

Phone: Fax:  
E-mail:

### Operational Analysis

Analyst:  
Agency or Company: Stantec  
Date Performed: 11/9/2016  
Analysis Time Period: 8:00AM -9:00AM  
Freeway/Direction: I-85 Southbound  
From/To: NC 216 to US 29  
Jurisdiction: SCDOT/NCDOT  
Analysis Year: 2015 Existing Conditions  
Description:

### Flow Inputs and Adjustments

Volume, V	1189	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	316	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	917	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	2	
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	917	pc/h/ln
Free-flow speed, FFS	70.3	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	13.1	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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Freeway/Direction: I-85 Southbound  
From/To: US 29 to Tribal Rd  
Jurisdiction: SCDOT  
Analysis Year: 2015 Existing Conditions  
Description:

### Flow Inputs and Adjustments

Volume, V	1258	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	335	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	970	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	2	
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	970	pc/h/ln
Free-flow speed, FFS	69.0	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	13.9	pc/mi/ln
Level of service, LOS	B	

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Freeway/Direction: I-85 Southbound  
From/To: Tribal Rd to Welcome Cntr  
Jurisdiction: SCDOT  
Analysis Year: 2015 Existing Conditions  
Description:

### Flow Inputs and Adjustments

Volume, V	1166	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	310	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	899	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	2	
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	899	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.8	pc/mi/ln
Level of service, LOS	B	

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Freeway/Direction: I-85 Southbound  
From/To: Welcome Cntr to SC 5  
Jurisdiction: SCDOT  
Analysis Year: 2015 Existing Conditions  
Description:

### Flow Inputs and Adjustments

Volume, V	1166	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	310	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	899	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	2	
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	899	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	12.8	pc/mi/ln
Level of service, LOS	B	

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Freeway/Direction: I-85 Southbound  
From/To: SC 5 to Blacksburg Hwy  
Jurisdiction: SCDOT  
Analysis Year: 2015 Existing Conditions  
Description:

### Flow Inputs and Adjustments

Volume, V	1539	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	409	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	1187	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	2	
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	1187	pc/h/ln
Free-flow speed, FFS	69.4	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
Density, D	17.0	pc/mi/ln
Level of service, LOS	B	

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Freeway/Direction: I-85 Southbound  
From/To: Blacksburg Hwy to SC 18  
Jurisdiction: SCDOT  
Analysis Year: 2015 Existing Conditions  
Description:

### Flow Inputs and Adjustments

Volume, V	1608	veh/h
Peak-hour factor, PHF	0.94	
Peak 15-min volume, v15	428	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	1240	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	2	
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	1240	pc/h/ln
Free-flow speed, FFS	70.7	mi/h
Average passenger-car speed, S	70.0	mi/h
Number of lanes, N	2	
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.