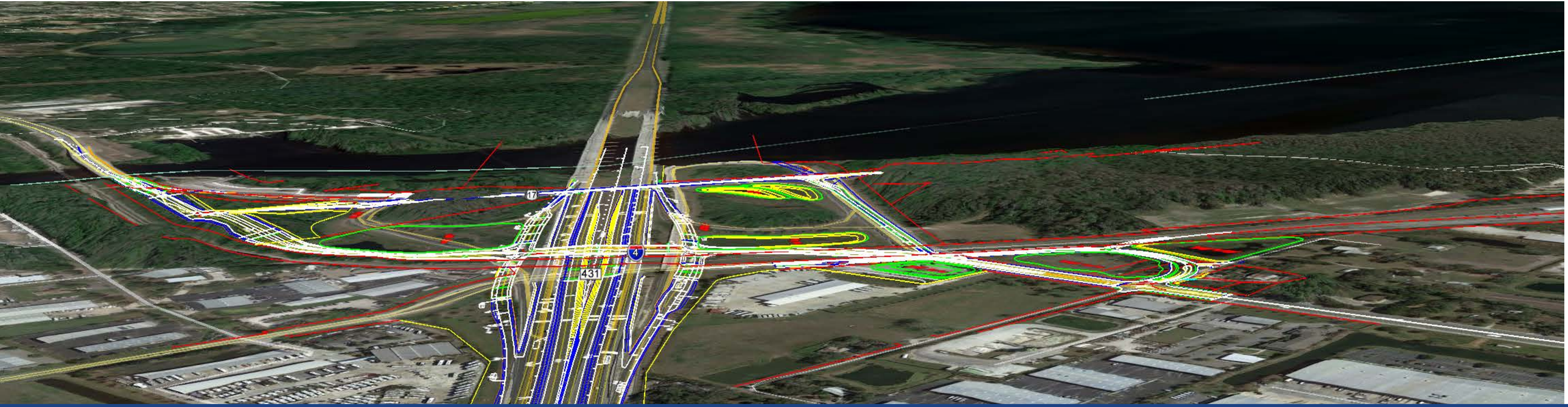
FREEVAL APPLICATION IN FLORIDA

FSITE ANNUAL MEETING
NOVEMBER 2, 2017

OUTLINE

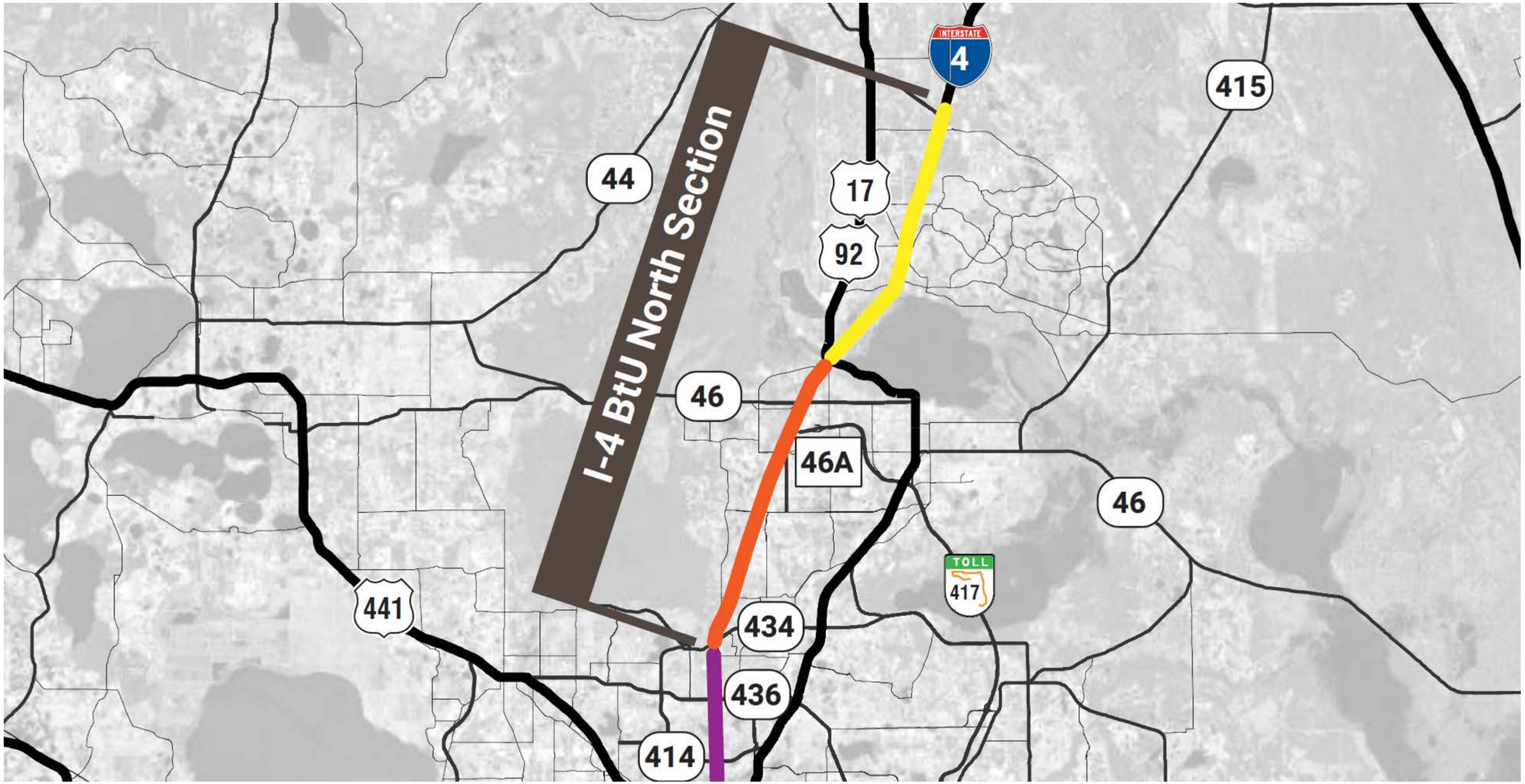
- I-4 BtU Segment 3 - Introduction
- FREEVAL Background
- HCM 6th Edition & Managed Lanes
- I-4 BtU Segment 3 - Express Lane Transition Analysis
- Questions/Answers



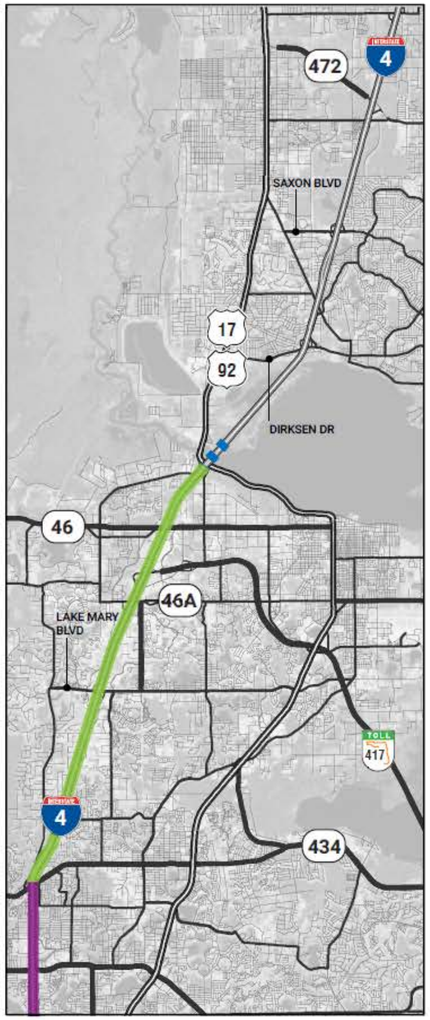
EXPRESS LANE TRANSITION ANALYSIS

I-4 BTU SEGMENT 3

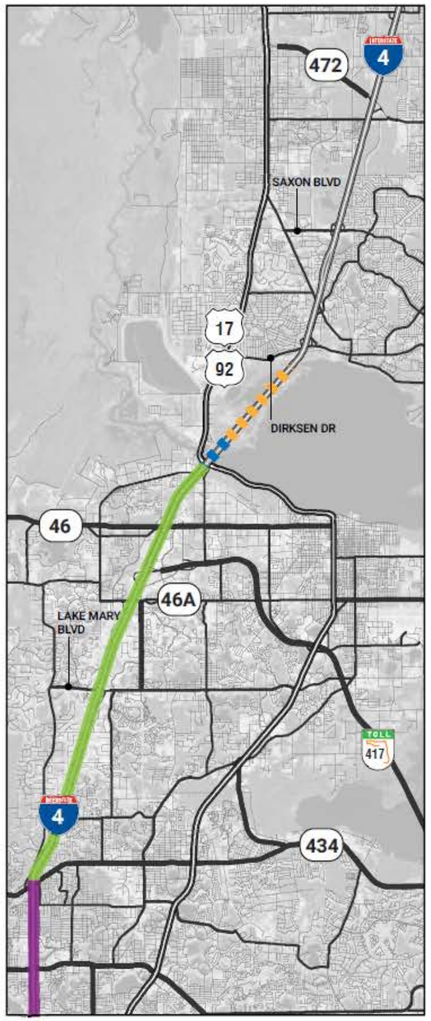
I-4 BEYOND THE ULTIMATE – SEGMENT 3



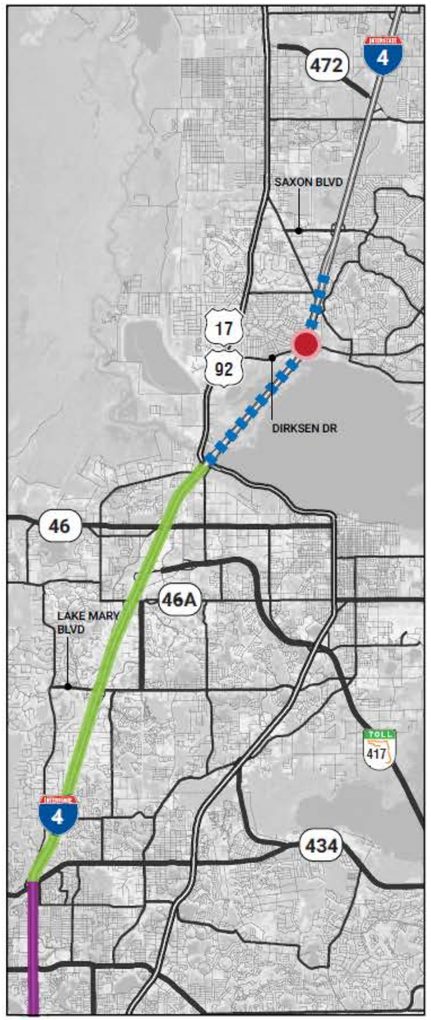
I-4 BTU SEGMENT 3 – TRANSITION ALTERNATIVES



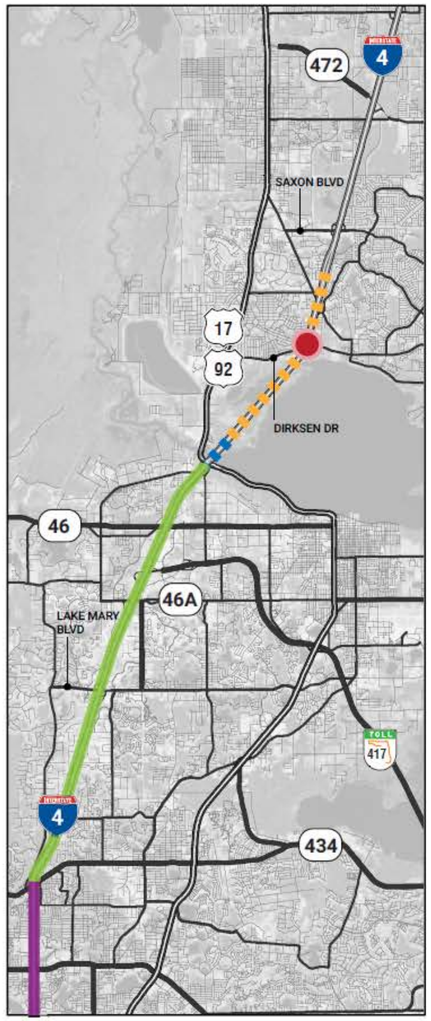
BUILD A



BUILD B



BUILD C



BUILD D

LEGEND

- I-4 ULTIMATE LIMITS
- I-4 BtU SEGMENT 3 LIMITS
- EB EXPRESS LANE TRANSITION
- EB HARD SHOULDER LIMITS
- INTERCHANGE IMPROVEMENT

FREEVAL BACKGROUND

FREEVAL

Implements HCM 6th Edition Freeway Facility Methodology

- Oversaturated conditions
- System impacts of congestion and queuing

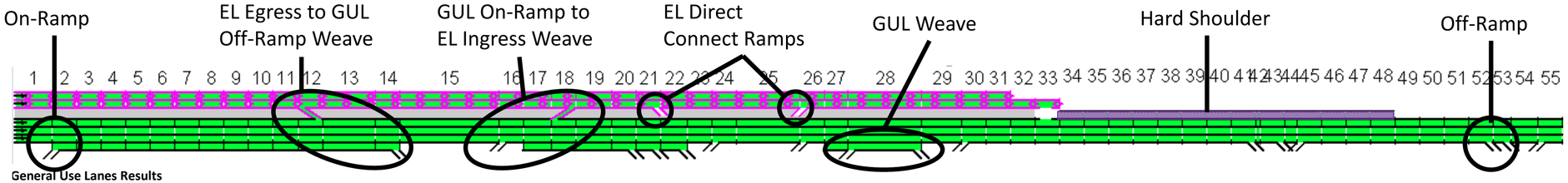
Rapid scenario analysis

- Volume scenarios
- Mitigation scenarios (e.g., hard shoulder running)

Evaluates general use lanes (GULs) and managed lanes (MLs)

- Basic freeway, merge, diverge, weave segments

FREEVAL



General Use Lanes Results

D/C Contours

D/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg.
#1 15:45 - 16:00	0.70	0.83	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.76	0.74	0.91	0.66	1.03	0.67	0.68	0.65	0.78	0.50	0.42	0.29	0.58	0.50	0.77	0.51	0.81	0.68	0.91	0.80	0.80	0.90	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.69	0.69	0.67	0.71	0.71	0.71	0.79	0.89	0.89	0.89	1.02	0.8
#2 16:00 - 16:15	0.72	0.85	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.78	0.76	0.94	0.67	1.06	0.69	0.70	0.67	0.80	0.52	0.43	0.30	0.59	0.52	0.79	0.52	0.83	0.70	0.94	0.82	0.82	0.93	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.71	0.71	0.69	0.73	0.73	0.73	0.82	0.92	0.92	0.92	1.05	0.9
#3 16:15 - 16:30	0.73	0.87	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.80	0.78	0.95	0.69	1.08	0.71	0.72	0.68	0.81	0.53	0.44	0.31	0.60	0.53	0.81	0.53	0.85	0.71	0.95	0.83	0.83	0.95	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.73	0.73	0.71	0.75	0.75	0.75	0.83	0.93	0.93	0.93	1.07	0.9
#4 16:30 - 16:45	0.74	0.87	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.80	0.78	0.96	0.69	1.09	0.71	0.72	0.68	0.82	0.53	0.45	0.31	0.61	0.53	0.82	0.53	0.85	0.71	0.96	0.84	0.84	0.96	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.73	0.73	0.71	0.75	0.75	0.75	0.84	0.94	0.94	0.94	1.08	0.9
#5 16:45 - 17:00	0.74	0.87	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.80	0.78	0.96	0.69	1.09	0.71	0.72	0.68	0.82	0.53	0.45	0.31	0.61	0.53	0.82	0.54	0.86	0.71	0.96	0.84	0.84	0.96	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.73	0.73	0.71	0.75	0.75	0.75	0.84	0.94	0.94	0.94	1.08	0.9
#6 17:00 - 17:15	0.73	0.86	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.79	0.77	0.95	0.68	1.07	0.70	0.71	0.67	0.81	0.52	0.44	0.31	0.60	0.53	0.80	0.53	0.84	0.70	0.95	0.83	0.83	0.94	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.72	0.72	0.70	0.74	0.74	0.74	0.83	0.93	0.93	0.93	1.06	0.9
#7 17:15 - 17:30	0.70	0.83	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.76	0.74	0.92	0.66	1.03	0.68	0.69	0.65	0.78	0.50	0.42	0.30	0.58	0.51	0.78	0.51	0.81	0.68	0.92	0.80	0.80	0.91	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.70	0.70	0.68	0.72	0.72	0.72	0.80	0.90	0.90	0.90	1.03	0.9
#8 17:30 - 17:45	0.67	0.80	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.73	0.71	0.88	0.63	0.99	0.65	0.66	0.62	0.75	0.48	0.41	0.28	0.56	0.49	0.75	0.49	0.78	0.65	0.88	0.77	0.77	0.87	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.67	0.67	0.65	0.69	0.69	0.69	0.77	0.86	0.86	0.86	0.98	0.8
#9 17:45 - 18:00	0.64	0.75	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.69	0.67	0.83	0.60	0.93	0.61	0.62	0.59	0.71	0.46	0.38	0.27	0.52	0.46	0.70	0.46	0.74	0.61	0.83	0.72	0.72	0.82	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.63	0.63	0.61	0.65	0.65	0.65	0.72	0.81	0.81	0.81	0.93	0.8
#10 18:00 - 18:15	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.76	0.55	0.86	0.56	0.57	0.54	0.65	0.42	0.36	0.25	0.49	0.42	0.65	0.43	0.68	0.57	0.77	0.67	0.67	0.76	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.58	0.58	0.57	0.60	0.60	0.60	0.67	0.75	0.75	0.75	0.86	0.7
#11 18:15 - 18:30	0.55	0.65	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.59	0.58	0.71	0.51	0.80	0.52	0.53	0.51	0.61	0.39	0.33	0.23	0.45	0.39	0.60	0.40	0.63	0.53	0.71	0.62	0.62	0.70	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.54	0.54	0.53	0.56	0.56	0.56	0.62	0.70	0.70	0.70	0.80	0.7
#12 18:30 - 18:45	0.50	0.59	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.49	0.53	0.52	0.64	0.47	0.72	0.48	0.48	0.46	0.55	0.36	0.30	0.21	0.41	0.36	0.55	0.36	0.57	0.48	0.65	0.57	0.57	0.64	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.49	0.49	0.48	0.51	0.51	0.51	0.56	0.63	0.63	0.63	0.72	0.6

Speed Contours

Speed Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg.
#1 15:45 - 16:00	67.3	57.4	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	67.6	59.6	66.1	50.7	68.4	46.3	68.2	62.0	68.8	61.2	66.7	66.6	69.7	63.9	69.9	62.	69.3	56.6	68.1	53.9	64.3	64.3	49.8	58.0	58.0	58.0	58.0	58.0	58.0	58.0	58.0	66.5	65.6	67.1	64.2	65.9	65.9	38.8	35.3	31.1	27.7	52.0	59
#2 16:00 - 16:15	66.8	55.9	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	67.1	59.3	65.3	48.5	68.0	46.3	68.2	61.8	68.8	61.0	66.7	66.6	69.7	63.8	69.9	61.	69.2	56.3	67.7	52.5	63.6	63.6	49.2	56.7	56.7	56.7	56.7	56.7	56.7	56.7	56.7	66.0	65.5	66.6	64.0	35.2	18.7	17.2	26.5	26.4	26.4	52.1	59
#3 16:15 - 16:30	66.4	54.8	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	66.7	59.2	64.8	47.1	67.7	46.3	68.2	61.7	68.7	60.9	66.7	66.5	69.7	63.8	69.9	60.	69.2	56.1	67.5	51.5	51.5	49.3	44.1	37.6	37.4	37.6	38.5	39.4	39.0	40.3	47.8	38.8	41.3	35.3	26.9	16.8	16.0	17.0	26.5	26.4	26.4	52.1	59
#4 16:30 - 16:45	66.2	54.4	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	66.6	59.1	64.6	46.5	67.5	46.3	68.2	61.6	68.7	60.9	66.7	66.5	69.7	63.8	69.9	60.	53.5	45.3	20.6	36.1	47.2	42.2	46.0	30.2	30.8	32.9	33.7	34.5	35.4	36.0	40.8	34.7	35.7	28.3	21.7	17.1	15.8	17.3	26.9	26.5	26.4	52.1	59
#5 16:45 - 17:00	66.2	54.3	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	66.5	59.1	64.5	46.3	67.5	46.3	68.2	61.6	68.7	60.9	66.7	66.5	69.7	63.7	69.9	60.	46.4	39.0	17.3	28.1	31.2	31.1	33.0	36.0	39.0	39.3	39.4	40.1	40.5	40.3	43.7	36.5	39.2	27.6	20.8	17.3	16.4	17.9	28.8	27.2	26.4	52.1	59
#6 17:00 - 17:15	66.5	55.2	66.8	66.8	66.8	66.8	66.8	66.8	66.8	66.8	66.8	59.2	65.0	47.6	67.8	46.3	68.2	61.7	68.8	61.0	66.7	66.6	69.7	63.8	69.9	61.	43.0	33.9	13.8	29.1	33.7	33.5	32.2	28.2	29.4	29.0	28.9	29.1	29.7	30.9	34.3	27.0	29.0	19.6	22.9	17.9	16.3	17.6	28.4	27.0	26.4	52.1	59
#7 17:15 - 17:30	67.2	57.1	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	59.6	66.0	50.3	68.3	46.3	68.2	62.0	68.8	61.2	66.7	66.6	69.7	63.9	69.9	62.	30.6	24.4	15.4	38.0	48.1	47.3	50.1	37.0	32.0	31.1	33.3	35.2	35.8	36.1	41.4	33.7	38.0	30.1	21.7	16.9	16.0	17.2	26.5	26.4	26.4	52.1	59
#8 17:30 - 17:45	68.0	59.1	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	68.2	60.0	66.9	53.2	68.8	46.4	68.2	62.3	68.9	61.4	66.7	66.6	69.7	64.0	45.5	42.	25.6	21.5	15.2	29.3	32.2	28.9	34.4	34.1	39.4	40.1	40.3	40.9	40.6	40.5	44.6	36.6	36.5	27.8	22.4	18.0	16.7	18.1	29.2	27.6	26.4	52.1	59
#9 17:45 - 18:00	68.8	61.6	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	68.9	60.5	68.0	56.7	69.4	46.5	68.2	62.7	69.0	61.8	66.7	66.6	69.7	64.2	42.4	39.	24.2	24.9	16.6	36.5	43.4	41.5	48.4	35.1	34.2	34.4	35.1	34.6	33.8	35.8	38.4	29.9	31.0	24.3	21.4	17.0	16.0	17.6	27.8	26.6	26.4	52.1	59
#10 18:00 - 18:15	69.5	64.2	69.5	69.6	69.6	69.6	69.6	69.6	69.6	69.6	69.6	61.2	69.0	60.5	69.8	46.6	68.2	63.3	69.1	62.1	66.8	66.6	69.7	64.4	69.9	64.0	29.5	25.1	15.6	34.5	39.3	41.7	49.8	45.6	42.0	36.2	36.6	35.5	34.4	36.8	40.0	32.2	32.5	27.0	19.6	16.8	15.9	17.6	27.1	26.4	26.4	52.1	59
#11 18:15 - 18:30	69.9	65.0	69.6	69.9	69.9	69.9	69.9	69.9	69.9	69.9	69.9	61.8	69.6	63.3	70.0	46.6	68.2	63.7	69.2	62.4	66.8	66.6	69.7	64.5	69.9	64.	37.4	36.6	17.2	38.4	44.5	42.4	51.1	37.9	43.2	53.0	53.1	53.1	52.9	56.5	37.2	23.6	14.7	15.0	14.9	14.9	16.7	26.4	26.4	26.4	52.1	59
#12 18:30 - 18:45	70.0	65.4	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.5	69.8	65.2	70.0	63.0	69.5	64.3	69.7	63.4	67.6	67.1	69.8	64.9	69.9	64.	69.5	70.0	35.9	50.3	45.6	41.3	42.3	30.6	31.2	31.4	29.7	30.9	31.3	31.2	30.8	24.1	23.3	22.7	20.7	18.0	16.7	18.1	29.2	27.5	26.4	52.1	59

LOS Contours

Density Based LOS

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg.
#1 15:45 - 16:00	C	C	C	C	C	C	C	C	C	C	C	C	D	C	C	C	C	B	C	C	D	A	A	B	B	C	B	C	C	C	D	D	E	D	D	D	D	D	D	D	D	C	C	C	B	C	C	E	F	F	F	C	C
#2 16:00 - 16:15	C	C	C	C	C	C	C	C	C	C	C	C	D	C	C	C	C	C	C	C	D	A	A	B	B	C	B	C	C	C	D	D	E	D	D	D	D	D	D	D	D	C	C	C	B	E	F	F	F	F	F	C	C
#3 16:15 - 16:30	C	C	C	C	C	C	C	C	C	C	C	C	D	C	C	C	C	C	C	C	D	A	A	B	B	C	B	D	C	C	E	E	E	F	F	F	F	E	E	E	E	E	E	E	F	F	F	F	F	F	F	C	C
#4 16:30 - 16:45	D	C	C	C	C	C	C	C	C	C	C	C	D	C	C	C	C	C	C	C	D	A	A	B	B	C	C	D	F	F	E	E	E	F	F	F	F	F	F	F	E	E	E	E	F	F	F	F	F	F	F	C	C
#5 16:45 - 17:00	D	C	C	C	C	C	C	C	C	C	C	C	D	C	C	C	C	C	C	C	D	A	A	B	B	C	D	E	F	F	F	F	F	F	E	E	E	E	E	E	E	E	E	F	F	F	F	F	F	F	F	C	C
#6 17:00 - 17:15	C	C	C	C	C	C	C	C	C	C	C	C	D	C	C	C	C	C	C	C	D	A	A	B	B	C	D	E	F	F	F	F	F	F	F	F	F	F	F	F	E	E	E	F	F	F	F	F	F	F	F	C	C
#7 17:15 - 17:30	C	C	C	C	C	C	C	C	C	C	C	C	D	C	C	C	C	B	C	C	D	A	A	B	B	C	E	F	F	F	E	E	E	F	F	F	F	F	F	F	E	E	E	F	F	F	F	F	F	F	F	C	C
#8 17:30 - 17:45	C	C	C	C	C	C	C	C	C	C	C	C	C	C	D	C	B	C	C	C	D	A	A	B	B	C	E	F	F	F	F	F	F	E	E	E	E	E	E	E	E	F	F	F	F	F	F	F	F	F	F	C	C
#9 17:45 - 18:00	C	C	C	C	C	C	C	C	C	C	C	C	C	B	C	D	C	B	C	C	C	A	A	B	D	E	F	F	F	F	E	E	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	C	C
#10 18:00 - 18:15	C	B	C	C	C	C	C	C	C	C	C	C	B	C	B	D	C	B	C	C	C	A	A	B	B	B	E	F	F	F	E	E	D	E	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	C	C
#11 18:15 - 18:30	C	B	B	B	B	B	B	B	B	B	B	B	C	B	B	D	C	B	C	C	C	A	A	B	B	B	D	E	F	F	E	E	D	F	E	E	E	E	E	E	D	E	F	F	F	F	F	F	F	F	F	C	C
#12 18:30 - 18:45	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	C	B	B	B	B	C	A	A	B	B	B	B	B	E	D	E	E	E	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	F	C	C

DATA INPUTS

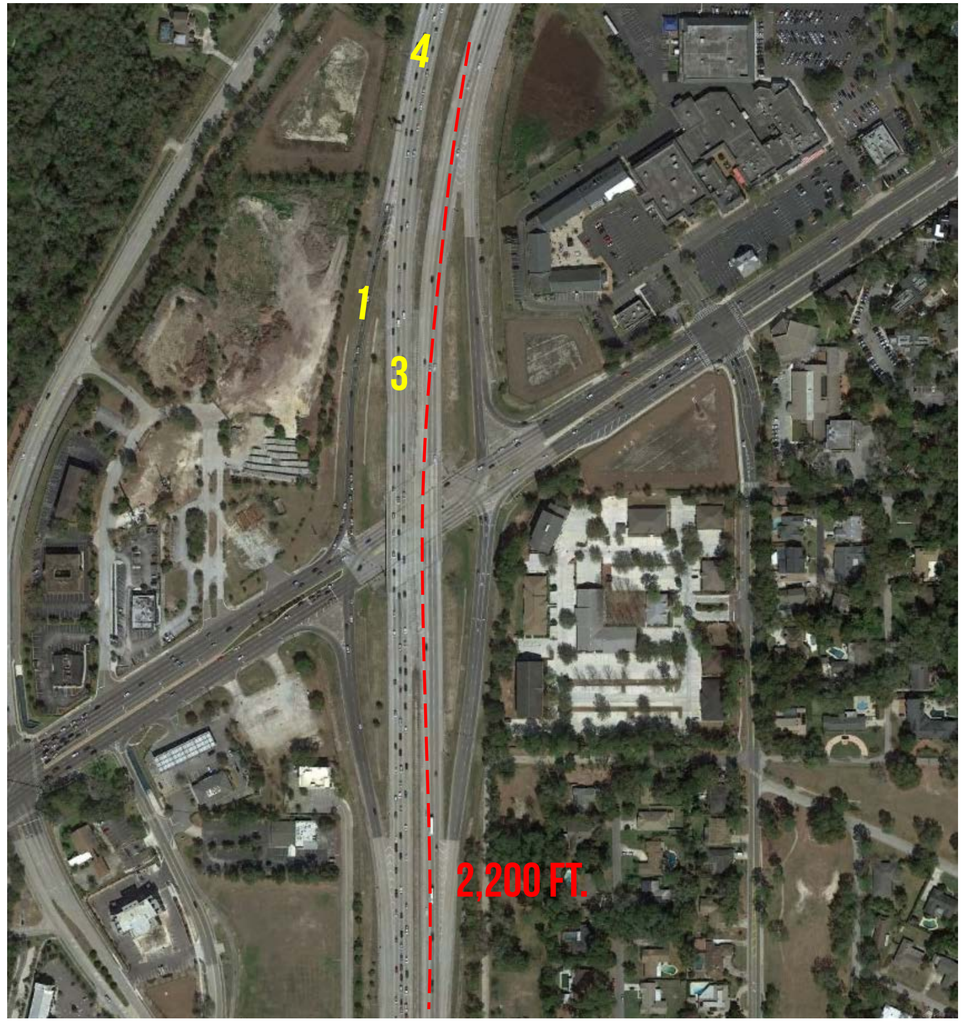
Geometry

- Number of freeway/ramp lanes
- Segment lengths
- Acceleration/deceleration lengths
- Free-flow speeds (mainline and ramps)

15-min demand volumes

- Peak Period
- Up to a 24-hr analysis

Truck percentages



CALIBRATION VARIABLES

Bottleneck capacities

- Florida-specific "default" CAFs (Univ. of FL research)

Other key variables

- Free-flow speeds
- Congested speeds
- Facility travel times
- Demand profiles

Fewer "levers and knobs" to adjust compared to VISSIM

Direct calibration of capacity and free flow speeds

Table 4.1. Recommended capacity values for various types of segments (pc/h/ln)

Segment Type	Number of Lanes	Capacity Values (pc/h/ln)	
		Pre-Breakdown Capacity *	Discharge Capacity **
Urban merge and diverge freeway segments	3	2,100	1,900
Urban merge and diverge freeway segments	2; 3>	2,000	1,800
Urban weaving freeway segments	3	2,200	2,000
Urban weaving freeway segments	2; 3>	2,100	1,900
Rural merge/diverge segments	3	1,900	1,700
Rural merge/diverge segments	2; 3>	1,800	1,600

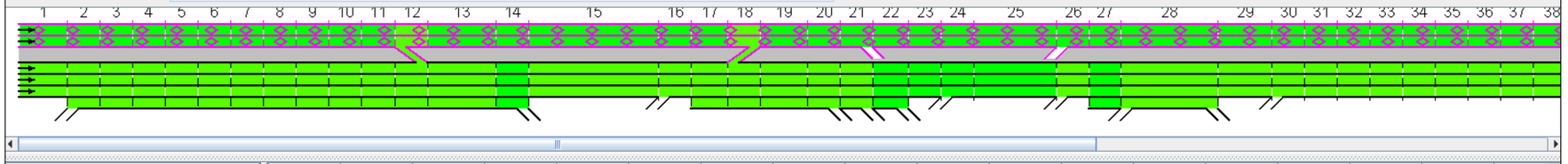
* Coefficient of variation (CV) and standard deviation (SD):
Urban sites: CV= 0.11, SD = 230
Rural sites: CV= 0.08, SD = 130

** Coefficient of variation (CV) and standard deviation (SD):
Urban sites: CV= 0.09, SD = 170
Rural sites: CV= 0.15, SD = 200

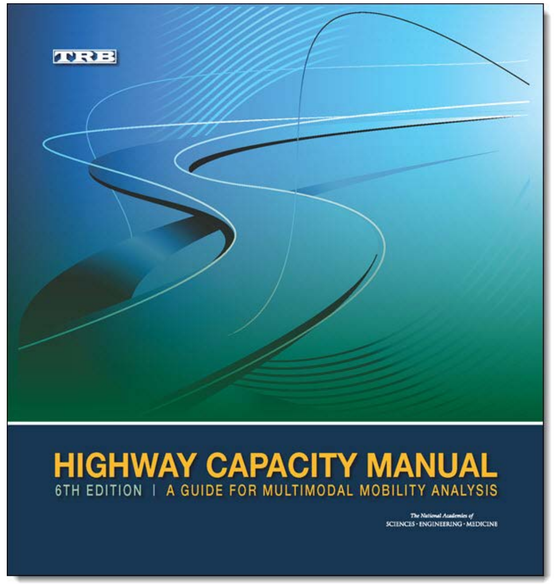
FREEVAL SCREENSHOT

Table Display Options: Input | GP Only

Analysis Period (A.P.) Control: A.P. 12/12 18:30 - 18:45 | First | Last | Jump To



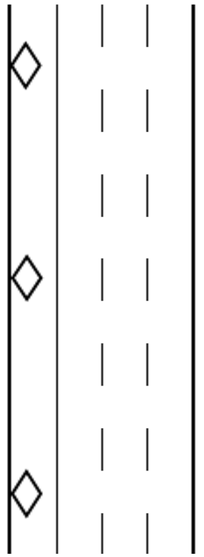
Segment	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
General Purpose Segment Data	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
General Purpose Segment Name		SR 43										EL Off/		Lake M		Lake		GP Off/
General Purpose Segment Type	Basic	On Ramp	Basic	Basic	Basic	Basic	Basic	Basic	Basic	Basic	Basic	Access	Basic	Off Ramp	Basic	On Ramp	Basic	Acces
Segment Length (ft)	2,236	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,558	1,500	3,165	1,500	5,960	1,500	1,689	1,500
Terrain	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level	Level
Truck-PC Equivalent (ET)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
# of Lanes: Mainline	3	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3	4	4
Free Flow Speed (mph)	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Mainline Dem. (vph)	3,059	4015	4015	4015	4015	4015	4015	4015	4015	4015	4015	4015	4015	4015	2575	3638	3638	3638
Mainline Single Unit Truck and Bu...	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Mainline Tractor Trailer (%)	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60
Seed Capacity Adj. Fac	1.00	0.83	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.83	1.00	0.83	1.00	0.88	1.00	0.83
Seed Entering Dem. Adj. Fac	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Seed Exit Dem. Adj. Fac	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Seed Free Flow Speed Adj. Fac	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Seed Driver Pop. Capacity Adj. F...	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Seed Driver Pop. Free Flow Spee...	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Acc/Dec Lane Length (ft)		1,500												1,500		1,500		
ONR Side		Right														Right		
# Lanes: ONR		2														2		
ONR Queue Capacity (veh/ln)		50														50		
ONR Free Flow Speed (mph)		45														45		
ONR/Entering Dem. (vph)		956										272				1,063		0
ONR Single Unit Truck and Bus (%)		1.20														1.20		
ONR Tractor Trailer (%)		1.60														1.60		
ONR Metering Type		None														None		
ONR Metering Fixed Rate (vph)																		
ONR Adaptive Metering ALINEA																		
ONR Adaptive Metering Fuzzy																		
OFR Side														Right				
# Lanes: OFR														2				
OFR Free Flow Speed (mph)														45				
OFR/Exit Dem. (vph)												0		1,440				138
OFR Single Unit Truck and Bus (%)														1.20				
OFR Tractor Trailer (%)														1.60				
Weave Segment Ls (ft)																		



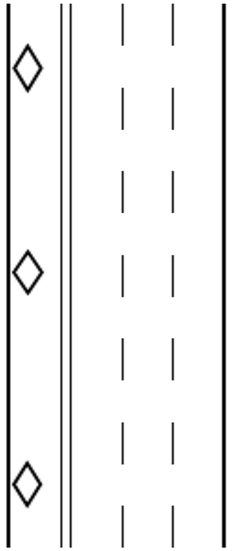
HCM 6TH EDITION AND MANAGED LANES

MANAGED LANES

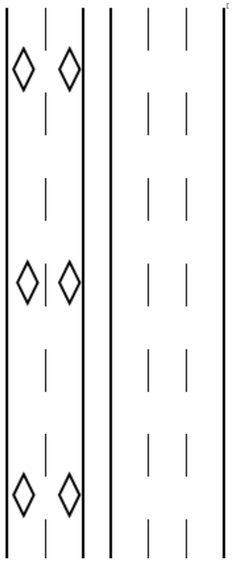
Incorporates five basic managed lane segment types:



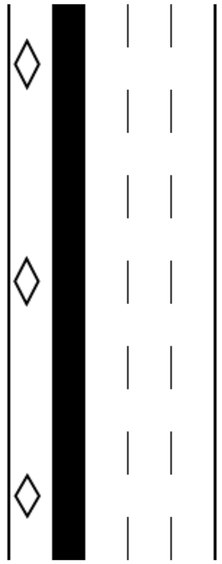
Continuous Access



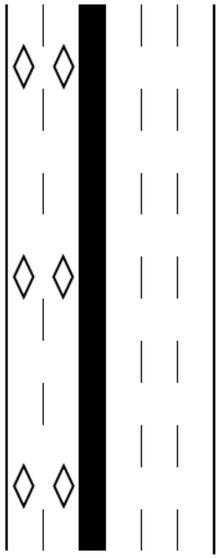
Buffer 1



Buffer 2



Barrier 1



Barrier 2

MANAGED LANE WEAVING SEGMENTS

Incorporates the methods for evaluating managed lane weaving segments, managed lane access segments, and cross-weave effects

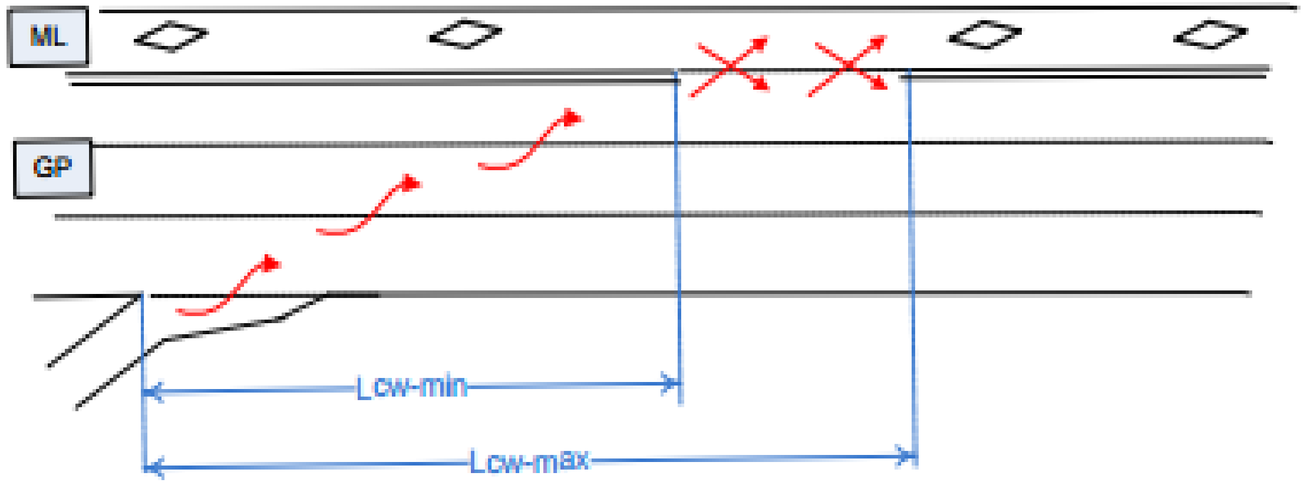
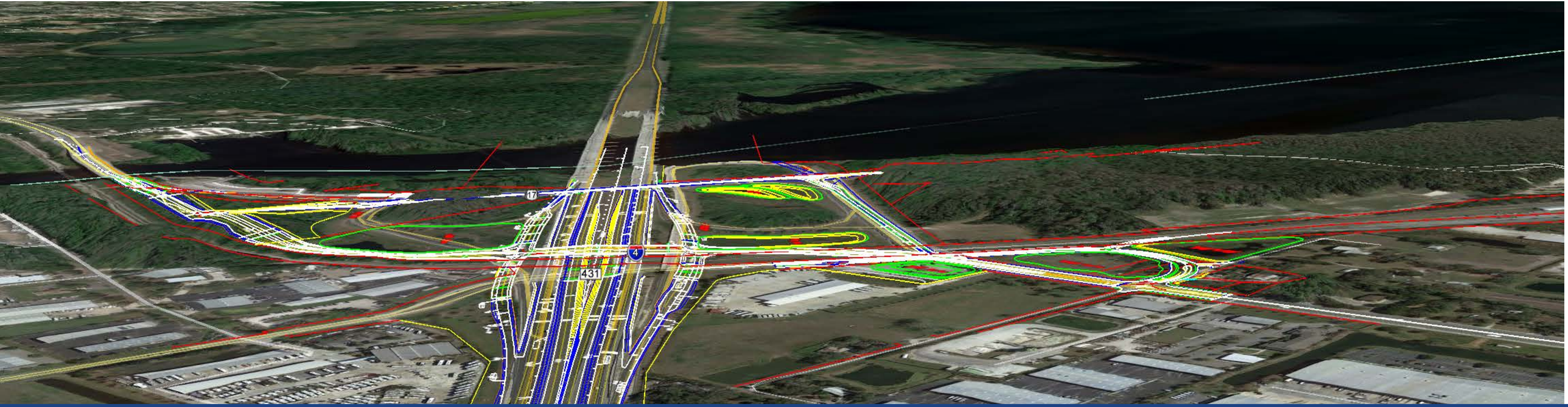


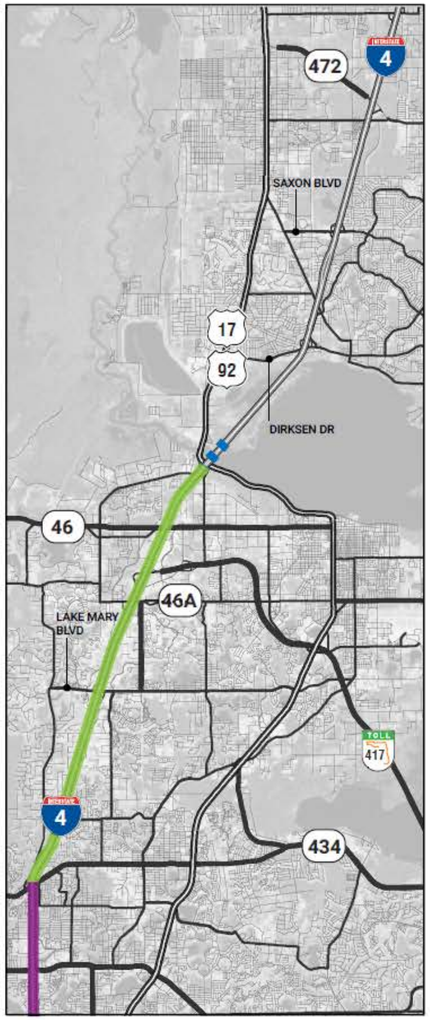
Exhibit 13-12: Weaving Movements Associated with Managed Lane Access and Egress



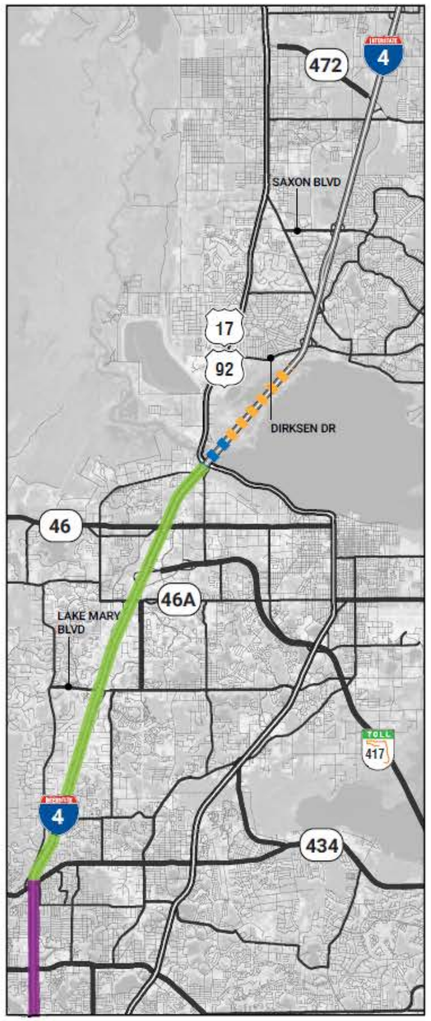
EXPRESS LANE TRANSITION ANALYSIS

I-4 BTU SEGMENT 3

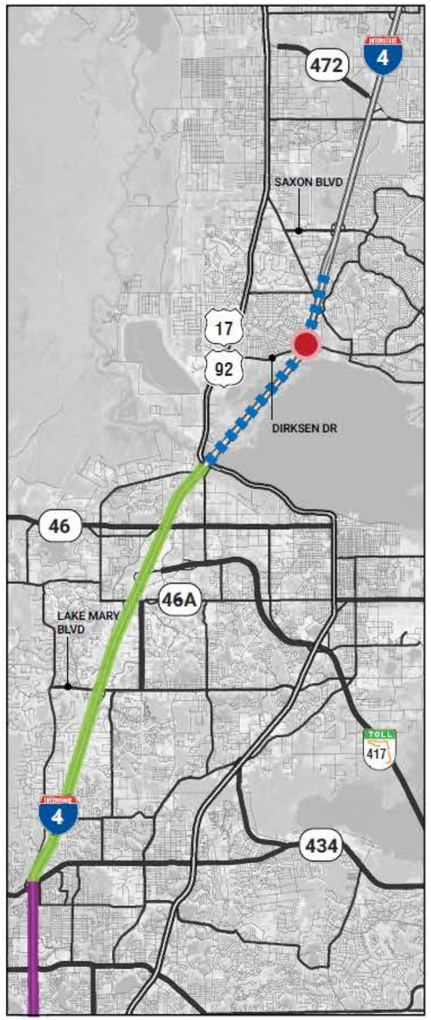
I-4 BTU SEGMENT 3 – TRANSITION ALTERNATIVES



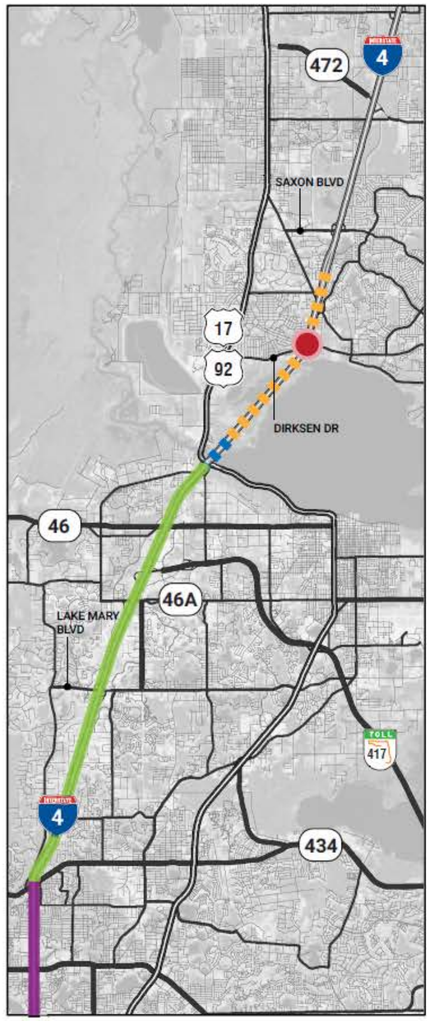
BUILD A



BUILD B



BUILD C

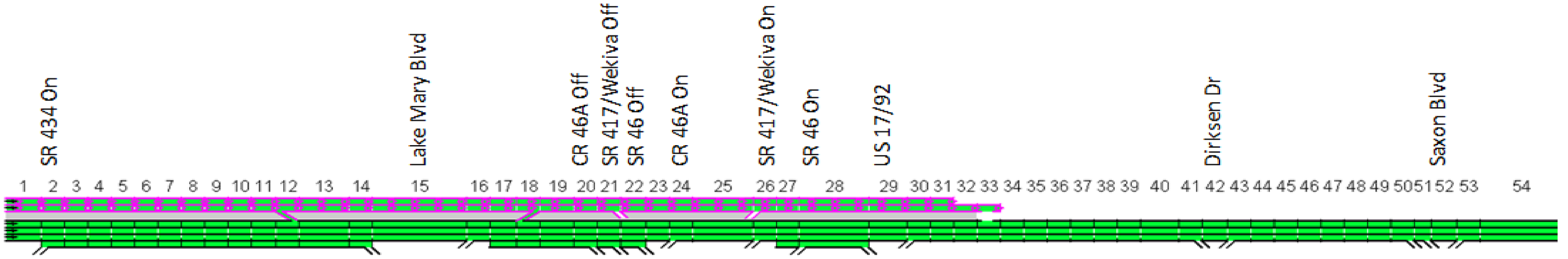


BUILD D

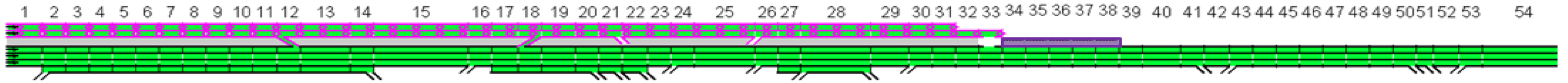
LEGEND

- I-4 ULTIMATE LIMITS
- I-4 BtU SEGMENT 3 LIMITS
- EB EXPRESS LANE TRANSITION
- EB HARD SHOULDER LIMITS
- INTERCHANGE IMPROVEMENT

TRANSITION ALTERNATIVES – FREEVAL NETWORK

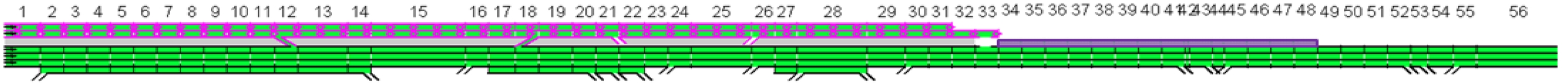


Build A Segmentation



Build B Segmentation

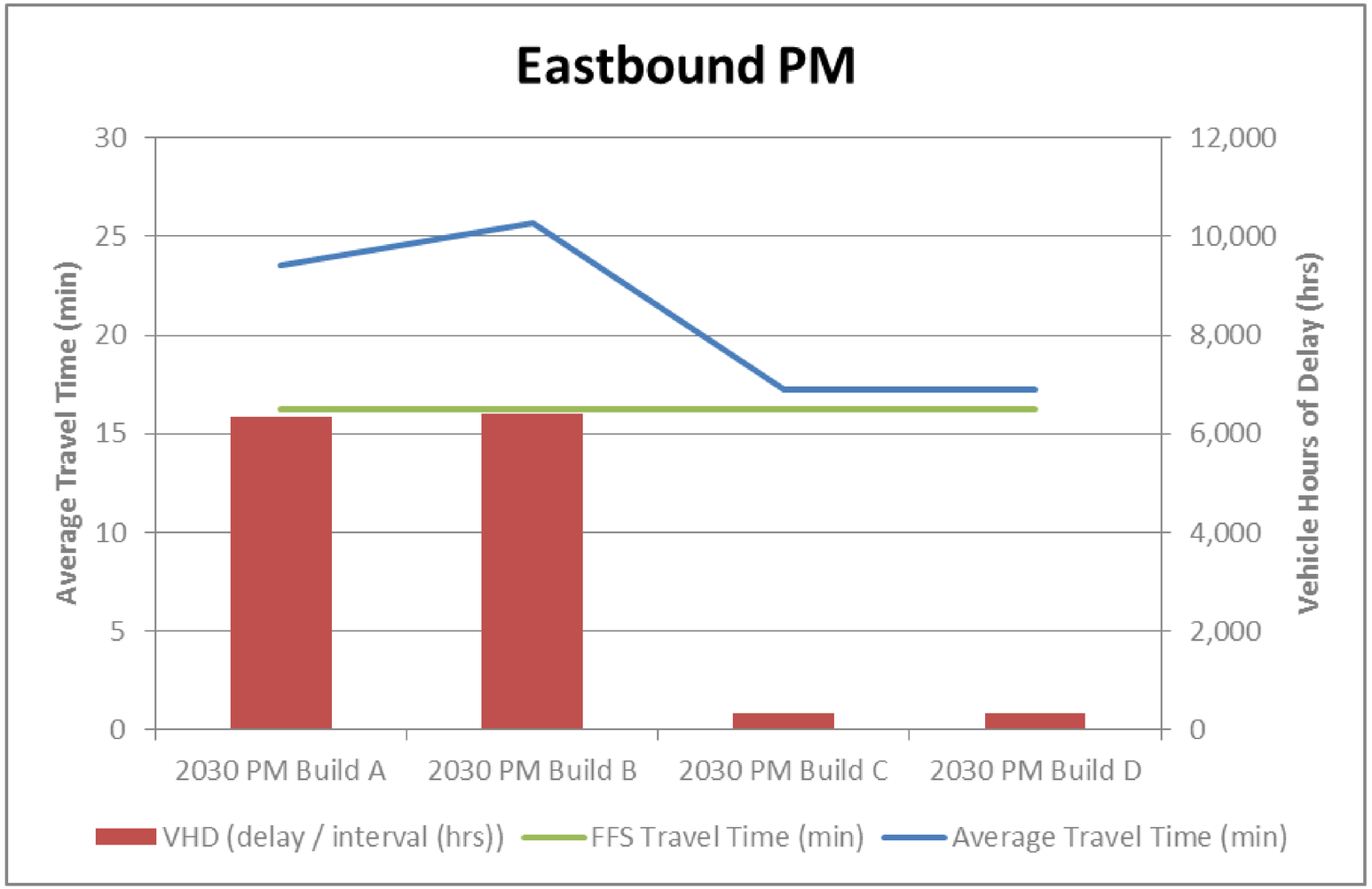
Build C Segmentation



Build D Segmentation

TRANSITION ALTERNATIVES – SYSTEM MEASURES

2030 Comparison



TRANSITION ALTERNATIVES – D/C CONTOURS

Build A

D/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
#1 15:45 - 16:00	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.79	0.57	0.90	0.59	0.60
#2 16:00 - 16:15	0.63	0.75	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.69	0.67	0.82	0.59	0.93	0.61	0.62
#3 16:15 - 16:30	0.65	0.76	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.70	0.68	0.83	0.60	0.95	0.62	0.63
#4 16:30 - 16:45	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.60	0.95	0.63	0.64
#5 16:45 - 17:00	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.61	0.96	0.63	0.64
#6 17:00 - 17:15	0.64	0.76	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.70	0.67	0.83	0.60	0.94	0.62	0.63
#7 17:15 - 17:30	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.80	0.58	0.91	0.60	0.61
#8 17:30 - 17:45	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.77	0.55	0.87	0.57	0.58
#9 17:45 - 18:00	0.56	0.66	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.61	0.59	0.72	0.52	0.82	0.54	0.55
#10 18:00 - 18:15	0.52	0.61	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.56	0.54	0.67	0.48	0.76	0.50	0.51
#11 18:15 - 18:30	0.48	0.57	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.52	0.51	0.62	0.45	0.70	0.46	0.47
#12 18:30 - 18:45	0.44	0.52	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.47	0.46	0.56	0.41	0.64	0.42	0.43

Analysis Period	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36
#1 15:45 - 16:00	0.57	0.68	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.82	0.72	0.72	0.91	0.98	0.98	0.98
#2 16:00 - 16:15	0.59	0.70	0.47	0.39	0.29	0.53	0.46	0.72	0.47	0.75	0.63	0.85	0.74	0.74	0.94	1.01	1.01	1.01
#3 16:15 - 16:30	0.60	0.72	0.48	0.40	0.29	0.53	0.47	0.73	0.48	0.76	0.65	0.86	0.76	0.76	0.96	1.03	1.03	1.03
#4 16:30 - 16:45	0.60	0.72	0.48	0.40	0.29	0.54	0.47	0.73	0.48	0.77	0.65	0.87	0.76	0.76	0.97	1.03	1.03	1.03
#5 16:45 - 17:00	0.60	0.72	0.48	0.40	0.30	0.54	0.47	0.74	0.48	0.77	0.65	0.87	0.76	0.76	0.97	1.04	1.04	1.04
#6 17:00 - 17:15	0.59	0.71	0.48	0.40	0.29	0.53	0.47	0.72	0.48	0.76	0.64	0.86	0.75	0.75	0.95	1.02	1.02	1.02
#7 17:15 - 17:30	0.57	0.69	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.83	0.73	0.73	0.92	0.98	0.98	0.98
#8 17:30 - 17:45	0.55	0.66	0.44	0.37	0.27	0.49	0.43	0.67	0.44	0.70	0.59	0.79	0.70	0.70	0.88	0.94	0.94	0.94
#9 17:45 - 18:00	0.52	0.62	0.42	0.35	0.25	0.46	0.41	0.63	0.42	0.66	0.56	0.75	0.66	0.66	0.83	0.89	0.89	0.89
#10 18:00 - 18:15	0.48	0.57	0.38	0.32	0.24	0.43	0.38	0.59	0.38	0.61	0.52	0.69	0.61	0.61	0.76	0.82	0.82	0.82
#11 18:15 - 18:30	0.44	0.53	0.36	0.30	0.22	0.40	0.35	0.54	0.36	0.57	0.48	0.64	0.56	0.56	0.71	0.76	0.76	0.76
#12 18:30 - 18:45	0.40	0.48	0.32	0.27	0.20	0.36	0.32	0.49	0.32	0.52	0.44	0.58	0.51	0.51	0.64	0.69	0.69	0.69

Analysis Period	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54
#1 15:45 - 16:00	0.98	0.98	0.98	0.96	1.12	0.75	0.91	0.79	0.79	0.79	0.79	0.79	0.79	0.91	0.78	0.60	0.78	0.68
#2 16:00 - 16:15	1.01	1.01	1.01	0.99	1.15	0.78	0.93	0.82	0.82	0.82	0.82	0.82	0.82	0.93	0.81	0.62	0.80	0.70
#3 16:15 - 16:30	1.03	1.03	1.03	1.01	1.17	0.79	0.95	0.83	0.83	0.83	0.83	0.83	0.83	0.95	0.82	0.63	0.82	0.72
#4 16:30 - 16:45	1.03	1.03	1.03	1.02	1.18	0.80	0.96	0.84	0.84	0.84	0.84	0.84	0.84	0.96	0.83	0.63	0.82	0.72
#5 16:45 - 17:00	1.04	1.04	1.04	1.02	1.18	0.80	0.96	0.84	0.84	0.84	0.84	0.84	0.84	0.96	0.83	0.64	0.83	0.72
#6 17:00 - 17:15	1.02	1.02	1.02	1.01	1.17	0.79	0.95	0.83	0.83	0.83	0.83	0.83	0.83	0.95	0.82	0.63	0.81	0.71
#7 17:15 - 17:30	0.98	0.98	0.98	0.97	1.13	0.76	0.91	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.79	0.61	0.79	0.69
#8 17:30 - 17:45	0.94	0.94	0.94	0.93	1.08	0.73	0.88	0.77	0.77	0.77	0.77	0.77	0.77	0.88	0.76	0.58	0.75	0.66
#9 17:45 - 18:00	0.89	0.89	0.89	0.87	1.01	0.69	0.83	0.72	0.72	0.72	0.72	0.72	0.72	0.83	0.71	0.55	0.71	0.62
#10 18:00 - 18:15	0.82	0.82	0.82	0.81	0.94	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.66	0.57
#11 18:15 - 18:30	0.76	0.76	0.76	0.75	0.87	0.59	0.71	0.62	0.62	0.62	0.62	0.62	0.62	0.71	0.61	0.47	0.61	0.53
#12 18:30 - 18:45	0.69	0.69	0.69	0.68	0.79	0.54	0.64	0.56	0.56	0.56	0.56	0.56	0.56	0.64	0.56	0.43	0.55	0.48

Build B

D/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
#1 15:45 - 16:00	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.79	0.57	0.90	0.59	0.60
#2 16:00 - 16:15	0.63	0.75	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.69	0.67	0.82	0.59	0.93	0.61	0.62
#3 16:15 - 16:30	0.65	0.76	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.70	0.68	0.83	0.60	0.95	0.62	0.63
#4 16:30 - 16:45	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.60	0.95	0.63	0.64
#5 16:45 - 17:00	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.61	0.96	0.63	0.64
#6 17:00 - 17:15	0.64	0.76	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.70	0.67	0.83	0.60	0.94	0.62	0.63
#7 17:15 - 17:30	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.80	0.58	0.91	0.60	0.61
#8 17:30 - 17:45	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.77	0.55	0.87	0.57	0.58
#9 17:45 - 18:00	0.56	0.66	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.61	0.59	0.72	0.52	0.82	0.54	0.55
#10 18:00 - 18:15	0.52	0.61	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.56	0.54	0.67	0.48	0.76	0.50	0.51
#11 18:15 - 18:30	0.48	0.57	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.52	0.51	0.62	0.45	0.70	0.46	0.47
#12 18:30 - 18:45	0.44	0.52	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.47	0.46	0.56	0.41	0.64	0.42	0.43

Analysis Period	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36
#1 15:45 - 16:00	0.57	0.68	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.82	0.72	0.72	0.82	0.78	0.78	0.78
#2 16:00 - 16:15	0.59	0.70	0.47	0.39	0.29	0.53	0.46	0.72	0.47	0.75	0.63	0.85	0.74	0.74	0.85	0.81	0.81	0.81
#3 16:15 - 16:30	0.60	0.72	0.48	0.40	0.29	0.53	0.47	0.73	0.48	0.76	0.65	0.86	0.76	0.76	0.86	0.82	0.82	0.82
#4 16:30 - 16:45	0.60	0.72	0.48	0.40	0.29	0.54	0.47	0.73	0.48	0.77	0.65	0.87	0.76	0.76	0.87	0.83	0.83	0.83
#5 16:45 - 17:00	0.60	0.72	0.48	0.40	0.30	0.54	0.47	0.74	0.48	0.77	0.65	0.87	0.76	0.76	0.87	0.83	0.83	0.83
#6 17:00 - 17:15	0.59	0.71	0.48	0.40	0.29	0.53	0.47	0.72	0.48	0.76	0.64	0.86	0.75	0.75	0.86	0.82	0.82	0.82
#7 17:15 - 17:30	0.57	0.69	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.83	0.73	0.73	0.83	0.79	0.79	0.79
#8 17:30 - 17:45	0.55	0.66	0.44	0.37	0.27	0.49	0.43	0.67	0.44	0.70	0.59	0.79	0.70	0.70	0.79	0.75	0.75	0.75
#9 17:45 - 18:00	0.52	0.62	0.42	0.35	0.25	0.46	0.41	0.63	0.42	0.66	0.56	0.75	0.66	0.66	0.75	0.71	0.71	0.71
#10 18:00 - 18:15	0.48	0.57	0.38	0.32	0.24	0.43	0.38	0.59	0.38	0.61	0.52	0.69	0.61	0.61	0.69	0.66	0.66	0.66
#11 18:15 - 18:30	0.44	0.53	0.36	0.30	0.22	0.40	0.35	0.54	0.36	0.57	0.48	0.64	0.56	0.56	0.64	0.61	0.61	0.61
#12 18:30 - 18:45	0.40	0.48	0.32	0.27	0.20	0.36	0.32	0.49	0.32	0.52	0.44	0.58	0.51	0.51	0.58	0.55	0.55	0.55

Analysis Period	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54
#1 15:45 - 16:00	0.78	0.87	0.98	0.96	1.12	0.75	0.91	0.79	0.79	0.79	0.79	0.79	0.79	0.91	0.78	0.60	0.78	0.68
#2 16:00 - 16:15	0.81	0.90	1.01	0.99	1.15	0.78	0.93	0.82	0.82	0.82	0.82	0.82	0.82	0.93	0.81	0.62	0.80	0.70
#3 16:15 - 16:30	0.82	0.91	1.03	1.01	1.17	0.79	0.95	0.83	0.83	0.83	0.83	0.83	0.83	0.95	0.82	0.63	0.82	0.72
#4 16:30 - 16:45	0.83	0.92	1.03	1.02	1.18	0.80	0.96	0.84	0.84	0.84	0.84	0.84	0.84	0.96	0.83	0.63	0.82	0.72
#5 16:45 - 17:00	0.83	0.92	1.04	1.02	1.18	0.80	0.96	0.84	0.84	0.84	0.84	0.84	0.84	0.96	0.83	0.64	0.83	0.72
#6 17:00 - 17:15	0.82	0.91	1.02	1.01	1.17	0.79	0.95	0.83	0.83	0.83	0.83	0.83	0.83	0.95	0.82	0.63	0.81	0.71
#7 17:15 - 17:30	0.79	0.88	0.98	0.97	1.13	0.76	0.91	0.80	0.80	0.80	0.80	0.80	0.80	0.91	0.79	0.61	0.79	0.69
#8 17:30 - 17:45	0.75	0.84	0.94	0.93	1.08	0.73	0.88	0.77	0.77	0.77	0.77	0.77	0.77	0.88	0.76	0.58	0.75	0.66
#9 17:45 - 18:00	0.71	0.79	0.89	0.87	1.01	0.69	0.83	0.72	0.72	0.72	0.72	0.72	0.72	0.83	0.71	0.55	0.71	0.62
#10 18:00 - 18:15	0.66	0.73	0.82	0.81	0.94	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.66	0.57
#11 18:15 - 18:30	0.61	0.68	0.76	0.75	0.87	0.59	0.71	0.62	0.62	0.62	0.62	0.62	0.62	0.71	0.61	0.47	0.61	0.53
#12 18:30 - 18:45	0.55	0.61	0.69	0.68	0.79	0.54	0.64	0.56	0.56	0.56	0.56	0.56	0.56	0.64	0.56	0.43	0.55	0.48

Build C

D/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
#1 15:45 - 16:00	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.79	0.57	0.90	0.59	0.60
#2 16:00 - 16:15	0.63	0.75	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.69	0.67	0.82	0.59	0.93	0.61	0.62
#3 16:15 - 16:30	0.65	0.76	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.70	0.68	0.83	0.60	0.95	0.62	0.63
#4 16:30 - 16:45	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.60	0.95	0.63	0.64
#5 16:45 - 17:00	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.61	0.96	0.63	0.64
#6 17:00 - 17:15	0.64	0.76	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.70	0.67	0.83	0.60	0.94	0.62	0.63
#7 17:15 - 17:30	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.80	0.58	0.91	0.60	0.61
#8 17:30 - 17:45	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.77	0.55	0.87	0.57	0.58
#9 17:45 - 18:00	0.56	0.66	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.61	0.59	0.72	0.52	0.82	0.54	0.55
#10 18:00 - 18:15	0.52	0.61	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.56	0.54	0.67	0.48	0.76	0.50	0.51
#11 18:15 - 18:30	0.48	0.57	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.52	0.51	0.62	0.45	0.70	0.46	0.47
#12 18:30 - 18:45	0.44	0.52	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.47	0.46	0.56	0.41	0.64	0.42	0.43

Analysis Period	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36
#1 15:45 - 16:00	0.57	0.68	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.82	0.72	0.72	0.80	0.72	0.72	0.72
#2 16:00 - 16:15	0.59	0.70	0.47	0.39	0.29	0.53	0.46	0.72	0.47	0.75	0.63	0.85	0.74	0.74	0.82	0.74	0.74	0.74
#3 16:15 - 16:30	0.60	0.72	0.48	0.40	0.29	0.53	0.47	0.73	0.48	0.76	0.65	0.86	0.76	0.76	0.84	0.76	0.76	0.76
#4 16:30 - 16:45	0.60	0.72	0.48	0.40	0.29	0.54	0.47	0.73	0.48	0.77	0.65	0.87	0.76	0.76	0.85	0.76	0.76	0.76
#5 16:45 - 17:00	0.60	0.72	0.48	0.40	0.30	0.54	0.47	0.74	0.48	0.77	0.65	0.87	0.76	0.76	0.85	0.76	0.76	0.76
#6 17:00 - 17:15	0.59	0.71	0.48	0.40	0.29	0.53	0.47	0.72	0.48	0.76	0.64	0.86	0.75	0.75	0.83	0.75	0.75	0.75
#7 17:15 - 17:30	0.57	0.69	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.83	0.73	0.73	0.81	0.73	0.73	0.73
#8 17:30 - 17:45	0.55	0.66	0.44	0.37	0.27	0.49	0.43	0.67	0.44	0.70	0.59	0.79	0.70	0.70	0.77	0.70	0.70	0.70
#9 17:45 - 18:00	0.52	0.62	0.42	0.35	0.25	0.46	0.41	0.63	0.42	0.66	0.56	0.75	0.66	0.66	0.73	0.66	0.66	0.66
#10 18:00 - 18:15	0.48	0.57	0.38	0.32	0.24	0.43	0.38	0.59	0.38	0.61	0.52	0.69	0.61	0.61	0.67	0.61	0.61	0.61
#11 18:15 - 18:30	0.44	0.53	0.36	0.30	0.22	0.40	0.35	0.54	0.36	0.57	0.48	0.64	0.56	0.56	0.63	0.56	0.56	0.56
#12 18:30 - 18:45	0.40	0.48	0.32	0.27	0.20	0.36	0.32	0.49	0.32	0.52	0.44	0.58	0.51	0.51	0.57	0.51	0.51	0.51

Analysis Period	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54	Seg. 55	Seg. 56
#1 15:45 - 16:00	0.72	0.72	0.69	0.77	0.88	0.60	0.68	0.57	0.70	0.61	0.61	0.78	0.82	0.82	0.82	0.93	0.78	0.60	0.78	0.68
#2 16:00 - 16:15	0.74	0.74	0.71	0.79	0.91	0.61	0.70	0.59	0.72	0.63	0.63	0.81	0.84	0.84	0.84	0.96	0.81	0.62	0.80	0.70
#3 16:15 - 16:30	0.76	0.76	0.72	0.81	0.92	0.62	0.71	0.60	0.73	0.64	0.64	0.82	0.86	0.86	0.86	0.98	0.82	0.63	0.82	0.72
#4 16:30 - 16:45	0.76	0.76	0.72	0.82	0.93	0.63	0.72	0.61	0.74	0.65	0.65	0.83	0.86	0.86	0.86	0.99	0.83	0.63	0.82	0.72
#5 16:45 - 17:00	0.76	0.76	0.73	0.82	0.93	0.63	0.72	0.61	0.74	0.65	0.65	0.83	0.86	0.86	0.86	0.99	0.83	0.64	0.83	0.72
#6 17:00 - 17:15	0.75	0.75	0.71	0.80	0.92	0.62	0.71	0.60	0.73	0.64	0.64	0.82	0.85	0.85	0.85	0.97	0.82	0.63	0.81	0.71
#7 17:15 - 17:30	0.73	0.73	0.69	0.78	0.88	0.60	0.68	0.58	0.71	0.62	0.62	0.79	0.82	0.82	0.82	0.94	0.79	0.61	0.79	0.69
#8 17:30 - 17:45	0.70	0.70	0.66	0.74	0.85	0.57	0.66	0.55	0.68	0.59	0.59	0.75	0.79	0.79	0.79	0.90	0.76	0.58	0.75	0.66
#9 17:45 - 18:00	0.66	0.66	0.62	0.70	0.80	0.54	0.62	0.52	0.64	0.56	0.56	0.71	0.74	0.74	0.74	0.85	0.71	0.55	0.71	0.62
#10 18:00 - 18:15	0.61	0.61	0.57	0.65	0.74	0.50	0.57	0.48	0.59	0.52	0.52	0.66	0.68	0.68	0.68	0.78	0.66	0.51	0.66	0.57
#11 18:15 - 18:30	0.56	0.56	0.53	0.60	0.68	0.47	0.53	0.45	0.55	0.48	0.48	0.61	0.63	0.63	0.63	0.72	0.61	0.47	0.61	0.53
#12 18:30 - 18:45	0.51	0.51	0.48	0.54	0.62	0.42	0.48	0.41	0.50	0.43	0.43	0.55	0.57	0.57	0.57	0.66	0.56	0.43	0.55	0.48

Build D

D/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
#1 15:45 - 16:00	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.79	0.57	0.90	0.59	0.60
#2 16:00 - 16:15	0.63	0.75	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.69	0.67	0.82	0.59	0.93	0.61	0.62
#3 16:15 - 16:30	0.65	0.76	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.70	0.68	0.83	0.60	0.95	0.62	0.63
#4 16:30 - 16:45	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.60	0.95	0.63	0.64
#5 16:45 - 17:00	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.61	0.96	0.63	0.64
#6 17:00 - 17:15	0.64	0.76	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.70	0.67	0.83	0.60	0.94	0.62	0.63
#7 17:15 - 17:30	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.80	0.58	0.91	0.60	0.61
#8 17:30 - 17:45	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.77	0.55	0.87	0.57	0.58
#9 17:45 - 18:00	0.56	0.66	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.61	0.59	0.72	0.52	0.82	0.54	0.55
#10 18:00 - 18:15	0.52	0.61	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.56	0.54	0.67	0.48	0.76	0.50	0.51
#11 18:15 - 18:30	0.48	0.57	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.52	0.51	0.62	0.45	0.70	0.46	0.47
#12 18:30 - 18:45	0.44	0.52	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.47	0.46	0.56	0.41	0.64	0.42	0.43

Analysis Period	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36
#1 15:45 - 16:00	0.57	0.68	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.82	0.72	0.72	0.82	0.78	0.78	0.78
#2 16:00 - 16:15	0.59	0.70	0.47	0.39	0.29	0.53	0.46	0.72	0.47	0.75	0.63	0.85	0.74	0.74	0.84	0.80	0.80	0.80
#3 16:15 - 16:30	0.60	0.72	0.48	0.40	0.29	0.53	0.47	0.73	0.48	0.76	0.65	0.86	0.76	0.76	0.86	0.82	0.82	0.82
#4 16:30 - 16:45	0.60	0.72	0.48	0.40	0.29	0.54	0.47	0.73	0.48	0.77	0.65	0.87	0.76	0.76	0.87	0.82	0.82	0.82
#5 16:45 - 17:00	0.60	0.72	0.48	0.40	0.30	0.54	0.47	0.74	0.48	0.77	0.65	0.87	0.76	0.76	0.87	0.83	0.83	0.83
#6 17:00 - 17:15	0.59	0.71	0.48	0.40	0.29	0.53	0.47	0.72	0.48	0.76	0.64	0.86	0.75	0.75	0.85	0.81	0.81	0.81
#7 17:15 - 17:30	0.57	0.69	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.83	0.73	0.73	0.82	0.79	0.79	0.79
#8 17:30 - 17:45	0.55	0.66	0.44	0.37	0.27	0.49	0.43	0.67	0.44	0.70	0.59	0.79	0.70	0.70	0.79	0.75	0.75	0.75
#9 17:45 - 18:00	0.52	0.62	0.42	0.35	0.25	0.46	0.41	0.63	0.42	0.66	0.56	0.75	0.66	0.66	0.74	0.71	0.71	0.71
#10 18:00 - 18:15	0.48	0.57	0.38	0.32	0.24	0.43	0.38	0.59	0.38	0.61	0.52	0.69	0.61	0.61	0.69	0.65	0.65	0.65
#11 18:15 - 18:30	0.44	0.53	0.36	0.30	0.22	0.40	0.35	0.54	0.36	0.57	0.48	0.64	0.56	0.56	0.64	0.61	0.61	0.61
#12 18:30 - 18:45	0.40	0.48	0.32	0.27	0.20	0.36	0.32	0.49	0.32	0.52	0.44	0.58	0.51	0.51	0.58	0.55	0.55	0.55

Analysis Period	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54	Seg. 55	Seg. 56
#1 15:45 - 16:00	0.78	0.78	0.78	0.78	0.78	0.62	0.62	0.60	0.64	0.64	0.64	0.71	0.79	0.79	0.79	0.91	0.78	0.60	0.78	0.68
#2 16:00 - 16:15	0.80	0.80	0.80	0.80	0.80	0.64	0.64	0.62	0.65	0.65	0.65	0.73	0.82	0.82	0.82	0.93	0.81	0.62	0.80	0.70
#3 16:15 - 16:30	0.82	0.82	0.82	0.82	0.82	0.65	0.65	0.63	0.67	0.67	0.67	0.74	0.83	0.83	0.83	0.95	0.82	0.63	0.82	0.72
#4 16:30 - 16:45	0.82	0.82	0.82	0.82	0.82	0.66	0.66	0.64	0.67	0.67	0.67	0.75	0.84	0.84	0.84	0.96	0.83	0.63	0.82	0.72
#5 16:45 - 17:00	0.83	0.83	0.83	0.83	0.83	0.66	0.66	0.64	0.67	0.67	0.67	0.75	0.84	0.84	0.84	0.96	0.83	0.64	0.83	0.72
#6 17:00 - 17:15	0.81	0.81	0.81	0.81	0.81	0.65	0.65	0.63	0.66	0.66	0.66	0.74	0.83	0.83	0.83	0.95	0.82	0.63	0.81	0.71
#7 17:15 - 17:30	0.79	0.79	0.79	0.79	0.79	0.62	0.62	0.61	0.64	0.64	0.64	0.71	0.80	0.80	0.80	0.91	0.79	0.61	0.79	0.69
#8 17:30 - 17:45	0.75	0.75	0.75	0.75	0.75	0.60	0.60	0.58	0.61	0.61	0.61	0.68	0.77	0.77	0.77	0.88	0.76	0.58	0.75	0.66
#9 17:45 - 18:00	0.71	0.71	0.71	0.71	0.71	0.56	0.56	0.55	0.58	0.58	0.58	0.64	0.72	0.72	0.72	0.83	0.71	0.55	0.71	0.62
#10 18:00 - 18:15	0.65	0.65	0.65	0.65	0.65	0.52	0.52	0.51	0.53	0.53	0.53	0.59	0.67	0.67	0.67	0.76	0.66	0.51	0.66	0.57
#11 18:15 - 18:30	0.61	0.61	0.61	0.61	0.61	0.49	0.49	0.47	0.50	0.50	0.50	0.55	0.62	0.62	0.62	0.71	0.61	0.47	0.61	0.53
#12 18:30 - 18:45	0.55	0.55	0.55	0.55	0.55	0.44	0.44	0.43	0.45	0.45	0.45	0.50	0.56	0.56	0.56	0.64	0.56	0.43	0.55	0.48

TRANSITION ALTERNATIVES – V/C CONTOURS

Build A

V/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54
#1 15:45 - 16:00	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.79	0.57	0.90	0.59	0.60	0.57	0.68	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.82	0.72	0.71	0.87	0.91	0.90	0.88	0.87	0.86	0.84	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.67	0.59
#2 16:00 - 16:15	0.63	0.75	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.69	0.67	0.82	0.59	0.93	0.61	0.62	0.59	0.70	0.47	0.39	0.29	0.53	0.46	0.72	0.47	0.75	0.60	0.87	0.69	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.67	0.59
#3 16:15 - 16:30	0.65	0.76	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.70	0.68	0.83	0.60	0.95	0.62	0.63	0.60	0.72	0.48	0.40	0.29	0.53	0.47	0.73	0.48	0.68	0.56	0.82	0.67	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.68	0.59
#4 16:30 - 16:45	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.60	0.95	0.63	0.64	0.60	0.72	0.48	0.40	0.29	0.54	0.47	0.73	0.47	0.67	0.56	0.82	0.66	0.66	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.68	0.59
#5 16:45 - 17:00	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.61	0.96	0.63	0.64	0.60	0.72	0.48	0.40	0.30	0.54	0.47	0.74	0.47	0.66	0.56	0.82	0.67	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.68	0.59
#6 17:00 - 17:15	0.64	0.76	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.70	0.67	0.83	0.60	0.94	0.62	0.63	0.59	0.71	0.48	0.40	0.29	0.53	0.46	0.72	0.46	0.68	0.58	0.77	0.67	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.68	0.59
#7 17:15 - 17:30	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.80	0.58	0.91	0.60	0.61	0.57	0.69	0.46	0.38	0.28	0.51	0.45	0.70	0.49	0.65	0.56	0.76	0.67	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.67	0.59
#8 17:30 - 17:45	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.77	0.55	0.87	0.57	0.58	0.55	0.66	0.44	0.37	0.27	0.49	0.43	0.67	0.44	0.65	0.54	0.81	0.67	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.50	0.67	0.58
#9 17:45 - 18:00	0.56	0.66	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.61	0.59	0.72	0.52	0.82	0.54	0.55	0.52	0.62	0.41	0.35	0.25	0.46	0.41	0.63	0.42	0.69	0.58	0.83	0.67	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.50	0.66	0.58
#10 18:00 - 18:15	0.52	0.61	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.56	0.54	0.67	0.48	0.76	0.50	0.51	0.48	0.57	0.38	0.32	0.23	0.43	0.38	0.59	0.38	0.68	0.58	0.82	0.67	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.66	0.66	0.66	0.66	0.66	0.66	0.76	0.65	0.50	0.65	0.57
#11 18:15 - 18:30	0.48	0.57	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.52	0.51	0.62	0.45	0.70	0.46	0.47	0.44	0.53	0.36	0.30	0.22	0.40	0.35	0.54	0.36	0.67	0.59	0.83	0.67	0.67	0.76	0.81	0.81	0.81	0.81	0.81	0.81	0.80	1.00	0.63	0.76	0.66	0.66	0.66	0.66	0.66	0.66	0.76	0.65	0.50	0.65	0.57
#12 18:30 - 18:45	0.44	0.52	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.47	0.46	0.56	0.41	0.64	0.42	0.43	0.40	0.48	0.32	0.27	0.20	0.36	0.32	0.49	0.32	0.65	0.55	0.77	0.65	0.66	0.75	0.88	0.83	0.82	0.82	0.82	0.82	0.80	1.00	0.63	0.76	0.66	0.66	0.66	0.66	0.66	0.66	0.76	0.65	0.50	0.64	0.56

Build B

V/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54
#1 15:45 - 16:00	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.79	0.57	0.90	0.59	0.60	0.57	0.68	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.82	0.72	0.72	0.82	0.78	0.77	0.74	0.71	0.76	0.84	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.67	0.59
#2 16:00 - 16:15	0.63	0.75	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.69	0.67	0.82	0.59	0.93	0.61	0.62	0.59	0.70	0.47	0.39	0.29	0.53	0.46	0.72	0.47	0.75	0.61	0.88	0.72	0.71	0.74	0.67	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.67	0.59
#3 16:15 - 16:30	0.65	0.76	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.70	0.68	0.83	0.60	0.95	0.62	0.63	0.60	0.72	0.48	0.40	0.29	0.53	0.47	0.73	0.48	0.69	0.55	0.81	0.66	0.65	0.69	0.66	0.66	0.66	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.68	0.59
#4 16:30 - 16:45	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.60	0.95	0.63	0.64	0.60	0.72	0.48	0.40	0.29	0.54	0.47	0.73	0.45	0.63	0.53	0.78	0.64	0.64	0.68	0.65	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.68	0.59
#5 16:45 - 17:00	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.61	0.96	0.63	0.64	0.60	0.72	0.48	0.40	0.30	0.54	0.45	0.73	0.46	0.64	0.54	0.81	0.66	0.65	0.68	0.65	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.68	0.59
#6 17:00 - 17:15	0.64	0.76	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.70	0.67	0.83	0.60	0.94	0.62	0.63	0.59	0.71	0.48	0.40	0.29	0.53	0.46	0.76	0.47	0.64	0.54	0.80	0.65	0.65	0.68	0.65	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.68	0.59
#7 17:15 - 17:30	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.80	0.58	0.91	0.60	0.61	0.57	0.69	0.46	0.38	0.28	0.51	0.44	0.75	0.46	0.64	0.54	0.79	0.65	0.65	0.69	0.65	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.51	0.67	0.59
#8 17:30 - 17:45	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.77	0.55	0.87	0.57	0.58	0.55	0.66	0.44	0.37	0.27	0.49	0.46	0.77	0.45	0.64	0.54	0.79	0.64	0.65	0.69	0.65	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.50	0.67	0.58
#9 17:45 - 18:00	0.56	0.66	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.61	0.59	0.72	0.52	0.82	0.54	0.55	0.52	0.62	0.41	0.35	0.25	0.46	0.41	0.68	0.47	0.66	0.56	0.80	0.65	0.66	0.69	0.65	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.67	0.67	0.67	0.67	0.67	0.67	0.76	0.66	0.50	0.66	0.58
#10 18:00 - 18:15	0.52	0.61	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.56	0.54	0.67	0.48	0.76	0.50	0.51	0.48	0.57	0.38	0.32	0.23	0.43	0.38	0.59	0.39	0.66	0.56	0.80	0.65	0.65	0.69	0.65	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.66	0.66	0.66	0.66	0.66	0.66	0.76	0.65	0.50	0.65	0.57
#11 18:15 - 18:30	0.48	0.57	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.52	0.51	0.62	0.45	0.70	0.46	0.47	0.44	0.53	0.36	0.30	0.22	0.40	0.35	0.54	0.36	0.67	0.57	0.81	0.66	0.65	0.69	0.65	0.65	0.65	0.65	0.72	0.81	0.80	1.00	0.63	0.76	0.66	0.66	0.66	0.66	0.66	0.66	0.76	0.65	0.50	0.65	0.57
#12 18:30 - 18:45	0.44	0.52	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.47	0.46	0.56	0.41	0.64	0.42	0.43	0.40	0.48	0.32	0.27	0.20	0.36	0.32	0.49	0.32	0.61	0.54	0.75	0.61	0.64	0.70	0.66	0.66	0.66	0.66	0.73	0.82	0.80	1.00	0.63	0.76	0.66	0.66	0.66	0.66	0.66	0.66	0.76	0.65	0.50	0.64	0.56

Build C

V/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54	Seg. 55	Seg. 56
#1 15:45 - 16:00	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.79	0.57	0.90	0.59	0.60	0.57	0.68	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.82	0.72	0.72	0.80	0.72	0.72	0.72	0.72	0.72	0.69	0.77	0.88	0.59	0.68	0.57	0.70	0.61	0.61	0.78	0.82	0.82	0.82	0.93	0.78	0.60	0.78	0.68
#2 16:00 - 16:15	0.63	0.75	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.69	0.67	0.82	0.59	0.93	0.61	0.62	0.59	0.70	0.47	0.39	0.29	0.53	0.46	0.72	0.47	0.75	0.63	0.85	0.74	0.74	0.82	0.74	0.74	0.74	0.74	0.74	0.71	0.79	0.91	0.61	0.70	0.59	0.72	0.63	0.63	0.81	0.84	0.84	0.84	0.96	0.81	0.62	0.80	0.70
#3 16:15 - 16:30	0.65	0.76	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.70	0.68	0.83	0.60	0.95	0.62	0.63	0.60	0.72	0.48	0.40	0.29	0.53	0.47	0.73	0.48	0.76	0.65	0.86	0.76	0.76	0.84	0.76	0.76	0.76	0.76	0.76	0.72	0.81	0.92	0.62	0.71	0.60	0.73	0.64	0.64	0.82	0.86	0.86	0.86	0.98	0.82	0.63	0.82	0.72
#4 16:30 - 16:45	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.60	0.95	0.63	0.64	0.60	0.72	0.48	0.40	0.29	0.54	0.47	0.73	0.48	0.77	0.65	0.87	0.76	0.76	0.85	0.76	0.76	0.76	0.76	0.76	0.72	0.82	0.93	0.63	0.72	0.61	0.74	0.65	0.65	0.83	0.86	0.86	0.86	0.99	0.83	0.63	0.82	0.72
#5 16:45 - 17:00	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.61	0.96	0.63	0.64	0.60	0.72	0.48	0.40	0.30	0.54	0.47	0.74	0.48	0.77	0.65	0.87	0.76	0.76	0.85	0.76	0.76	0.76	0.76	0.76	0.73	0.82	0.93	0.63	0.72	0.61	0.74	0.65	0.65	0.83	0.86	0.86	0.86	0.99	0.83	0.64	0.83	0.72
#6 17:00 - 17:15	0.64	0.76	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.70	0.67	0.83	0.60	0.94	0.62	0.63	0.59	0.71	0.48	0.40	0.29	0.53	0.46	0.72	0.48	0.76	0.64	0.86	0.75	0.75	0.83	0.75	0.75	0.75	0.75	0.75	0.72	0.80	0.92	0.62	0.71	0.60	0.73	0.64	0.64	0.82	0.85	0.85	0.85	0.97	0.82	0.63	0.81	0.71
#7 17:15 - 17:30	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.80	0.58	0.91	0.60	0.61	0.57	0.69	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.83	0.73	0.73	0.81	0.73	0.73	0.73	0.73	0.73	0.69	0.78	0.88	0.60	0.68	0.58	0.70	0.62	0.62	0.79	0.82	0.82	0.82	0.94	0.79	0.60	0.79	0.69
#8 17:30 - 17:45	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.77	0.55	0.87	0.57	0.58	0.55	0.66	0.44	0.37	0.27	0.49	0.43	0.67	0.44	0.70	0.59	0.79	0.70	0.70	0.77	0.70	0.70	0.70	0.70	0.70	0.66	0.74	0.85	0.57	0.66	0.55	0.68	0.59	0.59	0.75	0.79	0.79	0.79	0.90	0.76	0.58	0.75	0.66
#9 17:45 - 18:00	0.56	0.66	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.61	0.59	0.72	0.52	0.82	0.54	0.55	0.52	0.62	0.41	0.35	0.25	0.46	0.41	0.63	0.42	0.66	0.56	0.75	0.66	0.66	0.73	0.66	0.66	0.66	0.66	0.66	0.62	0.70	0.80	0.54	0.62	0.52	0.64	0.56	0.56	0.71	0.74	0.74	0.74	0.85	0.71	0.55	0.71	0.62
#10 18:00 - 18:15	0.52	0.61	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.56	0.54	0.67	0.48	0.76	0.50	0.51	0.48	0.57	0.38	0.32	0.23	0.43	0.38	0.59	0.38	0.61	0.52	0.69	0.61	0.61	0.67	0.61	0.61	0.61	0.61	0.61	0.57	0.65	0.74	0.50	0.57	0.48	0.59	0.52	0.52	0.66	0.68	0.68	0.68	0.78	0.66	0.51	0.66	0.57
#11 18:15 - 18:30	0.48	0.57	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.52	0.51	0.62	0.45	0.70	0.46	0.47	0.44	0.53	0.36	0.30	0.22	0.40	0.35	0.54	0.36	0.57	0.48	0.64	0.56	0.56	0.63	0.56	0.56	0.56	0.56	0.56	0.53	0.60	0.68	0.46	0.53	0.45	0.55	0.48	0.48	0.61	0.63	0.63	0.63	0.72	0.61	0.47	0.61	0.53
#12 18:30 - 18:45	0.44	0.52	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.47	0.46	0.56	0.41	0.64	0.42	0.43	0.40	0.48	0.32	0.27	0.20	0.36	0.32	0.49	0.32	0.52	0.44	0.58	0.51	0.51	0.57	0.51	0.51	0.51	0.51	0.51	0.48	0.54	0.62	0.42	0.48	0.41	0.50	0.43	0.43	0.55	0.57	0.57	0.57	0.66	0.56	0.43	0.55	0.48

Build D

V/C Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54	Seg. 55	Seg. 56
#1 15:45 - 16:00	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.79	0.57	0.90	0.59	0.60	0.57	0.68	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.82	0.72	0.72	0.82	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.62	0.62	0.60	0.64	0.64	0.64	0.71	0.79	0.79	0.79	0.91	0.78	0.60	0.78	0.68
#2 16:00 - 16:15	0.63	0.75	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.62	0.69	0.67	0.82	0.59	0.93	0.61	0.62	0.59	0.70	0.47	0.39	0.29	0.53	0.46	0.72	0.47	0.75	0.63	0.85	0.74	0.74	0.84	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.64	0.64	0.62	0.65	0.65	0.65	0.73	0.82	0.82	0.82	0.93	0.81	0.62	0.80	0.70
#3 16:15 - 16:30	0.65	0.76	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.70	0.68	0.83	0.60	0.95	0.62	0.63	0.60	0.72	0.48	0.40	0.29	0.53	0.47	0.73	0.48	0.76	0.65	0.86	0.76	0.76	0.86	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.65	0.65	0.63	0.67	0.67	0.67	0.74	0.83	0.83	0.83	0.95	0.82	0.63	0.82	0.72
#4 16:30 - 16:45	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.60	0.95	0.63	0.64	0.60	0.72	0.48	0.40	0.29	0.54	0.47	0.73	0.48	0.77	0.65	0.87	0.76	0.76	0.87	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.66	0.66	0.64	0.67	0.67	0.67	0.75	0.84	0.84	0.84	0.96	0.83	0.63	0.82	0.72
#5 16:45 - 17:00	0.65	0.77	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.64	0.71	0.68	0.84	0.61	0.96	0.63	0.64	0.60	0.72	0.48	0.40	0.30	0.54	0.47	0.74	0.48	0.77	0.65	0.87	0.76	0.76	0.87	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.66	0.66	0.64	0.67	0.67	0.67	0.75	0.84	0.84	0.84	0.96	0.83	0.64	0.83	0.72
#6 17:00 - 17:15	0.64	0.76	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.63	0.70	0.67	0.83	0.60	0.94	0.62	0.63	0.59	0.71	0.48	0.40	0.29	0.53	0.46	0.72	0.48	0.76	0.64	0.86	0.75	0.75	0.85	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.65	0.65	0.63	0.66	0.66	0.66	0.74	0.83	0.83	0.83	0.95	0.82	0.63	0.81	0.71
#7 17:15 - 17:30	0.62	0.73	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.67	0.65	0.80	0.58	0.91	0.60	0.61	0.57	0.69	0.46	0.38	0.28	0.51	0.45	0.70	0.46	0.73	0.62	0.83	0.73	0.73	0.82	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.62	0.62	0.61	0.64	0.64	0.64	0.71	0.80	0.80	0.80	0.91	0.79	0.61	0.79	0.69
#8 17:30 - 17:45	0.59	0.70	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.58	0.64	0.62	0.77	0.55	0.87	0.57	0.58	0.55	0.66	0.44	0.37	0.27	0.49	0.43	0.67	0.44	0.70	0.59	0.79	0.70	0.70	0.79	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.75	0.60	0.60	0.58	0.61	0.61	0.61	0.68	0.77	0.77	0.77	0.88	0.76	0.58	0.75	0.66
#9 17:45 - 18:00	0.56	0.66	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.61	0.59	0.72	0.52	0.82	0.54	0.55	0.52	0.62	0.41	0.35	0.25	0.46	0.41	0.63	0.42	0.66	0.56	0.75	0.66	0.66	0.74	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.56	0.56	0.55	0.58	0.58	0.58	0.64	0.72	0.72	0.72	0.83	0.71	0.55	0.71	0.62
#10 18:00 - 18:15	0.52	0.61	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.56	0.54	0.67	0.48	0.76	0.50	0.51	0.48	0.57	0.38	0.32	0.23	0.43	0.38	0.59	0.38	0.61	0.52	0.69	0.61	0.61	0.69	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.52	0.52	0.51	0.53	0.53	0.53	0.59	0.67	0.67	0.67	0.76	0.66	0.51	0.66	0.57
#11 18:15 - 18:30	0.48	0.57	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.47	0.52	0.51	0.62	0.45	0.70	0.46	0.47	0.44	0.53	0.36	0.30	0.22	0.40	0.35	0.54	0.36	0.57	0.48	0.64	0.56	0.56	0.64	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.61	0.49	0.49	0.47	0.50	0.50	0.50	0.55	0.62	0.62	0.62	0.71	0.61	0.47	0.61	0.53
#12 18:30 - 18:45	0.44	0.52	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.43	0.47	0.46	0.56	0.41	0.64	0.42	0.43	0.40	0.48	0.32	0.27	0.20	0.36	0.32	0.49	0.32	0.52	0.44	0.58	0.51	0.51	0.58	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.44	0.44	0.43	0.45	0.45	0.45	0.50	0.56	0.56	0.56	0.64	0.56	0.43	0.55	0.48

TRANSITION ALTERNATIVES – SPEED CONTOURS

Build A

Speed Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
#1 15:45 - 16:00	69.1	62.7	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	61.0	68.6	58.6	69.6	53.8	68.8	62.9
#2 16:00 - 16:15	68.8	61.7	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	60.7	68.2	57.2	69.5	51.9	68.6	62.7
#3 16:15 - 16:30	68.6	61.0	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	60.6	67.9	56.2	69.3	50.6	68.5	62.6
#4 16:30 - 16:45	68.5	60.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	60.5	67.8	55.8	69.3	50.0	68.5	62.5
#5 16:45 - 17:00	68.5	60.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	60.5	67.7	55.7	69.3	49.9	68.5	62.5
#6 17:00 - 17:15	68.7	61.3	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	60.6	68.0	56.5	69.4	51.0	68.6	62.6
#7 17:15 - 17:30	69.1	62.5	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	60.9	68.5	58.4	69.6	53.4	68.7	62.9
#8 17:30 - 17:45	69.4	63.9	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	61.3	69.0	60.3	69.8	56.1	68.9	63.1
#9 17:45 - 18:00	69.8	64.9	69.5	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	61.8	69.5	62.6	70.0	59.2	69.2	63.5
#10 18:00 - 18:15	70.0	65.2	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.4	69.8	65.0	70.0	62.5	69.4	64.0
#11 18:15 - 18:30	70.0	65.5	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.9	69.8	65.4	70.0	63.8	69.5	64.4
#12 18:30 - 18:45	70.0	65.8	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	63.5	69.9	65.8	70.0	64.3	69.6	64.9

Analysis Period	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36
#1 15:45 - 16:00	69.6	63.2	66.9	67.3	69.8	64.5	69.9	63.9	69.4	57.9	69.1	59.0	66.7	47.5	37.8	37.7	35.5	33.5
#2 16:00 - 16:15	69.5	63.0	66.8	67.2	69.8	64.4	69.9	63.7	69.4	46.7	19.2	33.5	34.5	22.8	19.6	30.0	29.1	28.1
#3 16:15 - 16:30	69.4	62.9	66.8	67.2	69.8	64.3	69.9	63.6	39.7	30.0	13.9	23.7	27.3	20.7	19.6	29.7	28.9	27.9
#4 16:30 - 16:45	69.3	62.9	66.8	67.1	69.8	64.3	40.3	36.1	19.0	22.8	13.2	23.7	27.3	22.0	19.4	27.9	27.1	26.1
#5 16:45 - 17:00	69.3	62.9	66.7	67.1	69.8	64.3	33.1	33.7	16.3	23.6	12.4	25.5	25.4	20.1	19.7	28.6	27.9	25.8
#6 17:00 - 17:15	69.4	63.0	66.8	67.2	69.8	64.3	39.8	35.1	15.6	21.9	13.4	26.3	22.5	19.1	18.7	27.7	26.7	25.5
#7 17:15 - 17:30	69.6	63.1	66.9	67.2	69.8	64.5	36.5	32.8	16.1	21.5	14.4	25.7	23.1	19.0	18.9	28.4	27.5	26.1
#8 17:30 - 17:45	69.7	63.3	67.0	67.3	69.8	64.6	69.9	39.1	21.1	21.4	12.8	24.5	26.4	20.9	19.0	28.5	27.6	26.2
#9 17:45 - 18:00	69.7	63.5	67.2	67.4	69.8	64.7	69.9	64.4	26.6	26.0	13.7	28.4	29.9	21.6	19.3	28.2	27.8	26.8
#10 18:00 - 18:15	69.7	63.7	67.4	67.5	69.8	64.9	69.9	64.7	39.3	32.5	13.4	25.6	29.2	21.3	19.6	29.0	27.9	27.1
#11 18:15 - 18:30	69.7	64.0	67.6	67.6	69.8	65.0	69.9	64.9	69.5	51.1	15.6	28.9	28.8	20.8	19.7	28.7	28.0	27.1
#12 18:30 - 18:45	69.7	64.2	67.8	67.7	69.8	65.2	69.9	65.2	69.6	70.0	20.9	23.0	25.3	20.9	19.7	35.8	38.2	36.1

Analysis Period	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54
#1 15:45 - 16:00	31.7	30.0	28.4	25.6	50.4	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.5	69.5
#2 16:00 - 16:15	26.7	25.4	25.3	24.7	50.4	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.5	69.5
#3 16:15 - 16:30	26.4	25.4	25.3	24.7	50.4	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.4	69.4
#4 16:30 - 16:45	25.4	25.3	25.3	24.7	50.4	68.5	62.1	68.1	68.1	68.1	68.1	68.1	68.1	62.1	61.7	69.1	63.4	69.4
#5 16:45 - 17:00	25.3	25.3	25.3	24.7	50.4	68.5	62.1	68.1	68.1	68.1	68.1	68.1	68.1	62.1	61.7	69.1	63.4	69.4
#6 17:00 - 17:15	25.3	25.3	25.3	24.7	50.4	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.4	69.5
#7 17:15 - 17:30	25.4	25.3	25.3	24.7	50.5	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.5	69.5
#8 17:30 - 17:45	25.4	25.3	25.3	24.7	50.5	68.5	62.3	68.2	68.2	68.2	68.2	68.2	68.2	62.3	61.7	69.1	63.5	69.5
#9 17:45 - 18:00	25.5	25.4	25.4	24.8	50.6	68.5	62.3	68.2	68.2	68.2	68.2	68.2	68.2	62.3	61.7	69.1	63.6	69.6
#10 18:00 - 18:15	25.8	25.4	25.4	24.8	50.7	68.5	62.4	68.2	68.2	68.2	68.2	68.2	68.2	62.4	61.7	69.1	63.7	69.7
#11 18:15 - 18:30	25.8	25.5	25.5	24.9	50.7	68.5	62.5	68.2	68.2	68.2	68.2	68.2	68.2	62.5	61.7	69.1	63.7	69.7
#12 18:30 - 18:45	33.9	32.4	29.9	25.0	50.8	68.5	62.5	68.3	68.3	68.3	68.3	68.3	68.3	62.5	61.7	69.1	63.8	69.8

Build B

Speed Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
#1 15:45 - 16:00	69.1	62.7	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	61.0	68.6	58.6	69.6	53.8	68.8	62.9
#2 16:00 - 16:15	68.8	61.7	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	60.7	68.2	57.2	69.5	51.9	68.6	62.7
#3 16:15 - 16:30	68.6	61.0	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	60.6	67.9	56.2	69.3	50.6	68.5	62.6
#4 16:30 - 16:45	68.5	60.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	60.5	67.8	55.8	69.3	50.0	68.5	62.5
#5 16:45 - 17:00	68.5	60.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	60.5	67.7	55.7	69.3	49.9	68.5	62.5
#6 17:00 - 17:15	68.7	61.3	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	60.6	68.0	56.5	69.4	51.0	68.6	62.6
#7 17:15 - 17:30	69.1	62.5	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	60.9	68.5	58.4	69.6	53.4	68.7	62.9
#8 17:30 - 17:45	69.4	63.9	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	61.3	69.0	60.3	69.8	56.1	68.9	63.1
#9 17:45 - 18:00	69.8	64.9	69.5	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	61.8	69.5	62.6	70.0	59.2	69.2	63.5
#10 18:00 - 18:15	70.0	65.2	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.4	69.8	65.0	70.0	62.5	69.4	64.0
#11 18:15 - 18:30	70.0	65.5	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.9	69.8	65.4	70.0	63.8	69.5	64.4
#12 18:30 - 18:45	70.0	65.8	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	63.5	69.9	65.8	70.0	64.3	69.6	64.9

Analysis Period	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36
#1 15:45 - 16:00	69.6	63.2	66.9	67.3	69.8	64.5	69.9	63.9	69.4	57.9	69.1	59.0	66.7	66.7	51.5	61.9	44.9	32.2
#2 16:00 - 16:15	69.5	63.0	66.8	67.2	69.8	64.4	69.9	63.7	69.4	57.6	26.3	36.6	39.7	36.6	29.0	21.2	16.4	15.6
#3 16:15 - 16:30	69.4	62.9	66.8	67.2	69.8	64.3	69.9	63.6	41.2	32.1	14.7	26.8	31.8	25.5	21.2	17.6	16.5	15.9
#4 16:30 - 16:45	69.3	62.9	66.8	67.1	69.8	64.3	39.9	36.0	16.1	18.9	12.4	24.8	27.4	23.6	19.7	17.2	15.7	14.7
#5 16:45 - 17:00	69.3	62.9	66.7	67.1	69.8	64.3	31.8	28.2	13.7	18.2	13.0	27.1	28.1	22.1	18.1	16.0	15.4	14.4
#6 17:00 - 17:15	69.4	63.0	66.8	67.2	69.8	64.3	25.6	26.0	13.8	18.4	13.4	27.8	29.0	22.7	19.2	16.6	15.4	14.4
#7 17:15 - 17:30	69.6	63.1	66.9	67.2	69.8	64.5	24.5	23.2	13.1	18.2	13.4	26.8	28.9	23.8	19.0	16.9	15.8	14.7
#8 17:30 - 17:45	69.7	63.3	67.0	67.3	69.8	64.6	26.6	26.5	13.8	18.4	13.3	27.3	28.4	24.1	19.7	17.2	16.0	14.8
#9 17:45 - 18:00	69.7	63.5	67.2	67.4	69.8	64.7	36.9	38.0	14.8	20.3	13.5	27.3	28.7	24.9	19.8	17.1	16.1	14.9
#10 18:00 - 18:15	69.7	63.7	67.4	67.5	69.8	64.9	69.9	64.7	34.6	24.1	13.5	26.7	27.1	25.3	20.3	17.4	16.2	15.0
#11 18:15 - 18:30	69.7	64.0	67.6	67.6	69.8	65.0	69.9	64.9	42.7	38.0	14.7	28.9	29.9	24.1	19.2	16.8	16.1	14.9
#12 18:30 - 18:45	69.7	64.2	67.8	67.7	69.8	65.2	69.9	65.2	69.6	59.3	15.7	25.8	26.6	24.2	25.1	20.1	18.5	17.2

Analysis Period	Seg. 37	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54
#1 15:45 - 16:00	23.5	20.1	28.4	25.6	50.4	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.5	69.5
#2 16:00 - 16:15	14.6	16.1	25.3	24.7	50.4	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.5	69.5
#3 16:15 - 16:30	14.6	16.1	25.3	24.7	50.4	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.4	69.4
#4 16:30 - 16:45	14.3	16.0	25.3	24.7	50.4	68.5	62.1	68.1	68.1	68.1	68.1	68.1	68.1	62.1	61.7	69.1	63.4	69.4
#5 16:45 - 17:00	14.3	16.0	25.3	24.7	50.4	68.5	62.1	68.1	68.1	68.1	68.1	68.1	68.1	62.1	61.7	69.1	63.4	69.4
#6 17:00 - 17:15	14.3	16.0	25.3	24.7	50.4	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.4	69.5
#7 17:15 - 17:30	14.4	16.1	25.3	24.7	50.5	68.5	62.2	68.1	68.1	68.1	68.1	68.1	68.1	62.2	61.7	69.1	63.5	69.5
#8 17:30 - 17:45	14.4	16.1	25.3	24.7	50.5	68.5	62.3	68.2	68.2	68.2	68.2	68.2	68.2	62.3	61.7	69.1	63.5	69.5
#9 17:45 - 18:00	14.4	16.1	25.4	24.8	50.6	68.5	62.3	68.2	68.2	68.2	68.2	68.2	68.2	62.3	61.7	69.1	63.6	69.6
#10 18:00 - 18:15	14.5	16.1	25.4	24.8	50.7	68.5	62.4	68.2	68.2	68.2	68.2	68.2	68.2	62.4	61.7	69.1	63.7	69.7
#11 18:15 - 18:30	14.5	16.2	25.5	24.9	50.7	68.5	62.5	68.2	68.2	68.2	68.2	68.2	68.2	62.5	61.7	69.1	63.7	69.7
#12 18:30 - 18:45	16.2	17.3	26.5	25.0	50.8	68.5	62.5	68.3	68.3	68.3	68.3	68.3	68.3	62.5	61.7	69.1	63.8	69.8

Build C

Speed Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
#1 15:45 - 16:00	69.1	62.7	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	61.0	68.6	58.6	69.6	53.8	68.8	62.9
#2 16:00 - 16:15	68.8	61.7	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	60.7	68.2	57.2	69.5	51.9	68.6	62.7
#3 16:15 - 16:30	68.6	61.0	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	60.6	67.9	56.2	69.3	50.6	68.5	62.6
#4 16:30 - 16:45	68.5	60.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	60.5	67.8	55.8	69.3	50.0	68.5	62.5
#5 16:45 - 17:00	68.5	60.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	60.5	67.7	55.7	69.3	49.9	68.5	62.5
#6 17:00 - 17:15	68.7	61.3	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	60.6	68.0	56.5	69.4	51.0	68.6	62.6
#7 17:15 - 17:30	69.1	62.5	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	60.9	68.5	58.4	69.6	53.4	68.7	62.8
#8 17:30 - 17:45	69.4	63.9	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	61.3	69.0	60.3	69.8	56.1	68.9	63.1
#9 17:45 - 18:00	69.8	64.9	69.5	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	61.8	69.5	62.6	70.0	59.2	69.2	63.5
#10 18:00 - 18:15	70.0	65.2	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.4	69.8	65.0	70.0	62.5	69.4	64.0
#11 18:15 - 18:30	70.0	65.5	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.9	69.8	65.4	70.0	63.8	69.5	64.4
#12 18:30 - 18:45	70.0	65.8	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	63.5	69.9	65.8	70.0	64.3	69.6	64.9

Analysis Period	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37
#1 15:45 - 16:00	69.6	63.2	66.9	67.3	69.8	64.5	69.9	63.9	69.4	57.9	69.1	59.0	66.7	66.7	61.0	66.7	66.7	66.7	66.7
#2 16:00 - 16:15	69.5	63.0	66.8	67.2	69.8	64.4	69.9	63.7	69.4	57.6	68.8	57.6	66.1	66.1	59.8	66.1	66.1	66.1	66.1
#3 16:15 - 16:30	69.4	62.9	66.8	67.2	69.8	64.3	69.9	63.6	69.4	57.5	68.6	56.6	65.6	65.6	59.0	65.6	65.6	65.6	65.6
#4 16:30 - 16:45	69.3	62.9	66.8	67.1	69.8	64.3	69.9	63.5	69.4	57.4	68.5	56.2	65.5	65.5	58.6	65.5	65.5	65.5	65.5
#5 16:45 - 17:00	69.3	62.9	66.7	67.1	69.8	64.3	69.9	63.4	69.4	57.4	68.5	56.1	65.4	65.4	58.5	65.4	65.4	65.4	65.4
#6 17:00 - 17:15	69.4	63.0	66.8	67.2	69.8	64.3	69.9	63.6	69.4	57.5	68.7	56.9	65.8	65.8	59.2	65.8	65.8	65.8	65.8
#7 17:15 - 17:30	69.6	63.1	66.9	67.2	69.8	64.5	69.9	63.8	69.4	57.9	69.0	58.7	66.6	66.6	60.8	66.6	66.6	66.6	66.6
#8 17:30 - 17:45	69.7	63.3	67.0	67.3	69.8	64.6	69.9	64.1	69.5	58.3	69.4	60.6	67.5	67.5	62.4	67.5	67.5	67.5	67.5
#9 17:45 - 18:00	69.7	63.5	67.2	67.4	69.8	64.7	69.9	64.4	69.5	58.9	69.8	62.8	68.4	68.4	64.4	68.4	68.4	68.4	68.4
#10 18:00 - 18:15	69.7	63.7	67.4	67.5	69.8	64.9	69.9	64.7	69.5	59.6	70.0	63.5	69.2	69.2	66.4	69.2	69.2	69.2	69.2
#11 18:15 - 18:30	69.7	64.0	67.6	67.6	69.8	65.0	69.9	64.9	69.5	60.2	70.0	63.8	69.5	69.7	67.7	69.7	69.7	69.7	69.7
#12 18:30 - 18:45	69.7	64.2	67.8	67.7	69.8	65.2	69.9	65.2	69.6	60.9	70.0	64.2	69.5	70.0	69.0	69.9	70.0	70.0	70.0

Analysis Period	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54	Seg. 55	Seg. 56
#1 15:45 - 16:00	66.7	61.5	64.7	55.1	66.5	62.6	68.8	63.9	69.1	69.1	54.2	62.5	62.5	62.6	50.8	61.2	69.1	61.3	67.8
#2 16:00 - 16:15	66.1	61.2	63.7	53.2	66.1	62.6	68.8	63.8	68.9	68.9	53.8	61.3	61.3	61.4	48.6	60.0	68.9	60.1	67.3
#3 16:15 - 16:30	65.6	61.1	63.1	52.0	65.8	62.5	68.8	63.5	68.7	68.7	53.5	60.6	60.6	60.6	47.1	59.2	68.8	59.4	66.9
#4 16:30 - 16:45	65.5	61.0	62.8	51.5	65.7	62.5	68.8	63.3	68.6	68.6	53.4	60.2	60.2	60.2	46.5	58.8	68.8	59.0	66.7
#5 16:45 - 17:00	65.4	61.0	62.7	51.3	65.7	62.5	68.8	63.2	68.5	68.5	53.4	60.1	60.1	60.2	46.3	58.7	68.8	58.9	66.7
#6 17:00 - 17:15	65.8	61.1	63.3	52.4	65.9	62.5	68.8	63.7	68.7	68.7	53.6	60.8	60.8	60.8	47.6	59.4	68.9	59.6	67.0
#7 17:15 - 17:30	66.6	61.4	64.5	54.7	66.4	62.6	68.8	63.9	69.1	69.1	54.1	62.3	62.3	62.3	50.3	60.9	69.0	61.1	67.7
#8 17:30 - 17:45	67.5	61.8	65.7	57.2	67.0	62.6	68.8	64.1	69.4	69.4	54.7	63.8	63.8	63.9	53.3	61.5	69.1	62.7	68.3
#9 17:45 - 18:00	68.4	62.2	67.1	60.1	67.7	62.6	68.8	64.3	69.5	69.8	55.5	65.6	65.6	65.6	56.9	61.6	69.1	63.2	69.0
#10 18:00 - 18:15	69.2	62.8	68.4	63.2	68.4	62.6	68.8	64.6	69.5	70.0	56.5	67.4	67.4	67.4	60.7	61.7	69.1	63.6	69.6
#11 18:15 - 18:30	69.7	63.3	69.3	63.5	68.5	62.6	68.8	64.9	69.5	70.0	57.4	68.6	68.6	68.6	63.5	61.8	69.1	63.9	69.9
#12 18:30 - 18:45	70.0	63.9	69.4	63.7	68.5	62.5	68.8	65.1	69.6	70.0	58.4	69.0	69.5	69.5	64.4	61.9	69.1	64.3	70.0

Build D

Speed Contours

Analysis Period	Seg. 1	Seg. 2	Seg. 3	Seg. 4	Seg. 5	Seg. 6	Seg. 7	Seg. 8	Seg. 9	Seg. 10	Seg. 11	Seg. 12	Seg. 13	Seg. 14	Seg. 15	Seg. 16	Seg. 17	Seg. 18
#1 15:45 - 16:00	69.1	62.7	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	61.0	68.6	58.6	69.6	53.8	68.8	62.9
#2 16:00 - 16:15	68.8	61.7	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	69.0	60.7	68.2	57.2	69.5	51.9	68.6	62.7
#3 16:15 - 16:30	68.6	61.0	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	60.6	67.9	56.2	69.3	50.6	68.5	62.6
#4 16:30 - 16:45	68.5	60.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	60.5	67.8	55.8	69.3	50.0	68.5	62.5
#5 16:45 - 17:00	68.5	60.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	68.7	60.5	67.7	55.7	69.3	49.9	68.5	62.5
#6 17:00 - 17:15	68.7	61.3	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	68.8	60.6	68.0	56.5	69.4	51.0	68.6	62.6
#7 17:15 - 17:30	69.1	62.5	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	69.2	60.9	68.5	58.4	69.6	53.4	68.7	62.8
#8 17:30 - 17:45	69.4	63.9	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	69.5	61.3	69.0	60.3	69.8	56.1	68.9	63.1
#9 17:45 - 18:00	69.8	64.9	69.5	69.8	69.8	69.8	69.8	69.8	69.8	69.8	69.8	61.8	69.5	62.6	70.0	59.2	69.2	63.5
#10 18:00 - 18:15	70.0	65.2	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.4	69.8	65.0	70.0	62.5	69.4	64.0
#11 18:15 - 18:30	70.0	65.5	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	62.9	69.8	65.4	70.0	63.8	69.5	64.4
#12 18:30 - 18:45	70.0	65.8	69.6	70.0	70.0	70.0	70.0	70.0	70.0	70.0	70.0	63.5	69.9	65.8	70.0	64.3	69.6	64.9

Analysis Period	Seg. 19	Seg. 20	Seg. 21	Seg. 22	Seg. 23	Seg. 24	Seg. 25	Seg. 26	Seg. 27	Seg. 28	Seg. 29	Seg. 30	Seg. 31	Seg. 32	Seg. 33	Seg. 34	Seg. 35	Seg. 36	Seg. 37
#1 15:45 - 16:00	69.6	63.2	66.9	67.3	69.8	64.5	69.9	63.9	69.4	57.9	69.1	59.0	66.7	66.7	51.5	62.1	62.1	62.1	62.1
#2 16:00 - 16:15	69.5	63.0	66.8	67.2	69.8	64.4	69.9	63.7	69.4	57.6	68.8	57.6	66.1	66.1	51.0	60.9	60.9	60.9	60.9
#3 16:15 - 16:30	69.4	62.9	66.8	67.2	69.8	64.3	69.9	63.6	69.4	57.5	68.6	56.6	65.6	65.6	50.7	60.2	60.2	60.2	60.2
#4 16:30 - 16:45	69.3	62.9	66.8	67.1	69.8	64.3	69.9	63.5	69.4	57.4	68.5	56.2	65.5	65.5	50.5	59.8	59.8	59.8	59.8
#5 16:45 - 17:00	69.3	62.9	66.7	67.1	69.8	64.3	69.9	63.4	69.4	57.4	68.5	56.1	65.4	65.4	50.5	59.7	59.7	59.7	59.7
#6 17:00 - 17:15	69.4	63.0	66.8	67.2	69.8	64.3	69.9	63.6	69.4	57.5	68.7	56.9	65.8	65.8	50.8	60.4	60.4	60.4	60.4
#7 17:15 - 17:30	69.6	63.1	66.9	67.2	69.8	64.5	69.9	63.8	69.4	57.9	69.0	58.7	66.6	66.6	51.4	61.9	61.9	61.9	61.9
#8 17:30 - 17:45	69.7	63.3	67.0	67.3	69.8	64.6	69.9	64.1	69.5	58.3	69.4	60.6	67.5	67.5	52.1	63.5	63.5	63.5	63.5
#9 17:45 - 18:00	69.7	63.5	67.2	67.4	69.8	64.7	69.9	64.4	69.5	58.9	69.8	62.8	68.4	68.4	53.0	65.3	65.3	65.3	65.3
#10 18:00 - 18:15	69.7	63.7	67.4	67.5	69.8	64.9	69.9	64.7	69.5	59.6	70.0	63.5	69.2	69.2	54.2	67.1	67.1	67.1	67.1
#11 18:15 - 18:30	69.7	64.0	67.6	67.6	69.8	65.0	69.9	64.9	69.5	60.2	70.0	63.8	69.5	69.7	55.2	68.3	68.3	68.3	68.3
#12 18:30 - 18:45	69.7	64.2	67.8	67.7	69.8	65.2	69.9	65.2	69.6	60.9	70.0	64.2	69.5	70.0	56.4	68.8	69.4	69.4	69.4

Analysis Period	Seg. 38	Seg. 39	Seg. 40	Seg. 41	Seg. 42	Seg. 43	Seg. 44	Seg. 45	Seg. 46	Seg. 47	Seg. 48	Seg. 49	Seg. 50	Seg. 51	Seg. 52	Seg. 53	Seg. 54	Seg. 55	Seg. 56
#1 15:45 - 16:00	62.1	62.1	62.1	62.1	68.2	65.9	68.7	64.7	68.0	68.0	64.0	64.2	64.2	64.2	53.7	61.1	69.1	61.3	67.8
#2 16:00 - 16:15	60.9	60.9	61.0	60.9	67.9	65.8	68.4	64.6	67.6	67.6	63.1	63.3	63.3	63.3	51.8	60.0	68.9	60.1	67.3
#3 16:15 - 16:30	60.2	60.2	60.2	60.2	67.7	65.8	68.1	64.5	67.3	67.3	62.4	62.7	62.7	62.7	50.6	59.2	68.8	59.4	66.9
#4 16:30 - 16:45	59.8	59.8	59.8	59.8	67.5	65.7	68.0	64.5	67.1	67.1	62.2	62.4	62.4	62.4	50.0	58.8	68.8	59.0	66.7
#5 16:45 - 17:00	59.7	59.7	59.7	59.7	67.5	65.7	68.0	64.5	67.1	67.1	62.1	62.3	62.3	62.3	49.9	58.7	68.8	58.9	66.7
#6 17:00 - 17:15	60.4	60.4	60.4	60.4	67.7	65.8	68.2	64.5	67.4	67.4	62.6	62.9	62.9	62.9	51.0	59.4	68.9	59.6	67.0
#7 17:15 - 17:30	61.9	61.9	61.9	61.9	68.1	65.9	68.6	64.7	67.9	67.9	63.8	64.0	64.0	64.0	53.3	60.9	69.0	61.1	67.7
#8 17:30 - 17:45	63.5	63.5	63.5	63.5	68.5	66.0	69.1	64.9	68.5	68.5	65.0	65.3	65.3	65.3	55.9	61.5	69.1	62.7	68.3
#9 17:45 - 18:00	65.3	65.3	65.3	65.3	68.9	66.1	69.4	65.1	69.2	69.2	66.4	66.7	66.7	66.7	58.9	61.6	69.1	63.2	69.0
#10 18:00 - 18:15	67.1	67.1	67.1	65.8	69.0	66.3	69.4	65.4	69.6	69.7	67.8	68.1	68.1	68.1	62.2	61.7	69.1	63.6	69.6
#11 18:15 - 18:30	68.3	68.3	68.3	66.1	69.1	66.5	69.4	65.7	69.6	69.9	68.7	69.0	69.0	69.0	64.3	61.8	69.1	63.9	69.9
#12 18:30 - 18:45	69.4	69.4	69.4	66.4	69.2	66.7	69.5	66.0	69.6	70.0	69.5	69.7	69.7	69.7	64.4	61.9	69.1	64.3	70.0

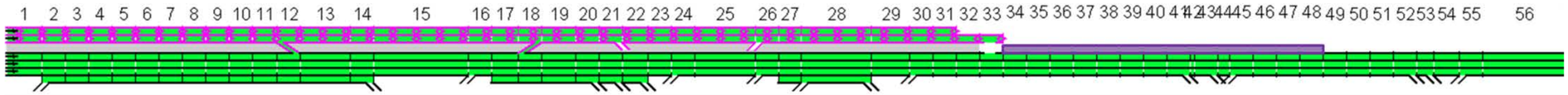
FREEVAL SUMMARY

Time is spent up front

- **Geometric segmentation**
- **Development and calibration of base freeway network**

Development of alternatives within FREEVAL is quick – much less time needed than VISSIM

Visualization of results often ‘shows’ the story



FREEVAL APPLICATIONS IN DISTRICT 5

I-4 at Darryl Carter Parkway

- Interim Interchange Analysis

I-4 at Wekiva Parkway

- Interim Interchange Analysis
- Hard Should Running Analysis

Express Lane Transition Evaluation

- I-4 Ultimate Express Lane Transition
- I-4 BtU Segment 3 Express Lane Transition

I-4 BtU North/South Section Evaluation

- FREEVAL and VISSIM currently under development

FREEVAL AVAILABLE ONLINE

Official analysis engine of the TRB Highway Capacity and Quality of Service Committee

Available for download here: http://hcmvolume4.org/

- Sign-up and navigate to the Technical Reference Library
- FREEVAL-2015e available in Chapters 11 and 25

TECHNICAL REFERENCE LIBRARY

QUICK JUMP

+ Chapter 1: HCM User's Guide
+ Chapter 2: Applications
+ Chapter 3: Modal Characteristics
+ Chapter 4: Traffic Operations and Capacity Concepts
+ Chapter 5: Quality and Level-of-Service Concepts
+ Chapter 6: HCM and Alternative Analysis Tools
+ Chapter 7: Interpreting HCM and Alternative Tool Results
+ Chapter 8: HCM Primer
+ Chapter 9: Glossary and Symbols
+ Chapter 10: Freeway Facilities Core Methodology
+ Chapter 11: Freeway Reliability Analysis
+ Chapter 12: Basic Freeway and Multilane Highway Segments
+ Chapter 13: Freeway Weaving Segments
+ Chapter 14: Freeway Merge and Diverge Segments
+ Chapter 15: Two-Lane Highways
+ Chapter 16: Urban Street Facilities
+ Chapter 17: Urban Street Reliability and ATDM
+ Chapter 18: Urban Street Segments
+ Chapter 19: Signalized Intersections
+ Chapter 20: Two-Way Stop-Controlled Intersections
+ Chapter 21: All-way Stop-Controlled Intersections
+ Chapter 22: Roundabouts
+ Chapter 23: Ramp Terminals and Alternative Intersections
+ Chapter 24: Off-street Pedestrian and Bicycle Facilities
+ Chapter 25: Freeway Facilities: Supplemental
+ Chapter 26: Freeway and Highway Segments: Supplemental
+ Chapter 27: Freeway Weaving: Supplemental
+ Chapter 28: Freeway Merges and Diverges: Supplemental
+ Chapter 29: Urban Street Facilities: Supplemental
+ Chapter 30: Urban Street Segments: Supplemental
+ Chapter 31: Signalized Intersections: Supplemental
+ Chapter 32: Stop-Controlled Intersections: Supplemental
+ Chapter 33: Roundabouts: Supplemental
+ Chapter 34: Interchange Ramp Terminals: Supplemental
+ Chapter 35: Pedestrians and Bicycles: Supplemental
+ Chapter 36: Concepts: Supplemental
+ Chapter 37: ATDM: Supplemental

CHAPTER 25: FREEWAY FACILITIES: SUPPLEMENTAL

TITLE	SIZE
Estimation of Capacities on Florida Freeways	
FREEVAL-2015e Computational Engine (Release 20160602)	5.9 MB
FREEVAL-2015e User's Guide	3.7 MB
Freeway Facility Calibration Procedure	771.6 KB
Heavy Vehicle Effects on Florida Freeways and Multilane Highways	
Highway Economic Requirements Systems—State Version	
Incorporating Travel Time Reliability into the Highway Capacity Manual	34.4 MB
Metropolitan Weather Database for Freeway Reliability Analysis	5.9 MB
NCFRP Report 31: Incorporating Truck Analysis into the Highway Capacity Manual	9 MB
Work Zone Capacity Methods for the Highway Capacity Manual	7.9 MB

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QUESTIONS ?