

Phone: (803)254-5800

Fax: (803)929-0334

E-mail:

---

 Operational Analysis
 

---

Analyst: JP  
 Agency/Co.: Florence & Hutcheson  
 Date Performed: 9/28/2011  
 Analysis Time Period: PM  
 Freeway/Dir of Travel: I-85NB  
 Weaving Location: I-85NB CD bt Woodruff & I-385  
 Analysis Year: 2015  
 Description: I-85/I-385 Alternate 4A

---

 Inputs
 

---

Segment Type	C-D Roadway/ Multilane Highways
Weaving configuration	One-Sided
Number of lanes, N	3 ln
Weaving segment length, LS	840 ft
Freeway free-flow speed, FFS	45 mi/h
Minimum segment speed, SMIN	15 mi/h
Freeway maximum capacity, cIFL	2250 pc/h/ln
Terrain type	Level
Grade	0.00 %
Length	0.00 mi

---

 Conversion to pc/h Under Base Conditions
 

---

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	1048	670	707	348	veh/h
Peak hour factor, PHF	0.90	0.90	0.90	0.90	
Peak 15-min volume, v15	291	186	196	97	
Trucks and buses	18	18	18	18	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	1.5	1.5	1.5	1.5	
Recreational vehicle PCE, ER	1.2	1.2	1.2	1.2	
Heavy vehicle adjustment, fHV	0.917	0.917	0.917	0.917	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	1269	811	856	421	pc/h
Volume ratio, VR	0.497				

---

 Configuration Characteristics
 

---

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.00	int/mi
Minimum RF lane changes, LCRF	1	lc/pc
Minimum FR lane changes, LCFR	1	lc/pc
Minimum RR lane changes, LCRR		lc/pc
Minimum weaving lane changes, LCMIN	1667	lc/h
Weaving lane changes, LCW	1749	lc/h
Non-weaving vehicle index, INW	0	
Non-weaving lane change, LCNW	226	lc/h
Total lane changes, LCALL	1975	lc/h

---

 Weaving and Non-Weaving Speeds
 

---

Weaving intensity factor, W	0.444
-----------------------------	-------

Average weaving speed, SW	35.8	mi/h
Average non-weaving speed, SNW	27.6	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____		
Weaving segment speed, S	31.2	mi/h
Weaving segment density, D	35.9	pc/mi/ln
Level of service, LOS	D	
Weaving segment v/c ratio	0.695	
Weaving segment flow rate, v	3357	pc/h
Weaving segment capacity, cW	4434	veh/h

_____Limitations on Weaving Segments_____				
If limit reached, see note.				

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7786	840	a,b
		Maximum	Analyzed	
Density-based capacity, cIWL (pc/h/ln)		2250	1719	c
		Maximum	Analyzed	
v/c ratio		1.00	0.695	d

Notes:

- In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
- Weaving segments longer than the calculated maximum length should be treated as isolated merge and diverge areas using the procedures of Chapter 13, "Freeway Merge and Diverge Segments."
- The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
- Volumes exceed the weaving segment capacity. The level of service is F.

\_\_\_\_\_