

Phone: Fax:
E-mail:

Operational Analysis

Analyst:
Agency or Company: Stantec
Date Performed: 11/9/2016
Analysis Time Period: 2:00PM-3:00PM
Freeway/Direction: I-85 Southbound
From/To: NC 216 to US 29
Jurisdiction: SCDOT/NCDOT
Analysis Year: 2040 Build Conditions
Description:

Flow Inputs and Adjustments

Volume, V	3114	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	828	v
Trucks and buses	30	%
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	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1601	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.00	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	3.2	mi/h
Free-flow speed, FFS	70.3	mi/h

LOS and Performance Measures

Flow rate, vp	1601	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	68.1	mi/h
Number of lanes, N	3	
Density, D	23.5	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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Date Performed: 11/9/2016
Analysis Time Period: 2:00PM-3:00PM
Freeway/Direction: I-85 Southbound
From/To: US 29 to Tribal Rd
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Flow Inputs and Adjustments

Volume, V	3090	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	822	v
Trucks and buses	30	%
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	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1589	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.7	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.50	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.5	mi/h
Free-flow speed, FFS	69.0	mi/h

LOS and Performance Measures

Flow rate, vp	1589	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	68.2	mi/h
Number of lanes, N	3	
Density, D	23.3	pc/mi/ln
Level of service, LOS	C	

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Freeway/Direction: I-85 Southbound
From/To: Tribal Rd to Welcome Cntr
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Flow Inputs and Adjustments

Volume, V	3158	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	840	v
Trucks and buses	30	%
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	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1624	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1624	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	3	
Density, D	23.9	pc/mi/ln
Level of service, LOS	C	

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Date Performed: 11/9/2016
Analysis Time Period: 2:00PM-3:00PM
Freeway/Direction: I-85 Southbound
From/To: Welcome Cntr to SC 5
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Flow Inputs and Adjustments

Volume, V	3158	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	840	v
Trucks and buses	30	%
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	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1624	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.0	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1624	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.9	mi/h
Number of lanes, N	3	
Density, D	23.9	pc/mi/ln
Level of service, LOS	C	

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Date Performed: 11/9/2016
Analysis Time Period: 2:00PM-3:00PM
Freeway/Direction: I-85 Southbound
From/To: SC 5 to Blacksburg Hwy
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Flow Inputs and Adjustments

Volume, V	3323	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	884	v
Trucks and buses	30	%
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	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1709	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.2	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	1.33	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	4.1	mi/h
Free-flow speed, FFS	69.4	mi/h

LOS and Performance Measures

Flow rate, vp	1709	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	67.0	mi/h
Number of lanes, N	3	
Density, D	25.5	pc/mi/ln
Level of service, LOS	C	

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Date Performed: 11/9/2016
Analysis Time Period: 2:00PM-3:00PM
Freeway/Direction: I-85 Southbound
From/To: Blacksburg Hwy to SC 18
Jurisdiction: SCDOT
Analysis Year: 2040 Build Conditions
Description:

Flow Inputs and Adjustments

Volume, V	3588	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	954	v
Trucks and buses	30	%
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	0.690	
Driver population factor, fp	1.00	
Flow rate, vp	1845	pc/h/ln

Speed Inputs and Adjustments

Lane width	11.3	ft
Right-side lateral clearance	6.0	ft
Total ramp density, TRD	0.83	ramps/mi
Number of lanes, N	3	
Free-flow speed:	Base	
FFS or BFFS	75.4	mi/h
Lane width adjustment, fLW	1.9	mi/h
Lateral clearance adjustment, fLC	0.0	mi/h
TRD adjustment	2.8	mi/h
Free-flow speed, FFS	70.7	mi/h

LOS and Performance Measures

Flow rate, vp	1845	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	65.2	mi/h
Number of lanes, N	3	
Density, D	28.3	pc/mi/ln
Level of service, LOS	D	

Overall results are not computed when free-flow speed is less than 55 mph.