

Interstate 80 Reconstruction

FREEWAY WEAVING WORKSHEET									
General Information					Site Information				
Analyst	JRE				Freeway/Dir of Travel	I-80 Eastbound			
Agency/Company	AECOM				Weaving Segment Location	Between Ints 304 and 305			
Date Performed	1/3/2014				Analysis Year	Alt2A 2045 AM			
Analysis Time Period	A.M. Peak Hour								
Project Description <i>Interstate 80 Reconstruction</i>									
Inputs									
Weaving configuration	One-Sided				Segment type	Freeway			
Weaving number of lanes, N	4				Freeway minimum speed, S_{MIN}	15			
Weaving segment length, L_S	2223ft				Freeway maximum capacity, C_{IFL}	2300			
Freeway free-flow speed, FFS	60 mph				Terrain type	Rolling			
Conversions to pc/h Under Base Conditions									
	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	2338	0.97	10	0	2.5	2.0	0.870	1.00	2772
V_{RF}	260	0.97	2	0	2.5	2.0	0.971	1.00	276
V_{FR}	1385	0.97	2	0	2.5	2.0	0.971	1.00	1471
V_{RR}	187	0.97	10	0	2.5	2.0	0.870	1.00	2772
V_{NW}	3002							V =	4749
V_W	1747								
VR	0.368								
Configuration Characteristics									
Minimum maneuver lanes, N_{WL}	2 lc				Minimum weaving lane changes, LC_{MIN}	0 lc/h			
Interchange density, ID	0.00 int/mi				Weaving lane changes, LC_W	274 lc/h			
Minimum RF lane changes, LC_{RF}	0 lc/pc				Non-weaving lane changes, LC_{NW}	1053 lc/h			
Minimum FR lane changes, LC_{FR}	0 lc/pc				Total lane changes, LC_{ALL}	1327 lc/h			
Minimum RR lane changes, LC_{RR}	lc/pc				Non-weaving vehicle index, I_{NW}	0.150			
Weaving Segment Speed, Density, Level of Service, and Capacity									
Weaving segment flow rate, v	4749 pc/h				Weaving intensity factor, W	0.150			
Weaving segment capacity, c_w	5673 veh/h				Weaving segment speed, S	54.2 mph			
Weaving segment v/c ratio	0.728				Average weaving speed, S_W	54.1 mph			
Weaving segment density, D	21.9 pc/mi/ln				Average non-weaving speed, S_{NW}	54.3 mph			
Level of Service, LOS	C				Maximum weaving length, L_{MAX}	6323 ft			
Notes									
a. 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".									
b. For volumes that exceed the weaving segment capacity, the level of service is "F".									

Interstate 80 Reconstruction

FREEWAY WEAVING WORKSHEET									
General Information					Site Information				
Analyst	JRE				Freeway/Dir of Travel	I-80 Eastbound			
Agency/Company	AECOM				Weaving Segment Location	Between Ints 304 and 305			
Date Performed	1/3/2014				Analysis Year	Alt2A 2045 PM			
Analysis Time Period	P.M. Peak Hour								
Project Description <i>Interstate 80 Reconstruction</i>									
Inputs									
Weaving configuration	One-Sided				Segment type	Freeway			
Weaving number of lanes, N	4				Freeway minimum speed, S_{MIN}	15			
Weaving segment length, L_S	2223ft				Freeway maximum capacity, C_{IFL}	2400			
Freeway free-flow speed, FFS	70 mph				Terrain type	Rolling			
Conversions to pc/h Under Base Conditions									
	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	3190	0.97	13	0	2.5	2.0	0.837	1.00	3930
V_{RF}	363	0.97	2	0	2.5	2.0	0.971	1.00	385
V_{FR}	1273	0.97	2	0	2.5	2.0	0.971	1.00	1352
V_{RR}	172	0.97	13	0	2.5	2.0	0.837	1.00	3930
V_{NW}	4134							V =	5871
V_W	1737								
VR	0.296								
Configuration Characteristics									
Minimum maneuver lanes, N_{WL}	2 lc				Minimum weaving lane changes, LC_{MIN}	0 lc/h			
Interchange density, ID	0.00 int/mi				Weaving lane changes, LC_W	274 lc/h			
Minimum RF lane changes, LC_{RF}	0 lc/pc				Non-weaving lane changes, LC_{NW}	1286 lc/h			
Minimum FR lane changes, LC_{FR}	0 lc/pc				Total lane changes, LC_{ALL}	1560 lc/h			
Minimum RR lane changes, LC_{RR}	lc/pc				Non-weaving vehicle index, I_{NW}	0.171			
Weaving Segment Speed, Density, Level of Service, and Capacity									
Weaving segment flow rate, v	5871 pc/h				Weaving intensity factor, W	0.171			
Weaving segment capacity, c_w	6788 veh/h				Weaving segment speed, S	62.7 mph			
Weaving segment v/c ratio	0.724				Average weaving speed, S_W	62.0 mph			
Weaving segment density, D	23.4 pc/mi/ln				Average non-weaving speed, S_{NW}	63.0 mph			
Level of Service, LOS	C				Maximum weaving length, L_{MAX}	5540 ft			
Notes									
a. 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".									
b. For volumes that exceed the weaving segment capacity, the level of service is "F".									

Interstate 80 Reconstruction

FREEWAY WEAVING WORKSHEET									
General Information					Site Information				
Analyst	JRE				Freeway/Dir of Travel	I-80 Eastbound			
Agency/Company	AECOM				Weaving Segment Location	Ints. 306 to 307			
Date Performed	1/3/2014				Analysis Year	Alt2A 2045 AM			
Analysis Time Period	A.M. Peak Hour								
Project Description <i>Interstate 80 Reconstruction</i>									
Inputs									
Weaving configuration	One-Sided				Segment type	Freeway			
Weaving number of lanes, N	4				Freeway minimum speed, S_{MIN}	15			
Weaving segment length, L_S	2400ft				Freeway maximum capacity, C_{IFL}	2400			
Freeway free-flow speed, FFS	70 mph				Terrain type	Rolling			
Conversions to pc/h Under Base Conditions									
	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	3006	0.97	10	0	2.5	2.0	0.870	1.00	3564
V_{RF}	718	0.97	2	0	2.5	2.0	0.971	1.00	762
V_{FR}	543	0.97	2	0	2.5	2.0	0.971	1.00	577
V_{RR}	0	0.97	10	0	2.5	2.0	0.870	1.00	3564
V_{NW}	3564							V =	4903
V_W	1339								
VR	0.273								
Configuration Characteristics									
Minimum maneuver lanes, N_{WL}	2 lc				Minimum weaving lane changes, LC_{MIN}	0 lc/h			
Interchange density, ID	0.00 int/mi				Weaving lane changes, LC_W	286 lc/h			
Minimum RF lane changes, LC_{RF}	0 lc/pc				Non-weaving lane changes, LC_{NW}	1265 lc/h			
Minimum FR lane changes, LC_{FR}	0 lc/pc				Total lane changes, LC_{ALL}	1551 lc/h			
Minimum RR lane changes, LC_{RR}	lc/pc				Non-weaving vehicle index, I_{NW}	0.160			
Weaving Segment Speed, Density, Level of Service, and Capacity									
Weaving segment flow rate, v	4903 pc/h				Weaving intensity factor, W	0.160			
Weaving segment capacity, c_w	7576 veh/h				Weaving segment speed, S	63.6 mph			
Weaving segment v/c ratio	0.563				Average weaving speed, S_W	62.4 mph			
Weaving segment density, D	19.3 pc/mi/ln				Average non-weaving speed, S_{NW}	64.1 mph			
Level of Service, LOS	B				Maximum weaving length, L_{MAX}	5297 ft			
Notes									
a. 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".									
b. For volumes that exceed the weaving segment capacity, the level of service is "F".									

Interstate 80 Reconstruction

FREEWAY WEAVING WORKSHEET									
General Information					Site Information				
Analyst	JRE				Freeway/Dir of Travel	I-80 Eastbound			
Agency/Company	AECOM				Weaving Segment Location	Between Ints 306 and 307			
Date Performed	1/3/2014				Analysis Year	Alt2A 2045 AM			
Analysis Time Period	P.M. Peak Hour								
Project Description <i>Interstate 80 Reconstruction</i>									
Inputs									
Weaving configuration	One-Sided				Segment type	Freeway			
Weaving number of lanes, N	4				Freeway minimum speed, S_{MIN}	15			
Weaving segment length, L_S	2400ft				Freeway maximum capacity, C_{IFL}	2400			
Freeway free-flow speed, FFS	70 mph				Terrain type	Rolling			
Conversions to pc/h Under Base Conditions									
	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	3538	0.97	10	0	2.5	2.0	0.870	1.00	4195
V_{RF}	648	0.97	2	0	2.5	2.0	0.971	1.00	688
V_{FR}	558	0.97	2	0	2.5	2.0	0.971	1.00	593
V_{RR}	0	0.97	10	0	2.5	2.0	0.870	1.00	4195
V_{NW}	4195							V =	5476
V_W	1281								
VR	0.234								
Configuration Characteristics									
Minimum maneuver lanes, N_{WL}	2 lc				Minimum weaving lane changes, LC_{MIN}	0 lc/h			
Interchange density, ID	0.00 int/mi				Weaving lane changes, LC_W	286 lc/h			
Minimum RF lane changes, LC_{RF}	0 lc/pc				Non-weaving lane changes, LC_{NW}	1395 lc/h			
Minimum FR lane changes, LC_{FR}	0 lc/pc				Total lane changes, LC_{ALL}	1681 lc/h			
Minimum RR lane changes, LC_{RR}	lc/pc				Non-weaving vehicle index, I_{NW}	0.171			
Weaving Segment Speed, Density, Level of Service, and Capacity									
Weaving segment flow rate, v	5476 pc/h				Weaving intensity factor, W	0.171			
Weaving segment capacity, c_w	7687 veh/h				Weaving segment speed, S	63.1 mph			
Weaving segment v/c ratio	0.619				Average weaving speed, S_W	62.0 mph			
Weaving segment density, D	21.7 pc/mi/ln				Average non-weaving speed, S_{NW}	63.4 mph			
Level of Service, LOS	C				Maximum weaving length, L_{MAX}	4886 ft			
Notes									
a. 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".									
b. For volumes that exceed the weaving segment capacity, the level of service is "F".									

Interstate 80 Reconstruction

FREEWAY WEAVING WORKSHEET									
General Information					Site Information				
Analyst	JRE				Freeway/Dir of Travel	Int. 307 to 308 EB			
Agency/Company	AECOM				Weaving Segment Location				
Date Performed	8/1/2013				Analysis Year	All Alternatives 2045			
Analysis Time Period	A.M. Peak Hour								
Project Description <i>Interstate 80 Reconstruction</i>									
Inputs									
Weaving configuration	One-Sided				Segment type	Freeway			
Weaving number of lanes, N	4				Freeway minimum speed, S_{MIN}	15			
Weaving segment length, L_S	2800ft				Freeway maximum capacity, C_{IFL}	2400			
Freeway free-flow speed, FFS	70 mph				Terrain type	Rolling			
Conversions to pc/h Under Base Conditions									
	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	2559	0.97	13	0	2.5	2.0	0.837	0.95	3319
V_{RF}	989	0.97	10	0	2.5	2.0	0.870	0.95	1234
V_{FR}	128	0.97	2	0	2.5	2.0	0.971	0.95	143
V_{RR}	91	0.97	13	0	2.5	2.0	0.837	0.95	3319
V_{NW}	3421							V =	4798
V_W	1377								
VR	0.287								
Configuration Characteristics									
Minimum maneuver lanes, N_{WL}	2 lc				Minimum weaving lane changes, LC_{MIN}	1377 lc/h			
Interchange density, ID	1.70 int/mi				Weaving lane changes, LC_W	2068 lc/h			
Minimum RF lane changes, LC_{RF}	1 lc/pc				Non-weaving lane changes, LC_{NW}	1957 lc/h			
Minimum FR lane changes, LC_{FR}	1 lc/pc				Total lane changes, LC_{ALL}	4025 lc/h			
Minimum RR lane changes, LC_{RR}	lc/pc				Non-weaving vehicle index, I_{NW}	0.301			
Weaving Segment Speed, Density, Level of Service, and Capacity									
Weaving segment flow rate, v	4798 pc/h				Weaving intensity factor, W	0.301			
Weaving segment capacity, c_w	6648 veh/h				Weaving segment speed, S	55.1 mph			
Weaving segment v/c ratio	0.574				Average weaving speed, S_W	57.3 mph			
Weaving segment density, D	21.8 pc/mi/ln				Average non-weaving speed, S_{NW}	54.3 mph			
Level of Service, LOS	C				Maximum weaving length, L_{MAX}	5445 ft			
Notes									
a. 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".									
b. For volumes that exceed the weaving segment capacity, the level of service is "F".									

Interstate 80 Reconstruction

FREEWAY WEAVING WORKSHEET									
General Information					Site Information				
Analyst	JRE				Freeway/Dir of Travel	Int. 307 to 308 EB			
Agency/Company	AECOM				Weaving Segment Location				
Date Performed	8/1/2013				Analysis Year	All Alternatives 2045			
Analysis Time Period	P.M. Peak Hour								
Project Description <i>Interstate 80 Reconstruction</i>									
Inputs									
Weaving configuration	One-Sided				Segment type	Freeway			
Weaving number of lanes, N	4				Freeway minimum speed, S_{MIN}	15			
Weaving segment length, L_S	2800ft				Freeway maximum capacity, C_{IFL}	2400			
Freeway free-flow speed, FFS	70 mph				Terrain type	Rolling			
Conversions to pc/h Under Base Conditions									
	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	3370	0.97	13	0	2.5	2.0	0.837	0.95	4370
V_{RF}	725	0.97	10	0	2.5	2.0	0.870	0.95	905
V_{FR}	154	0.97	2	0	2.5	2.0	0.971	0.95	172
V_{RR}	110	0.97	13	0	2.5	2.0	0.837	0.95	4370
V_{NW}	4493							V =	5570
V_W	1077								
VR	0.193								
Configuration Characteristics									
Minimum maneuver lanes, N_{WL}	2 lc				Minimum weaving lane changes, LC_{MIN}	1077 lc/h			
Interchange density, ID	1.70 int/mi				Weaving lane changes, LC_W	1768 lc/h			
Minimum RF lane changes, LC_{RF}	1 lc/pc				Non-weaving lane changes, LC_{NW}	2691 lc/h			
Minimum FR lane changes, LC_{FR}	1 lc/pc				Total lane changes, LC_{ALL}	4459 lc/h			
Minimum RR lane changes, LC_{RR}	lc/pc				Non-weaving vehicle index, I_{NW}	0.326			
Weaving Segment Speed, Density, Level of Service, and Capacity									
Weaving segment flow rate, v	5570 pc/h				Weaving intensity factor, W	0.326			
Weaving segment capacity, c_w	7225 veh/h				Weaving segment speed, S	55.7 mph			
Weaving segment v/c ratio	0.613				Average weaving speed, S_W	56.5 mph			
Weaving segment density, D	25.0 pc/mi/ln				Average non-weaving speed, S_{NW}	55.6 mph			
Level of Service, LOS	C				Maximum weaving length, L_{MAX}	4468 ft			
Notes									
a. 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".									
b. For volumes that exceed the weaving segment capacity, the level of service is "F".									

Interstate 80 Reconstruction

FREEWAY WEAVING WORKSHEET									
General Information					Site Information				
Analyst	JRE				Freeway/Dir of Travel	Int. 307 to 308 EB			
Agency/Company	AECOM				Weaving Segment Location				
Date Performed	8/1/2013				Analysis Year	All Alternatives 2045			
Analysis Time Period	A.M. Peak Hour								
Project Description <i>Interstate 80 Reconstruction</i>									
Inputs									
Weaving configuration	One-Sided				Segment type	Freeway			
Weaving number of lanes, N	4				Freeway minimum speed, S_{MIN}	15			
Weaving segment length, L_S	2800ft				Freeway maximum capacity, C_{IFL}	2400			
Freeway free-flow speed, FFS	70 mph				Terrain type	Rolling			
Conversions to pc/h Under Base Conditions									
	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	2559	0.97	13	0	2.5	2.0	0.837	0.95	3319
V_{RF}	989	0.97	10	0	2.5	2.0	0.870	0.95	1234
V_{FR}	128	0.97	2	0	2.5	2.0	0.971	0.95	143
V_{RR}	91	0.97	13	0	2.5	2.0	0.837	0.95	3319
V_{NW}	3421							V =	4798
V_W	1377								
VR	0.287								
Configuration Characteristics									
Minimum maneuver lanes, N_{WL}	2 lc				Minimum weaving lane changes, LC_{MIN}	1377 lc/h			
Interchange density, ID	1.70 int/mi				Weaving lane changes, LC_W	2068 lc/h			
Minimum RF lane changes, LC_{RF}	1 lc/pc				Non-weaving lane changes, LC_{NW}	1957 lc/h			
Minimum FR lane changes, LC_{FR}	1 lc/pc				Total lane changes, LC_{ALL}	4025 lc/h			
Minimum RR lane changes, LC_{RR}	lc/pc				Non-weaving vehicle index, I_{NW}	0.301			
Weaving Segment Speed, Density, Level of Service, and Capacity									
Weaving segment flow rate, v	4798 pc/h				Weaving intensity factor, W	0.301			
Weaving segment capacity, c_w	6648 veh/h				Weaving segment speed, S	55.1 mph			
Weaving segment v/c ratio	0.574				Average weaving speed, S_W	57.3 mph			
Weaving segment density, D	21.8 pc/mi/ln				Average non-weaving speed, S_{NW}	54.3 mph			
Level of Service, LOS	C				Maximum weaving length, L_{MAX}	5445 ft			
Notes									
a. 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".									
b. For volumes that exceed the weaving segment capacity, the level of service is "F".									

Interstate 80 Reconstruction

FREEWAY WEAVING WORKSHEET									
General Information					Site Information				
Analyst	JRE				Freeway/Dir of Travel	Int. 308 to 307 WB			
Agency/Company	AECOM				Weaving Segment Location				
Date Performed	8/1/2013				Analysis Year	All Alternatives 2045			
Analysis Time Period	P.M. Peak Hour								
Project Description <i>Interstate 80 Reconstruction</i>									
Inputs									
Weaving configuration	One-Sided				Segment type	Freeway			
Weaving number of lanes, N	4				Freeway minimum speed, S_{MIN}	15			
Weaving segment length, L_S	2500ft				Freeway maximum capacity, C_{IFL}	2400			
Freeway free-flow speed, FFS	70 mph				Terrain type	Rolling			
Conversions to pc/h Under Base Conditions									
	V (veh/h)	PHF	Truck (%)	RV (%)	E_T	E_R	f_{HV}	f_p	v (pc/h)
V_{FF}	4803	0.97	13	0	2.5	2.0	0.837	0.95	6229
V_{RF}	295	0.97	2	0	2.5	2.0	0.971	0.95	330
V_{FR}	1157	0.97	10	0	2.5	2.0	0.870	0.95	1444
V_{RR}	132	0.97	13	0	2.5	2.0	0.837	0.95	6229
V_{NW}	6377							V =	8151
V_W	1774								
VR	0.218								
Configuration Characteristics									
Minimum maneuver lanes, N_{WL}	2 lc				Minimum weaving lane changes, LC_{MIN}	1774 lc/h			
Interchange density, ID	1.70 int/mi				Weaving lane changes, LC_W	2422 lc/h			
Minimum RF lane changes, LC_{RF}	1 lc/pc				Non-weaving lane changes, LC_{NW}	3111 lc/h			
Minimum FR lane changes, LC_{FR}	1 lc/pc				Total lane changes, LC_{ALL}	5533 lc/h			
Minimum RR lane changes, LC_{RR}	lc/pc				Non-weaving vehicle index, I_{NW}	0.423			
Weaving Segment Speed, Density, Level of Service, and Capacity									
Weaving segment flow rate, v	8151 pc/h				Weaving intensity factor, W	0.423			
Weaving segment capacity, c_w	7091 veh/h				Weaving segment speed, S	48.7 mph			
Weaving segment v/c ratio	0.914				Average weaving speed, S_W	53.7 mph			
Weaving segment density, D	41.9 pc/mi/ln				Average non-weaving speed, S_{NW}	47.4 mph			
Level of Service, LOS	E				Maximum weaving length, L_{MAX}	4717 ft			
Notes									
a. 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".									
b. For volumes that exceed the weaving segment capacity, the level of service is "F".									