I-85 SB Off-Ramp	Through	88	92	4	0.4	Y	A	2	0
	Approach	***88***	***92***	***4***	***0.4***	***Y***	***A***	***2.5***	***0***
Overall	**-**	**2,157**	**2,162**	**5**	**0.1**	**Y**	**A**	**2.5**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,931	1,906	-25	0.6	Y	A	1	0
	Approach	***1,931***	***1,906***	***-25***	***0.6***	***Y***	***A***	***0.8***	***0***
NB: I-85 NB Off-Ramp	Through	245	252	7	0.5	Y	A	2	0
	Approach	***245***	***252***	***7***	***0.5***	***Y***	***A***	***1.8***	***0***
Overall	**-**	**2,176**	**2,158**	**-18**	**0.4**	**Y**	**A**	**1.8**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,931	1,904	-27	0.6	Y	A	1	0
	Approach	***1,931***	***1,904***	***-27***	***0.6***	***Y***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	207	207	0	0.0	Y	A	1	0
	Approach	***207***	***207***	***0***	***0.0***	***Y***	***A***	***1.1***	***0***
Overall	**-**	**2,138**	**2,111**	**-27**	**0.6**	**Y**	**A**	**1.1**	**-**

98004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,138	2,107	-31	0.7	Y	A	0	0
	Approach	***2,138***	***2,107***	***-31***	***0.7***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB On-Ramp	Through	10	10	0	0.0	Y	A	4	29
	Approach	***10***	***10***	***0***	***0.0***	***Y***	***A***	***4.4***	***29***
Overall	**-**	**2,148**	**2,117**	**-31**	**0.7**	**Y**	**A**	**4.4**	**-**

98003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,148	2,066	-82	1.8	Y	A	0	0
	Approach	***2,148***	***2,066***	***-82***	***1.8***	***Y***	***A***	***0.4***	***0***
NB: I-85 NB Off-Ramp	Through	42	43	1	0.2	Y	A	3	0
	Approach	***42***	***43***	***1***	***0.2***	***Y***	***A***	***3.5***	***0***
Overall	**-**	**2,190**	**2,109**	**-81**	**1.7**	**Y**	**A**	**3.5**	**-**

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,976	1,980	4	0.1	Y	A	1	22
	Approach	***1,976***	***1,980***	***4***	***0.1***	***Y***	***A***	***1.0***	***22***
SB: I-85 SB Off-Ramp	Through	181	178	-3	0.2	Y	A	1	21
	Approach	***181***	***178***	***-3***	***0.2***	***Y***	***A***	***0.7***	***21***
Overall	**-**	**2,157**	**2,158**	**1**	**0.0**	**Y**	**A**	**1.0**	**-**

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,976	1,976	0	0.0	Y	A	1	132
	Approach	***1,976***	***1,976***	***0***	***0.0***	***Y***	***A***	***0.5***	***132***
SB: I-85 SB Off-Ramp	Through	84	85	1	0.1	Y	A	1	132
	Approach	***84***	***85***	***1***	***0.1***	***Y***	***A***	***1.0***	***132***
Overall	**-**	**2,060**	**2,061**	**1**	**0.0**	**Y**	**A**	**1.0**	**-**

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,795	1,765	-30	0.7	Y	A	1	0
	Approach	***1,795***	***1,765***	***-30***	***0.7***	***Y***	***A***	***0.7***	***0***
NB: I-85 NB Off-Ramp	Through	311	300	-11	0.6	Y	A	4	0
	Approach	***311***	***300***	***-11***	***0.6***	***Y***	***A***	***3.9***	***0***
Overall	**-**	**2,106**	**2,065**	**-41**	**0.9**	**Y**	**A**	**3.9**	**-**

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,795	1,762	-33	0.8	Y	A	0	0
	Approach	***1,795***	***1,762***	***-33***	***0.8***	***Y***	***A***	***0.2***	***0***
NB: I-85 NB On-Ramp	Through	87	88	1	0.1	Y	A	0	0
	Approach	***87***	***88***	***1***	***0.1***	***Y***	***A***	***0.1***	***0***
Overall	**-**	**1,882**	**1,850**	**-32**	**0.7**	**Y**	**A**	**0.2**	**-**

No Build PM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,544	4,048	-496	7.6	N	A	0	0
	Approach	***4,544***	***4,048***	***-496***	***7.6***	***N***	***A***	***0.4***	***0***
SB: I-85 SB On-Ramp	Through	103	105	2	0.2	Y	A	9	0
	Approach	***103***	***105***	***2***	***0.2***	***Y***	***A***	***8.6***	***0***
Overall	**-**	**4,647**	**4,153**	**-494**	**7.4**	**N**	**A**	**8.6**	**-**

80002: Interstate 85 at SB On-Ramp Loop									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,362	3,866	-496	7.7	N	A	1	0
	Approach	***4,362***	***3,866***	***-496***	***7.7***	***N***	***A***	***0.6***	***0***
SB: I-85 SB Off-Ramp	Through	182	184	2	0.1	Y	A	1	0
	Approach	***182***	***184***	***2***	***0.1***	***Y***	***A***	***0.6***	***0***
Overall	**-**	**4,544**	**4,050**	**-494**	**7.5**	**N**	**A**	**0.6**	**-**

80003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,362	3,877	-485	7.6	N	A	1	0
	Approach	***4,362***	***3,877***	***-485***	***7.6***	***N***	***A***	***1.5***	***0***
SB: I-85 SB Off-Ramp	Through	166	141	-25	2.0	Y	A	3	0
	Approach	***166***	***141***	***-25***	***2.0***	***Y***	***A***	***3.1***	***0***
Overall	**-**	**4,528**	**4,018**	**-510**	**7.8**	**N**	**A**	**3.1**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,450	3,648	-802	12.6	N	C	25	1,709
	Approach	***4,450***	***3,648***	***-802***	***12.6***	***N***	***C***	***24.9***	***1,709***
NB: I-85 NB Off-Ramp	Through	354	292	-62	3.4	Y	C	23	1,709
	Approach	***354***	***292***	***-62***	***3.4***	***Y***	***C***	***23.4***	***1,709***
Overall	**-**	**4,804**	**3,940**	**-864**	**13.1**	**N**	**C**	**24.9**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,450	3,651	-799	12.6	N	A	6	142
	Approach	***4,450***	***3,651***	***-799***	***12.6***	***N***	***A***	***6.0***	***142***
NB: I-85 NB On-Ramp	Through	136	138	2	0.2	Y	A	1	0
	Approach	***136***	***138***	***2***	***0.2***	***Y***	***A***	***0.9***	***0***
Overall	**-**	**4,586**	**3,789**	**-797**	**12.3**	**N**	**A**	**6.0**	**-**

82001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,507	3,720	-787	12.3	N	A	1	19
	Approach	***4,507***	***3,720***	***-787***	***12.3***	***N***	***A***	***0.8***	***19***
NB: I-85 NB Off-Ramp	Through	79	64	-15	1.8	Y	A	1	19
	Approach	***79***	***64***	***-15***	***1.8***	***Y***	***A***	***0.7***	***19***
Overall	**-**	**4,586**	**3,784**	**-802**	**12.4**	**N**	**A**	**0.8**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,223	3,775	-448	7.1	N	A	7	1,094
	Approach	***4,223***	***3,775***	***-448***	***7.1***	***N***	***A***	***6.6***	***1,094***
SB: I-85 SB Off-Ramp	Through	305	295	-10	0.6	Y	C	16	18
	Approach	***305***	***295***	***-10***	***0.6***	***Y***	***C***	***15.9***	***18***
Overall	**-**	**4,528**	**4,070**	**-458**	**7.0**	**N**	**C**	**15.9**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,223	3,786	-437	6.9	N	A	2	54
	Approach	***4,223***	***3,786***	***-437***	***6.9***	***N***	***A***	***1.9***	***54***
SB: I-85 SB Off-Ramp	Through	157	149	-8	0.6	Y	A	4	54
	Approach	***157***	***149***	***-8***	***0.6***	***Y***	***A***	***4.5***	***54***
Overall	**-**	**4,380**	**3,935**	**-445**	**6.9**	**N**	**A**	**4.5**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,115	3,399	-716	11.7	N	A	1	118
	Approach	***4,115***	***3,399***	***-716***	***11.7***	***N***	***A***	***0.8***	***118***
NB: I-85 NB Off-Ramp	Through	392	321	-71	3.8	Y	A	3	118
	Approach	***392***	***321***	***-71***	***3.8***	***Y***	***A***	***2.7***	***118***
Overall	**-**	**4,507**	**3,720**	**-787**	**12.3**	**N**	**A**	**2.7**	**-**

83004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,115	3,399	-716	11.7	N	A	1	5
	Approach	***4,115***	***3,399***	***-716***	***11.7***	***N***	***A***	***1.1***	***5***
NB: I-85 NB On-Ramp	Through	148	141	-7	0.6	Y	C	21	0
	Approach	***148***	***141***	***-7***	***0.6***	***Y***	***C***	***20.6***	***0***
Overall	**-**	**4,263**	**3,540**	**-723**	**11.6**	**N**	**C**	**20.6**	**-**

87001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,244	3,820	-424	6.7	N	A	2	0
	Approach	***4,244***	***3,820***	***-424***	***6.7***	***N***	***A***	***2.2***	***0***
SB: I-85 SB Off-Ramp	Through	136	126	-10	0.9	Y	A	3	0
	Approach	***136***	***126***	***-10***	***0.9***	***Y***	***A***	***2.9***	***0***
Overall	**-**	**4,380**	**3,946**	**-434**	**6.7**	**N**	**A**	**2.9**	**-**

87002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,244	3,825	-419	6.6	N	A	2	0
	Approach	***4,244***	***3,825***	***-419***	***6.6***	***N***	***A***	***1.6***	***0***
SB: I-85 SB Off-Ramp	Through	98	89	-9	0.9	Y	A	5	0
	Approach	***98***	***89***	***-9***	***0.9***	***Y***	***A***	***4.6***	***0***
Overall	**-**	**4,342**	**3,914**	**-428**	**6.7**	**N**	**A**	**4.6**	**-**

87003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,039	3,349	-690	11.4	N	A	1	0
	Approach	***4,039***	***3,349***	***-690***	***11.4***	***N***	***A***	***1.4***	***0***
NB: I-85 NB Off-Ramp	Through	224	191	-33	2.3	Y	A	3	0
	Approach	***224***	***191***	***-33***	***2.3***	***Y***	***A***	***2.6***	***0***
Overall	**-**	**4,263**	**3,540**	**-723**	**11.6**	**N**	**A**	**2.6**	**-**

87004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,039	3,346	-693	11.4	N	A	1	0
	Approach	***4,039***	***3,346***	***-693***	***11.4***	***N***	***A***	***0.8***	***0***
NB: I-85 NB On-Ramp	Through	97	80	-17	1.8	Y	D	27	0
	Approach	***97***	***80***	***-17***	***1.8***	***Y***	***D***	***26.9***	***0***
Overall	**-**	**4,136**	**3,426**	**-710**	**11.5**	**N**	**D**	**26.9**	**-**

90001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,602	3,526	-76	1.3	Y	A	8	1,028
	Approach	***3,602***	***3,526***	***-76***	***1.3***	***Y***	***A***	***7.6***	***1,028***
SB: I-85 SB On-Ramp	Through	740	400	-340	14.2	N	F	154	1,354
	Approach	***740***	***400***	***-340***	***14.2***	***N***	***F***	***154.4***	***1,354***
Overall	**-**	**4,342**	**3,926**	**-416**	**6.5**	**N**	**F**	**154.4**	**-**

90002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,602	3,533	-69	1.2	Y	A	3	608
	Approach	***3,602***	***3,533***	***-69***	***1.2***	***Y***	***A***	***3.1***	***608***
SB: I-85 SB Off-Ramp	Through	339	331	-8	0.4	Y	A	5	608
	Approach	***339***	***331***	***-8***	***0.4***	***Y***	***A***	***4.9***	***608***
Overall	**-**	**3,941**	**3,864**	**-77**	**1.2**	**Y**	**A**	**4.9**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,447	2,842	-605	10.8	N	A	1	440
	Approach	***3,447***	***2,842***	***-605***	***10.8***	***N***	***A***	***1.3***	***440***
NB: I-85 NB Off-Ramp	Through	689	572	-117	4.7	Y	A	1	440
	Approach	***689***	***572***	***-117***	***4.7***	***Y***	***A***	***1.4***	***440***
Overall	**-**	**4,136**	**3,414**	**-722**	**11.7**	**N**	**A**	**1.4**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday PM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,447	2,847	-600	10.7	N	A	1	0
	Approach	***3,447***	***2,847***	***-600***	***10.7***	***N***	***A***	***1.4***	***0***
NB: I-85 NB On-Ramp	Through	469	352	-117	5.8	N	C	16	5
	Approach	***469***	***352***	***-117***	***5.8***	***N***	***C***	***15.8***	***5***
Overall	**-**	**3,916**	**3,199**	**-717**	**12.0**	**N**	**C**	**15.8**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,851	3,778	-73	1.2	Y	A	2	0
	Approach	***3,851***	***3,778***	***-73***	***1.2***	***Y***	***A***	***2.4***	***0***
SB: I-85 SB Off-Ramp	Through	90	89	-1	0.1	Y	A	1	0
	Approach	***90***	***89***	***-1***	***0.1***	***Y***	***A***	***1.2***	***0***
Overall	**-**	**3,941**	**3,867**	**-74**	**1.2**	**Y**	**A**	**2.4**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,559	3,494	-65	1.1	Y	A	1	0
	Approach	***3,559***	***3,494***	***-65***	***1.1***	***Y***	***A***	***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	292	288	-4	0.2	Y	A	0	0
	Approach	***292***	***288***	***-4***	***0.2***	***Y***	***A***	***0.4***	***0***
Overall	**-**	**3,851**	**3,782**	**-69**	**1.1**	**Y**	**A**	**0.9**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,559	3,493	-66	1.1	Y	A	1	0
	Approach	***3,559***	***3,493***	***-66***	***1.1***	***Y***	***A***	***1.4***	***0***
SB: I-85 SB Off-Ramp	Through	390	384	-6	0.3	Y	A	3	0
	Approach	***390***	***384***	***-6***	***0.3***	***Y***	***A***	***3.2***	***0***
Overall	**-**	**3,949**	**3,877**	**-72**	**1.2**	**Y**	**A**	**3.2**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,516	2,880	-636	11.2	N	A	1	0
	Approach	***3,516***	***2,880***	***-636***	***11.2***	***N***	***A***	***0.8***	***0***
NB: I-85 NB Off-Ramp	Through	400	328	-72	3.8	Y	A	1	0
	Approach	***400***	***328***	***-72***	***3.8***	***Y***	***A***	***1.4***	***0***
Overall	**-**	**3,916**	**3,208**	**-708**	**11.9**	**N**	**A**	**1.4**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,516	2,881	-635	11.2	N	A	1	0
	Approach	***3,516***	***2,881***	***-635***	***11.2***	***N***	***A***	***0.9***	***0***
NB: I-85 NB On-Ramp	Through	109	104	-5	0.5	Y	A	1	0
	Approach	***109***	***104***	***-5***	***0.5***	***Y***	***A***	***1.0***	***0***
Overall	**-**	**3,625**	**2,985**	**-640**	**11.1**	**N**	**A**	**1.0**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,625	2,986	-639	11.1	N	A	1	0
	Approach	***3,625***	***2,986***	***-639***	***11.1***	***N***	***A***	***0.6***	***0***
NB: I-85 NB On-Ramp	Through	270	271	1	0.1	Y	A	0	0
	Approach	***270***	***271***	***1***	***0.1***	***Y***	***A***	***0.2***	***0***
Overall	**-**	**3,895**	**3,257**	**-638**	**10.7**	**N**	**A**	**0.6**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,728	3,111	-617	10.5	N	A	1	0
	Approach	***3,728***	***3,111***	***-617***	***10.5***	***N***	***A***	***0.9***	***0***
NB: I-85 NB Off-Ramp	Through	167	137	-30	2.4	Y	A	3	0
	Approach	***167***	***137***	***-30***	***2.4***	***Y***	***A***	***3.4***	***0***
Overall	**-**	**3,895**	**3,248**	**-647**	**10.8**	**N**	**A**	**3.4**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,791	3,716	-75	1.2	Y	A	1	99
	Approach	***3,791***	***3,716***	***-75***	***1.2***	***Y***	***A***	***1.3***	***99***
SB: I-85 SB On-Ramp	Through	158	154	-4	0.4	Y	A	7	0
	Approach	***158***	***154***	***-4***	***0.4***	***Y***	***A***	***7.3***	***0***
Overall	**-**	**3,949**	**3,870**	**-79**	**1.3**	**Y**	**A**	**7.3**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,791	3,715	-76	1.2	Y	A	1	64
	Approach	***3,791***	***3,715***	***-76***	***1.2***	***Y***	***A***	***0.8***	***64***
SB: I-85 SB Off-Ramp	Through	140	138	-2	0.2	Y	A	1	64
	Approach	***140***	***138***	***-2***	***0.2***	***Y***	***A***	***1.1***	***64***
Overall	**-**	**3,931**	**3,853**	**-78**	**1.3**	**Y**	**A**	**1.1**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,643	3,588	-55	0.9	Y	A	8	1,474
	Approach	***3,643***	***3,588***	***-55***	***0.9***	***Y***	***A***	***8.0***	***1,474***
SB: I-85 SB Off-Ramp	Through	288	269	-19	1.1	Y	C	21	325
	Approach	***288***	***269***	***-19***	***1.1***	***Y***	***C***	***21.4***	***325***
Overall	**-**	**3,931**	**3,857**	**-74**	**1.2**	**Y**	**C**	**21.4**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,643	3,597	-46	0.8	Y	A	7	1,557
	Approach	***3,643***	***3,597***	***-46***	***0.8***	***Y***	***A***	***7.1***	***1,557***
SB: I-85 SB Off-Ramp	Through	123	124	1	0.1	Y	A	7	1,557
	Approach	***123***	***124***	***1***	***0.1***	***Y***	***A***	***7.1***	***1,557***
Overall	**-**	**3,766**	**3,721**	**-45**	**0.7**	**Y**	**A**	**7.1**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,383	2,819	-564	10.1	N	A	1	0
	Approach	***3,383***	***2,819***	***-564***	***10.1***	***N***	***A***	***0.8***	***0***
NB: I-85 NB Off-Ramp	Through	345	298	-47	2.6	Y	A	2	0
	Approach	***345***	***298***	***-47***	***2.6***	***Y***	***A***	***1.6***	***0***
Overall	**-**	**3,728**	**3,117**	**-611**	**10.4**	**N**	**A**	**1.6**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,383	2,820	-563	10.1	N	A	1	0
	Approach	***3,383***	***2,820***	***-563***	***10.1***	***N***	***A***	***0.8***	***0***
NB: I-85 NB On-Ramp	Through	224	226	2	0.1	Y	A	4	0
	Approach	***224***	***226***	***2***	***0.1***	***Y***	***A***	***4.3***	***0***
Overall	**-**	**3,607**	**3,046**	**-561**	**9.7**	**N**	**A**	**4.3**	**-**

98004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,607	3,037	-570	9.9	N	A	0	0
	Approach	***3,607***	***3,037***	***-570***	***9.9***	***N***	***A***	***0.4***	***0***
NB: I-85 NB On-Ramp	Through	9	9	0	0.0	Y	B	12	51
	Approach	***9***	***9***	***0***	***0.0***	***Y***	***B***	***11.7***	***51***
Overall	**-**	**3,616**	**3,046**	**-570**	**9.9**	**N**	**B**	**11.7**	**-**

98003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,616	3,035	-581	10.1	N	A	1	0
	Approach	***3,616***	***3,035***	***-581***	***10.1***	***N***	***A***	***0.7***	***0***
NB: I-85 NB Off-Ramp	Through	10	7	-3	1.0	Y	A	4	0
	Approach	***10***	***7***	***-3***	***1.0***	***Y***	***A***	***3.9***	***0***
Overall	**-**	**3,626**	**3,042**	**-584**	**10.1**	**N**	**A**	**3.9**	**-**

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,498	3,512	14	0.2	Y	A	3	0
	Approach	***3,498***	***3,512***	***14***	***0.2***	***Y***	***A***	***3.0***	***0***
SB: I-85 SB Off-Ramp	Through	268	264	-4	0.2	Y	A	2	18
	Approach	***268***	***264***	***-4***	***0.2***	***Y***	***A***	***2.2***	***18***
Overall	**-**	**3,766**	**3,776**	**10**	**0.2**	**Y**	**A**	**3.0**	**-**

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,498	3,506	8	0.1	Y	A	2	521
	Approach	***3,498***	***3,506***	***8***	***0.1***	***Y***	***A***	***2.2***	***521***
SB: I-85 SB Off-Ramp	Through	87	85	-2	0.2	Y	A	4	521
	Approach	***87***	***85***	***-2***	***0.2***	***Y***	***A***	***3.8***	***521***
Overall	**-**	**3,585**	**3,591**	**6**	**0.1**	**Y**	**A**	**3.8**	**-**

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,392	2,838	-554	9.9	N	A	1	30
	Approach	***3,392***	***2,838***	***-554***	***9.9***	***N***	***A***	***1.0***	***30***
NB: I-85 NB Off-Ramp	Through	214	185	-29	2.1	Y	A	4	30
	Approach	***214***	***185***	***-29***	***2.1***	***Y***	***A***	***3.8***	***30***
Overall	**-**	**3,606**	**3,023**	**-583**	**10.1**	**N**	**A**	**3.8**	**-**

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday PM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,392	2,836	-556	10.0	N	A	0	0
	Approach	***3,392***	***2,836***	***-556***	***10.0***	***N***	***A***	***0.4***	***0***
NB: I-85 NB On-Ramp	Through	70	68	-2	0.2	Y	A	0	0
	Approach	***70***	***68***	***-2***	***0.2***	***Y***	***A***	***0.1***	***0***
Overall	**-**	**3,462**	**2,904**	**-558**	**9.9**	**N**	**A**	**0.4**	**-**

Build AM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,417	3,381	-36	0.6	Y		0	0
	Approach	***3,417***	***3,381***	***-36***	***0.6***	***Y***		***0.3***	***0***
SB: I-85 SB On-Ramp	Through	42	41	-1	0.2	Y		4	0
	Approach	***42***	***41***	***-1***	***0.2***	***Y***		***3.9***	***0***
Overall	**-**	**3,459**	**3,422**	**-37**	**0.6**	**Y**		**3.9**	**-**

80002: Interstate 85 at SB Off-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,951	2,931	-20	0.4	Y		0	0
	Approach	***2,951***	***2,931***	***-20***	***0.4***	***Y***		***0.5***	***0***
SB: I-85 SB Off-Ramp	Through	466	458	-8	0.4	Y		1	0
	Approach	***466***	***458***	***-8***	***0.4***	***Y***		***0.8***	***0***
Overall	**-**	**3,417**	**3,389**	**-28**	**0.5**	**Y**		**0.8**	**-**

80003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,951	2,932	-19	0.4	Y		0	0
	Approach	***2,951***	***2,932***	***-19***	***0.4***	***Y***		***0.5***	***0***
SB: I-85 SB Off-Ramp	Through	226	225	-1	0.1	Y		2	0
	Approach	***226***	***225***	***-1***	***0.1***	***Y***		***1.6***	***0***
Overall	**-**	**3,177**	**3,157**	**-20**	**0.4**	**Y**		**1.6**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,586	2,648	62	1.2	Y		0	63
	Approach	***2,586***	***2,648***	***62***	***1.2***	***Y***		***0.5***	***63***
NB: I-85 NB Off-Ramp	Through	490	428	-62	2.9	Y		1	63
	Approach	***490***	***428***	***-62***	***2.9***	***Y***		***1.3***	***63***
Overall	**-**	**3,076**	**3,076**	**0**	**0.0**	**Y**		**1.3**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,586	2,646	60	1.2	Y		0	0
	Approach	***2,586***	***2,646***	***60***	***1.2***	***Y***		***0.4***	***0***
NB: I-85 NB On-Ramp	Through	211	211	0	0.0	Y		0	0
	Approach	***211***	***211***	***0***	***0.0***	***Y***		***0.3***	***0***
Overall	**-**	**2,797**	**2,857**	**60**	**1.1**	**Y**		**0.4**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,682	2,678	-4	0.1	Y		0	0
	Approach	***2,682***	***2,678***	***-4***	***0.1***	***Y***		***0.2***	***0***
SB: I-85 SB Off-Ramp	Through	495	493	-2	0.1	Y		0	0
	Approach	***495***	***493***	***-2***	***0.1***	***Y***		***0.3***	***0***
Overall	**-**	**3,177**	**3,171**	**-6**	**0.1**	**Y**		**0.3**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,682	2,680	-2	0.0	Y		1	0
	Approach	***2,682***	***2,680***	***-2***	***0.0***	***Y***		***0.7***	***0***
SB: I-85 SB Off-Ramp	Through	106	110	4	0.4	Y		2	0
	Approach	***106***	***110***	***4***	***0.4***	***Y***		***2.0***	***0***
Overall	**-**	**2,788**	**2,790**	**2**	**0.0**	**Y**		**2.0**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,534	2,584	50	1.0	Y		0	0
	Approach	***2,534***	***2,584***	***50***	***1.0***	***Y***		***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	263	270	7	0.4	Y		3	0
	Approach	***263***	***270***	***7***	***0.4***	***Y***		***2.8***	***0***
Overall	-	**2,797**	**2,854**	**57**	**1.1**	**Y**		**2.8**	-

83004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,534	2,583	49	1.0	Y		0	0
	Approach	***2,534***	***2,583***	***49***	***1.0***	***Y***		***0.3***	***0***
NB: I-85 NB On-Ramp	Through	152	154	2	0.2	Y		0	0
	Approach	***152***	***154***	***2***	***0.2***	***Y***		***0.3***	***0***
Overall	-	**2,686**	**2,737**	**51**	**1.0**	**Y**		**0.3**	-

87001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,543	2,540	-3	0.1	Y		2	0
	Approach	***2,543***	***2,540***	***-3***	***0.1***	***Y***		***1.6***	***0***
SB: I-85 SB Off-Ramp	Through	245	248	3	0.2	Y		1	0
	Approach	***245***	***248***	***3***	***0.2***	***Y***		***0.9***	***0***
Overall	-	**2,788**	**2,788**	**0**	**0.0**	**Y**		**1.6**	-

87002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,543	2,537	-6	0.1	Y		2	0
	Approach	***2,543***	***2,537***	***-6***	***0.1***	***Y***		***2.2***	***0***
SB: I-85 SB Off-Ramp	Through	70	70	0	0.0	Y		4	0
	Approach	***70***	***70***	***0***	***0.0***	***Y***		***4.2***	***0***
Overall	-	**2,613**	**2,607**	**-6**	**0.1**	**Y**		**4.2**	-

87003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,572	2,606	34	0.7	Y		0	0
	Approach	***2,572***	***2,606***	***34***	***0.7***	***Y***		***0.3***	***0***
NB: I-85 NB Off-Ramp	Through	114	120	6	0.6	Y		1	0
	Approach	***114***	***120***	***6***	***0.6***	***Y***		***1.3***	***0***
Overall	-	**2,686**	**2,726**	**40**	**0.8**	**Y**		**1.3**	-

87004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,572	2,604	32	0.6	Y		0	0
	Approach	***2,572***	***2,604***	***32***	***0.6***	***Y***		***0.4***	***0***
NB: I-85 NB On-Ramp	Through	126	130	4	0.4	Y		0	0
	Approach	***126***	***130***	***4***	***0.4***	***Y***		***0.4***	***0***
Overall	-	**2,698**	**2,734**	**36**	**0.7**	**Y**		**0.4**	-

90001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,006	2,000	-6	0.1	Y		0	0
	Approach	***2,006***	***2,000***	***-6***	***0.1***	***Y***		***0.2***	***0***
SB: I-85 SB On-Ramp	Through	607	606	-1	0.0	Y		3	35
	Approach	***607***	***606***	***-1***	***0.0***	***Y***		***3.1***	***35***
Overall	-	**2,613**	**2,606**	**-7**	**0.1**	**Y**		**3.1**	-

90002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,006	2,002	-4	0.1	Y		1	0
	Approach	***2,006***	***2,002***	***-4***	***0.1***	***Y***		***0.7***	***0***
SB: I-85 SB Off-Ramp	Through	259	258	-1	0.1	Y		5	0
	Approach	***259***	***258***	***-1***	***0.1***	***Y***		***5.2***	***0***
Overall	-	**2,265**	**2,260**	**-5**	**0.1**	**Y**		**5.2**	-

90003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,145	2,178	33	0.7	Y		1	0
	Approach	***2,145***	***2,178***	***33***	***0.7***	***Y***		***0.7***	***0***
NB: I-85 NB Off-Ramp	Through	553	561	8	0.3	Y		5	0
	Approach	***553***	***561***	***8***	***0.3***	***Y***		***5.1***	***0***
Overall	-	**2,698**	**2,739**	**41**	**0.8**	**Y**		**5.1**	-

90004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,145	2,178	33	0.7	Y		0	0
	Approach	***2,145***	***2,178***	***33***	***0.7***	***Y***		***0.3***	***0***
NB: I-85 NB On-Ramp	Through	265	274	9	0.5	Y		1	0
	Approach	***265***	***274***	***9***	***0.5***	***Y***		***0.7***	***0***
Overall	-	**2,410**	**2,452**	**42**	**0.9**	**Y**		**0.7**	-

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,187	2,185	-2	0.0	Y		1	0
	Approach	***2,187***	***2,185***	***-2***	***0.0***	***Y***		***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	78	76	-2	0.2	Y		0	0
	Approach	***78***	***76***	***-2***	***0.2***	***Y***		***0.5***	***0***
Overall	-	**2,265**	**2,261**	**-4**	**0.1**	**Y**		**0.9**	-

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,030	2,024	-6	0.1	Y		1	6
	Approach	***2,030***	***2,024***	***-6***	***0.1***	***Y***		***1.1***	***6***
SB: I-85 SB Off-Ramp	Through	157	159	2	0.2	Y		0	0
	Approach	***157***	***159***	***2***	***0.2***	***Y***		***0.3***	***0***
Overall	-	**2,187**	**2,183**	**-4**	**0.1**	**Y**		**1.1**	-

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,030	2,022	-8	0.2	Y		2	133
	Approach	***2,030***	***2,022***	***-8***	***0.2***	***Y***		***2.4***	***133***
SB: I-85 SB Off-Ramp	Through	278	290	12	0.7	Y		6	133
	Approach	***278***	***290***	***12***	***0.7***	***Y***		***5.9***	***133***
Overall	-	**2,308**	**2,312**	**4**	**0.1**	**Y**		**5.9**	-

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,102	2,140	38	0.8	Y		0	0
	Approach	***2,102***	***2,140***	***38***	***0.8***	***Y***		***0.2***	***0***
NB: I-85 NB Off-Ramp	Through	308	306	-2	0.1	Y		1	0
	Approach	***308***	***306***	***-2***	***0.1***	***Y***		***1.2***	***0***
Overall	-	**2,410**	**2,446**	**36**	**0.7**	**Y**		**1.2**	-

92005: Interstate 85 at NB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,102	2,140	38	0.8	Y		0	0
	Approach	***2,102***	***2,140***	***38***	***0.8***	***Y***		***0.2***	***0***
NB: I-85 NB On-Ramp	Through	154	150	-4	0.3	Y		0	0
	Approach	***154***	***150***	***-4***	***0.3***	***Y***		***0.3***	***0***
Overall	-	**2,256**	**2,290**	**34**	**0.7**	**Y**		**0.3**	-

92006: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,256	2,289	33	0.7	Y		0	0
	Approach	***2,256***	***2,289***	***33***	***0.7***	***Y***		***0.3***	***0***
NB: I-85 NB On-Ramp	Through	151	150	-1	0.1	Y		0	0
	Approach	***151***	***150***	***-1***	***0.1***	***Y***		***0.4***	***0***
Overall	-	**2,407**	**2,439**	**32**	**0.7**	**Y**		**0.4**	-

95001: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,176	2,206	30	0.6	Y		0	16
	Approach	***2,176***	***2,206***	***30***	***0.6***	***Y***		***0.4***	***16***
NB: I-85 NB Off-Ramp	Through	231	230	-1	0.1	Y		0	16
	Approach	***231***	***230***	***-1***	***0.1***	***Y***		***0.4***	***16***
Overall	-	**2,407**	**2,436**	**29**	**0.6**	**Y**		**0.4**	-

95002: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,178	2,179	1	0.0	Y		0	0
	Approach	***2,178***	***2,179***	***1***	***0.0***	***Y***		***0.3***	***0***
SB: I-85 SB On-Ramp	Through	130	126	-4	0.4	Y		0	0
	Approach	***130***	***126***	***-4***	***0.4***	***Y***		***0.2***	***0***
Overall	-	**2,308**	**2,305**	**-3**	**0.1**	**Y**		**0.3**	-

95003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,178	2,184	6	0.1	Y		0	0
	Approach	***2,178***	***2,184***	***6***	***0.1***	***Y***		***0.1***	***0***
SB: I-85 SB Off-Ramp	Through	163	160	-3	0.2	Y		0	0
	Approach	***163***	***160***	***-3***	***0.2***	***Y***		***0.3***	***0***
Overall	-	**2,341**	**2,344**	**3**	**0.1**	**Y**		**0.3**	-

96001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,069	2,072	3	0.1	Y		0	0
	Approach	***2,069***	***2,072***	***3***	***0.1***	***Y***		***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	272	272	0	0.0	Y		0	0
	Approach	***272***	***272***	***0***	***0.0***	***Y***		***0.2***	***0***
Overall	-	**2,341**	**2,344**	**3**	**0.1**	**Y**		**0.3**	-

96002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	2,069	2,071	2	0.0	Y		1	29
	Approach	***2,069***	***2,071***	***2***	***0.0***	***Y***		***0.9***	***29***
SB: I-85 SB Off-Ramp	Through	88	92	4	0.4	Y		1	29
	Approach	***88***	***92***	***4***	***0.4***	***Y***		***1.1***	***29***
Overall	-	**2,157**	**2,163**	**6**	**0.1**	**Y**		**1.1**	-

96003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,030	2,038	8	0.2	Y		1	85
	Approach	***2,030***	***2,038***	***8***	***0.2***	***Y***		***0.6***	***85***
NB: I-85 NB Off-Ramp	Through	245	258	13	0.8	Y		1	85
	Approach	***245***	***258***	***13***	***0.8***	***Y***		***0.9***	***85***
Overall	-	**2,275**	**2,296**	**21**	**0.4**	**Y**		**0.9**	-

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	2,030	2,036	6	0.1	Y		1	7
	Approach	***2,030***	***2,036***	***6***	***0.1***	***Y***		***0.5***	***7***
NB: I-85 NB On-Ramp	Through	118	124	6	0.5	Y		0	0
	Approach	***118***	***124***	***6***	***0.5***	***Y***		***0.3***	***0***
Overall	-	**2,148**	**2,160**	**12**	**0.3**	**Y**		**0.5**	-

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,976	1,980	4	0.1	Y		1	6
	Approach	***1,976***	***1,980***	***4***	***0.1***	***Y***		***1.0***	***6***
SB: I-85 SB Off-Ramp	Through	181	179	-2	0.1	Y		1	21
	Approach	***181***	***179***	***-2***	***0.1***	***Y***		***0.8***	***21***
Overall	-	**2,157**	**2,159**	**2**	**0.0**	**Y**		**1.0**	-

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	1,976	1,976	0	0.0	Y		1	132
	Approach	***1,976***	***1,976***	***0***	***0.0***	***Y***		***0.5***	***132***
SB: I-85 SB Off-Ramp	Through	84	85	1	0.1	Y		1	132
	Approach	***84***	***85***	***1***	***0.1***	***Y***		***1.0***	***132***
Overall	-	**2,060**	**2,061**	**1**	**0.0**	**Y**		**1.0**	-

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,795	1,838	43	1.0	Y		1	49
	Approach	***1,795***	***1,838***	***43***	***1.0***	***Y***		***1.3***	***49***
NB: I-85 NB Off-Ramp	Through	311	313	2	0.1	Y		4	49
	Approach	***311***	***313***	***2***	***0.1***	***Y***		***4.3***	***49***
Overall	-	**2,106**	**2,151**	**45**	**1.0**	**Y**		**4.3**	-

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	1,795	1,836	41	1.0	Y		0	0
	Approach	***1,795***	***1,836***	***41***	***1.0***	***Y***		***0.3***	***0***
NB: I-85 NB On-Ramp	Through	87	88	1	0.1	Y		0	0
	Approach	***87***	***88***	***1***	***0.1***	***Y***		***0.1***	***0***
Overall	-	**1,882**	**1,924**	**42**	**1.0**	**Y**		**0.3**	-

Build PM Peak

80001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,544	4,497	-47	0.7	Y		2	19
	Approach	***4,544***	***4,497***	***-47***	***0.7***	***Y***		***2.1***	***19***
SB: I-85 SB On-Ramp	Through	103	104	1	0.1	Y		9	335
	Approach	***103***	***104***	***1***	***0.1***	***Y***		***9.4***	***335***
Overall	**-**	**4,647**	**4,601**	**-46**	**0.7**	**Y**		**9.4**	**-**

80002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,362	4,312	-50	0.8	Y		1	0
	Approach	***4,362***	***4,312***	***-50***	***0.8***	***Y***		***1.1***	***0***
SB: I-85 SB Off-Ramp	Through	182	192	10	0.7	Y		2	521
	Approach	***182***	***192***	***10***	***0.7***	***Y***		***2.2***	***521***
Overall	**-**	**4,544**	**4,504**	**-40**	**0.6**	**Y**		**2.2**	**-**

80003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,362	4,312	-50	0.8	Y		1	0
	Approach	***4,362***	***4,312***	***-50***	***0.8***	***Y***		***1.1***	***0***
SB: I-85 SB Off-Ramp	Through	166	160	-6	0.5	Y		3	109
	Approach	***166***	***160***	***-6***	***0.5***	***Y***		***2.6***	***109***
Overall	**-**	**4,528**	**4,472**	**-56**	**0.8**	**Y**		**2.6**	**-**

80004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,384	4,391	7	0.1	Y		9	0
	Approach	***4,384***	***4,391***	***7***	***0.1***	***Y***		***9.4***	***0***
NB: I-85 NB Off-Ramp	Through	420	423	3	0.1	Y		0	0
	Approach	***420***	***423***	***3***	***0.1***	***Y***		***0.4***	***0***
Overall	**-**	**4,804**	**4,814**	**10**	**0.1**	**Y**		**9.4**	**-**

80005: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,384	4,388	4	0.1	Y		1	0
	Approach	***4,384***	***4,388***	***4***	***0.1***	***Y***		***0.9***	***0***
NB: I-85 NB On-Ramp	Through	136	139	3	0.3	Y		0	0
	Approach	***136***	***139***	***3***	***0.3***	***Y***		***0.0***	***0***
Overall	**-**	**4,520**	**4,527**	**7**	**0.1**	**Y**		**0.9**	**-**

83001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,223	4,208	-15	0.2	Y		0	0
	Approach	***4,223***	***4,208***	***-15***	***0.2***	***Y***		***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	305	307	2	0.1	Y		1	0
	Approach	***305***	***307***	***2***	***0.1***	***Y***		***0.7***	***0***
Overall	**-**	**4,528**	**4,515**	**-13**	**0.2**	**Y**		**0.7**	**-**

83002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,223	4,206	-17	0.3	Y		3	109
	Approach	***4,223***	***4,206***	***-17***	***0.3***	***Y***		***2.6***	***109***
SB: I-85 SB Off-Ramp	Through	157	168	11	0.9	Y		1	0
	Approach	***157***	***168***	***11***	***0.9***	***Y***		***0.9***	***0***
Overall	**-**	**4,380**	**4,374**	**-6**	**0.1**	**Y**		**2.6**	**-**

83003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,115	4,126	11	0.2	Y		2	109
	Approach	***4,115***	***4,126***	***11***	***0.2***	***Y***		***1.7***	***109***
NB: I-85 NB Off-Ramp	Through	405	403	-2	0.1	Y		4	669
	Approach	***405***	***403***	***-2***	***0.1***	***Y***		***3.8***	***669***
Overall	-	**4,520**	**4,529**	**9**	**0.1**	**Y**		**3.8**	-

83004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,115	4,126	11	0.2	Y		3	669
	Approach	***4,115***	***4,126***	***11***	***0.2***	***Y***		***2.8***	***669***
NB: I-85 NB On-Ramp	Through	148	148	0	0.0	Y		1	0
	Approach	***148***	***148***	***0***	***0.0***	***Y***		***1.1***	***0***
Overall	-	**4,263**	**4,274**	**11**	**0.2**	**Y**		**2.8**	-

87001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,244	4,247	3	0.0	Y		0	0
	Approach	***4,244***	***4,247***	***3***	***0.0***	***Y***		***0.2***	***0***
SB: I-85 SB Off-Ramp	Through	136	138	2	0.2	Y		1	0
	Approach	***136***	***138***	***2***	***0.2***	***Y***		***1.1***	***0***
Overall	-	**4,380**	**4,385**	**5**	**0.1**	**Y**		**1.1**	-

87002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	4,244	4,248	4	0.1	Y		1	0
	Approach	***4,244***	***4,248***	***4***	***0.1***	***Y***		***1.2***	***0***
SB: I-85 SB Off-Ramp	Through	98	97	-1	0.1	Y		0	0
	Approach	***98***	***97***	***-1***	***0.1***	***Y***		***0.4***	***0***
Overall	-	**4,342**	**4,345**	**3**	**0.0**	**Y**		**1.2**	-

87003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,039	3,915	-124	2.0	Y		1	11
	Approach	***4,039***	***3,915***	***-124***	***2.0***	***Y***		***0.7***	***11***
NB: I-85 NB Off-Ramp	Through	224	222	-2	0.1	Y		1	0
	Approach	***224***	***222***	***-2***	***0.1***	***Y***		***0.6***	***0***
Overall	-	**4,263**	**4,137**	**-126**	**1.9**	**Y**		**0.7**	-

87004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	4,039	3,909	-130	2.1	Y		1	0
	Approach	***4,039***	***3,909***	***-130***	***2.1***	***Y***		***0.5***	***0***
NB: I-85 NB On-Ramp	Through	97	97	0	0.0	Y		1	11
	Approach	***97***	***97***	***0***	***0.0***	***Y***		***0.9***	***11***
Overall	-	**4,136**	**4,006**	**-130**	**2.0**	**Y**		**0.9**	-

90001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,602	3,601	-1	0.0	Y		1	0
	Approach	***3,602***	***3,601***	***-1***	***0.0***	***Y***		***0.5***	***0***
SB: I-85 SB On-Ramp	Through	740	744	4	0.1	Y		4	0
	Approach	***740***	***744***	***4***	***0.1***	***Y***		***3.5***	***0***
Overall	-	**4,342**	**4,345**	**3**	**0.0**	**Y**		**3.5**	-

90002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,602	3,603	1	0.0	Y		1	0
	Approach	***3,602***	***3,603***	***1***	***0.0***	***Y***		***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	339	336	-3	0.2	Y		5	0
	Approach	***339***	***336***	***-3***	***0.2***	***Y***		***4.5***	***0***
Overall	**-**	**3,941**	**3,939**	**-2**	**0.0**	**Y**		**4.5**	**-**

90003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,447	3,345	-102	1.8	Y		1	0
	Approach	***3,447***	***3,345***	***-102***	***1.8***	***Y***		***1.0***	***0***
NB: I-85 NB Off-Ramp	Through	689	670	-19	0.7	Y		2	0
	Approach	***689***	***670***	***-19***	***0.7***	***Y***		***1.7***	***0***
Overall	**-**	**4,136**	**4,015**	**-121**	**1.9**	**Y**		**1.7**	**-**

90004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,447	3,343	-104	1.8	Y		1	0
	Approach	***3,447***	***3,343***	***-104***	***1.8***	***Y***		***0.7***	***0***
NB: I-85 NB On-Ramp	Through	469	476	7	0.3	Y		1	0
	Approach	***469***	***476***	***7***	***0.3***	***Y***		***0.9***	***0***
Overall	**-**	**3,916**	**3,819**	**-97**	**1.6**	**Y**		**0.9**	**-**

92001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,851	3,849	-2	0.0	Y		1	0
	Approach	***3,851***	***3,849***	***-2***	***0.0***	***Y***		***0.9***	***0***
SB: I-85 SB Off-Ramp	Through	90	89	-1	0.1	Y		1	0
	Approach	***90***	***89***	***-1***	***0.1***	***Y***		***0.7***	***0***
Overall	**-**	**3,941**	**3,938**	**-3**	**0.0**	**Y**		**0.9**	**-**

92002: Interstate 85 at SB On-Ramp Loop									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,559	3,558	-1	0.0	Y		6	809
	Approach	***3,559***	***3,558***	***-1***	***0.0***	***Y***		***6.0***	***809***
SB: I-85 SB Off-Ramp	Through	292	293	1	0.1	Y		1	0
	Approach	***292***	***293***	***1***	***0.1***	***Y***		***0.6***	***0***
Overall	**-**	**3,851**	**3,851**	**0**	**0.0**	**Y**		**6.0**	**-**

92003: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,559	3,557	-2	0.0	Y		1	0
	Approach	***3,559***	***3,557***	***-2***	***0.0***	***Y***		***1.4***	***0***
SB: I-85 SB Off-Ramp	Through	390	392	2	0.1	Y		5	0
	Approach	***390***	***392***	***2***	***0.1***	***Y***		***4.7***	***0***
Overall	**-**	**3,949**	**3,949**	**0**	**0.0**	**Y**		**4.7**	**-**

92004: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,516	3,429	-87	1.5	Y		0	0
	Approach	***3,516***	***3,429***	***-87***	***1.5***	***Y***		***0.5***	***0***
NB: I-85 NB Off-Ramp	Through	400	387	-13	0.7	Y		0	0
	Approach	***400***	***387***	***-13***	***0.7***	***Y***		***0.0***	***0***
Overall	**-**	**3,916**	**3,816**	**-100**	**1.6**	**Y**		**0.5**	**-**

92005: Interstate 85 at NB On-Ramp Loop									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,516	3,428	-88	1.5	Y		1	0
	Approach	***3,516***	***3,428***	***-88***	***1.5***	***Y***		***0.7***	***0***
NB: I-85 NB On-Ramp	Through	109	105	-4	0.4	Y		1	0
	Approach	***109***	***105***	***-4***	***0.4***	***Y***		***0.5***	***0***
Overall	**-**	**3,625**	**3,533**	**-92**	**1.5**	**Y**		**0.7**	**-**

92006: Interstate 85 at NB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,625	3,531	-94	1.6	Y		1	0
	Approach	***3,625***	***3,531***	***-94***	***1.6***	***Y***		***0.7***	***0***
NB: I-85 NB On-Ramp	Through	270	271	1	0.1	Y		0	0
	Approach	***270***	***271***	***1***	***0.1***	***Y***		***0.4***	***0***
Overall	**-**	**3,895**	**3,802**	**-93**	**1.5**	**Y**		**0.7**	**-**

95001: Interstate 85 at NB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,728	3,633	-95	1.6	Y		10	0
	Approach	***3,728***	***3,633***	***-95***	***1.6***	***Y***		***9.7***	***0***
NB: I-85 NB Off-Ramp	Through	167	161	-6	0.5	Y		1	2
	Approach	***167***	***161***	***-6***	***0.5***	***Y***		***1.1***	***2***
Overall	**-**	**3,895**	**3,794**	**-101**	**1.6**	**Y**		**9.7**	**-**

95002: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,791	3,803	12	0.2	Y		0	0
	Approach	***3,791***	***3,803***	***12***	***0.2***	***Y***		***0.4***	***0***
SB: I-85 SB On-Ramp	Through	158	152	-6	0.5	Y		3	0
	Approach	***158***	***152***	***-6***	***0.5***	***Y***		***2.8***	***0***
Overall	**-**	**3,949**	**3,955**	**6**	**0.1**	**Y**		**2.8**	**-**

95003: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,791	3,802	11	0.2	Y		0	0
	Approach	***3,791***	***3,802***	***11***	***0.2***	***Y***		***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	140	142	2	0.2	Y		0	0
	Approach	***140***	***142***	***2***	***0.2***	***Y***		***0.5***	***0***
Overall	**-**	**3,931**	**3,944**	**13**	**0.2**	**Y**		**0.5**	**-**

96001: Interstate 85 at SB On-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,643	3,665	22	0.4	Y		0	0
	Approach	***3,643***	***3,665***	***22***	***0.4***	***Y***		***0.3***	***0***
SB: I-85 SB Off-Ramp	Through	288	276	-12	0.7	Y		0	0
	Approach	***288***	***276***	***-12***	***0.7***	***Y***		***0.2***	***0***
Overall	**-**	**3,931**	**3,941**	**10**	**0.2**	**Y**		**0.3**	**-**

96002: Interstate 85 at SB Off-Ramp									
Approach	**Movement**	**Weekday AM**							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,643	3,663	20	0.3	Y		0	31
	Approach	***3,643***	***3,663***	***20***	***0.3***	***Y***		***0.4***	***31***
SB: I-85 SB Off-Ramp	Through	123	125	2	0.2	Y		0	31
	Approach	***123***	***125***	***2***	***0.2***	***Y***		***0.3***	***31***
Overall	**-**	**3,766**	**3,788**	**22**	**0.4**	**Y**		**0.4**	**-**

96003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,514	3,294	-220	3.8	Y		0	0
	Approach	***3,514***	***3,294***	***-220***	***3.8***	***Y***		***0.1***	***0***
NB: I-85 NB Off-Ramp	Through	345	313	-32	1.8	Y		0	0
	Approach	***345***	***313***	***-32***	***1.8***	***Y***		***0.3***	***0***
Overall	**-**	**3,859**	**3,607**	**-252**	**4.1**	**N**		**0.3**	**-**

96004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,514	3,297	-217	3.7	Y		0	0
	Approach	***3,514***	***3,297***	***-217***	***3.7***	***Y***		***0.2***	***0***
NB: I-85 NB On-Ramp	Through	102	102	0	0.0	Y		0	0
	Approach	***102***	***102***	***0***	***0.0***	***Y***		***0.5***	***0***
Overall	**-**	**3,616**	**3,399**	**-217**	**3.7**	**Y**		**0.5**	**-**

10001: Interstate 85 at SB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,498	3,511	13	0.2	Y		6	233
	Approach	***3,498***	***3,511***	***13***	***0.2***	***Y***		***6.0***	***233***
SB: I-85 SB Off-Ramp	Through	268	267	-1	0.1	Y		9	233
	Approach	***268***	***267***	***-1***	***0.1***	***Y***		***9.2***	***233***
Overall	**-**	**3,766**	**3,778**	**12**	**0.2**	**Y**		**9.2**	**-**

10002: Interstate 85 at SB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
SB: Interstate 85	Through	3,498	3,506	8	0.1	Y		19	596
	Approach	***3,498***	***3,506***	***8***	***0.1***	***Y***		***18.6***	***596***
SB: I-85 SB Off-Ramp	Through	87	85	-2	0.2	Y		13	596
	Approach	***87***	***85***	***-2***	***0.2***	***Y***		***12.8***	***596***
Overall	**-**	**3,585**	**3,591**	**6**	**0.1**	**Y**		**18.6**	**-**

10003: Interstate 85 at NB Off-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,392	3,173	-219	3.8	Y		0	261
	Approach	***3,392***	***3,173***	***-219***	***3.8***	***Y***		***0.0***	***261***
NB: I-85 NB Off-Ramp	Through	214	207	-7	0.5	Y		23	233
	Approach	***214***	***207***	***-7***	***0.5***	***Y***		***22.7***	***233***
Overall	**-**	**3,606**	**3,380**	**-226**	**3.8**	**Y**		**22.7**	**-**

10004: Interstate 85 at NB On-Ramp									
Approach	Movement	Weekday AM							
		Input Volume	Output Volume	Difference	GEH Value	Acceptable	LOS	Delay	MaxQueue
NB: Interstate 85	Through	3,392	3,169	-223	3.9	Y		6	313
	Approach	***3,392***	***3,169***	***-223***	***3.9***	***Y***		***6.1***	***313***
NB: I-85 NB On-Ramp	Through	70	69	-1	0.1	Y		6	169
	Approach	***70***	***69***	***-1***	***0.1***	***Y***		***5.7***	***169***
Overall	**-**	**3,462**	**3,238**	**-224**	**3.9**	**Y**		**6.1**	**-**