

Appendix H

Weave Analysis

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-----Operational Analysis-----

Analyst:
Agency/Co.: Qk4
Date Performed: 4/10/2014
Analysis Time Period: AM Design Hour
Freeway/Dir of Travel: ETB Parkway Northbound
Weaving Location: KY 1682
Analysis Year: 2013 Existing
Description: Edward T Breathitt Pkwy Interstate 69 Upgrade

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	300	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2200*	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	180	80	310	0	veh/h
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	50	22	86	0	
Trucks and buses	15	10	10	0	%
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	0.930	0.952	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	215	93	362	0	pc/h
Volume ratio, VR		0.679			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.3	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	455	lc/h
Weaving lane changes, LCW	455	lc/h
Non-weaving vehicle index, INW	2	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	455	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.314
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Average weaving speed, SW	56.9	mi/h
Average non-weaving speed, SNW	65.7	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	59.4	mi/h
Weaving segment density, D	3.8	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.190	
Weaving segment flow rate, v	624	veh/h
Weaving segment capacity, cW	3288	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	9994	300	a,b
Density-based capacity, cIWL (pc/h/ln)		2200*	1458	c
v/c ratio		1.00	0.190	d

Notes:

- a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
- b. 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."
- c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
- d. Volumes exceed the weaving segment capacity. The level of service is F.

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-----Operational Analysis-----

Analyst:
Agency/Co.: Qk4
Date Performed: 4/10/2014
Analysis Time Period: AM Design Hour
Freeway/Dir of Travel: ETB Parkway Northbound
Weaving Location: KY 1682
Analysis Year: 2040 No Build
Description: Edward T Breathitt Pkwy Interstate 69 Upgrade

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	300	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2200*	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

-----Conversion to pc/h Under Base Conditions-----

	Volume Components				veh/h
	VFF	VRF	VFR	VRR	
Volume, V	240	100	410	0	
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	67	28	114	0	
Trucks and buses	18	14	14	0	%
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	0.935	0.935	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	291	119	487	0	pc/h
Volume ratio, VR		0.676			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.3	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	606	lc/h
Weaving lane changes, LCW	606	lc/h
Non-weaving vehicle index, INW	3	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	606	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.394
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Average weaving speed, SW	54.5	mi/h
Average non-weaving speed, SNW	64.2	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	57.3	mi/h
Weaving segment density, D	5.2	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.253	
Weaving segment flow rate, v	823	veh/h
Weaving segment capacity, cW	3259	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	9950	300	a,b
Density-based capacity, cIWL (pc/h/ln)		2200*	1462	c
v/c ratio		1.00	0.253	d

Notes:

- a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
- b. 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."
- c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
- d. Volumes exceed the weaving segment capacity. The level of service is F.

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-----Operational Analysis-----

Analyst:
Agency/Co.: Qk4
Date Performed: 4/10/2014
Analysis Time Period: PM Design Hour
Freeway/Dir of Travel: ETB Parkway Northbound
Weaving Location: KY 1682
Analysis Year: 2013 Existing
Description: Edward T Breathitt Pkwy Interstate 69 Upgrade

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	300	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2200*	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	470	80	310	0	veh/h
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	131	22	86	0	
Trucks and buses	15	10	10	0	%
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	0.930	0.952	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	561	93	362	0	pc/h
Volume ratio, VR		0.448			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.3	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	455	lc/h
Weaving lane changes, LCW	455	lc/h
Non-weaving vehicle index, INW	5	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	455	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.314
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Average weaving speed, SW	56.9	mi/h
Average non-weaving speed, SNW	65.1	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	61.1	mi/h
Weaving segment density, D	5.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.203	
Weaving segment flow rate, v	946	veh/h
Weaving segment capacity, cW	4660	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7223	300	a,b
Density-based capacity, cIWL (pc/h/ln)		2200*	1670	c
v/c ratio		1.00	0.203	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.

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-----Operational Analysis-----

Analyst:
Agency/Co.: Qk4
Date Performed: 4/10/2014
Analysis Time Period: PM Design Hour
Freeway/Dir of Travel: ETB Parkway Northbound
Weaving Location: KY 1682
Analysis Year: 2040 No Build
Description: Edward T Breathitt Pkwy Interstate 69 Upgrade

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	300	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2200*	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

-----Conversion to pc/h Under Base Conditions-----

	Volume Components				veh/h
	VFF	VRF	VFR	VRR	
Volume, V	610	100	410	0	
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	169	28	114	0	
Trucks and buses	18	14	14	0	%
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	0.935	0.935	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	739	119	487	0	pc/h
Volume ratio, VR		0.451			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.3	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	606	lc/h
Weaving lane changes, LCW	606	lc/h
Non-weaving vehicle index, INW	7	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	606	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.394
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Average weaving speed, SW	54.5	mi/h
Average non-weaving speed, SNW	63.5	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	59.1	mi/h
Weaving segment density, D	7.6	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.269	
Weaving segment flow rate, v	1234	veh/h
Weaving segment capacity, cW	4591	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7254	300	a,b
Density-based capacity, cIWL (pc/h/ln)		2200*	1668	c
v/c ratio		1.00	0.269	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.

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-----Operational Analysis-----

Analyst:
Agency/Co.: Qk4
Date Performed: 4/10/2014
Analysis Time Period: AM Design Hour
Freeway/Dir of Travel: ETB Parkway Southbound
Weaving Location: KY 1682
Analysis Year: 2013 Existing
Description: Edward T Breathitt Pkwy Interstate 69 Upgrade

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	300	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2200*	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

-----Conversion to pc/h Under Base Conditions-----

	Volume Components				veh/h
	VFF	VRF	VFR	VRR	
Volume, V	390	320	60	0	
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	108	89	17	0	
Trucks and buses	15	10	10	0	%
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	0.930	0.952	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	466	373	70	0	pc/h
Volume ratio, VR		0.487			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.3	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	443	lc/h
Weaving lane changes, LCW	443	lc/h
Non-weaving vehicle index, INW	4	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	443	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.307
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Average weaving speed, SW	57.1	mi/h
Average non-weaving speed, SNW	65.4	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	61.0	mi/h
Weaving segment density, D	5.0	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.185	
Weaving segment flow rate, v	846	veh/h
Weaving segment capacity, cW	4563	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7679	300	a,b
Density-based capacity, cIWL (pc/h/ln)		2200*	1635	c
v/c ratio		1.00	0.185	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.

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-----Operational Analysis-----

Analyst:
Agency/Co.: Qk4
Date Performed: 4/10/2014
Analysis Time Period: AM Design Hour
Freeway/Dir of Travel: ETB Parkway Southbound
Weaving Location: KY 1682
Analysis Year: 2040 No Build
Description: Edward T Breathitt Pkwy Interstate 69 Upgrade

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	300	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2200*	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

-----Conversion to pc/h Under Base Conditions-----

	Volume Components				veh/h
	VFF	VRF	VFR	VRR	
Volume, V	490	420	80	0	
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	136	117	22	0	
Trucks and buses	18	14	14	0	%
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	0.935	0.935	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	593	499	95	0	pc/h
Volume ratio, VR		0.500			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.3	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	594	lc/h
Weaving lane changes, LCW	594	lc/h
Non-weaving vehicle index, INW	5	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	594	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.387
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Average weaving speed, SW	54.6	mi/h
Average non-weaving speed, SNW	63.8	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	58.9	mi/h
Weaving segment density, D	6.7	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.247	
Weaving segment flow rate, v	1089	veh/h
Weaving segment capacity, cW	4400	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	7831	300	a,b
Density-based capacity, cIWL (pc/h/ln)		Maximum 2200*	Analyzed 1624	c
v/c ratio		Maximum 1.00	Analyzed 0.247	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.

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-----Operational Analysis-----

Analyst:
 Agency/Co.: Qk4
 Date Performed: 4/10/2014
 Analysis Time Period: PM Design Hour
 Freeway/Dir of Travel: ETB Parkway Southbound
 Weaving Location: KY 1682
 Analysis Year: 2013 Existing
 Description: Edward T Breathitt Pkwy Interstate 69 Upgrade

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	300	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2200*	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

-----Conversion to pc/h Under Base Conditions-----

	Volume Components				veh/h
	VFF	VRF	VFR	VRR	
Volume, V	310	320	60	0	
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	86	89	17	0	
Trucks and buses	15	10	10	0	%
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	0.930	0.952	0.952	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	370	373	70	0	pc/h
Volume ratio, VR		0.545			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.3	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	443	lc/h
Weaving lane changes, LCW	443	lc/h
Non-weaving vehicle index, INW	3	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	443	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.307
-----------------------------	-------

Average weaving speed, SW	57.1	mi/h
Average non-weaving speed, SNW	65.5	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	60.6	mi/h
Weaving segment density, D	4.5	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.185	
Weaving segment flow rate, v	757	veh/h
Weaving segment capacity, cW	4097	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8356	300	a,b
Density-based capacity, cIWL (pc/h/ln)		2200*	1584	c
v/c ratio		1.00	0.185	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.

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-----Operational Analysis-----

Analyst:
Agency/Co.: Qk4
Date Performed: 4/10/2014
Analysis Time Period: PM Design Hour
Freeway/Dir of Travel: ETB Parkway Southbound
Weaving Location: KY 1682
Analysis Year: 2040 No Build
Description: Edward T Breathitt Pkwy Interstate 69 Upgrade

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	3	ln
Weaving segment length, LS	300	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	15	mi/h
Freeway maximum capacity, cIFL	2200*	pc/h/ln
Terrain type	Level	
Grade	0.00	%
Length	0.00	mi

-----Conversion to pc/h Under Base Conditions-----

	Volume Components				veh/h
	VFF	VRF	VFR	VRR	
Volume, V	390	420	80	0	
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	108	117	22	0	
Trucks and buses	18	14	14	0	%
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	0.935	0.935	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	472	499	95	0	pc/h
Volume ratio, VR		0.557			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	0.3	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	594	lc/h
Weaving lane changes, LCW	594	lc/h
Non-weaving vehicle index, INW	4	
Non-weaving lane change, LCNW	0	lc/h
Total lane changes, LCALL	594	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.387
-----------------------------	-------

Average weaving speed, SW	54.6	mi/h
Average non-weaving speed, SNW	64.0	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	58.4	mi/h
Weaving segment density, D	6.1	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.248	
Weaving segment flow rate, v	978	veh/h
Weaving segment capacity, cW	3951	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	8503	300	a,b
Density-based capacity, cIWL (pc/h/ln)		2200*	1572	c
v/c ratio		1.00	0.248	d

Notes:

- a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
- b. 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."
- c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
- d. Volumes exceed the weaving segment capacity. The level of service is F.

Phone:
E-mail:

Fax:

-----Operational Analysis-----

Analyst: JJJ
 Agency/Co.: Qk4
 Date Performed: 9/2/2014
 Analysis Time Period: Design Hour
 Freeway/Dir of Travel: ETB Parkway
 Weaving Location: US 62 to I69
 Analysis Year: 2040
 Description:

-----Inputs-----

Segment Type	Freeway	
Weaving configuration	One-Sided	
Number of lanes, N	2	ln
Weaving segment length, LS	4350	ft
Freeway free-flow speed, FFS	70	mi/h
Minimum segment speed, SMIN	60	mi/h
Freeway maximum capacity, cIFL	2400	pc/h/ln
Terrain type	Rolling	
Grade		%
Length		mi

-----Conversion to pc/h Under Base Conditions-----

	Volume Components				
	VFF	VRF	VFR	VRR	
Volume, V	540	90	210	0	veh/h
Peak hour factor, PHF	0.90	0.90	0.90	0.94	
Peak 15-min volume, v15	150	25	58	0	
Trucks and buses	18	18	18	0	%
Recreational vehicles	0	0	0	0	%
Trucks and buses PCE, ET	2.5	2.5	2.5	2.5	
Recreational vehicle PCE, ER	2.0	2.0	2.0	2.0	
Heavy vehicle adjustment, fHV	0.787	0.787	0.787	1.000	
Driver population adjustment, fP	1.00	1.00	1.00	1.00	
Flow rate, v	762	127	296	0	pc/h
Volume ratio, VR		0.357			

-----Configuration Characteristics-----

Number of maneuver lanes, NWL	2	ln
Interchange density, ID	1.0	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	423	lc/h
Weaving lane changes, LCW	596	lc/h
Non-weaving vehicle index, INW	331	
Non-weaving lane change, LCNW	2129	lc/h
Total lane changes, LCALL	2725	lc/h

-----Weaving and Non-Weaving Speeds-----

Weaving intensity factor, W	0.156
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Average weaving speed, SW	68.6	mi/h
Average non-weaving speed, SNW	64.1	mi/h

_____Weaving Segment Speed, Density, Level of Service and Capacity_____

Weaving segment speed, S	65.7	mi/h
Weaving segment density, D	9.0	pc/mi/ln
Level of service, LOS	A	
Weaving segment v/c ratio	0.262	
Weaving segment flow rate, v	934	veh/h
Weaving segment capacity, cW	3556	veh/h

_____Limitations on Weaving Segments_____

If limit reached, see note.

	Minimum	Maximum	Actual	Note
Weaving length (ft)	300	6203	4350	a,b
Density-based capacity, cIWL (pc/h/ln)		2400	2258	c
v/c ratio		1.00	0.262	d

Notes:

- a. In weaving segments shorter than 300 ft, weaving vehicles are assumed to make only necessary lane changes.
- b. 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."
- c. The density-based capacity exceeds the capacity of a basic freeway segment, under equivalent ideal conditions.
- d. Volumes exceed the weaving segment capacity. The level of service is F.
