APPENDIX P

2007 Existing Weave Analysis

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<u> </u>			FREEWA	Y WEAV	ING WOR		l			
General	Informat	ion			Site Info	rmation				
Analyst Agency/Con Date Perforr Analysis Tim	ned	TC McMa AM Pe	hon eak Hour		Weaving Seg Location Rt 12 Jurisdiction			28 NB 28 NB @ Rt 9 ting (2007)		
Inputs										
Freeway free-flow speed, S _{FF} (mi/h) 55 Weaving number of lanes, N 4 Weaving seg length, L (ft) 490 Terrain Leve			el	Weaving type Volume ratio, VR Weaving ratio, R			A 0.16 0.34			
Convers	sions to p	c/h Unde	er Base C	ondition	ıs		T	1	1	
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	f_{HV}	fp	V	
V_{o1}	7431	0.92	3	0	1.5	1.2	0.985	1.00	8198	
V_{o2}	0	0.92	3	0	1.5	1.2	0.985	1.00	0	
V_{w1}	936	0.92	3	0	1.5	1.2	0.985	1.00	1032	
V_{w2}	475	0.92	3	0	1.5	1.2	0.985	1.00	524	
$V_{\rm w}$				1556	V_{nw}		,		8198	
V					•	-			9754	
Weaving	g and No	า-Weavin	g Speeds	5						
			Unconstr	ained				strained		
		Weaving	<u>'</u>	`	ving (i = nw)	Weavii	ng (i = w)	Non-Wea	ving (= nw)	
a (Exhibit 24		0.15		<u> </u>	035					
b (Exhibit 24 c (Exhibit 24		2.20 0.97			00					
d (Exhibit 24		0.80		1.30 0.75						
		2.82			54					
Weaving and no	Weaving and non-weaving			32.73						
Maximum no	anes required fumber of lanes If Nw < Nw	for unconstrain , Nw (max)	ned operation,	Nw	1.05 1.40	if Nw > Nv	v (max) const	rained operati	on	
		· ,			f Service,		, ,			
Weaving segment speed, S (mi/h)				31.61						
Weaving segment density, D (pc/mi/ln)				77.14						
Level of service, LOS				F						
Capacity of base condition, c _b (pc/h)				6426						
Capacity as a 15-minute flow rate, c (veh/h)				6331						
Capacity as	Capacity as a full-hour volume, c _h (veh/h)				5					
E -										

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
- b. Capacity constrained by basic freeway capacity.
- c. Capacity occurs under constrained operating conditions.
- d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in
- e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.

- f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C). g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such
- h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
- i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such

			FREEWA	Y WEAV	ING WOR		Τ			
General	Informat	ion			Site Info	rmation				
Analyst Agency/Con Date Perforr Analysis Tim	ned	TC McMa AM Pe	hon eak Hour		Freeway/Dir Weaving Seg Jurisdiction Analysis Yea	g Location	Rt 128	Rt 128 SB Rt 128 SB at Rt 9 Existing (2007)		
Inputs										
Freeway free-flow speed, S _{FF} (mi/h) 55 Weaving number of lanes, N 5 Weaving seg length, L (ft) 590 Terrain Leve			el	Weaving type Volume ratio, VR Weaving ratio, R			A 0.19 0.35			
Convers	sions to p	c/h Unde	r Base C	ondition			_			
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	f_{HV}	fp	V	
V _{o1}	5808	0.92	3	0	1.5	1.2	0.985	1.00	6407	
V_{o2}	0	0.92	0	0	1.5	1.2	1.000	1.00	0	
V_{w1}	857	0.92	3	0	1.5	1.2	0.985	1.00	945	
V_{w2}	469	0.92	3	0	1.5	1.2	0.985	1.00	517	
$V_{\rm w}$	1	•		1462	V_{nw}		•	•	6407	
V	V									
Weaving	g and Nor	n-Weavin	g Speeds	3						
Unconstra				ained				trained		
		Weaving			ving (i = nw)	Weavi	ng (i = w)	ng (i = w) Non-Weavin		
a (Exhibit 24		0.15 2.20								
	- (/				00					
	c (Exhibit 24-6) 0.97			1.30 0.75				 		
	d (Exhibit 24-6) 0.80 Weaving intensity factor, Wi 1.67		0.73							
Weaving and no	n-weaving	31.8		39.62						
Maximum nu	anes required fumber of lanes If Nw < Nw	, Nw (max)	'		1.38 1.40	if Nw > No	v (max) constr	rained onerati	on	
		. ,			Service		, ,	amod operati	011	
Weaving segment speed, S (mi/h)				, Level of Service, and Capacity						
Weaving segment density, D (pc/mi/ln)				41.53						
Level of service, LOS				E						
Capacity of base condition, c _b (pc/h)				8187						
Capacity as a 15-minute flow rate, c (veh/h)				8066						
Capacity as a full-hour volume, c _h (veh/h)				7421						
				Į.						

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
- b. Capacity constrained by basic freeway capacity.
- c. Capacity occurs under constrained operating conditions.
- d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in
- e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.

- f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C). g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such
- h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
- i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such

			EDEE\A/A	\/\\\F\\	<u> </u>	WOLLEE:				
	11.6		FKEEWA	Y WEAV	/ING WOR		l			
Genera	al Informat	tion			Site Info	rmation				
Analyst Agency/Co Date Perfo Analysis T	rmed	TC McMa PM P	ahon eak Hour		Weaving Seg Location Rt Jurisdiction			: 128 NB : 128 NB @ Rt 9 xisting (2007)		
Inputs										
Freeway free-flow speed, S _{FF} (mi/h) 55 Weaving number of lanes, N 4 Weaving seg length, L (ft) 490 Terrain Leve			el	Weaving type Volume ratio Weaving ratio	, VR		A 0.17 0.48			
	rsions to p	1	1	1	ì			1		
(pc/h)	V	PHF	Truck %	RV %	E _T	E _R	f _{HV}	fp	V	
V_{o1}	6800	0.92	3	0	1.5	1.2	0.985	1.00	7502	
V_{o2}	0	0.92	3	0	1.5	1.2	0.985	1.00	0	
V_{w1}	661	0.92	3	0	1.5	1.2	0.985	1.00	729	
V_{w2}	706	0.92	3	0	1.5	1.2	0.985	1.00	778	
$V_{\rm w}$					V_{nw}				7502	
V									9009	
Weavir	ng and No	n-Weavin	g Speeds	5					'	
			Unconstr	ained				trained		
<u></u>		Weaving				Weavii	ng (i = w)	Non-Wea	ving (= nw)	
a (Exhibit 2		0.1		0.0035 4.00						
b (Exhibit 2 c (Exhibit 2		0.9		ļ	.30					
d (Exhibit 2		0.8		0.75						
_	sity factor, Wi	2.6		1.42						
Weaving and speeds, Si (m		27.3	32	33.56						
Number of	lanes required number of lanes	s, Nw (max)	'		1.07 1.40	if Nw > Nv	v (max) consti	rained operati	on	
Weavir	ng Segmei	nt Speed,	Density,	Level o	f Service,	and Cap	acity			
Weaving s	egment speed,	S (mi/h)		32.33						
Weaving segment density, D (pc/mi/ln)				69.67						
Level of service, LOS				F						
Capacity of base condition, c _b (pc/h)				6382						
Capacity as a 15-minute flow rate, c (veh/h)				6288						
Consolitions of full becoming to the first				I						

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
- b. Capacity constrained by basic freeway capacity.

Capacity as a full-hour volume, c_h (veh/h)

- c. Capacity occurs under constrained operating conditions.
- d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in
- e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.

5785

- f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C). g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such
- h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
- i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such

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Canara	lloformo		FREEWA	Y WEAV	/ING WOF		<u> </u>			
	ıl Informat				1	Site Information				
Analyst Agency/Co	mpany	TC McMa	hon		Freeway/Dir of Travel Weaving Seg Location		Rt 128 SB Rt 128 SB at Rt 9			
Date Perfo	rmed				Jurisdiction	-				
Analysis Ti	me Period	PM Pe	eak Hour		Analysis Yea	ır	Existing (2007)			
Inputs										
	ee-flow speed,		55		Weaving type	е	Α			
	umber of lanes, eg length, L (ft)		5 590		Volume ratio		0.16			
Terrain	eg lengui, L (ii)		Lev		Weaving rati	o, H	0.44			
Conver	sions to p	oc/h Unde	er Base C	ondition	ns					
(pc/h)	V	PHF	Truck %	RV %	E _T	ER	f _{HV}	fp	V	
V_{o1}	6746	0.92	3	0	1.5	1.2	0.985	1.00	7442	
V_{o2}	0	0.92	0	0	1.5	1.2	1.000	1.00	0	
V_{w1}	730	0.92	3	0	1.5	1.2	0.985	1.00	805	
V_{w2}	570	0.92	3	0	1.5	1.2	0.985	1.00	628	
$V_{\rm w}$				1433	V_{nw}				7442	
V									8875	
Weavin	ng and No	n-Weavin	g Speeds	5						
			Unconstr				trained			
- /F. de ile it 0	Weaving (i = w)							Non-Wea	ving (= nw)	
a (Exhibit 2 b (Exhibit 2		0.15 2.20			0.0035 4.00					
c (Exhibit 2		0.97			.30	 				
d (Exhibit 2		0.80		0.75						
Weaving inten		1.80)	0.89						
Weaving and non-weaving speeds, Si (mi/h) 31.10			38.80							
	lanes required		ned operation,	Nw	1.29	•				
Maximum r	number of lanes				1.40	=				
Magazin	If Nw < Nw				Comrise		v (max) consti	rained operati	on	
	ng Segme		Density,	1	Service,	and Cap	acity			
	egment speed, egment density	, ,		37.31						
	rvice, LOS	, D (рс/IIII/III)		47.58 F						
Capacity of base condition, c _h (pc/h)				8316						
Capacity as a 15-minute flow rate, c (veh/h)				8193						
One of the sea full beautiful to the season of the season				1 3.00						

- a. Weaving segments longer than 2500 ft. are treated as isolated merge and diverge areas using the procedures of Chapter 25, "Ramps and Ramp Junctions".
- b. Capacity constrained by basic freeway capacity.

Capacity as a full-hour volume, c_h (veh/h)

- c. Capacity occurs under constrained operating conditions.
- d. Three-lane Type A segments do not operate well at volume ratios greater than 0.45. Poor operations and some local queuing are expected in
- e. Four-lane Type A segments do not operate well at volume ratios greater than 0.35. Poor operations and some local queuing are expected in such cases.

7538

- f. Capacity constrained by maximum allowable weaving flow rate: 2,800 pc/h (Type A), 4,000 (Type B), 3,500 (Type C). g. Five-lane Type A segments do not operate well at volume ratios greater than 0.20. Poor operations and some local queuing are expected in such
- h. Type B weaving segments do not operate well at volume ratios greater than 0.80. Poor operations and some local queuing are expected in such cases.
- i. Type C weaving segments do not operate well at volume ratios greater than 0.50. Poor operations and some local queuing are expected in such

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