

Phone: Fax:
E-mail:

-----Merge Analysis-----

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: US 29 Off Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

-----Freeway Data-----

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.3	mph
Volume on freeway	1133	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	125	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	2738	ft

-----Conversion to pc/h Under Base Conditions-----

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1133	125	56	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	301	33	15	v
Trucks and buses	30	0	0	%
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	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1748	133	60	pcph

Estimation of V12 Merge Areas

L

=

(Equation 13-6 or 13-7)

EQ

P

=

1.000

Using Equation

0

FM

v

=

v

(P

)

=

1748

pc/h

12

F

FM

Capacity Checks

v

FO

v or v

3

av34

Actual

1881

0

pc/h

Maximum

4800

(Equation 13-14 or 13-17)

LOS F?

No

Is v or v

3

av34

> 2700 pc/h?

No

Is v or v

3

av34

> 1.5 v /2

No

12

If yes, v

= 1748

(Equation 13-15, 13-16, 13-18, or 13-19)

12A

Flow Entering Merge Influence Area

v

R12

Actual

1881

Max Desirable

4600

Violation?

No

Level of Service Determination (if not F)

Density, D = 5.475 + 0.00734 v

R

+ 0.0078 v

12

- 0.00627 L

A

= 10.7

pc/mi/ln

Level of service for ramp-freeway junction areas of influence

B

Speed Estimation

Intermediate speed variable,

M

= 0.242

Space mean speed in ramp influence area,

S

= 63.5

mph

Space mean speed in outer lanes,

S

= N/A

mph

Space mean speed for all vehicles,

S

= 63.5

mph

Phone: Fax:
E-mail:

-----Merge Analysis-----

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Tribal Rd On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

-----Freeway Data-----

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	991	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	175	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

-----Adjacent Ramp Data (if one exists)-----

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	267	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1615	ft

-----Conversion to pc/h Under Base Conditions-----

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	991	175	267	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	264	47	71	v
Trucks and buses	30	0	0	%
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	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1529	186	284	pcph

Estimation of V12 Merge Areas

$$L = \text{(Equation 13-6 or 13-7)}$$

$$EQ$$

$$P = 1.000 \quad \text{Using Equation } 0$$

$$FM$$

$$v_{12} = v_F (P_{FM}) = 1529 \quad \text{pc/h}$$

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1715	4780	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, $v_{12A} = 1529$		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1715	4600	No

Level of Service Determination (if not F)

$$\text{Density, } D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 10.7 \quad \text{pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	$M_S = 0.253$	
Space mean speed in ramp influence area,	$S_R = 62.2$	mph
Space mean speed in outer lanes,	$S_0 = \text{N/A}$	mph
Space mean speed for all vehicles,	$S = 62.2$	mph

Phone: Fax:
E-mail:

-----Merge Analysis-----

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Tribal Rd On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

-----Freeway Data-----

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.0	mph
Volume on freeway	991	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	175	vph
Length of first accel/decel lane	1280	ft
Length of second accel/decel lane		ft

-----Adjacent Ramp Data (if one exists)-----

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	68	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	3467	ft

-----Conversion to pc/h Under Base Conditions-----

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	991	175	68	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	264	47	18	v
Trucks and buses	30	0	0	%
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	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1529	186	72	pcph

Estimation of V12 Merge Areas

$$L = \text{(Equation 13-6 or 13-7)}$$

$$EQ$$

$$P = 1.000 \quad \text{Using Equation } 0$$

$$FM$$

$$v_{12} = v_F (P_{FM}) = 1529 \quad \text{pc/h}$$

Capacity Checks

		Actual	Maximum	LOS F?
v _{FO}		1715	4780	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} = 1529			(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v _{R12}	1715	4600	No

Level of Service Determination (if not F)

$$\text{Density, } D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 10.7 \quad \text{pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	M _S = 0.253	
Space mean speed in ramp influence area,	S _R = 62.2	mph
Space mean speed in outer lanes,	S ₀ = N/A	mph
Space mean speed for all vehicles,	S = 62.2	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On Ramp to I-85 S
Jurisdiction: SCCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1098	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	68	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	68	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2352	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1098	68	68	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	292	18	18	v
Trucks and buses	30	0	0	%
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	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1694	72	72	pcph

Estimation of V12 Merge Areas

L

=

(Equation 13-6 or 13-7)

EQ

P

=

1.000

Using Equation

0

FM

v

=

v

(P

)

=

1694

pc/h

12

F

FM

Capacity Checks

v

FO

v

or v

3

av34

Actual

1766

0

pc/h

Maximum

4788

(Equation 13-14 or 13-17)

LOS F?

No

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

= 1694

(Equation 13-15, 13-16, 13-18, or 13-19)

12A

Flow Entering Merge Influence Area

v

R12

Actual

1766

Max Desirable

4600

Violation?

No

Level of Service Determination (if not F)

Density, D = 5.475 + 0.00734 v

+ 0.0078 v

- 0.00627 L

= 13.7

pc/mi/ln

R

R

12

A

Level of service for ramp-freeway junction areas of influence

B

Speed Estimation

Intermediate speed variable,

M

= 0.283

Space mean speed in ramp influence area,

S

= 61.7

mph

Space mean speed in outer lanes,

S

= N/A

mph

Space mean speed for all vehicles,

S

= 61.7

mph

Phone: Fax:
E-mail:

-----Merge Analysis-----

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Welcome Cntr On Ramp to I-85 S
Jurisdiction: SCCDOT
Analysis Year: 2015 Existing Conditions
Description:

-----Freeway Data-----

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1098	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	68	vph
Length of first accel/decel lane	875	ft
Length of second accel/decel lane		ft

-----Adjacent Ramp Data (if one exists)-----

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	75	vph
Position of adjacent Ramp	Downstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2216	ft

-----Conversion to pc/h Under Base Conditions-----

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1098	68	75	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	292	18	20	v
Trucks and buses	30	0	0	%
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	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1694	72	80	pcph

Estimation of V12 Merge Areas

$L =$ (Equation 13-6 or 13-7)
 EQ
 $P = 1.000$ Using Equation 0
 FM
 $v_{12} = v_F (P_{FM}) = 1694$ pc/h

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	1766	4788	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, $v_{12A} = 1694$		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	1766	4600	No

Level of Service Determination (if not F)

Density, $D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 13.7$ pc/mi/ln
 Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	$M_S = 0.283$	
Space mean speed in ramp influence area,	$S_R = 61.7$	mph
Space mean speed in outer lanes,	$S_0 = N/A$	mph
Space mean speed for all vehicles,	$S = 61.7$	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: SC 5 On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.4	mph
Volume on freeway	1091	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	448	vph
Length of first accel/decel lane	675	ft
Length of second accel/decel lane		ft

Adjacent Ramp Data (if one exists)

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	75	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2290	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1091	448	75	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	290	119	20	v
Trucks and buses	30	0	0	%
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	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	1683	477	80	pcph

Estimation of V12 Merge Areas

$$L = \text{(Equation 13-6 or 13-7)}$$

$$EQ$$

$$P = 1.000 \quad \text{Using Equation } 0$$

$$FM$$

$$v_{12} = v_F(P_{FM}) = 1683 \quad \text{pc/h}$$

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2160	4788	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, $v_{12A} = 1683$		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2160	4600	No

Level of Service Determination (if not F)

$$\text{Density, } D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 17.9 \quad \text{pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence B

Speed Estimation

Intermediate speed variable,	$M_S = 0.308$	
Space mean speed in ramp influence area,	$S_R = 61.0$	mph
Space mean speed in outer lanes,	$S_0 = \text{N/A}$	mph
Space mean speed for all vehicles,	$S = 61.0$	mph

Phone: Fax:
E-mail:

Merge Analysis

Analyst:
Agency/Co.: Stantec
Date performed: 11/16/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Blacksburg On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

Freeway Data

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	69.8	mph
Volume on freeway	1471	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	137	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	68	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	2560	ft

Conversion to pc/h Under Base Conditions

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1471	137	68	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	391	36	18	v
Trucks and buses	30	0	0	%
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	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2269	146	72	pcph

Estimation of V12 Merge Areas

$$L = \text{(Equation 13-6 or 13-7)}$$

$$EQ$$

$$P = 1.000 \quad \text{Using Equation } 0$$

$$FM$$

$$v_{12} = v_F (P_{FM}) = 2269 \quad \text{pc/h}$$

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2415	4796	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, $v_{12A} = 2269$		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2415	4600	No

Level of Service Determination (if not F)

$$\text{Density, } D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 21.1 \quad \text{pc/mi/ln}$$

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,	$S_R = 60.6$	mph
Space mean speed in outer lanes,	$S_0 = \text{N/A}$	mph
Space mean speed for all vehicles,	$S = 60.6$	mph

Phone: Fax:
E-mail:

_____ Merge Analysis _____

Analyst:
Agency/Co.: Stantec
Date performed: 11/9/2016
Analysis time period: 8:00AM-9:00AM
Freeway/Dir of Travel: I-85 Southbound
Junction: Shelby Hwy On Ramp to I-85 SB
Jurisdiction: SCDOT
Analysis Year: 2015 Existing Conditions
Description:

_____ Freeway Data _____

Type of analysis	Merge	
Number of lanes in freeway	2	
Free-flow speed on freeway	70.7	mph
Volume on freeway	1554	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	332	vph
Length of first accel/decel lane	365	ft
Length of second accel/decel lane		ft

_____ Adjacent Ramp Data (if one exists) _____

Does adjacent ramp exist?	Yes	
Volume on adjacent Ramp	54	vph
Position of adjacent Ramp	Upstream	
Type of adjacent Ramp	Off	
Distance to adjacent Ramp	1322	ft

_____ Conversion to pc/h Under Base Conditions _____

Junction Components	Freeway	Ramp	Adjacent Ramp	
Volume, V (vph)	1554	332	54	vph
Peak-hour factor, PHF	0.94	0.94	0.94	
Peak 15-min volume, v15	413	88	14	v
Trucks and buses	30	0	0	%
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	0.690	1.000	1.000	
Driver population factor, fP	1.00	1.00	1.00	
Flow rate, vp	2397	353	57	pcph

Estimation of V12 Merge Areas

$$L = \text{(Equation 13-6 or 13-7)}$$

$$EQ$$

$$P = 1.000 \quad \text{Using Equation } 0$$

$$FM$$

$$v_{12} = v_F (P_{FM}) = 2397 \quad \text{pc/h}$$

Capacity Checks

	Actual	Maximum	LOS F?
v_{FO}	2750	4800	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, $v_{12A} = 2397$		(Equation 13-15, 13-16, 13-18, or 13-19)	

Flow Entering Merge Influence Area

	Actual	Max Desirable	Violation?
v_{R12}	2750	4600	No

Level of Service Determination (if not F)

$$\text{Density, } D = 5.475 + 0.00734 v_R + 0.0078 v_{12} - 0.00627 L_A = 24.5 \quad \text{pc/mi/ln}$$

Level of service for ramp-freeway junction areas of influence C

Speed Estimation

Intermediate speed variable,	$M_S = 0.356$	
Space mean speed in ramp influence area,	$S_R = 60.5$	mph
Space mean speed in outer lanes,	$S_0 = N/A$	mph
Space mean speed for all vehicles,	$S = 60.5$	mph