ACADIAN / PERKINS IMR
Appendix C

Analysis Input Parameters.....

No Build Network Analysis.....

MOE Comparison Table.....

2040 Build Volume Estimation Methodology.....

QA-QC Documentation.....

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URBAN SYSTEMS inc.

Project # 10-085-2

HCS Freeway Merge/Diverge analysis No Build Conditions	
INPUT	
Project Properties	
Analyst	Initials of person doing analysis
Agency	USI- 10-085-2
Analysis Year	2017
Project Description	I-10 Corridor Improvement Stage 1 EA - "analysis location"
Jurisdiction	LADOTD
Time Period	"Scenario AM"
Date	"Date of analysis"
Geometric Data	
Number of lanes	3
Freeway FFS	Posted speed
Freeway Length	default
Freeway Terrain Type	level
Freeway Grade	default
Freeway Grade Length	default
Highway or C-D Roadway	unchecked
Managed Lane	unchecked
Ramp Lanes	1
Ramp FFS	Posted advisory speed of ramp for diverge and default for merge (unless posted)
Ramp side	Right
Ramp Terrain Type	Level
Ramp Grade	default
Ramp Grade length	default
Total Ramp Density	Calculated using Google Earth
Right Side Clearance	Measured in Google Earth
Length of First Accel Lane	From previous analysis or measured in Google Earth
Length of Second Accel Lane	default
Demand Data	
Freeway Demand	I-10 mainline volume (DC Figure 2)
Freeway Peak Hour Factor	Calculated mainline PHF
Freeway Total Trucks	HV % from DCR reports Table 1.
Freeway Tractor-Trailers	default
Freeway Single Unit Trucks	default
Merge/Diverge Demand	On/Off ramp volume (DC Figure 2)
Ramp Peak Hour Factor	Calculated ramp PHF
Ramp Total Trucks	HV % from DCR reports (weighted average)
Ramp Single Unit Trucks	default
Ramp Tractor-Trailers	default
Adjustment Factors	
Freeway Driver Population	default
Freeway Weather Type	default
Frreeway Speed Adjustment Factor	default
Freeway Capacity Adjustment Factor	default
Freeway Demand Adjustment Factor	default
Incident Type	default
Ramp Driver Population	default
Ramp Weather Type	default
Ramp Speed Adjustment Factor	default
Ramp Capacity Adjustment Factor	default
Ramp Demand Adjustment Factor	default
Adjacent Ramps	
Upstream Ramp	merge/diverge
Distance to Upstream Ramp	From previous analysis or measured in Google Earth
Upstream Ramp Terrain	default
Upstream Ramp Demand	On/Off ramp volume (DC Figure 2 - may not be the same DC report)
Upstram Ramp PHF	Calculated ramp PHF
Upstream Ramp Trucks	HV % from DCR reports (weighted average)
Downstream Ramp	merge/diverge
Distance to Downstream Ramp	From previous analysis or measured in Google Earth
Downstream Ramp Terrain	default
Downstream Ramp Demand	On/Off ramp volume (DC Figure 2 - may not be the same DC report)
Downstram Ramp PHF	Calculated mainline PHF
Downstream Ramp Trucks	HV % from DCR reports (weighted average)

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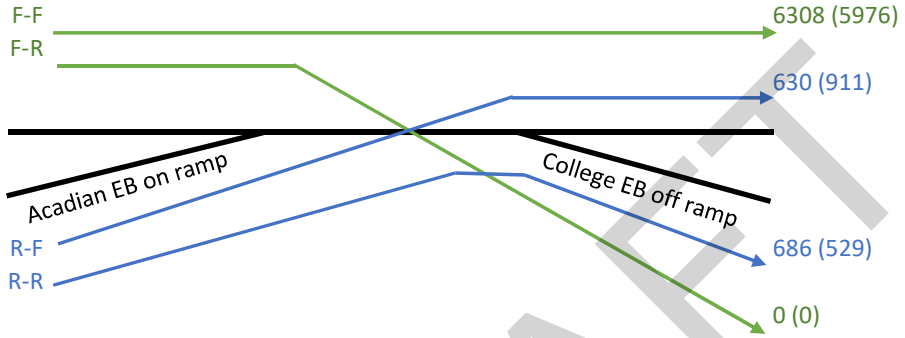
I-10 EB No Build Weave Sensitivity Volumes

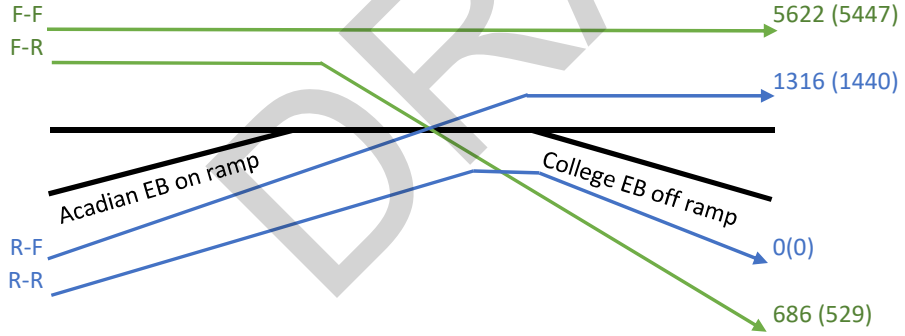
I-10 eastbound between Acadian and College is a weave. As there was insufficient data to determine weave maneuvers (freeway to freeway, freeway to ramp, ramp to freeway, and ramp to ramp), a volume sensitivity weave analysis was conducted. The following three (3) volume scenarios were considered:

--- Case 1: 100% of vehicles exiting at College originate from Acadian
--- Case 2: 100% of vehicles exiting at College originate from I-10 eastbound
--- Case 3: 50% of vehicles exiting at College originate from Acadian and I-10 eastbound

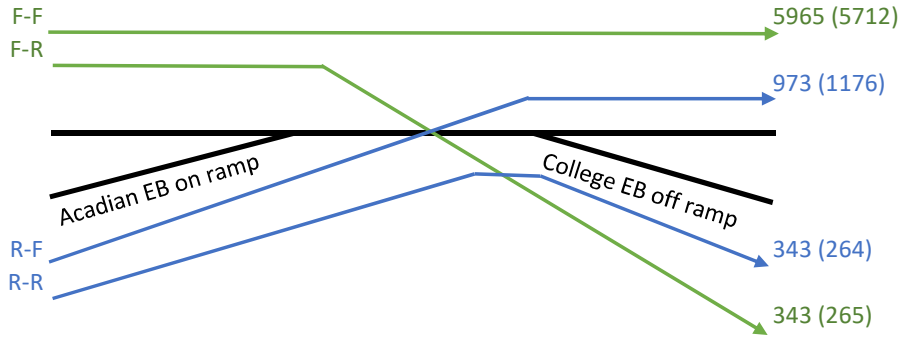
No Build: AM (PM) Case #1: All exiting volume from ramp



No Build: AM (PM) Case #2: All exiting volume from freeway (*Discussed in Chapter 2)



No Build: AM (PM) Case #3: 50% exiting volume from ramp, 50% from freeway



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HCS7 Basic Freeway Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB west of Perkins off ramp		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	55.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6823	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	2677
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2250
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2250
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.19
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	55.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	SJT	Date	6/4/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB west of Perkins off ramp		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	55.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6248	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	2408
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2250
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2250
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.07
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	55.0		

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HCS7 Freeway Diverge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA- I-10 EB Diverge at Perkins Rd		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	3	1
Free-Flow Speed (FFS), mi/h	60.0	30.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	150
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	6823	363
Peak Hour Factor (PHF)	0.96	0.92
Total Trucks, %	13.00	2.40
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.885	0.977
Flow Rate (v_i), pc/h	8031	404
Capacity (c), pc/h	6900	1900
Volume-to-Capacity Ratio (v/c)	1.16	0.21

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	48.7
Distance to Upstream Ramp (L_{UP}), ft	4700	Speed Index (D_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	258.6	Flow Outer Lanes (v_{OA}), pc/h/ln	2700
Distance to Downstream Ramp (L_{DOWN}), ft	850	Off-Ramp Influence Area Speed (S_R), mi/h	50.5
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.541	Outer Lanes Freeway Speed (S_O), mi/h	59.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	5331	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Diverge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA- I-10 EB Diverge at Perkins Rd		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	3	1
Free-Flow Speed (FFS), mi/h	60.0	30.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	150
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	6248	163
Peak Hour Factor (PHF)	0.96	0.67
Total Trucks, %	11.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.901	1.000
Flow Rate (v_i), pc/h	7223	243
Capacity (c), pc/h	6900	1900
Volume-to-Capacity Ratio (v/c)	1.05	0.13

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	41.8
Distance to Upstream Ramp (L_{UP}), ft	4700	Speed Index (D_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	156.8	Flow Outer Lanes (v_{OA}), pc/h/ln	2700
Distance to Downstream Ramp (L_{DOWN}), ft	850	Off-Ramp Influence Area Speed (S_R), mi/h	50.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.568	Outer Lanes Freeway Speed (S_O), mi/h	59.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	4523	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Basic Freeway Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB between Perkins and Acadian		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.1
Right-Side Lateral Clearance, ft	0		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6460	Heavy Vehicle Adjustment Factor (f_{HV})	0.885
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	2535
Total Trucks, %	13.00	Capacity (c), pc/h/ln	2231
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2231
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.14
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	2.4	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	4.5	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.1		

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HCS7 Basic Freeway Report

Project Information

Analyst	SJT	Date	6/5/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB between Perkins and Acadian		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.50
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	53.1
Right-Side Lateral Clearance, ft	0		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6085	Heavy Vehicle Adjustment Factor (f_{HV})	0.901
Peak Hour Factor	0.96	Flow Rate (V_p), pc/h/ln	2345
Total Trucks, %	11.00	Capacity (c), pc/h/ln	2231
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2231
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.05
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	2.4	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	4.5	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	53.1		

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HCS7 Freeway Diverge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA- I-10 EB Diverge at Acadian Thruway		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	3	1
Free-Flow Speed (FFS), mi/h	60.0	30.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	110
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	6460	152
Peak Hour Factor (PHF)	0.96	0.79
Total Trucks, %	13.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.885	1.000
Flow Rate (v_i), pc/h	7604	192
Capacity (c), pc/h	6900	1900
Volume-to-Capacity Ratio (v/c)	1.10	0.10

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	45.4
Distance to Upstream Ramp (L_{UP}), ft	850	Speed Index (D_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	2700
Distance to Downstream Ramp (L_{DOWN}), ft	1930	Off-Ramp Influence Area Speed (S_R), mi/h	50.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.561	Outer Lanes Freeway Speed (S_O), mi/h	59.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	4904	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Diverge Report

Project Information

Analyst	SJT	Date	6/5/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA- I-10 EB Diverge at Acadian Thruway		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	3	1
Free-Flow Speed (FFS), mi/h	60.0	30.0
Segment Length (L) / Deceleration Length (L_D), ft	1500	110
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	6085	109
Peak Hour Factor (PHF)	0.96	0.86
Total Trucks, %	11.00	2.60
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.901	0.975
Flow Rate (v_i), pc/h	7035	130
Capacity (c), pc/h	6900	1900
Volume-to-Capacity Ratio (v/c)	1.02	0.07

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	40.5
Distance to Upstream Ramp (L_{UP}), ft	850	Speed Index (D_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	2700
Distance to Downstream Ramp (L_{DOWN}), ft	1930	Off-Ramp Influence Area Speed (S_R), mi/h	50.9
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FD})	0.578	Outer Lanes Freeway Speed (S_O), mi/h	59.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	4335	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	-	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Weaving Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB Weave b/w Acadian and College - Case #1		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	828	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	6308	630	686	0
Peak Hour Factor (PHF)	0.96	0.93	0.89	0.96
Total Trucks, %	13.00	0.60	2.00	13.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.885	0.994	0.980	0.885
Flow Rate (v_i), pc/h	7425	682	787	0

Weaving Flow Rate (v_w), pc/h	682	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	8212	Density-Based Capacity (c_{IWL}), pc/h/ln	2110
Total Flow Rate (v), pc/h	8894	Demand Flow-Based Capacity (c_{IW}), pc/h	31169
Volume Ratio (VR)	0.077	Weaving Segment Capacity (c_W), veh/h	7469
Minimum Lane Change Rate (LC_{MIN}), lc/h	0	Adjusted Weaving Area Capacity, pc/h	8284
Maximum Weaving Length (L_{MAX}), ft	3318	Volume-to-Capacity Ratio (v/c)	1.07

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	-	Average Weaving Speed (S_W), mi/h	-
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	-	Average Non-Weaving Speed (S_{NW}), mi/h	-
Weaving Lane Change Rate (LC_W), lc/h	-	Average Speed (S), mi/h	-
Total Lane Change Rate (LC_{All}), lc/h	-	Density (D), pc/mi/ln	-
Weaving Intensity Factor (W)	-	Level of Service (LOS)	F

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HCS7 Freeway Weaving Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB Weave b/w Acadian and College - Case #1		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	828	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	5976	911	529	0
Peak Hour Factor (PHF)	0.96	0.94	0.77	0.96
Total Trucks, %	11.00	0.50	2.00	11.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.901	0.995	0.980	0.901
Flow Rate (v_i), pc/h	6909	974	701	0

Weaving Flow Rate (v_w), pc/h	974	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	7610	Density-Based Capacity (c_{IWL}), pc/h/ln	2083
Total Flow Rate (v), pc/h	8584	Demand Flow-Based Capacity (c_{IW}), pc/h	21239
Volume Ratio (VR)	0.113	Weaving Segment Capacity (c_W), veh/h	7507
Minimum Lane Change Rate (LC_{MIN}), lc/h	974	Adjusted Weaving Area Capacity, pc/h	8176
Maximum Weaving Length (L_{MAX}), ft	3666	Volume-to-Capacity Ratio (v/c)	1.05

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	-	Average Weaving Speed (S_W), mi/h	-
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	-	Average Non-Weaving Speed (S_{NW}), mi/h	-
Weaving Lane Change Rate (LC_W), lc/h	-	Average Speed (S), mi/h	-
Total Lane Change Rate (LC_{All}), lc/h	-	Density (D), pc/mi/ln	-
Weaving Intensity Factor (W)	-	Level of Service (LOS)	F

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HCS7 Freeway Weaving Report

Project Information

Analyst	SJT	Date	6/5/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB Weave b/w Acadian and College - Case #2		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	828	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	5622	1316	0	686
Peak Hour Factor (PHF)	0.96	0.93	0.89	0.96
Total Trucks, %	13.00	0.60	2.00	13.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.885	0.994	0.980	0.885
Flow Rate (v_i), pc/h	6617	1424	0	807

Weaving Flow Rate (v_w), pc/h	2231	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	6617	Density-Based Capacity (c_{IWL}), pc/h/ln	1975
Total Flow Rate (v), pc/h	8848	Demand Flow-Based Capacity (c_{IW}), pc/h	9524
Volume Ratio (VR)	0.252	Weaving Segment Capacity (c_W), veh/h	6992
Minimum Lane Change Rate (LC_{MIN}), lc/h	0	Adjusted Weaving Area Capacity, pc/h	7747
Maximum Weaving Length (L_{MAX}), ft	5075	Volume-to-Capacity Ratio (v/c)	1.14

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	-	Average Weaving Speed (S_W), mi/h	-
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	-	Average Non-Weaving Speed (S_{NW}), mi/h	-
Weaving Lane Change Rate (LC_W), lc/h	-	Average Speed (S), mi/h	-
Total Lane Change Rate (LC_{All}), lc/h	-	Density (D), pc/mi/ln	-
Weaving Intensity Factor (W)	-	Level of Service (LOS)	F

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HCS7 Freeway Weaving Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB Weave b/w Acadian and College - Case #2		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	828	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.33	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	5447	1440	0	529
Peak Hour Factor (PHF)	0.96	0.94	0.77	0.96
Total Trucks, %	11.00	0.50	2.00	11.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.901	0.995	0.980	0.901
Flow Rate (v_i), pc/h	6297	1540	0	612

Weaving Flow Rate (v_w), pc/h	2152	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	6297	Density-Based Capacity (c_{IWL}), pc/h/ln	1973
Total Flow Rate (v), pc/h	8449	Demand Flow-Based Capacity (c_{IW}), pc/h	9412
Volume Ratio (VR)	0.255	Weaving Segment Capacity (c_W), veh/h	7111
Minimum Lane Change Rate (LC_{MIN}), lc/h	0	Adjusted Weaving Area Capacity, pc/h	7745
Maximum Weaving Length (L_{MAX}), ft	5106	Volume-to-Capacity Ratio (v/c)	1.09

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	-	Average Weaving Speed (S_W), mi/h	-
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	-	Average Non-Weaving Speed (S_{NW}), mi/h	-
Weaving Lane Change Rate (LC_W), lc/h	-	Average Speed (S), mi/h	-
Total Lane Change Rate (LC_{All}), lc/h	-	Density (D), pc/mi/ln	-
Weaving Intensity Factor (W)	-	Level of Service (LOS)	F

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HCS7 Freeway Weaving Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB Weave b/w Acadian and College - Case #3		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	828	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	1.67	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	5965	973	343	343
Peak Hour Factor (PHF)	0.96	0.93	0.89	0.96
Total Trucks, %	13.00	0.60	2.00	13.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.885	0.994	0.980	0.885
Flow Rate (v_i), pc/h	7021	1053	393	404

Weaving Flow Rate (v_w), pc/h	1457	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	7414	Density-Based Capacity (c_{IWL}), pc/h/ln	2044
Total Flow Rate (v), pc/h	8871	Demand Flow-Based Capacity (c_{IW}), pc/h	14634
Volume Ratio (VR)	0.164	Weaving Segment Capacity (c_W), veh/h	7236
Minimum Lane Change Rate (LC_{MIN}), lc/h	0	Adjusted Weaving Area Capacity, pc/h	8021
Maximum Weaving Length (L_{MAX}), ft	4171	Volume-to-Capacity Ratio (v/c)	1.11

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	-	Average Weaving Speed (S_W), mi/h	-
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	-	Average Non-Weaving Speed (S_{NW}), mi/h	-
Weaving Lane Change Rate (LC_W), lc/h	-	Average Speed (S), mi/h	-
Total Lane Change Rate (LC_{All}), lc/h	-	Density (D), pc/mi/ln	-
Weaving Intensity Factor (W)	-	Level of Service (LOS)	F

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HCS7 Freeway Weaving Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 EB Weave b/w Acadian and College - Case #3		

Geometric Data

Number of Lanes (N), ln	4	Segment Type	Freeway
Short Length (L_S), ft	828	Number of Maneuver Lanes (N_{WL}), ln	2
Weaving Configuration	One-Sided	Ramp-to-Freeway Lane Changes (LC_{RF}), lc	1
Terrain Type	Level	Freeway-to-Ramp Lane Changes (LC_{FR}), lc	1
Percent Grade, %	-	Ramp-to-Ramp Lane Changes (LC_{RR}), lc	0
Interchange Density (ID), int/mi	0.33	Cross Weaving Managed Lane	No

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

	FF	RF	RR	FR
Demand Volume (V_i), veh/h	5712	1176	264	265
Peak Hour Factor (PHF)	0.96	0.94	0.77	0.96
Total Trucks, %	11.00	0.50	2.00	11.00
Heavy Vehicle Adjustment Factor (f_{HV})	0.901	0.995	0.980	0.901
Flow Rate (v_i), pc/h	6604	1257	350	306

Weaving Flow Rate (v_w), pc/h	1563	Freeway Max Capacity (c_{IFL}), pc/h/ln	2300
Non-Weaving Flow Rate (v_{NW}), pc/h	6954	Density-Based Capacity (c_{IWL}), pc/h/ln	2029
Total Flow Rate (v), pc/h	8517	Demand Flow-Based Capacity (c_{IW}), pc/h	13043
Volume Ratio (VR)	0.184	Weaving Segment Capacity (c_W), veh/h	7313
Minimum Lane Change Rate (LC_{MIN}), lc/h	0	Adjusted Weaving Area Capacity, pc/h	7965
Maximum Weaving Length (L_{MAX}), ft	4373	Volume-to-Capacity Ratio (v/c)	1.07

Speed and Density

Non-Weaving Vehicle Index (I_{NW})	-	Average Weaving Speed (S_W), mi/h	-
Non-Weaving Lane Change Rate (LC_{NW}), lc/h	-	Average Non-Weaving Speed (S_{NW}), mi/h	-
Weaving Lane Change Rate (LC_W), lc/h	-	Average Speed (S), mi/h	-
Total Lane Change Rate (LC_{All}), lc/h	-	Density (D), pc/mi/ln	-
Weaving Intensity Factor (W)	-	Level of Service (LOS)	F

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HCS7 Freeway Merge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB Merge at College		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	4	1
Free-Flow Speed (FFS), mi/h	60.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1200
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	7402	488
Peak Hour Factor (PHF)	0.94	0.81
Total Trucks, %	6.00	1.20
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.988
Flow Rate (v_i), pc/h	8350	610
Capacity (c), pc/h	9200	2000
Volume-to-Capacity Ratio (v/c)	0.97	0.31

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	28.6
Distance to Upstream Ramp (L_{UP}), ft	1000	Speed Index (M_S)	0.440
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	2505
Distance to Downstream Ramp (L_{DOWN}), ft	2650	On-Ramp Influence Area Speed (S_R), mi/h	52.1
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.142	Outer Lanes Freeway Speed (S_O), mi/h	52.2
Flow in Lanes 1 and 2 (v_{12}), pc/h	3340	Ramp Junction Speed (S), mi/h	52.2
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3950	Average Density (D), pc/mi/ln	42.9
Level of Service (LOS)	D		

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HCS7 Freeway Merge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB Merge at College		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	4	1
Free-Flow Speed (FFS), mi/h	60.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	1200
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	6814	384
Peak Hour Factor (PHF)	0.99	0.88
Total Trucks, %	8.00	0.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	1.000
Flow Rate (v_i), pc/h	7433	436
Capacity (c), pc/h	9200	2000
Volume-to-Capacity Ratio (v/c)	0.86	0.22

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	24.4
Distance to Upstream Ramp (L_{UP}), ft	1000	Speed Index (M_S)	0.355
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	2230
Distance to Downstream Ramp (L_{DOWN}), ft	2650	On-Ramp Influence Area Speed (S_R), mi/h	53.6
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.163	Outer Lanes Freeway Speed (S_O), mi/h	53.8
Flow in Lanes 1 and 2 (v_{12}), pc/h	2973	Ramp Junction Speed (S), mi/h	53.7
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	3409	Average Density (D), pc/mi/ln	36.6
Level of Service (LOS)	C		

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HCS7 Basic Freeway Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB between College and Acadian		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	55.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7890	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2225
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2250
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2250
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.99
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	50.5
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	44.1
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	55.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB between College and Acadian		

Geometric Data

Number of Lanes, ln	4	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	55.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7198	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.99	Flow Rate (V_p), pc/h/ln	1963
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2250
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2250
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	0.87
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	54.3
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	36.2
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	E
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	55.0		

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HCS7 Freeway Merge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB Merge at Acadian		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	3	1
Free-Flow Speed (FFS), mi/h	60.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	232
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	6591	154
Peak Hour Factor (PHF)	0.94	0.92
Total Trucks, %	6.00	3.10
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.970
Flow Rate (v_i), pc/h	7436	173
Capacity (c), pc/h	6900	2000
Volume-to-Capacity Ratio (v/c)	1.10	0.09

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	1159.5	Density in Ramp Influence Area (D_R), pc/mi/ln	42.3
Distance to Upstream Ramp (L_{UP}), ft	2400	Speed Index (M_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	2700
Distance to Downstream Ramp (L_{DOWN}), ft	1482	On-Ramp Influence Area Speed (S_R), mi/h	45.0
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.584	Outer Lanes Freeway Speed (S_O), mi/h	51.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	4736	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4909	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Merge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB Merge at Acadian		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	3	1
Free-Flow Speed (FFS), mi/h	60.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	232
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	5924	197
Peak Hour Factor (PHF)	0.99	0.86
Total Trucks, %	8.00	1.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.990
Flow Rate (v_i), pc/h	6462	231
Capacity (c), pc/h	6900	2000
Volume-to-Capacity Ratio (v/c)	0.97	0.12

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	963.5	Density in Ramp Influence Area (D_R), pc/mi/ln	35.2
Distance to Upstream Ramp (L_{UP}), ft	2400	Speed Index (M_S)	0.519
Downstream Equilibrium Distance (L_{EQ}), ft	-	Flow Outer Lanes (v_{OA}), pc/h/ln	2688
Distance to Downstream Ramp (L_{DOWN}), ft	1482	On-Ramp Influence Area Speed (S_R), mi/h	50.7
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.584	Outer Lanes Freeway Speed (S_O), mi/h	51.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	3774	Ramp Junction Speed (S), mi/h	50.9
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4005	Average Density (D), pc/mi/ln	43.8
Level of Service (LOS)	E		

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HCS7 Freeway Merge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB Merge at Perkins		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	3	1
Free-Flow Speed (FFS), mi/h	60.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	441
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	6745	830
Peak Hour Factor (PHF)	0.94	0.90
Total Trucks, %	6.00	1.90
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.943	0.981
Flow Rate (v_i), pc/h	7609	940
Capacity (c), pc/h	6900	2000
Volume-to-Capacity Ratio (v/c)	1.24	0.47

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	48.0
Distance to Upstream Ramp (L_{UP}), ft	1440	Speed Index (M_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	3778.5	Flow Outer Lanes (v_{OA}), pc/h/ln	2700
Distance to Downstream Ramp (L_{DOWN}), ft	3373	On-Ramp Influence Area Speed (S_R), mi/h	30.4
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.595	Outer Lanes Freeway Speed (S_O), mi/h	51.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	4909	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	5849	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Freeway Merge Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB Merge at Perkins		

Geometric Data

	Freeway	Ramp
Number of Lanes (N)	3	1
Free-Flow Speed (FFS), mi/h	60.0	35.0
Segment Length (L) / Acceleration Length (L_A), ft	1500	441
Terrain Type	Level	Level
Percent Grade, %	-	-
Segment Type / Ramp Side	Freeway	Right

Adjustment Factors

Driver Population	All Familiar	All Familiar
Weather Type	Non-Severe Weather	Non-Severe Weather
Incident Type	No Incident	-
Final Speed Adjustment Factor (SAF)	1.000	1.000
Final Capacity Adjustment Factor (CAF)	1.000	1.000
Demand Adjustment Factor (DAF)	1.000	1.000

Demand and Capacity

Demand Volume (V_i), veh/h	6121	583
Peak Hour Factor (PHF)	0.99	0.79
Total Trucks, %	8.00	2.00
Single-Unit Trucks (SUT), %	-	-
Tractor-Trailers (TT), %	-	-
Heavy Vehicle Adjustment Factor (f_{HV})	0.926	0.980
Flow Rate (v_i), pc/h	6677	753
Capacity (c), pc/h	6900	2000
Volume-to-Capacity Ratio (v/c)	1.08	0.38

Speed and Density

Upstream Equilibrium Distance (L_{EQ}), ft	-	Density in Ramp Influence Area (D_R), pc/mi/ln	39.3
Distance to Upstream Ramp (L_{UP}), ft	1440	Speed Index (M_S)	-
Downstream Equilibrium Distance (L_{EQ}), ft	2183.4	Flow Outer Lanes (v_{OA}), pc/h/ln	2700
Distance to Downstream Ramp (L_{DOWN}), ft	3373	On-Ramp Influence Area Speed (S_R), mi/h	46.8
Prop. Freeway Vehicles in Lane 1 and 2 (P_{FM})	0.590	Outer Lanes Freeway Speed (S_O), mi/h	51.1
Flow in Lanes 1 and 2 (v_{12}), pc/h	3977	Ramp Junction Speed (S), mi/h	-
Flow Entering Ramp-Infl. Area (v_{R12}), pc/h	4730	Average Density (D), pc/mi/ln	-
Level of Service (LOS)	F		

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HCS7 Basic Freeway Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build AM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB west of Perkins on ramp		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	55.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	7575	Heavy Vehicle Adjustment Factor (f_{HV})	0.943
Peak Hour Factor	0.94	Flow Rate (V_p), pc/h/ln	2849
Total Trucks, %	6.00	Capacity (c), pc/h/ln	2250
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2250
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.27
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	55.0		

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HCS7 Basic Freeway Report

Project Information

Analyst	SJT	Date	6/13/2019
Agency	USI - 10-085-2	Analysis Year	2040
Jurisdiction	LADOTD	Time Period Analyzed	No Build PM
Project Description	I-10 Corridor Improvement Stage 1 EA - I-10 WB west of Perkins on ramp		

Geometric Data

Number of Lanes, ln	3	Terrain Type	Level
Segment Length (L), ft	-	Percent Grade, %	-
Measured or Base Free-Flow Speed	Base	Grade Length, mi	-
Base Free-Flow Speed (BFFS), mi/h	60.0	Total Ramp Density (TRD), ramps/mi	1.67
Lane Width, ft	12	Free-Flow Speed (FFS), mi/h	55.0
Right-Side Lateral Clearance, ft	10		

Adjustment Factors

Driver Population	All Familiar	Final Speed Adjustment Factor (SAF)	1.000
Weather Type	Non-Severe Weather	Final Capacity Adjustment Factor (CAF)	1.000
Incident Type	No Incident	Demand Adjustment Factor (DAF)	1.000

Demand and Capacity

Demand Volume veh/h	6704	Heavy Vehicle Adjustment Factor (f_{HV})	0.926
Peak Hour Factor	0.99	Flow Rate (V_p), pc/h/ln	2438
Total Trucks, %	8.00	Capacity (c), pc/h/ln	2250
Single-Unit Trucks (SUT), %	-	Adjusted Cpacity (c_{adj}), pc/h/ln	2250
Tractor-Trailers (TT), %	-	Volume-to-Capacity Ratio (v/c)	1.08
Passenger Car Equivalent (E_T)	2.000		

Speed and Density

Lane Width Adjustment (f_{LW})	0.0	Average Speed (S), mi/h	-
Right-Side Lateral Clearance Adj. (f_{RLC})	0.0	Density (D), pc/mi/ln	-
Total Ramp Density Adjustment	5.0	Level of Service (LOS)	F
Adjusted Free-Flow Speed (FFS_{adj}), mi/h	55.0		

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	621	8	670	42	530	0	0	1072	104
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1881	1882	1863	1759	1863	0	0	1881	1881
Adj Flow Rate, veh/h				674	0	0	45	570	0	0	1153	0
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %				1	0	2	8	2	0	0	1	1
Cap, veh/h				811	0	358	60	2324	0	0	2016	902
Arrive On Green				0.23	0.00	0.00	0.04	0.66	0.00	0.00	0.56	0.00
Sat Flow, veh/h				3583	0	1583	1675	3632	0	0	3668	1599
Grp Volume(v), veh/h				674	0	0	45	570	0	0	1153	0
Grp Sat Flow(s),veh/h/ln				1792	0	1583	1675	1770	0	0	1787	1599
Q Serve(g_s), s				17.9	0.0	0.0	2.7	6.6	0.0	0.0	20.8	0.0
Cycle Q Clear(g_c), s				17.9	0.0	0.0	2.7	6.6	0.0	0.0	20.8	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				811	0	358	60	2324	0	0	2016	902
V/C Ratio(X)				0.83	0.00	0.00	0.75	0.25	0.00	0.00	0.57	0.00
Avail Cap(c_a), veh/h				1039	0	459	122	2324	0	0	2016	902
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				36.9	0.0	0.0	47.8	7.0	0.0	0.0	14.0	0.0
Incr Delay (d2), s/veh				5.3	0.0	0.0	23.3	0.1	0.0	0.0	1.2	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				14.5	0.0	0.0	2.9	5.7	0.0	0.0	15.7	0.0
LnGrp Delay(d),s/veh				42.1	0.0	0.0	71.1	7.1	0.0	0.0	15.2	0.0
LnGrp LOS				D			E	A			B	
Approach Vol, veh/h					674			615			1153	
Approach Delay, s/veh					42.1			11.8			15.2	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	9.3	62.1		28.6		71.4		
Change Period (Y+Rc), s	5.7	5.7		6.0		5.7		
Max Green Setting (Gmax), s	7.3	46.3		29.0		59.3		
Max Q Clear Time (g_c+I1), s	4.7	22.8		19.9		8.6		
Green Ext Time (p_c), s	0.0	19.7		2.7		36.5		

Intersection Summary	
HCM 2010 Ctrl Delay	21.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	621	8	670	42	530	1072	104
Turn Type	Perm	NA	Perm	Prot	NA	NA	Perm
Protected Phases		4		1	6	2	
Permitted Phases	4		4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.0	11.0	11.0	10.7	10.7	21.7	21.7
Total Split (s)	35.0	35.0	35.0	13.0	65.0	52.0	52.0
Total Split (%)	35.0%	35.0%	35.0%	13.0%	65.0%	52.0%	52.0%
Yellow Time (s)	5.0	5.0	5.0	4.7	4.7	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	5.7
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	None	C-Min	C-Min

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 42 (42%), Referenced to phase 2:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 22: Acadian Thruway & I-10 WB off ramp

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	553	22	699	58	540	0	0	1254	116
Number				7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln				1900	1900	1900	1863	1881	0	0	1900	1881
Adj Flow Rate, veh/h				592	0	0	60	562	0	0	1306	0
Adj No. of Lanes				2	0	1	1	2	0	0	2	1
Peak Hour Factor				0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %				0	0	0	2	1	0	0	0	1
Cap, veh/h				729	0	325	77	2436	0	0	2097	929
Arrive On Green				0.20	0.00	0.00	0.04	0.68	0.00	0.00	0.58	0.00
Sat Flow, veh/h				3619	0	1615	1774	3668	0	0	3705	1599
Grp Volume(v), veh/h				592	0	0	60	562	0	0	1306	0
Grp Sat Flow(s),veh/h/ln				1810	0	1615	1774	1787	0	0	1805	1599
Q Serve(g_s), s				15.6	0.0	0.0	3.3	5.9	0.0	0.0	23.8	0.0
Cycle Q Clear(g_c), s				15.6	0.0	0.0	3.3	5.9	0.0	0.0	23.8	0.0
Prop In Lane				1.00		1.00	1.00		0.00	0.00		1.00
Lane Grp Cap(c), veh/h				729	0	325	77	2436	0	0	2097	929
V/C Ratio(X)				0.81	0.00	0.00	0.78	0.23	0.00	0.00	0.62	0.00
Avail Cap(c_a), veh/h				1013	0	452	130	2436	0	0	2097	929
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				38.1	0.0	0.0	47.3	6.0	0.0	0.0	13.8	0.0
Incr Delay (d2), s/veh				4.3	0.0	0.0	20.6	0.1	0.0	0.0	1.4	0.0
Initial Q Delay(d3),s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln				13.0	0.0	0.0	3.8	5.2	0.0	0.0	17.9	0.0
LnGrp Delay(d),s/veh				42.4	0.0	0.0	68.0	6.1	0.0	0.0	15.2	0.0
LnGrp LOS				D			E	A			B	
Approach Vol, veh/h					592			622			1306	
Approach Delay, s/veh					42.4			12.1			15.2	
Approach LOS					D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		
Phs Duration (G+Y+Rc), s	10.1	63.8		26.1		73.9		
Change Period (Y+Rc), s	5.7	5.7		6.0		5.7		
Max Green Setting (Gmax), s	7.3	47.3		28.0		60.3		
Max Q Clear Time (g_c+I1), s	5.3	25.8		17.6		7.9		
Green Ext Time (p_c), s	0.0	19.1		2.5		40.8		

Intersection Summary	
HCM 2010 Ctrl Delay	20.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

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Lane Group	WBL	WBT	WBR	NBL	NBT	SBT	SBR
Lane Configurations							
Volume (vph)	553	22	699	58	540	1254	116
Turn Type	Perm	NA	Perm	Prot	NA	NA	Perm
Protected Phases		4		1	6	2	
Permitted Phases	4		4				2
Detector Phase	4	4	4	1	6	2	2
Switch Phase							
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	15.0	15.0
Minimum Split (s)	11.0	11.0	11.0	11.0	11.0	21.0	21.0
Total Split (s)	34.0	34.0	34.0	13.0	66.0	53.0	53.0
Total Split (%)	34.0%	34.0%	34.0%	13.0%	66.0%	53.0%	53.0%
Yellow Time (s)	5.0	5.0	5.0	4.7	4.7	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	5.7	5.7	5.7	5.7
Lead/Lag				Lead		Lag	Lag
Lead-Lag Optimize?							
Recall Mode	None	None	None	None	None	C-Min	C-Min

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 22: Acadian Thruway & I-10 WB off ramp

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	59	2	90	0	0	0	0	477	757	556	1158	0
Number	3	8	18				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900				0	1827	1900	1881	1881	0
Adj Flow Rate, veh/h	64	2	0				0	518	0	604	1259	0
Adj No. of Lanes	0	1	1				0	2	1	1	2	0
Peak Hour Factor	0.92	0.92	0.92				0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	0				0	4	0	1	1	0
Cap, veh/h	88	3	81				0	623	290	1069	2977	0
Arrive On Green	0.05	0.05	0.00				0.00	0.18	0.00	0.60	0.83	0.00
Sat Flow, veh/h	1757	55	1615				0	3563	1615	1792	3668	0
Grp Volume(v), veh/h	66	0	0				0	518	0	604	1259	0
Grp Sat Flow(s),veh/h/ln	1812	0	1615				0	1736	1615	1792	1787	0
Q Serve(g_s), s	3.6	0.0	0.0				0.0	14.4	0.0	20.5	9.1	0.0
Cycle Q Clear(g_c), s	3.6	0.0	0.0				0.0	14.4	0.0	20.5	9.1	0.0
Prop In Lane	0.97		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	91	0	81				0	623	290	1069	2977	0
V/C Ratio(X)	0.73	0.00	0.00				0.00	0.83	0.00	0.57	0.42	0.00
Avail Cap(c_a), veh/h	526	0	468				0	670	312	1069	2977	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.8	0.0	0.0				0.0	39.6	0.0	12.3	2.2	0.0
Incr Delay (d2), s/veh	14.4	0.0	0.0				0.0	12.3	0.0	0.9	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.9	0.0	0.0				0.0	12.6	0.0	15.6	8.1	0.0
LnGrp Delay(d),s/veh	61.2	0.0	0.0				0.0	51.9	0.0	13.2	2.6	0.0
LnGrp LOS	E							D		B	A	
Approach Vol, veh/h		66						518			1863	
Approach Delay, s/veh		61.2						51.9			6.0	
Approach LOS		E						D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		89.0			65.3	23.6		11.0
Change Period (Y+Rc), s		5.7			5.7	5.7		6.0
Max Green Setting (Gmax), s		59.3			34.3	19.3		29.0
Max Q Clear Time (g_c+I1), s		11.1			22.5	16.4		5.6
Green Ext Time (p_c), s		25.2			9.4	1.5		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	17.2
HCM 2010 LOS	B

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Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	2	90	477	757	556	1158
Turn Type	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8		6		5	2
Permitted Phases		8		6		
Detector Phase	8	8	6	6	5	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	5.0	5.0
Minimum Split (s)	22.0	22.0	21.7	21.7	10.7	10.7
Total Split (s)	35.0	35.0	25.0	25.0	40.0	65.0
Total Split (%)	35.0%	35.0%	25.0%	25.0%	40.0%	65.0%
Yellow Time (s)	5.0	5.0	4.7	4.7	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.7	5.7	5.7	5.7
Lead/Lag			Lead	Lead	Lag	
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	None	C-Max

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 42 (42%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated

Splits and Phases: 17: Acadian Thruway & I-10 EB off ramp

DRAFT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	31	1	77	0	0	0	0	579	825	615	1191	0
Number	3	8	18				1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0				0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00				1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1779	1881				0	1881	1900	1900	1881	0
Adj Flow Rate, veh/h	32	1	0				0	591	0	628	1215	0
Adj No. of Lanes	0	1	1				0	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98				0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	1	0	1				0	1	0	0	1	0
Cap, veh/h	49	2	48				0	871	394	999	3049	0
Arrive On Green	0.03	0.03	0.00				0.00	0.24	0.00	0.55	0.85	0.00
Sat Flow, veh/h	1646	51	1599				0	3668	1615	1810	3668	0
Grp Volume(v), veh/h	33	0	0				0	591	0	628	1215	0
Grp Sat Flow(s),veh/h/ln	1697	0	1599				0	1787	1615	1810	1787	0
Q Serve(g_s), s	1.9	0.0	0.0				0.0	15.0	0.0	23.8	7.6	0.0
Cycle Q Clear(g_c), s	1.9	0.0	0.0				0.0	15.0	0.0	23.8	7.6	0.0
Prop In Lane	0.97		1.00				0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	51	0	48				0	871	394	999	3049	0
V/C Ratio(X)	0.65	0.00	0.00				0.00	0.68	0.00	0.63	0.40	0.00
Avail Cap(c_a), veh/h	204	0	192				0	1226	554	999	3049	0
HCM Platoon Ratio	1.00	1.00	1.00				1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00				0.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	48.0	0.0	0.0				0.0	34.3	0.0	15.3	1.6	0.0
Incr Delay (d2), s/veh	18.0	0.0	0.0				0.0	4.2	0.0	1.5	0.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0				0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.1	0.0	0.0				0.0	12.5	0.0	18.0	6.7	0.0
LnGrp Delay(d),s/veh	66.0	0.0	0.0				0.0	38.5	0.0	16.8	2.0	0.0
LnGrp LOS	E							D		B	A	
Approach Vol, veh/h		33						591			1843	
Approach Delay, s/veh		66.0						38.5			7.1	
Approach LOS		E						D			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2			5	6		8
Phs Duration (G+Y+Rc), s		91.0			60.9	30.1		9.0
Change Period (Y+Rc), s		5.7			5.7	5.7		6.0
Max Green Setting (Gmax), s		76.3			36.3	34.3		12.0
Max Q Clear Time (g_c+I1), s		9.6			25.8	17.0		3.9
Green Ext Time (p_c), s		28.1			8.4	7.4		0.1

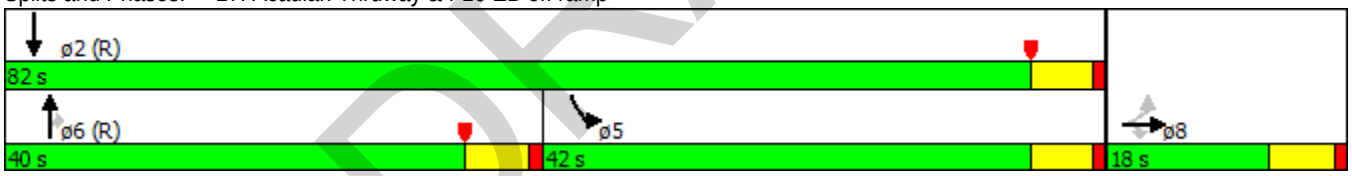
Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

DRAFT

Lane Group	EBT	EBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	1	77	579	825	615	1191
Turn Type	NA	Perm	NA	Perm	Prot	NA
Protected Phases	8		6		5	2
Permitted Phases		8		6		
Detector Phase	8	8	6	6	5	2
Switch Phase						
Minimum Initial (s)	5.0	5.0	15.0	15.0	5.0	5.0
Minimum Split (s)	11.0	11.0	21.0	21.0	11.0	11.0
Total Split (s)	18.0	18.0	40.0	40.0	42.0	82.0
Total Split (%)	18.0%	18.0%	40.0%	40.0%	42.0%	82.0%
Yellow Time (s)	5.0	5.0	4.7	4.7	4.7	4.7
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	5.7	5.7	5.7	5.7
Lead/Lag			Lead	Lead	Lag	
Lead-Lag Optimize?						
Recall Mode	None	None	C-Min	C-Min	None	C-Max

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 17: Acadian Thruway & I-10 EB off ramp



DRAFT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	1	0	3	0	103	0	1135	7	92	1096	3
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1267	1900	1900	1900	1900	1900	1900	1863	1667	1900	1880	1900
Adj Flow Rate, veh/h	2	1	0	3	0	114	0	1261	8	102	1218	3
Adj No. of Lanes	1	1	0	0	1	1	0	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	50	0	0	100	100	0	2	2	14	0	1	1
Cap, veh/h	5	8	0	151	0	191	0	2398	1078	356	2787	7
Arrive On Green	0.00	0.00	0.00	0.08	0.00	0.08	0.00	0.68	0.68	0.03	0.76	0.76
Sat Flow, veh/h	1206	1900	0	1809	0	1615	0	3632	1416	1810	3656	9
Grp Volume(v), veh/h	2	1	0	3	0	114	0	1261	8	102	595	626
Grp Sat Flow(s),veh/h/ln	1206	1900	0	1810	0	1615	0	1770	1416	1810	1786	1878
Q Serve(g_s), s	0.2	0.1	0.0	0.2	0.0	6.7	0.0	17.8	0.1	1.6	11.9	11.9
Cycle Q Clear(g_c), s	0.2	0.1	0.0	0.2	0.0	6.7	0.0	17.8	0.1	1.6	11.9	11.9
Prop In Lane	1.00		0.00	1.00		1.00	0.00		1.00	1.00		0.00
Lane Grp Cap(c), veh/h	5	8	0	151	0	191	0	2398	1078	356	1362	1432
V/C Ratio(X)	0.41	0.13	0.00	0.02	0.00	0.60	0.00	0.53	0.01	0.29	0.44	0.44
Avail Cap(c_a), veh/h	109	171	0	163	0	201	0	2398	1078	456	1362	1432
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.7	49.6	0.0	42.1	0.0	41.8	0.0	8.1	2.9	6.4	4.2	4.2
Incr Delay (d2), s/veh	48.3	7.6	0.0	0.1	0.0	4.3	0.0	0.8	0.0	0.4	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	0.1	0.0	0.1	0.0	5.8	0.0	13.7	0.1	1.5	10.2	10.6
LnGrp Delay(d),s/veh	98.0	57.2	0.0	42.1	0.0	46.2	0.0	8.9	2.9	6.8	5.3	5.2
LnGrp LOS	F	E		D		D		A	A	A	A	A
Approach Vol, veh/h		3			117			1269			1323	
Approach Delay, s/veh		84.4			46.1			8.9			5.4	
Approach LOS		F			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		81.2		13.4	8.5	72.8		5.4
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		67.0		9.0	9.0	53.0		9.0
Max Q Clear Time (g_c+I1), s		13.9		8.7	3.6	19.8		2.2
Green Ext Time (p_c), s		50.3		0.0	0.1	32.0		0.0

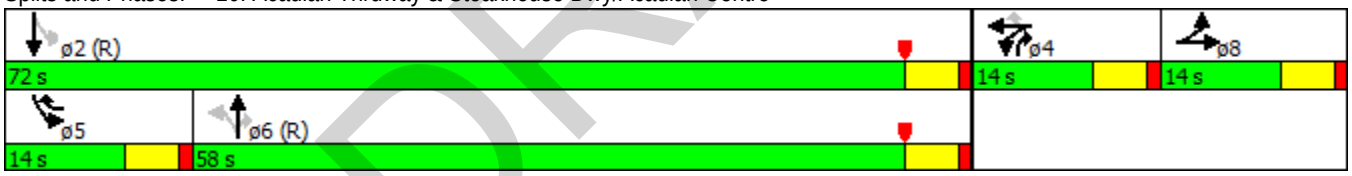
Intersection Summary	
HCM 2010 Ctrl Delay	8.8
HCM 2010 LOS	A

DRAFT

Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	SBL	SBT
Lane Configurations								
Volume (vph)	2	1	0	103	1135	7	92	1096
Turn Type	Split	NA	NA	pm+ov	NA	pm+ov	pm+pt	NA
Protected Phases	8	8	4	5	6	4	5	2
Permitted Phases				4		6	2	
Detector Phase	8	8	4	5	6	4	5	2
Switch Phase								
Minimum Initial (s)	5.0	5.0	5.0	3.0	10.0	5.0	3.0	15.0
Minimum Split (s)	10.0	10.0	10.0	8.0	21.0	10.0	8.0	21.0
Total Split (s)	14.0	14.0	14.0	14.0	58.0	14.0	14.0	72.0
Total Split (%)	14.0%	14.0%	14.0%	14.0%	58.0%	14.0%	14.0%	72.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag				Lead	Lag		Lead	
Lead-Lag Optimize?				Yes	Yes		Yes	
Recall Mode	None	None	None	None	C-Min	None	None	C-Min

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 44 (44%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 10: Acadian Thruway & Steakhouse Dwy/Acadian Centre



DRAFT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	12	1	9	14	8	61	15	1343	29	54	1161	42
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1900	1863	1900	1881	1900	1900	1882	1900
Adj Flow Rate, veh/h	12	1	9	14	8	62	15	1370	30	55	1185	43
Adj No. of Lanes	1	1	0	0	1	1	0	2	1	1	2	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	0	0	0	0	2	1	1	0	0	1	1
Cap, veh/h	41	4	34	61	35	120	47	2418	1216	311	2727	99
Arrive On Green	0.02	0.02	0.02	0.05	0.05	0.05	0.70	0.70	0.70	0.02	0.77	0.77
Sat Flow, veh/h	1810	164	1476	1172	670	1583	15	3448	1614	1810	3519	128
Grp Volume(v), veh/h	12	0	10	22	0	62	736	649	30	55	602	626
Grp Sat Flow(s),veh/h/ln	1810	0	1640	1841	0	1583	1836	1626	1614	1810	1788	1859
Q Serve(g_s), s	0.7	0.0	0.6	1.1	0.0	3.8	0.0	19.8	0.5	0.8	11.4	11.4
Cycle Q Clear(g_c), s	0.7	0.0	0.6	1.1	0.0	3.8	19.2	19.8	0.5	0.8	11.4	11.4
Prop In Lane	1.00		0.90	0.64		1.00	0.02		1.00	1.00		0.07
Lane Grp Cap(c), veh/h	41	0	37	96	0	120	1324	1141	1216	311	1385	1441
V/C Ratio(X)	0.29	0.00	0.27	0.23	0.00	0.52	0.56	0.57	0.02	0.18	0.43	0.43
Avail Cap(c_a), veh/h	163	0	148	129	0	148	1324	1141	1216	396	1385	1441
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	0.0	48.0	45.5	0.0	44.4	7.3	7.4	3.1	6.1	3.8	3.8
Incr Delay (d2), s/veh	3.8	0.0	3.7	1.2	0.0	3.4	1.7	2.1	0.0	0.3	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.7	0.0	0.6	1.1	0.0	3.2	15.7	14.5	0.5	0.7	9.9	10.2
LnGrp Delay(d),s/veh	51.9	0.0	51.8	46.6	0.0	47.9	9.0	9.5	3.1	6.4	4.8	4.8
LnGrp LOS	D		D	D		D	A	A	A	A	A	A
Approach Vol, veh/h		22			84			1415			1283	
Approach Delay, s/veh		51.8			47.5			9.1			4.9	
Approach LOS		D			D			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		82.5		10.2	7.3	75.1		7.3
Change Period (Y+Rc), s		5.0		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		69.0		7.0	7.0	57.0		9.0
Max Q Clear Time (g_c+I1), s		13.4		5.8	2.8	21.8		2.7
Green Ext Time (p_c), s		53.3		0.0	0.0	34.2		0.0

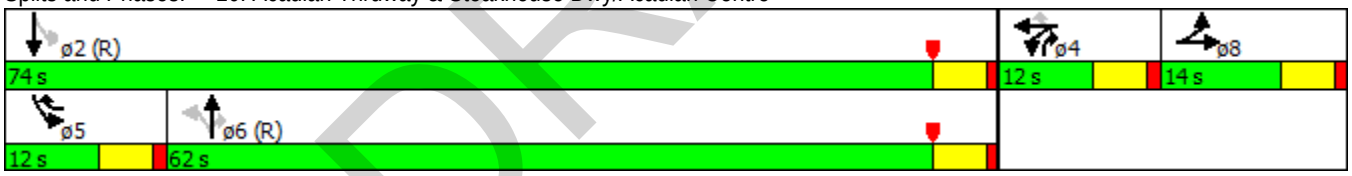
Intersection Summary	
HCM 2010 Ctrl Delay	8.6
HCM 2010 LOS	A

DRAFT

Lane Group	EBL	EBT	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Volume (vph)	12	1	8	61	15	1343	29	54	1161
Turn Type	Split	NA	NA	pm+ov	Perm	NA	pm+ov	pm+pt	NA
Protected Phases	8	8	4	5		6	4	5	2
Permitted Phases				4	6		6	2	
Detector Phase	8	8	4	5	6	6	4	5	2
Switch Phase									
Minimum Initial (s)	5.0	5.0	5.0	3.0	10.0	10.0	5.0	3.0	15.0
Minimum Split (s)	10.0	10.0	10.0	8.0	21.0	21.0	10.0	8.0	21.0
Total Split (s)	14.0	14.0	12.0	12.0	62.0	62.0	12.0	12.0	74.0
Total Split (%)	14.0%	14.0%	12.0%	12.0%	62.0%	62.0%	12.0%	12.0%	74.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0
Lead/Lag				Lead	Lag	Lag		Lead	
Lead-Lag Optimize?				Yes	Yes	Yes		Yes	
Recall Mode	None	None	None	None	C-Min	C-Min	None	None	C-Min

Intersection Summary
Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 10: Acadian Thruway & Steakhouse Dwy/Acadian Centre



DRAFT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	235	636	57	157	966	270	236	658	104	255	699	49
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1892	1900	1881	1863	1845	1827	1881	1900	1863	1900	1863
Adj Flow Rate, veh/h	247	669	60	165	1017	284	248	693	109	268	736	52
Adj No. of Lanes	2	2	0	2	2	1	1	2	1	2	2	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	0	0	1	2	3	4	1	0	2	0	2
Cap, veh/h	303	1109	99	223	1094	636	273	1152	624	332	945	551
Arrive On Green	0.09	0.33	0.33	0.06	0.31	0.31	0.16	0.32	0.32	0.10	0.26	0.26
Sat Flow, veh/h	3476	3337	299	3476	3539	1568	1740	3574	1615	3442	3610	1580
Grp Volume(v), veh/h	247	360	369	165	1017	284	248	693	109	268	736	52
Grp Sat Flow(s),veh/h/ln	1738	1798	1839	1738	1770	1568	1740	1787	1615	1721	1805	1580
Q Serve(g_s), s	8.4	20.1	20.1	5.6	33.4	15.8	16.8	19.6	5.3	9.2	22.7	2.7
Cycle Q Clear(g_c), s	8.4	20.1	20.1	5.6	33.4	15.8	16.8	19.6	5.3	9.2	22.7	2.7
Prop In Lane	1.00		0.16	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	303	597	611	223	1094	636	273	1152	624	332	945	551
V/C Ratio(X)	0.82	0.60	0.60	0.74	0.93	0.45	0.91	0.60	0.17	0.81	0.78	0.09
Avail Cap(c_a), veh/h	333	597	611	333	1094	636	281	1152	624	556	945	551
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.8	33.5	33.5	55.2	40.2	25.9	49.7	34.2	24.2	53.1	41.1	26.3
Incr Delay (d2), s/veh	12.9	4.5	4.4	3.6	14.8	2.3	30.1	1.0	0.2	3.5	6.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	8.1	16.1	16.4	5.0	25.7	11.6	15.6	14.9	4.3	8.0	17.9	2.2
LnGrp Delay(d),s/veh	66.7	37.9	37.9	58.7	55.0	28.1	79.8	35.2	24.4	56.6	47.4	26.7
LnGrp LOS	E	D	D	E	D	C	E	D	C	E	D	C
Approach Vol, veh/h		976			1466			1050			1056	
Approach Delay, s/veh		45.2			50.2			44.6			48.7	
Approach LOS		D			D			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.2	45.4	24.4	37.0	16.0	42.6	17.2	44.3
Change Period (Y+Rc), s	5.5	5.5	5.6	5.6	5.5	5.5	5.6	5.6
Max Green Setting (Gmax), s	11.5	35.5	19.4	31.4	11.5	35.5	19.4	31.4
Max Q Clear Time (g_c+I1), s	7.6	22.1	18.8	24.7	10.4	35.4	11.2	21.6
Green Ext Time (p_c), s	0.1	11.0	0.0	5.3	0.1	0.1	0.4	7.3

Intersection Summary	
HCM 2010 Ctrl Delay	47.5
HCM 2010 LOS	D

Notes

User approved changes to right turn type.

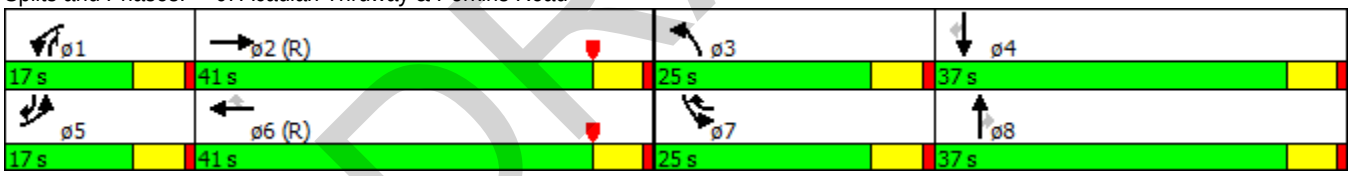
DRAFT

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	235	636	157	966	270	236	658	104	255	699	49
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	1	6	7	3	8	1	7	4	5
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	6 7	3	8	8 1	7	4	4 5
Switch Phase											
Minimum Initial (s)	5.0	12.0	5.0	12.0	5.0	5.0	12.0	5.0	5.0	12.0	5.0
Minimum Split (s)	10.5	17.5	10.5	17.5	10.6	10.6	17.6	10.5	10.6	17.6	10.5
Total Split (s)	17.0	41.0	17.0	41.0	25.0	25.0	37.0	17.0	25.0	37.0	17.0
Total Split (%)	14.2%	34.2%	14.2%	34.2%	20.8%	20.8%	30.8%	14.2%	20.8%	30.8%	14.2%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.5	4.6	4.6	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.6	5.6	5.6	5.5	5.6	5.6	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None	Max	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 68 (57%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 9: Acadian Thruway & Perkins Road



DRAFT

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	327	978	60	181	970	224	164	814	145	395	496	43
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1900	1900	1900	1881	1881	1881	1881	1900	1881	1900	1900
Adj Flow Rate, veh/h	330	988	61	183	980	226	166	822	146	399	501	43
Adj No. of Lanes	2	2	0	2	2	1	1	2	1	2	2	1
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %	0	0	0	0	1	1	1	1	0	1	0	0
Cap, veh/h	379	1405	87	234	1306	787	189	900	514	441	987	615
Arrive On Green	0.11	0.41	0.41	0.07	0.37	0.37	0.11	0.25	0.25	0.13	0.27	0.27
Sat Flow, veh/h	3510	3454	213	3510	3574	1599	1792	3574	1615	3476	3610	1611
Grp Volume(v), veh/h	330	516	533	183	980	226	166	822	146	399	501	43
Grp Sat Flow(s),veh/h/ln	1755	1805	1862	1755	1787	1599	1792	1787	1615	1738	1805	1611
Q Serve(g_s), s	13.9	35.7	35.7	7.7	36.0	12.5	13.7	33.5	10.2	17.0	17.6	2.5
Cycle Q Clear(g_c), s	13.9	35.7	35.7	7.7	36.0	12.5	13.7	33.5	10.2	17.0	17.6	2.5
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	379	734	757	234	1306	787	189	900	514	441	987	615
V/C Ratio(X)	0.87	0.70	0.70	0.78	0.75	0.29	0.88	0.91	0.28	0.90	0.51	0.07
Avail Cap(c_a), veh/h	456	734	757	456	1306	787	232	939	532	450	987	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.9	37.0	37.0	68.9	41.6	22.5	66.2	54.5	38.3	64.6	46.0	29.5
Incr Delay (d2), s/veh	13.8	5.6	5.4	4.3	4.0	0.9	25.1	13.1	0.4	21.0	1.9	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	11.9	26.1	26.7	7.0	25.5	9.7	12.8	25.2	8.1	14.5	13.9	2.1
LnGrp Delay(d),s/veh	79.6	42.6	42.4	73.2	45.6	23.4	91.2	67.6	38.7	85.6	47.8	29.7
LnGrp LOS	E	D	D	E	D	C	F	E	D	F	D	C
Approach Vol, veh/h		1379			1389			1134			943	
Approach Delay, s/veh		51.4			45.7			67.3			63.0	
Approach LOS		D			D			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.5	66.5	21.4	46.6	21.7	60.3	24.6	43.4
Change Period (Y+Rc), s	5.5	5.5	5.6	5.6	5.5	5.5	5.6	5.6
Max Green Setting (Gmax), s	19.5	49.5	19.4	39.4	19.5	49.5	19.4	39.4
Max Q Clear Time (g_c+I1), s	9.7	37.7	15.7	19.6	15.9	38.0	19.0	35.5
Green Ext Time (p_c), s	0.3	10.4	0.1	12.0	0.3	10.2	0.1	2.2

Intersection Summary	
HCM 2010 Ctrl Delay	55.7
HCM 2010 LOS	E

Notes

User approved changes to right turn type.

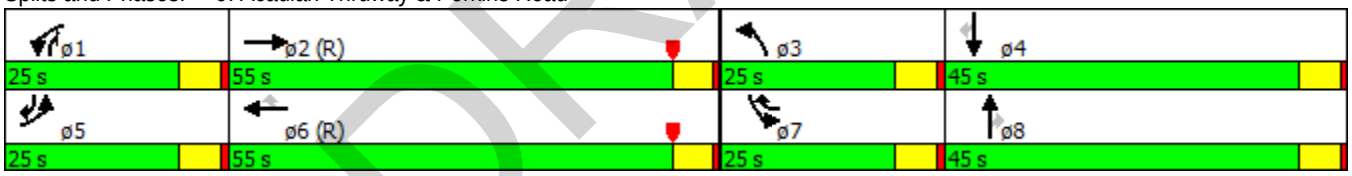
DRAFT

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											
Volume (vph)	327	978	181	970	224	164	814	145	395	496	43
Turn Type	Prot	NA	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	5	2	1	6	7	3	8	1	7	4	5
Permitted Phases					6			8			4
Detector Phase	5	2	1	6	7	3	8	1	7	4	5
Switch Phase											
Minimum Initial (s)	5.0	12.0	5.0	12.0	5.0	5.0	12.0	5.0	5.0	12.0	5.0
Minimum Split (s)	10.5	18.0	10.5	18.0	10.6	10.6	18.0	10.5	10.6	18.0	10.5
Total Split (s)	25.0	55.0	25.0	55.0	25.0	25.0	45.0	25.0	25.0	45.0	25.0
Total Split (%)	16.7%	36.7%	16.7%	36.7%	16.7%	16.7%	30.0%	16.7%	16.7%	30.0%	16.7%
Yellow Time (s)	4.5	4.5	4.5	4.5	4.6	4.6	4.6	4.5	4.6	4.6	4.5
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.5	5.5	5.5	5.5	5.6	5.6	5.6	5.5	5.6	5.6	5.5
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?											
Recall Mode	None	C-Min	None	C-Min	None	None	None	None	None	Max	None

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 60 (40%), Referenced to phase 2:EBT and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 9: Acadian Thruway & Perkins Road



DRAFT

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	50	673	528	780	332	31
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1863	1863	1855	1900
Adj Flow Rate, veh/h	51	687	539	0	339	0
Adj No. of Lanes	1	2	1	1	0	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	0	1	2	2	0	0
Cap, veh/h	531	2500	1155	982	371	0
Arrive On Green	0.03	0.70	0.62	0.00	0.21	0.00
Sat Flow, veh/h	1810	3668	1863	1583	1762	0
Grp Volume(v), veh/h	51	687	539	0	340	0
Grp Sat Flow(s),veh/h/ln	1810	1787	1863	1583	1767	0
Q Serve(g_s), s	1.1	8.6	18.6	0.0	22.6	0.0
Cycle Q Clear(g_c), s	1.1	8.6	18.6	0.0	22.6	0.0
Prop In Lane	1.00			1.00	1.00	0.00
Lane Grp Cap(c), veh/h	531	2500	1155	982	372	0
V/C Ratio(X)	0.10	0.27	0.47	0.00	0.91	0.00
Avail Cap(c_a), veh/h	544	2500	1155	982	692	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	8.6	6.7	12.2	0.0	46.3	0.0
Incr Delay (d2), s/veh	0.1	0.3	1.4	0.0	6.9	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.0	7.7	15.0	0.0	17.4	0.0
LnGrp Delay(d),s/veh	8.6	7.0	13.5	0.0	53.2	0.0
LnGrp LOS	A	A	B		D	
Approach Vol, veh/h		738	539		340	
Approach Delay, s/veh		7.1	13.5		53.2	
Approach LOS		A	B		D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		89.3		30.7	9.5	79.8		
Change Period (Y+Rc), s		5.4		5.4	5.4	5.4		
Max Green Setting (Gmax), s		62.6		47.0	5.0	52.2		
Max Q Clear Time (g_c+I1), s		10.6		24.6	3.1	20.6		
Green Ext Time (p_c), s		22.8		0.7	0.0	17.8		

Intersection Summary	
HCM 2010 Ctrl Delay	18.9
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

DRAFT

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Volume (vph)	50	673	528	780	332
Turn Type	pm+pt	NA	NA	Perm	Prot
Protected Phases	5	2	6		4
Permitted Phases	2			6	
Detector Phase	5	2	6	6	4
Switch Phase					
Minimum Initial (s)	5.0	20.0	20.0	20.0	15.0
Minimum Split (s)	10.4	25.4	25.4	25.4	20.4
Total Split (s)	10.4	68.0	57.6	57.6	52.4
Total Split (%)	8.6%	56.5%	47.8%	47.8%	43.5%
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	C-Min	None

Intersection Summary
Cycle Length: 120.4
Actuated Cycle Length: 120.4
Offset: 83 (69%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perkins Road & I-10 EB off ramp

DRAFT

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (veh/h)	33	1080	676	549	142	21
Number	5	2	6	16	7	14
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1881	1881	1863	1900	1900
Adj Flow Rate, veh/h	36	1187	743	0	156	0
Adj No. of Lanes	1	2	1	1	0	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	3	1	1	2	0	0
Cap, veh/h	490	2838	1359	1144	215	0
Arrive On Green	0.03	0.79	0.72	0.00	0.12	0.00
Sat Flow, veh/h	1757	3668	1881	1583	1799	0
Grp Volume(v), veh/h	36	1187	743	0	157	0
Grp Sat Flow(s),veh/h/ln	1757	1787	1881	1583	1810	0
Q Serve(g_s), s	0.6	12.8	22.7	0.0	10.5	0.0
Cycle Q Clear(g_c), s	0.6	12.8	22.7	0.0	10.5	0.0
Prop In Lane	1.00			1.00	0.99	0.00
Lane Grp Cap(c), veh/h	490	2838	1359	1144	216	0
V/C Ratio(X)	0.07	0.42	0.55	0.00	0.73	0.00
Avail Cap(c_a), veh/h	721	2838	1359	1144	376	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	0.00
Uniform Delay (d), s/veh	6.0	4.0	8.0	0.0	53.1	0.0
Incr Delay (d2), s/veh	0.0	0.5	1.6	0.0	3.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.5	10.6	17.9	0.0	9.3	0.0
LnGrp Delay(d),s/veh	6.1	4.4	9.5	0.0	56.5	0.0
LnGrp LOS	A	A	A		E	
Approach Vol, veh/h		1223	743		157	
Approach Delay, s/veh		4.5	9.5		56.5	
Approach LOS		A	A		E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4	5	6		
Phs Duration (G+Y+Rc), s		104.7		20.3	9.0	95.7		
Change Period (Y+Rc), s		5.4		5.4	5.4	5.4		
Max Green Setting (Gmax), s		88.6		26.0	20.0	63.2		
Max Q Clear Time (g_c+I1), s		14.8		12.5	2.6	24.7		
Green Ext Time (p_c), s		52.1		0.2	0.0	31.6		

Intersection Summary	
HCM 2010 Ctrl Delay	10.1
HCM 2010 LOS	B

Notes

User approved volume balancing among the lanes for turning movement.

DRAFT

Lane Group	EBL	EBT	WBT	WBR	SBL
Lane Configurations					
Volume (vph)	33	1080	676	549	142
Turn Type	pm+pt	NA	NA	Perm	Prot
Protected Phases	5	2	6		4
Permitted Phases	2			6	
Detector Phase	5	2	6	6	4
Switch Phase					
Minimum Initial (s)	5.0	20.0	20.0	20.0	15.0
Minimum Split (s)	25.4	25.4	25.4	25.4	20.4
Total Split (s)	25.4	94.0	68.6	68.6	31.4
Total Split (%)	20.3%	75.0%	54.7%	54.7%	25.0%
Yellow Time (s)	4.4	4.4	4.4	4.4	4.4
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.4	5.4	5.4	5.4	5.4
Lead/Lag	Lead		Lag	Lag	
Lead-Lag Optimize?	Yes		Yes	Yes	
Recall Mode	None	C-Min	C-Min	C-Min	None

Intersection Summary
Cycle Length: 125.4
Actuated Cycle Length: 125.4
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perkins Road & I-10 EB off ramp

DRAFT

Intersection Comparison
Existing and No Build Conditions

Location	AM						PM					
	Existing			No Build			Existing			No Build		
	Delay (sec)	V/C Ratio	95th % Queues (ft)*	Delay (sec)	V/C Ratio	95th % Queues (ft)*	Delay (sec)	V/C Ratio	95th % Queues (ft)*	Delay (sec)	V/C Ratio	95th % Queues (ft)*
Acadian Thruway at I-10 Westbound Ramps	**21.3**			**21.8**			**20.3**			**20.8**		
Acadian Thruway Northbound	11.5	0.74	138	11.8	0.75	143	11.9	0.78	123	12.1	0.78	130
Acadian Thruway Southbound	14.3	0.54	370	15.2	0.57	393	14.2	0.59	418	15.2	0.62	448
I-10 Off Ramp Westbound	42.0	0.82	350	42.1	0.83	363	42.4	0.81	313	42.4	0.81	325
Acadian Thruway at I-10 Eastbound Ramps	**16.7**			**17.2**			**15.1**			**15.4**		
Acadian Thruway Northbound	50.1	0.82	300	51.9	0.83	315	38.9	0.67	303	38.5	0.68	313
Acadian Thruway Southbound	5.7	0.54	368	6.0	0.57	390	6.6	0.60	418	7.1	0.63	450
I-10 Off Ramp Eastbound	61.8	0.73	95	61.2	0.73	98	65.8	0.64	50	66.0	0.65	53
Acadian Thruway at Acadian Centre	**8.5**			**8.8**			**8.4**			**8.6**		
Acadian Thruway Northbound	8.4	0.50	320	8.9	0.53	343	8.7	0.54	373	9.1	0.57	393
Acadian Thruway Southbound	5.1	0.42	253	5.4	0.44	265	4.7	0.42	240	4.9	0.43	255
Richland Plantation Eastbound	84.4	0.41	5	84.4	0.41	5	51.8	0.29	18	51.8	0.29	18
Acadian Centre Westbound	46.0	0.59	140	46.1	0.60	145	47.7	0.51	78	47.5	0.52	80

* Queues reported in vehicle, converted to feet by a factor of 25 ft/veh

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Intersection Comparison
Existing and No Build Conditions

Location	AM						PM					
	Existing			No Build			Existing			No Build		
	Delay (sec)	V/C Ratio	95th % Queues (ft)*	Delay (sec)	V/C Ratio	95th % Queues (ft)*	Delay (sec)	V/C Ratio	95th % Queues (ft)*	Delay (sec)	V/C Ratio	95th % Queues (ft)*
Acadian Thruway at Perkins Road	**44.0**			**47.5**			**53.2**			**55.7**		
Stanford Avenue Northbound	44.2	0.90	375	44.6	0.91	390	65.0	0.89	598	67.3	0.91	630
Acadian Thruway Southbound	47.9	0.80	425	48.7	0.81	448	62.5	0.90	348	63.0	0.90	363
Perkins Road Eastbound	42.3	0.80	363	45.2	0.82	410	47.4	0.85	575	51.4	0.87	668
Perkins Road Westbound	42.0	0.81	530	50.2	0.93	643	42.0	0.77	550	45.7	0.78	638
Perkins Rd at I-10 Ramps	**18.0**			**18.9**			**9.5**			**10.1**		
I-10 Eastbound off ramp Southbound	54.5	0.91	398	53.2	0.91	435	55.2	0.66	213	56.5	0.73	233
Perkins Road Eastbound	6.1	0.24	158	7.1	0.27	193	4.2	0.38	233	4.5	0.42	265
Perkins Road Westbound	11.5	0.41	318	13.5	0.47	375	8.7	0.49	390	9.5	0.55	448

* Queues reported in vehicle, converted to feet by a factor of 25 ft/veh

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Freeway/Merge/Diverge Segments Comparison
Existing and No Build Conditions

Location	AM		PM	
	Existing Density (pc/ln/mi)	No Build Density (pc/ln/mi)	Existing Density (pc/ln/mi)	No Build Density (pc/ln/mi)
I-10 Eastbound Freeway west of Perkins Road	39.8	--	34.0	--
I-10 Eastbound Diverge at Perkins Road	39.0	--	34.4	--
I-10 Eastbound Freeway between Perkins Road and Acadian Thruway	37.4	--	34.1	--
I-10 Eastbound Diverge at Acadian Thruway	36.3	--	33.2	--
I-10 Eastbound Weave between Acadian Thruway and College Drive – Case #1	38.5	--	38.5	--
I-10 Eastbound Weave between Acadian Thruway and College Drive – Case #2	--	--	--	--
I-10 Eastbound Weave between Acadian Thruway and College Drive – Case #3	42.6	--	41.3	--
I-10 Westbound Merge at College Drive	33.3	42.9	28.9	36.6
I-10 Westbound Freeway between Acadian Thruway and College Drive	32.6	44.1	28.8	36.2
I-10 Westbound Merge at Acadian Thruway	37.8	--	32.6	43.8
I-10 Westbound Merge at Perkins Road	44.9	--	37.3	--
I-10 Westbound Freeway west of Perkins Road	--	--	35.3	--

-- When v/c is greater than 1 the HCS software does not report density

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Acadian Perkins 2040 Build Volume Estimation Methodology

2040 Build Traffic Volumes

Volumes for the design year were developed for use in Build conditions analysis to compare to the No Build analysis results. The objective is to assess the operational impact of the proposed interchange modifications with an additional lane on I-10. The proposed modifications for the Acadian/Perkins interchanges are the removal of the I-10 WB on-ramp from Perkins and the I-10 EB off-ramp to Perkins. Separate IMRs are being prepared for proposed modifications to the Washington/Dalrymple interchanges and a directional ramp to College Drive from I-10 and I-12.

TransCAD Data

TransCAD volume output from the Capitol Region Planning Commission's (CRPC) regional transportation models was reviewed to assist with estimating projected Build volumes. Model output is a useful tool as it predicts changes to traffic patterns with proposed interchange modifications and also takes into account other projects that are included in the financially constrained long-range transportation plan. The model volume output is not intended to be used as absolute, especially at the micro level such as peak periods at intersections.

Models were provided for the following scenarios:

- 2037 No Build condition with the existing configuration
- 2037 Build conditions with the following proposed improvements:
    - An additional lane on I-10
    - College Dr Directional Ramps from I-10 and I-12
    - Perkins Ramp Removal
    - Washington St/Dalrymple Dr combined interchange.

The model output was reviewed to confirm the links and number of lanes matched the existing and proposed conditions within the study area. These are presented on pages Appendix C XX- C XX and C XX- C XX.

The intersection flow diagrams were reviewed for the AM and PM peak periods. The intersection flow diagrams are presented on pages Appendix C XX - C XX. The ADTs were also reviewed and are presented on pages Appendix C XX and C XX - C XX. The percent change between the TransCAD No Build and TransCAD Build output was calculated for the AM peak period, PM peak period, and ADTs. The No Build volumes from Figure 2.5 for I-10, the Acadian ramp terminal intersections, and Acadian at Perkins were multiplied by the percent change calculated from the TransCAD models to develop the proposed Build volumes.

The results are presented in Table C-1.

Table C.1 - TransCAD Data

Location	TransCAD Node	Approach		Movement		AM							PM							ADT (Approach Total)		
						No Build (with Perkins)		Build (all projects)		% of No Build	2040 No Build Volume	2040 Build Volume (Calculated from TransCAD %s)	No Build (with Perkins)		Build (all projects)		% of No Build	2040 No Build Volume	2040 Build Volume (Calculated from TransCAD %s)	No Build (with Perkins)	Build (all projects)	% of No Build
I-10 EB merge east of Acadian	6321	I-10	Eastbound	Mainline	Interstate	10474	14109	12414	16072	114%	7624	8691	14855	19797	18001	22519	114%	7416	8454	98318	108163	110%
				On Ramp		3634		3658					4942		4518							
I-10 WB diverge east of Acadian	5590	I-10	Westbound	Mainline	Interstate	18019		20873		116%	7890	9152	17905		20821		116%	7918	9185	100868	113193	112%
				Off Ramp																		
Acadian at Perkins	6324	Stanford	NB	Left		207		258		125%	236	295	292		225		77%	164	126	18372	17293	94%
				Thru		2966		2779		94%	658	619	3551		3167		89%	814	724			
				Right		604		663		110%	104	114	627		675		108%	145	157			
		Acadian	SB	Left		681		1615		237%	255	604	747		1848		247%	395	976	14434	20636	143%
				Thru		2168		2072		96%	699	671	2785		2748		99%	496	491			
				Right		129		149		116%	49	57	93		105		112%	43	48			
		Perkins	EB	Left		194		190		98%	235	230	308		290		94%	327	307	13672	6589	48%
				Thru		2136		972		45%	636	286	2570		1038		40%	978	391			
				Right		285		220		77%	57	44	418		306		73%	60	44			
			WB	Left		439		566		129%	157	203	846		866		102%	181	185	16835	14460	86%
				Thru		2477		1170		47%	966	454	2705		1152		43%	970	417			
				Right		459		1166		254%	270	686	449		1354		302%	224	676			
I-10 EB at Acadian	6326	Acadian	NB	Thru		1683		2380		141%	477	673	1699		2842		167%	579	967	19794	22306	113%
				Right		2130		1949		92%	757	696	3092		2491		81%	825	668			
			SB	Left		1504		1709		114%	556	634	1850		2027		110%	615	677	22953	24038	105%
				Thru		3124		3163		101%	1158	1170	3738		3575		96%	1191	1143			
		I-10 EB Off-ramp	EB	Left		71		79		112%	59	66	110		123		112%	31	35	1432	7890	551%
				Thru		0		0		100%	2	2	0		0		100%	1	1			
				Right		266		1229		462%	90	416	203		1538		759%	77	584			
I-10 WB at Acadian	6328	Acadian	NB	Left		122		963		787%	42	331	317		1365		430%	58	249	8381	12498	149%
				Thru		1631		1496		92%	530	488	1492		1600		107%	540	578			
			SB	Thru		2935		3008		102%	1072	1093	3826		3657		96%	1254	1204	16446	16273	99%
				Right		156		137		88%	104	92	209		157		75%	116	87			
		I-10 WB Off-ramp	WB	Left		1693		1864		110%	621	683	1762		1945		110%	553	608	17200	18524	108%
				Thru		47		0		0%	8	8	0		0		100%	22	22			
				Right		2089		2285		109%	670	730	2198		2153		98%	699	685			
I-10 WB On Ramp at College Dr	6347	College Dr NB	NB	Right		158		259		164%	247	405	445		521		117%	169	198	19200	22305	116%
			SB	Left		417		643		154%	241	371	722		1086		150%	215	323	24836	26482	107%
I-10 EB diverge at College Dr	6322	I-10	Eastbound	Off Ramp		1436		1767		123%	686	844	1559		1956		125%	529	661	6545	8217	126%

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The resulting Build volumes are presented in black on Figure C-1 for the AM, and Figure C-2 for the PM with the corresponding percent change from the No Build volumes.

The TransCAD build model results indicated zero volume for the through movements at the Acadian eastbound and westbound off ramps. To represent the possibility of motorists still making these movements, the 2040 No Build volumes were used as the 2040 Build Volumes. The TransCAD model did not include a node for the Acadian at Acadian Centre intersection. The 2040 No Build volumes were also used for turning movements and side street movements at this intersection. These are presented in green on Figure C-1 for the AM and Figure C-2 for the PM.

The remaining movements were calculated from the upstream/downstream locations and are shown in orange on the volume figures. The northbound and southbound through movements at Acadian Centre were calculated from the Acadian at I-10 eastbound off ramp intersection.

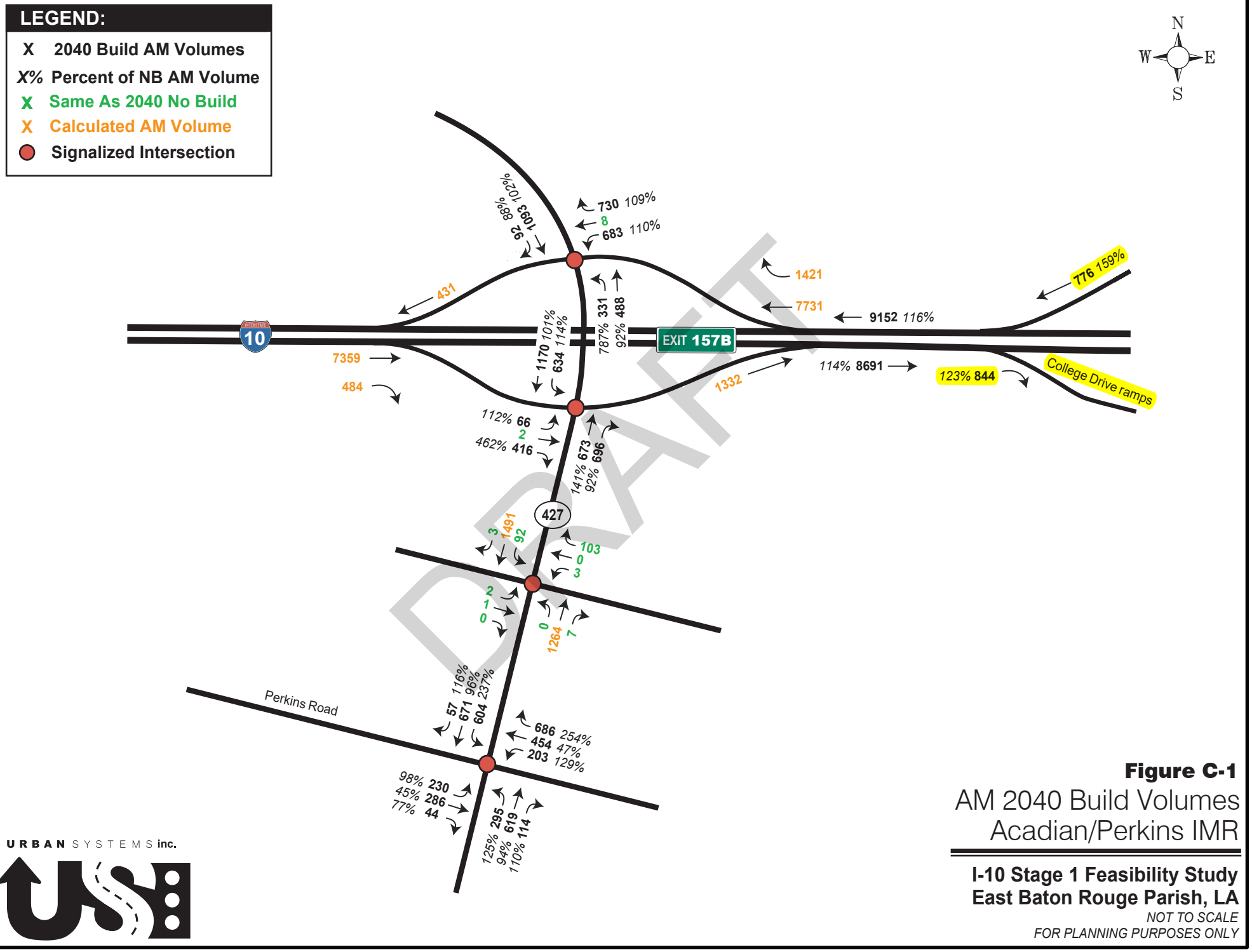


Figure C-1

AM 2040 Build Volumes
Acadian/Perkins IMR

I-10 Stage 1 Feasibility Study
East Baton Rouge Parish, LA

NOT TO SCALE
FOR PLANNING PURPOSES ONLY

URBAN SYSTEMS inc.

Project # 10-085-2

Last Revised June 19, 2019

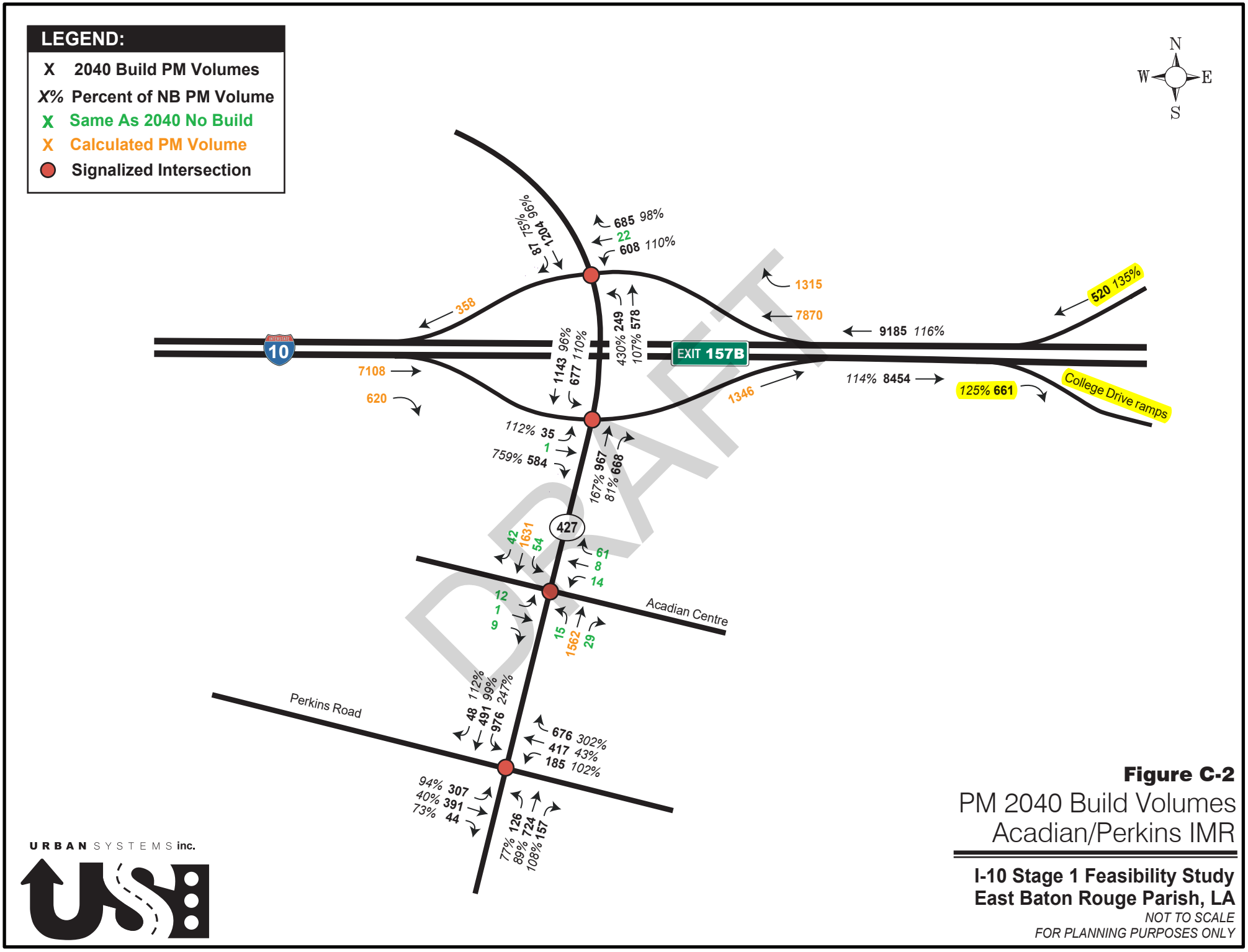


Figure C-2

PM 2040 Build Volumes
Acadian/Perkins IMR

I-10 Stage 1 Feasibility Study
East Baton Rouge Parish, LA

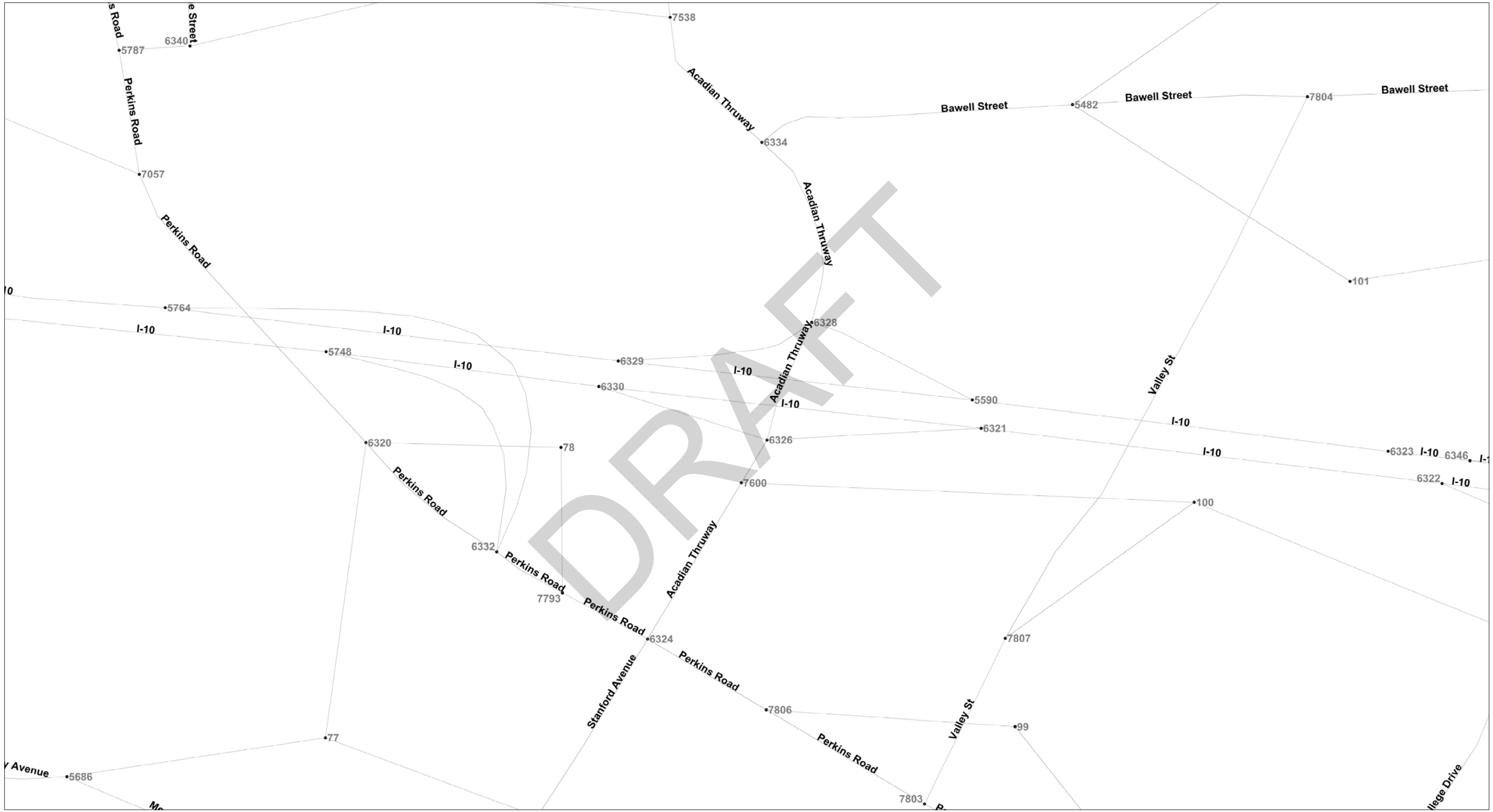
NOT TO SCALE
FOR PLANNING PURPOSES ONLY

URBAN SYSTEMS inc.

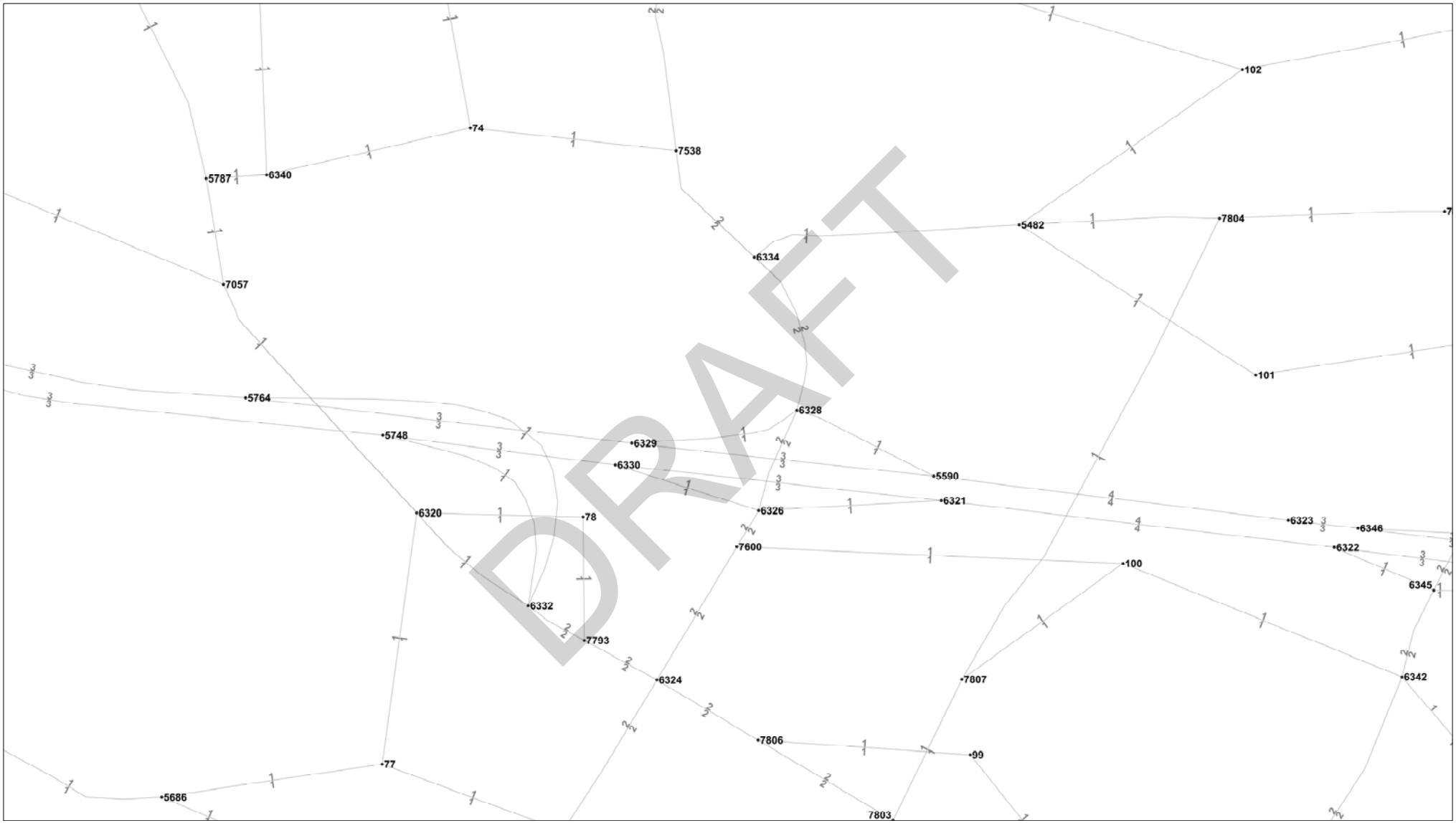
Project # 10-085-2

Last Revised June 19, 2019

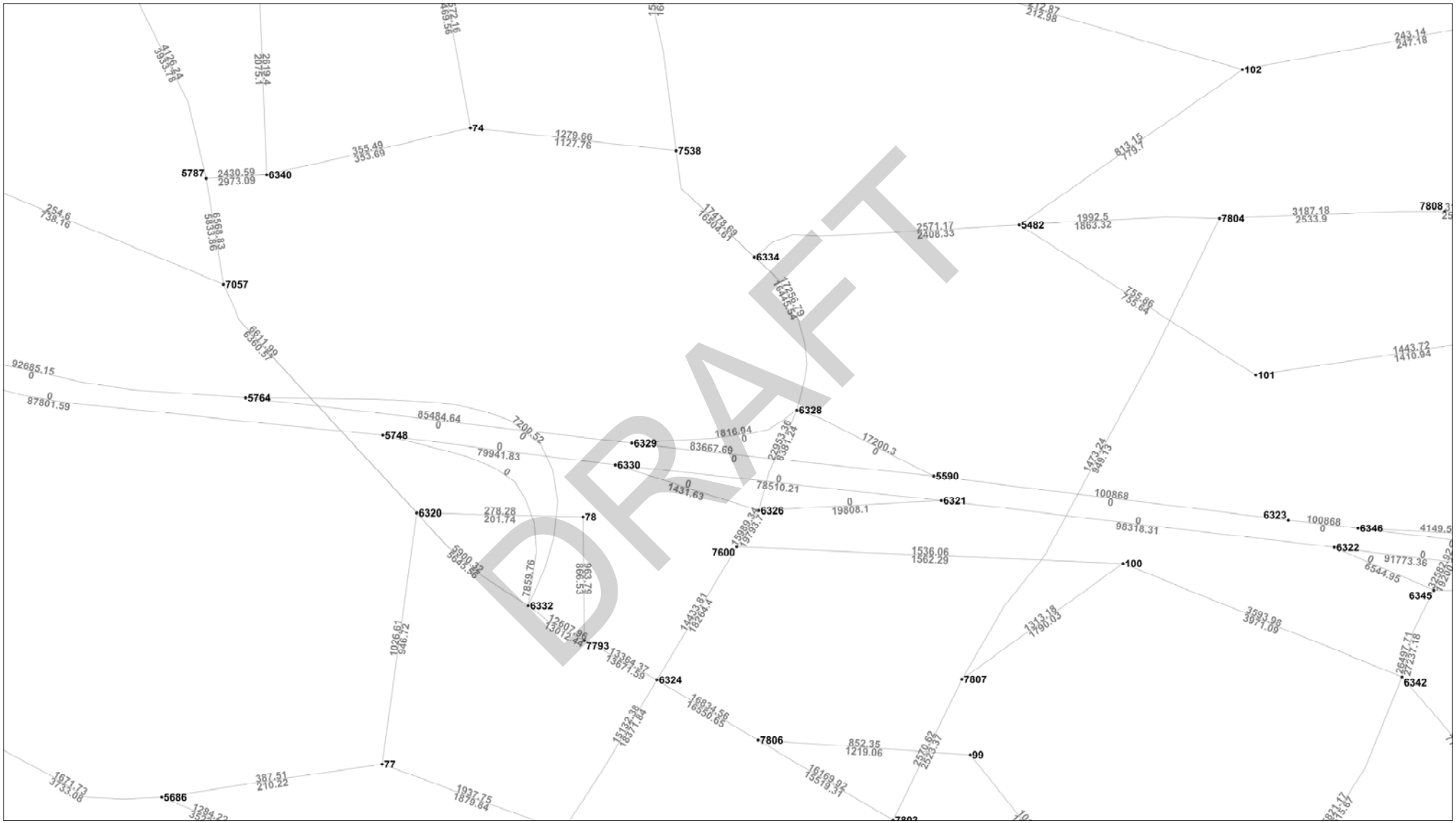
Acadian/Perkins IMR
2037 No Build - Nodes and Names



Acadian/Perkins IMR
2037 No Build - Nodes and Lanes



Acadian/Perkins IMR
2037 No Build- Nodes and ADTs



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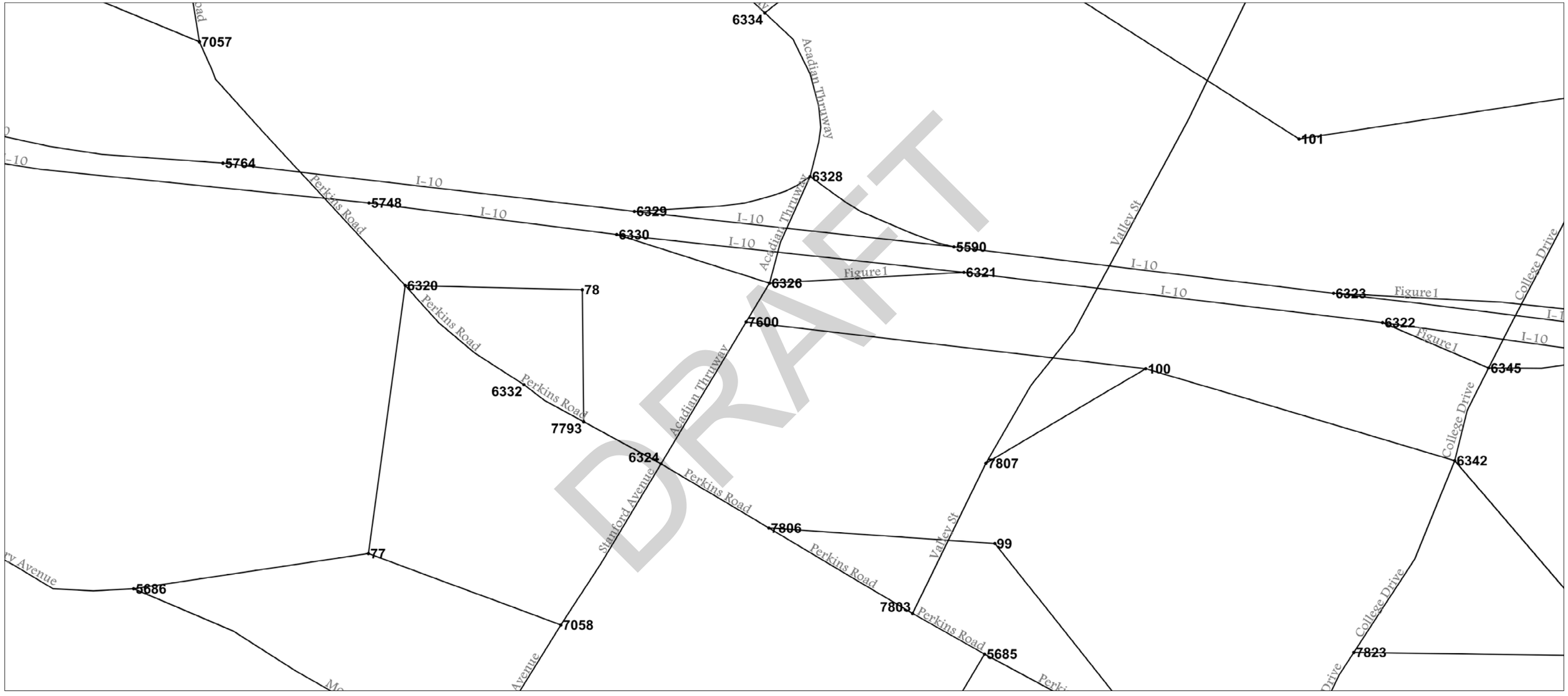

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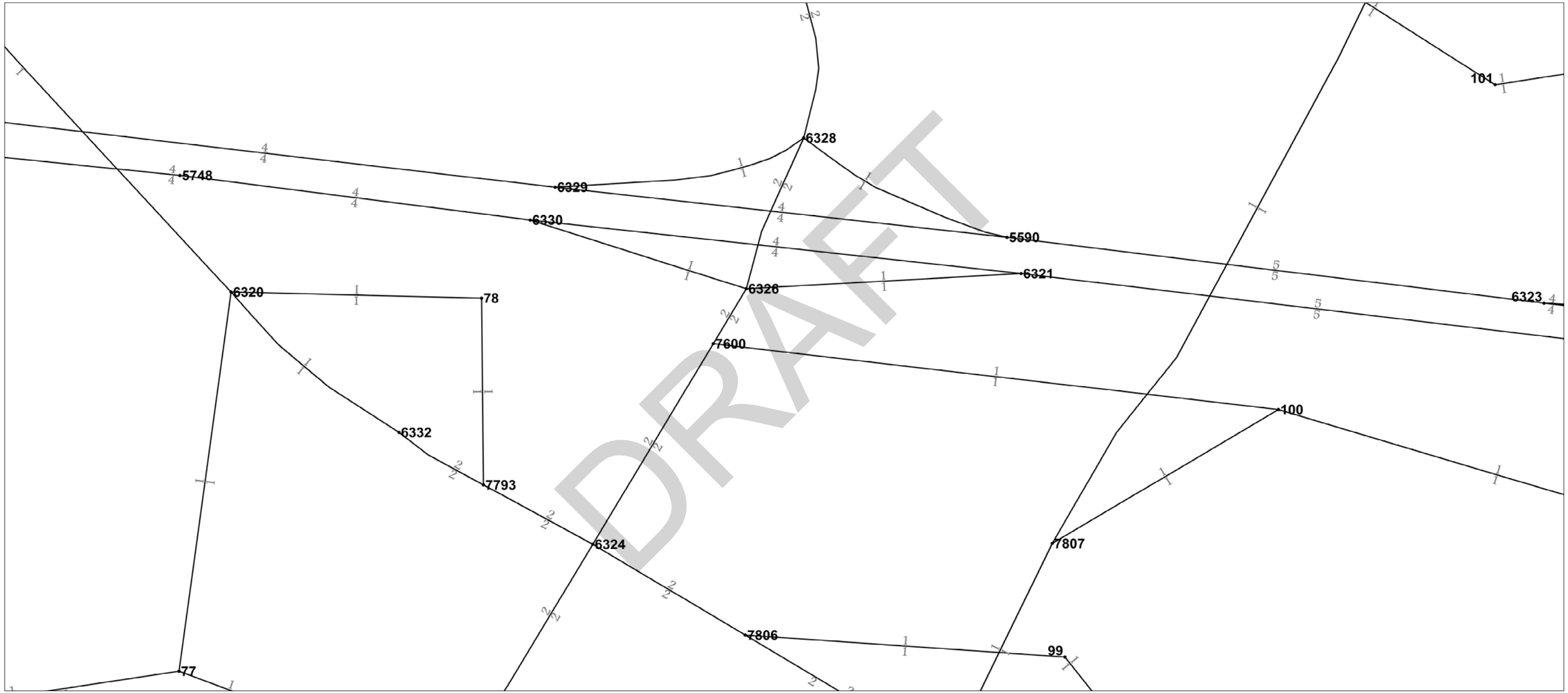
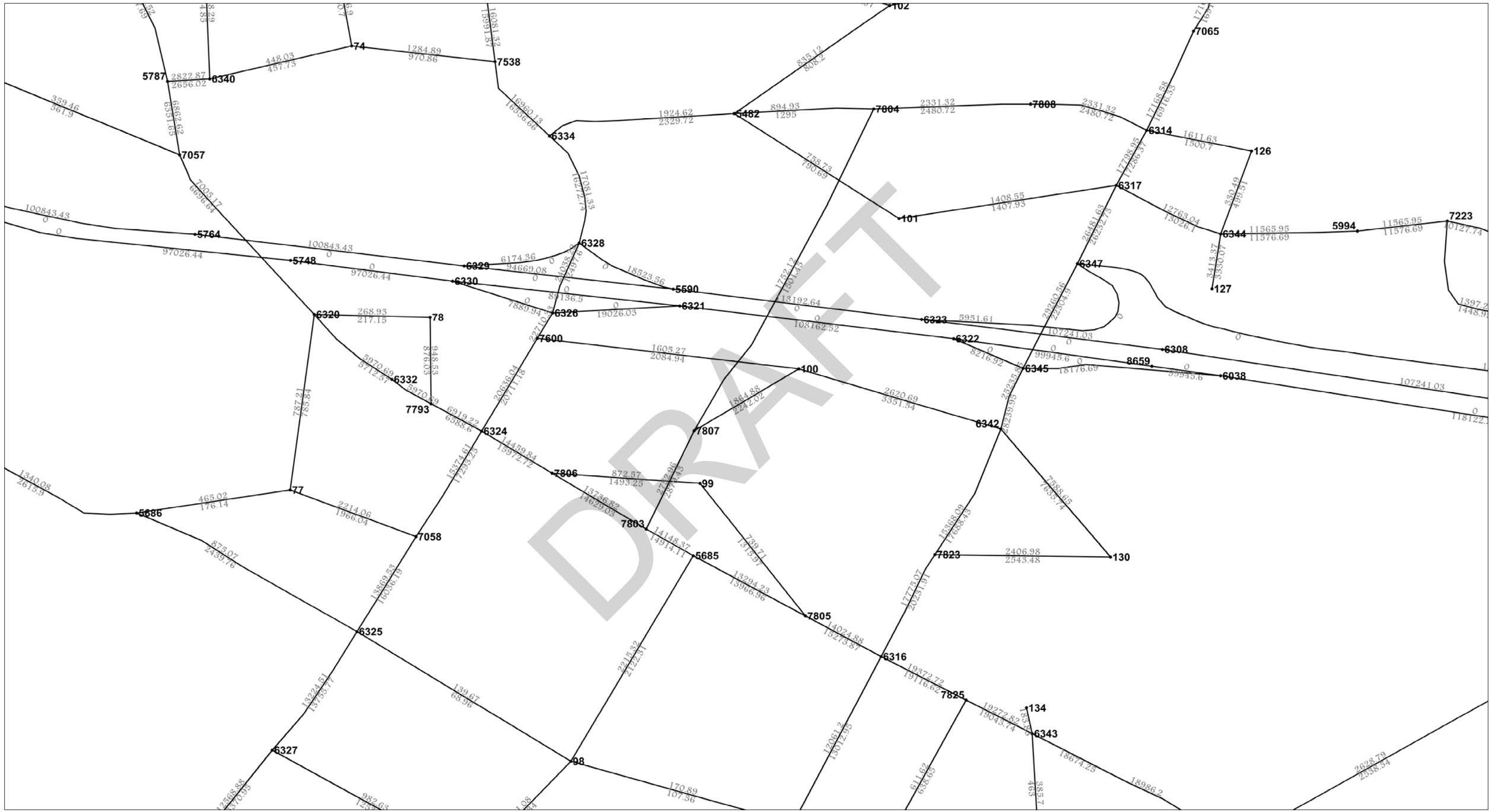
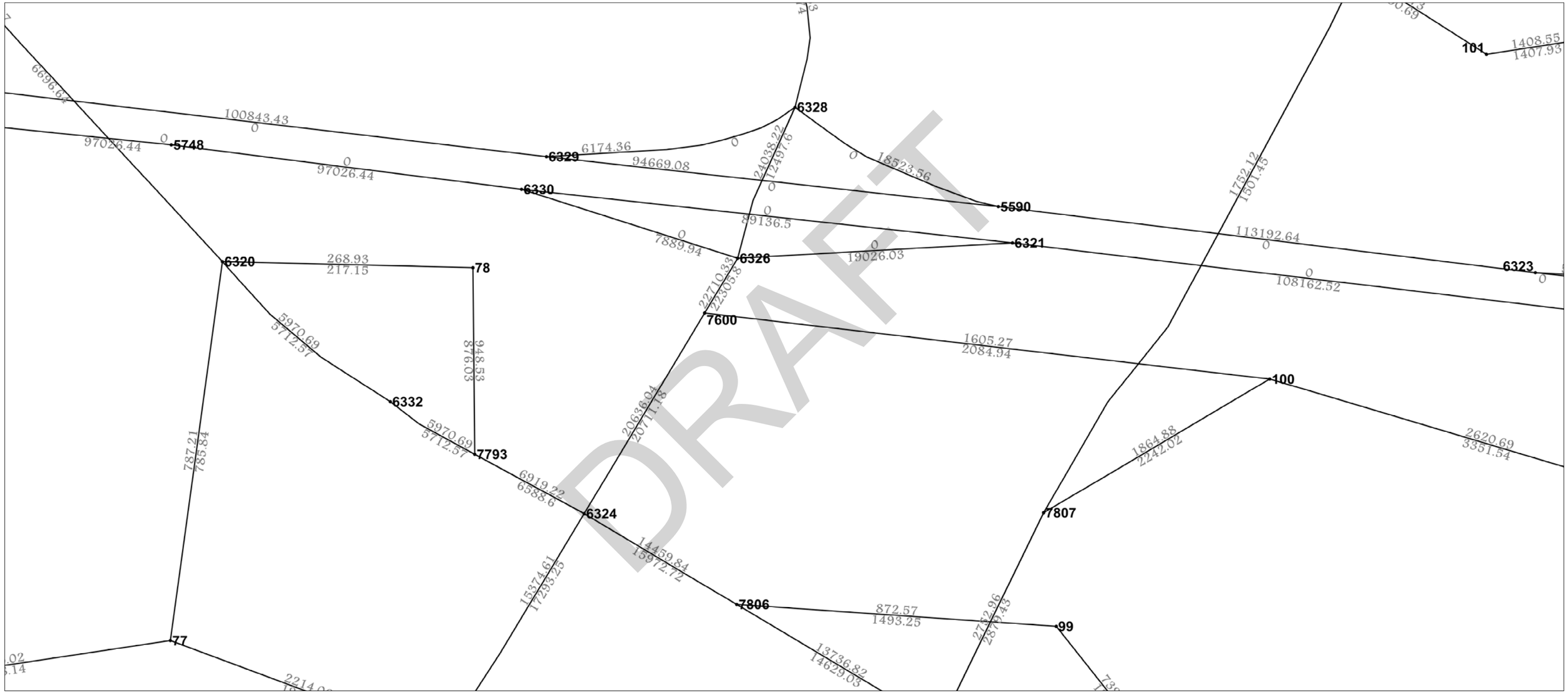
Acadian/Perkins IMR
2037 Build - Nodes and Lanes



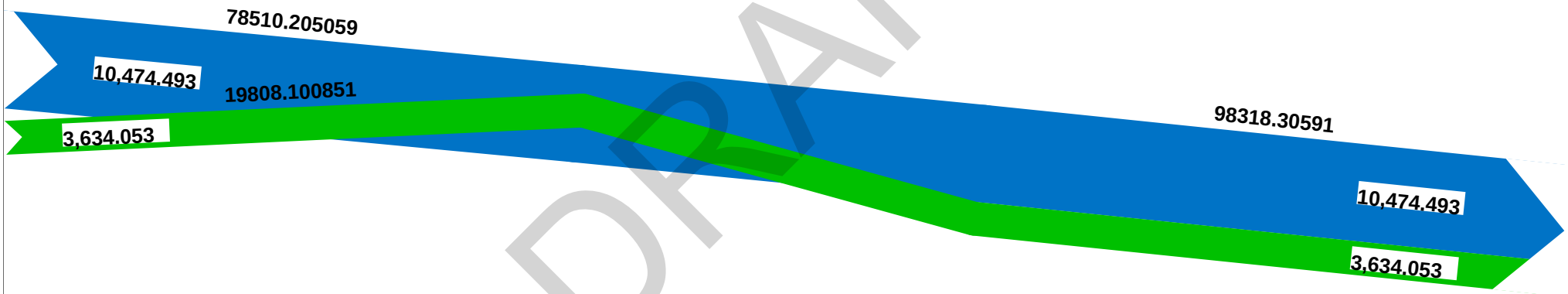
Acadian/Perkins IMR
2037 Build - Nodes and ADTs



Acadian/Perkins IMR
2037 Build - Nodes and ADTs (zoomed in)



I-10 EB on merge from Acadian



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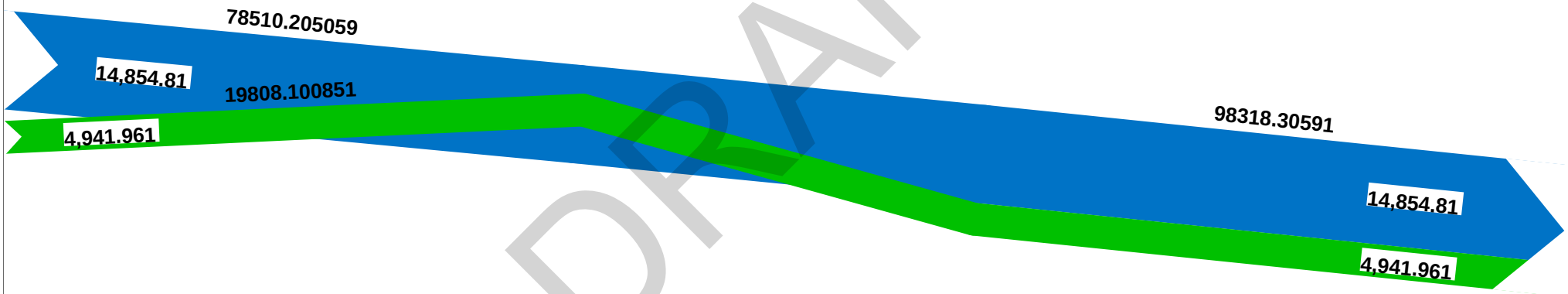
Node 6321 2037 No Build AM

I-10 EB on merge from Acadian



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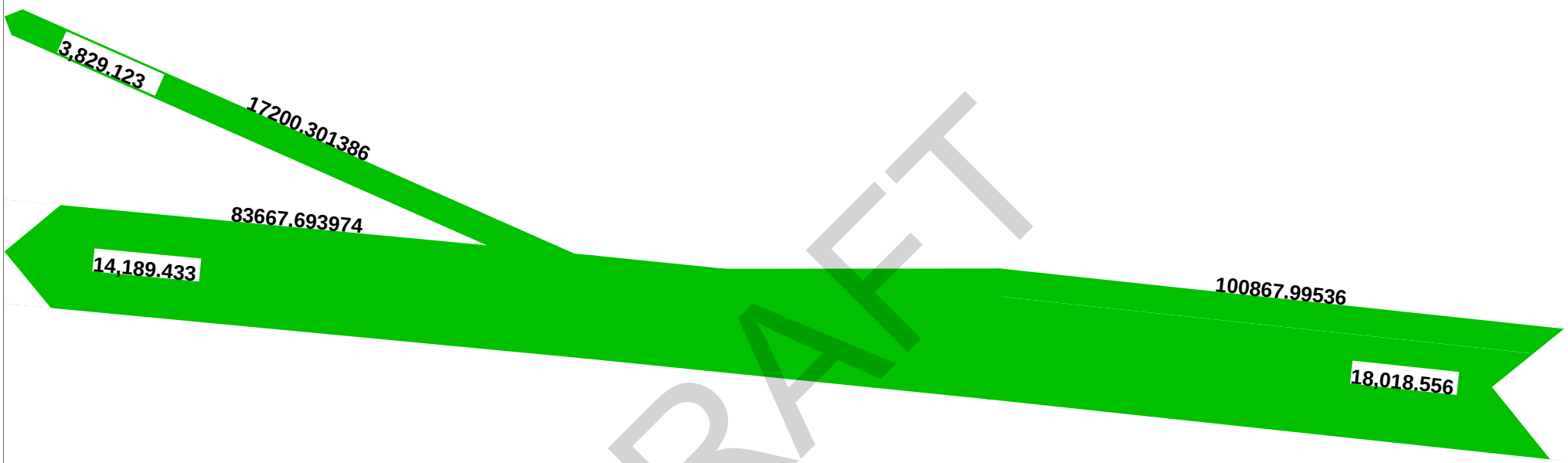
Node 6321 2037 No Build PM

I-10 WB off diverge to Acadian



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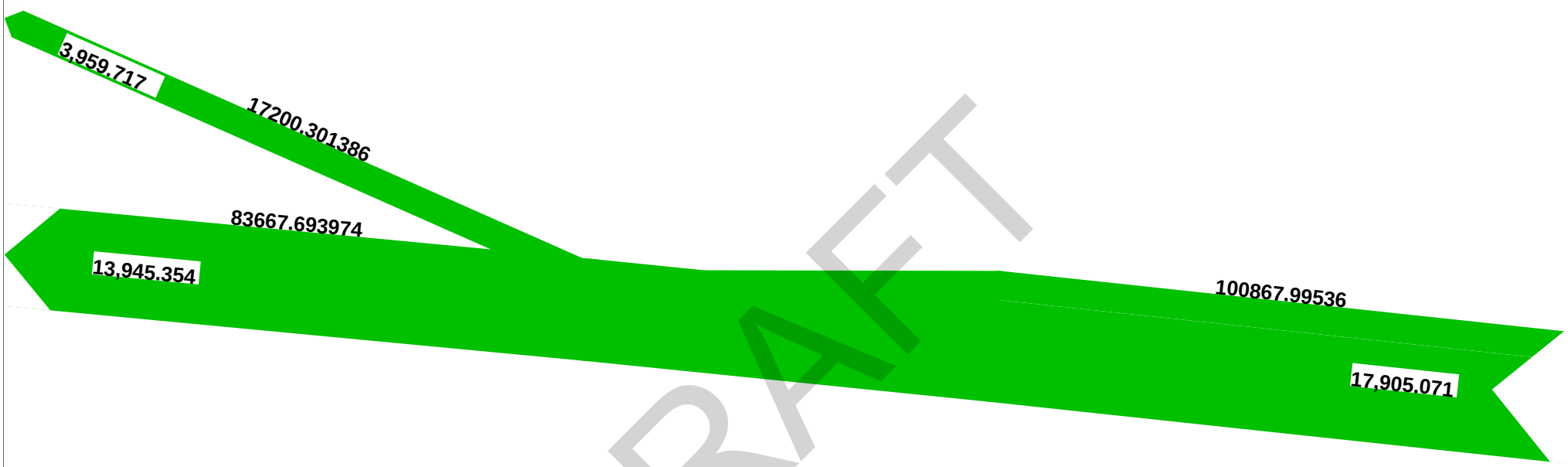
Node 5590 2037 No Build AM

I-10 WB off diverge to Acadian



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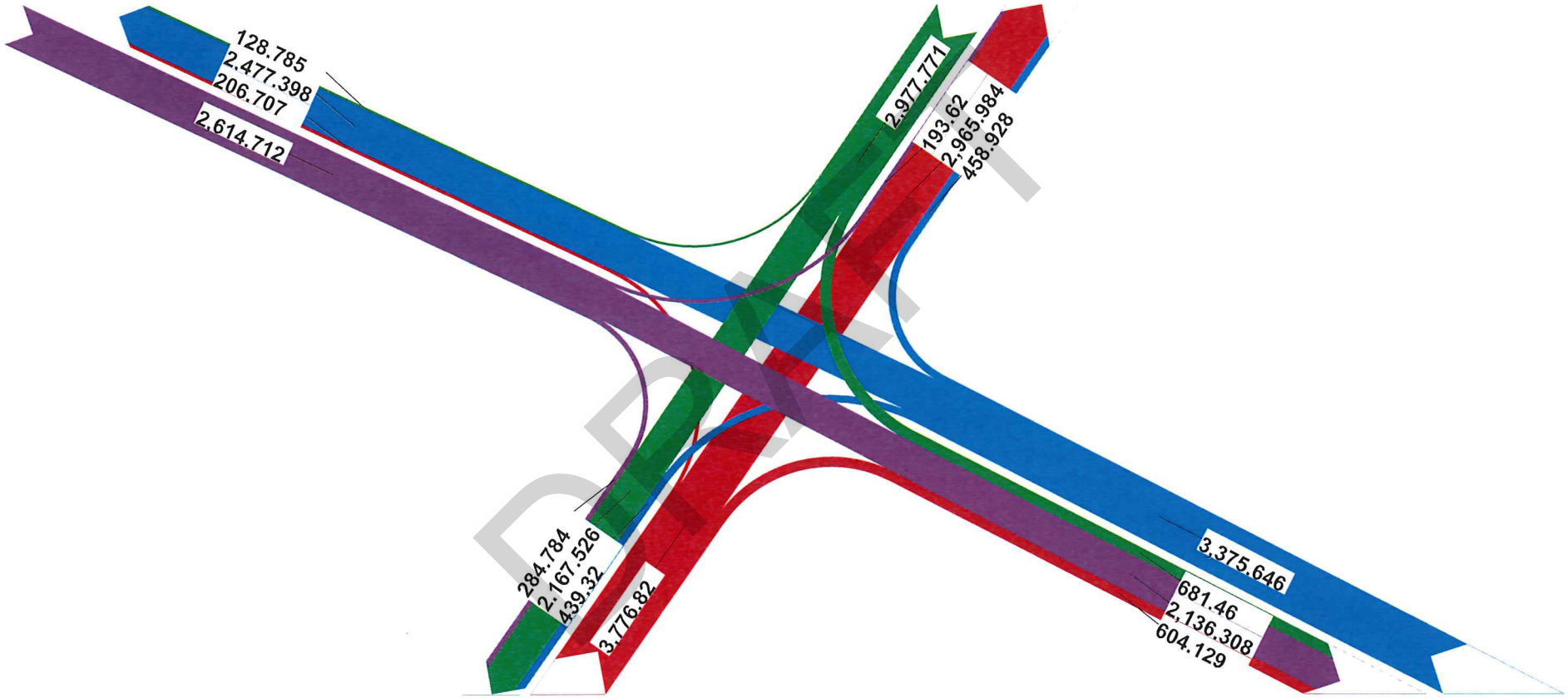
Node 5590 2037 No Build PM

Acadian at Perkins



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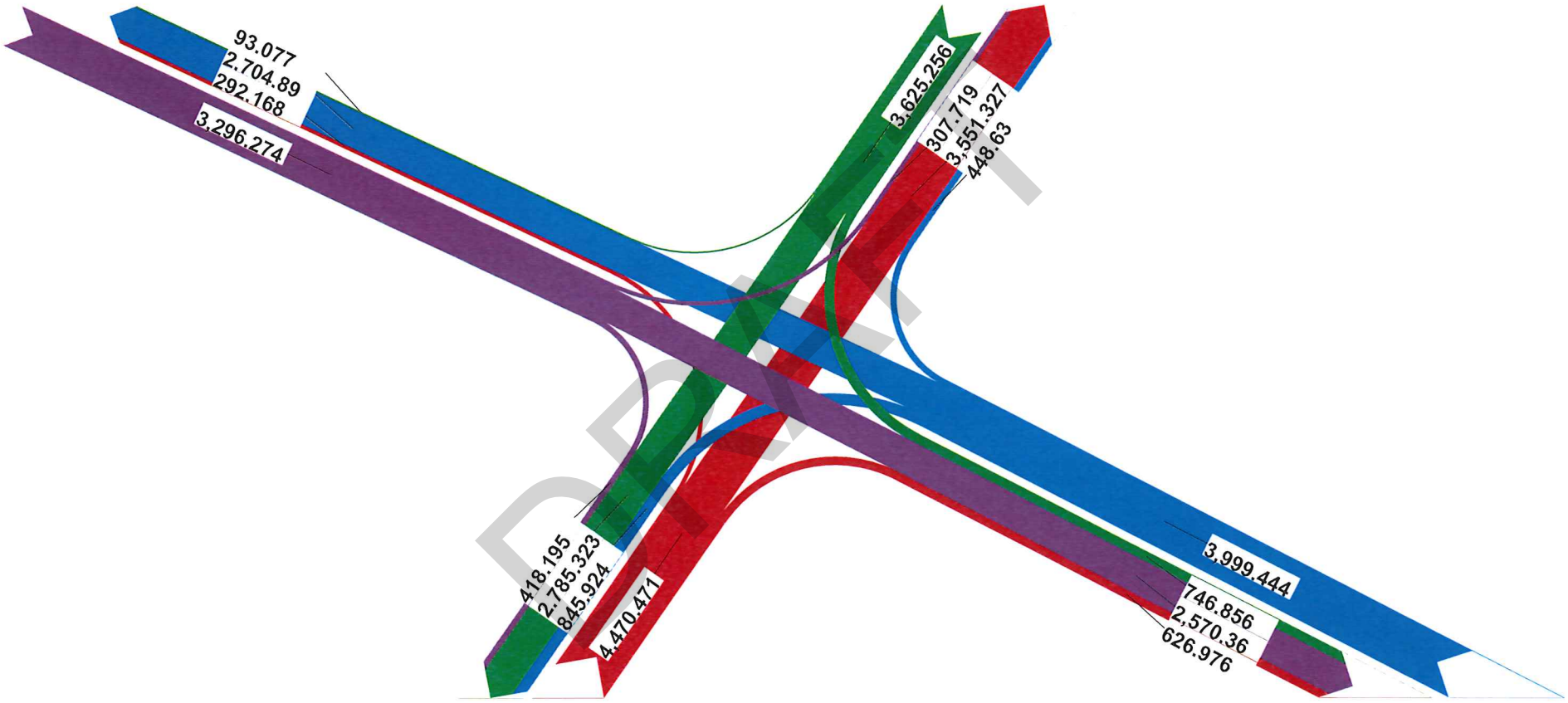
Node 6324 2037 AM

No Build

Acadian at Perkins



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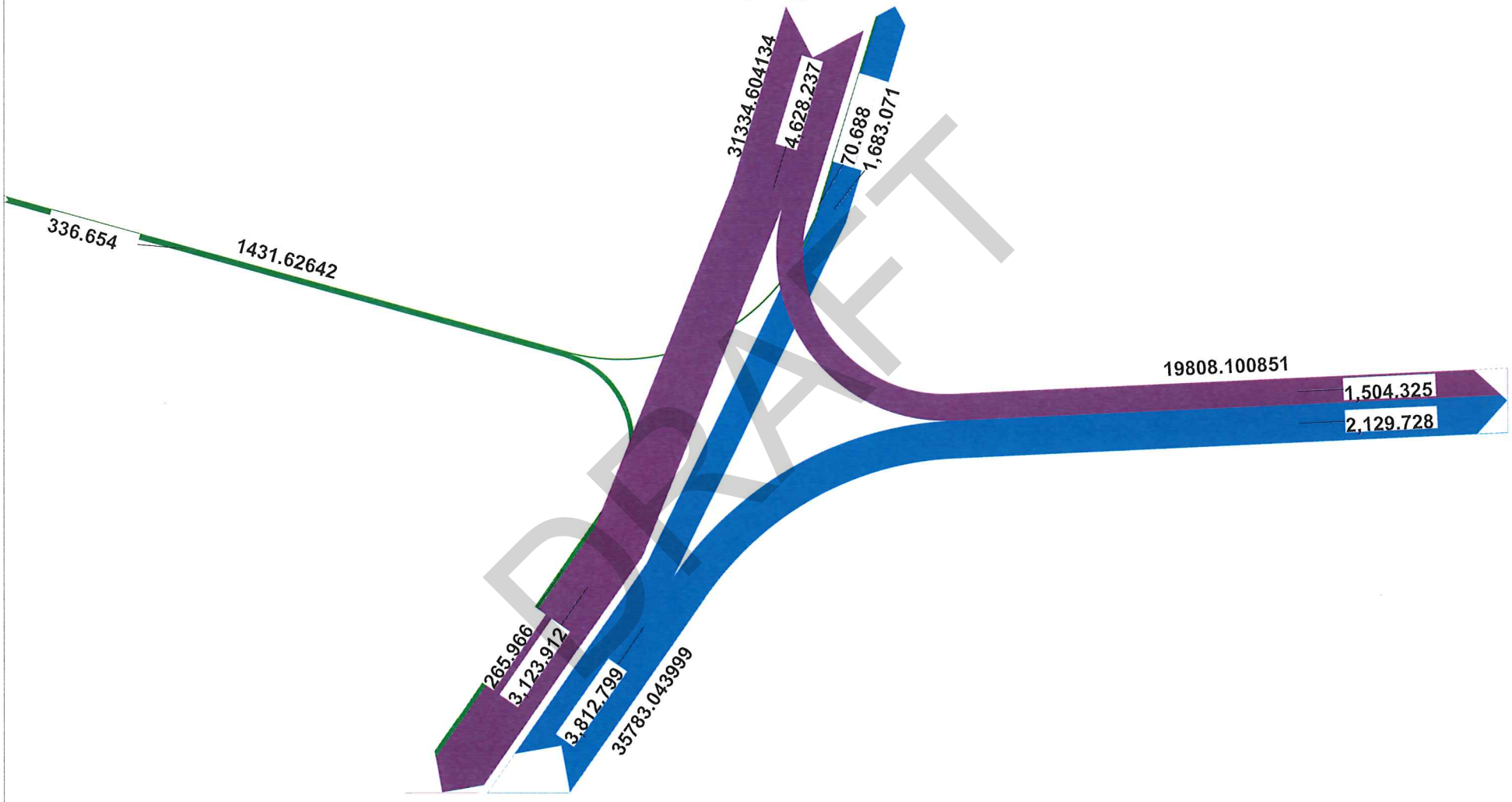
Node 6324 2037 PM

No Build

I-10 EB Ramps @ Acadian



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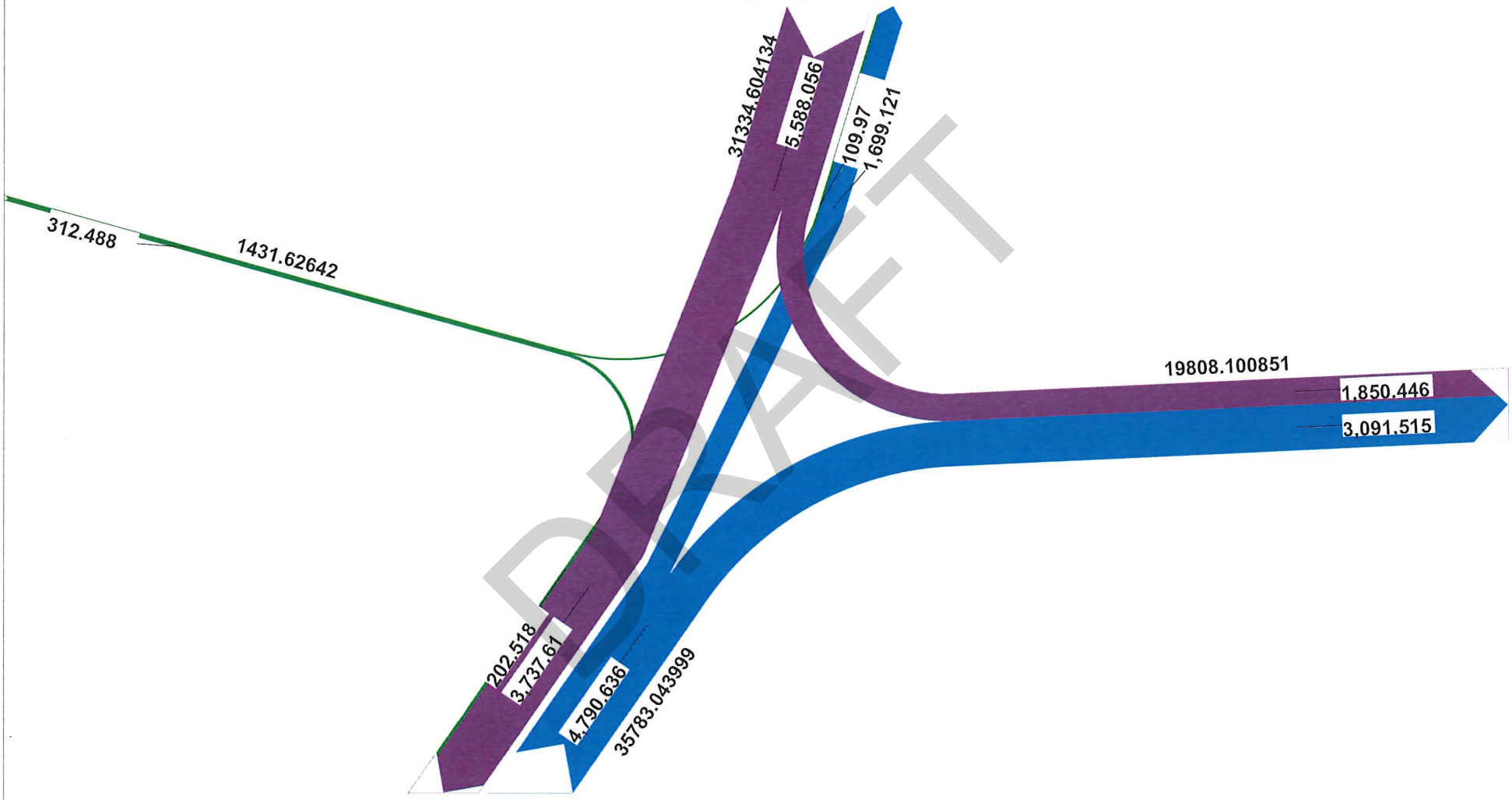
Node 6326 2037 No Build AM

I-10 EB Ramps @ Acadian



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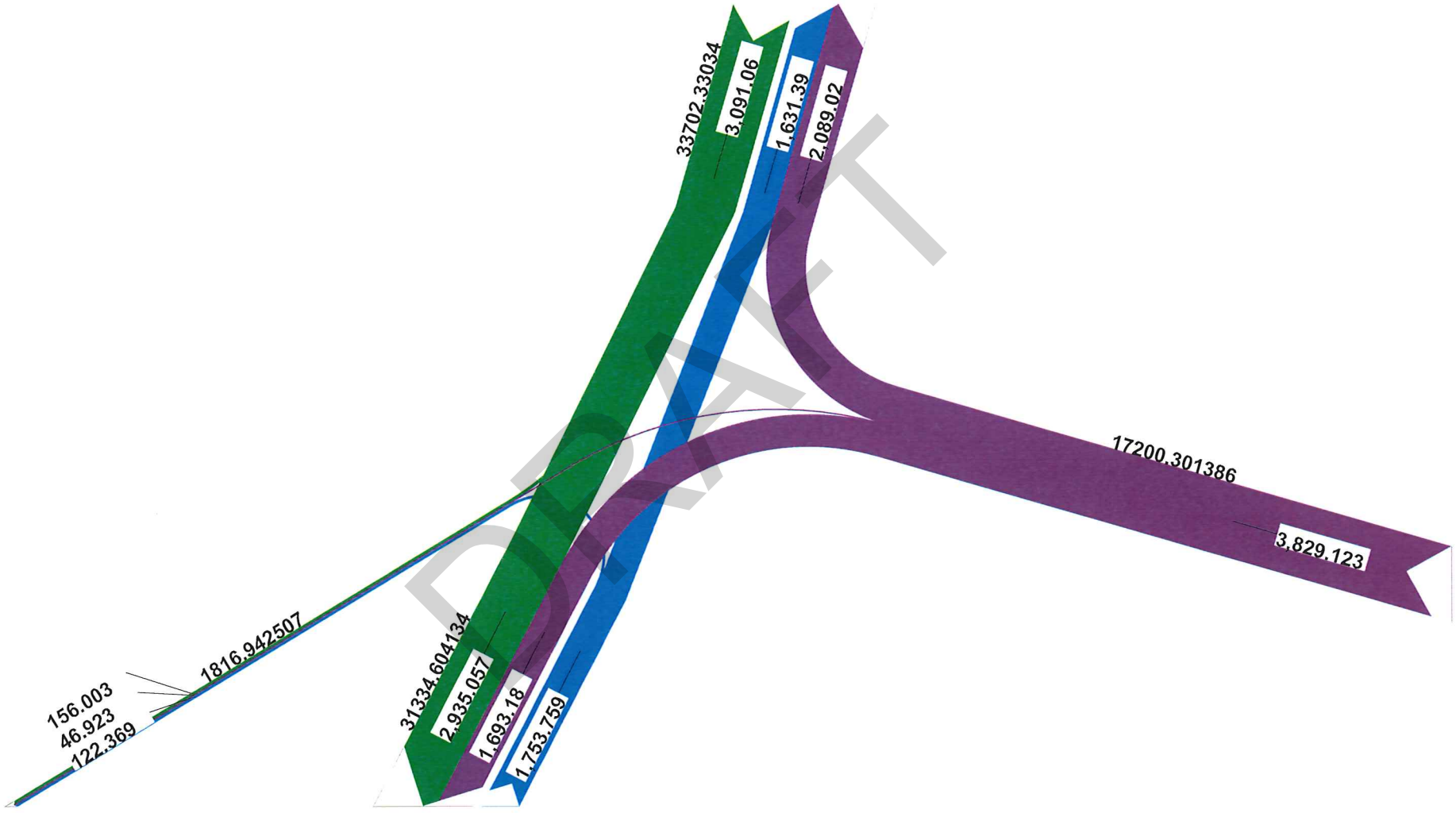
Node 6326 2037 No Build PM

I-10 WB Ramps @ Acadian



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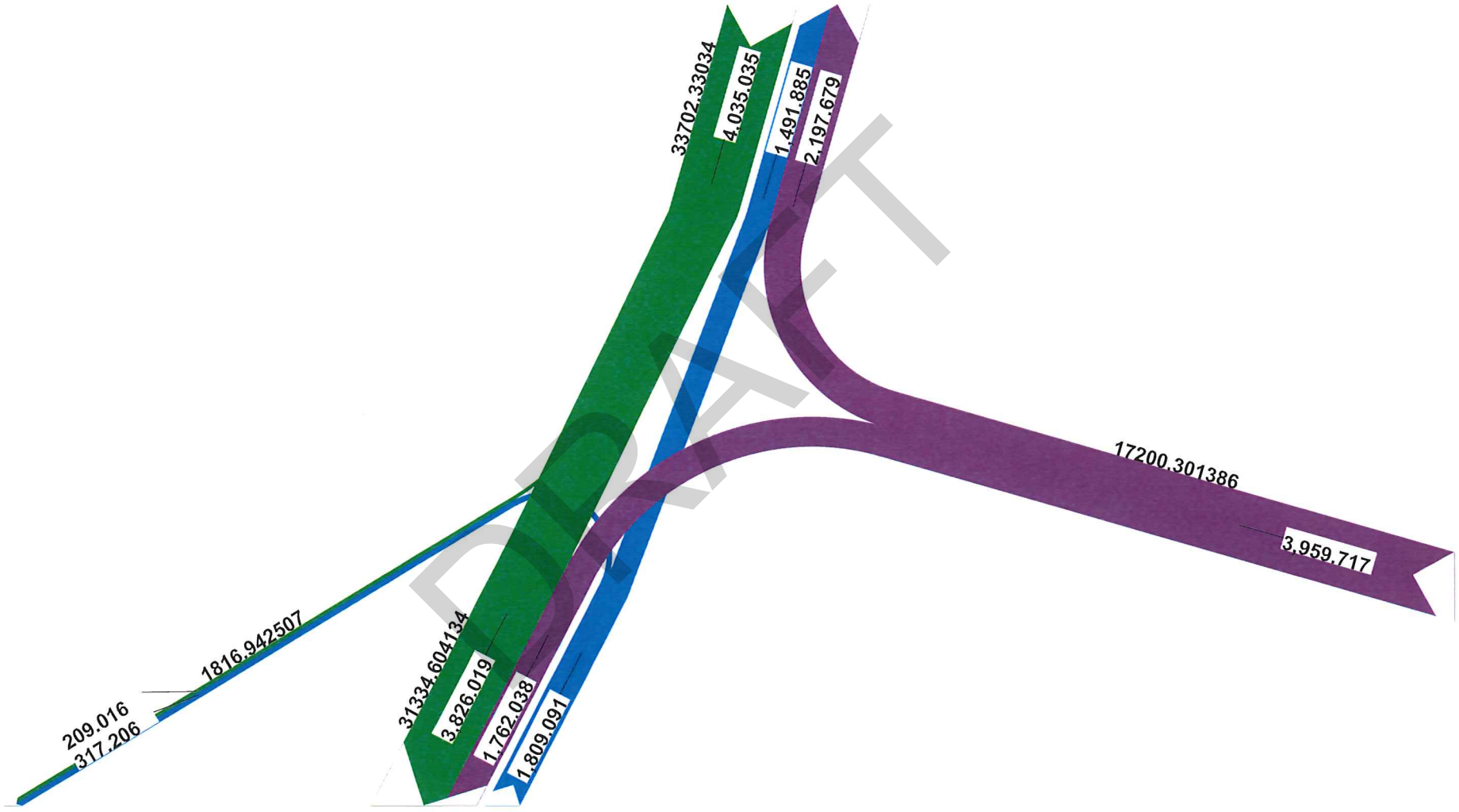
Node 6328 2037 No Build AM

I-10 WB Ramps @ Acadian



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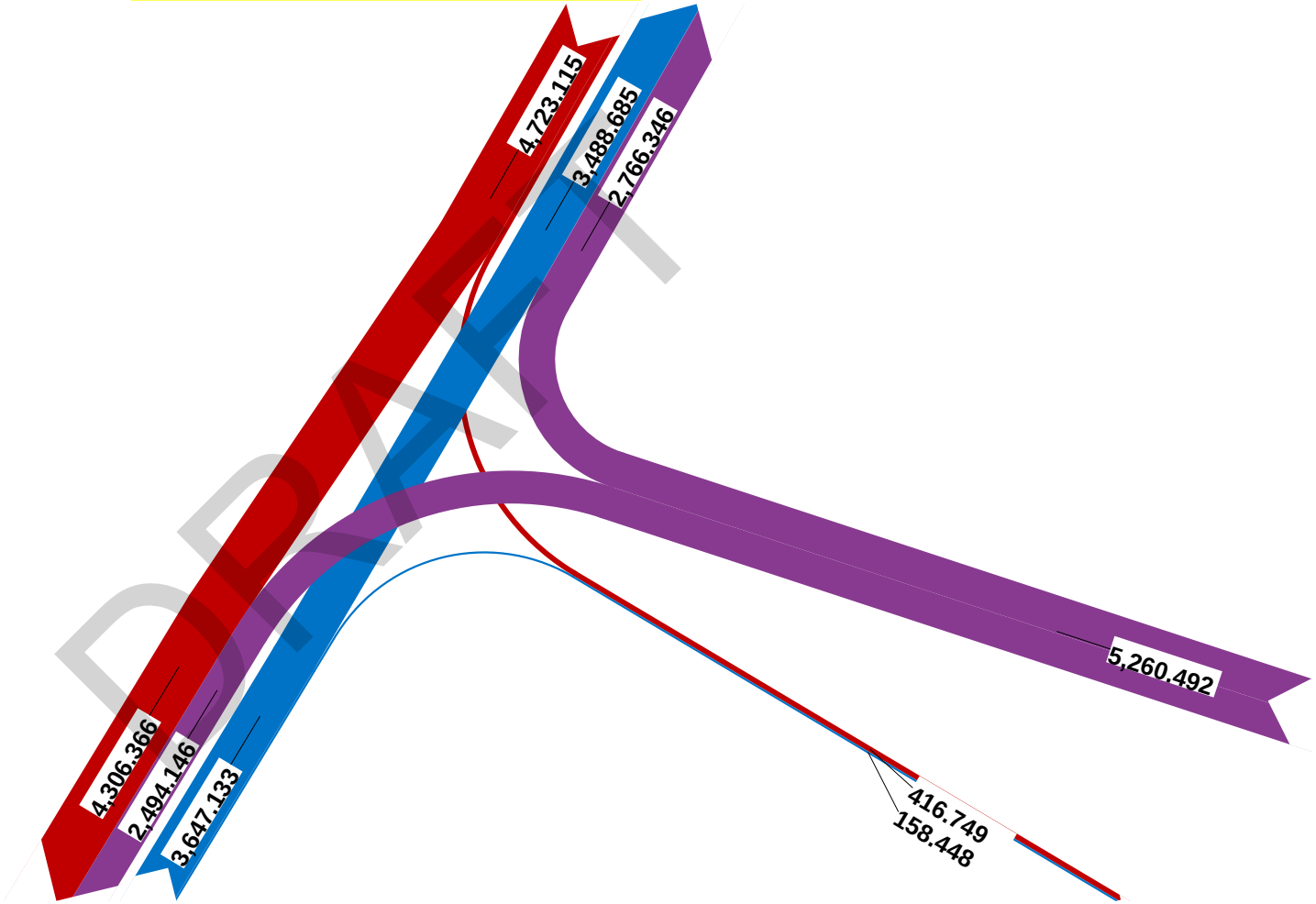
Node 6328 2037 No Build PM

I-10 WB Off Ramp at College Dr



No Build AM Node 6347

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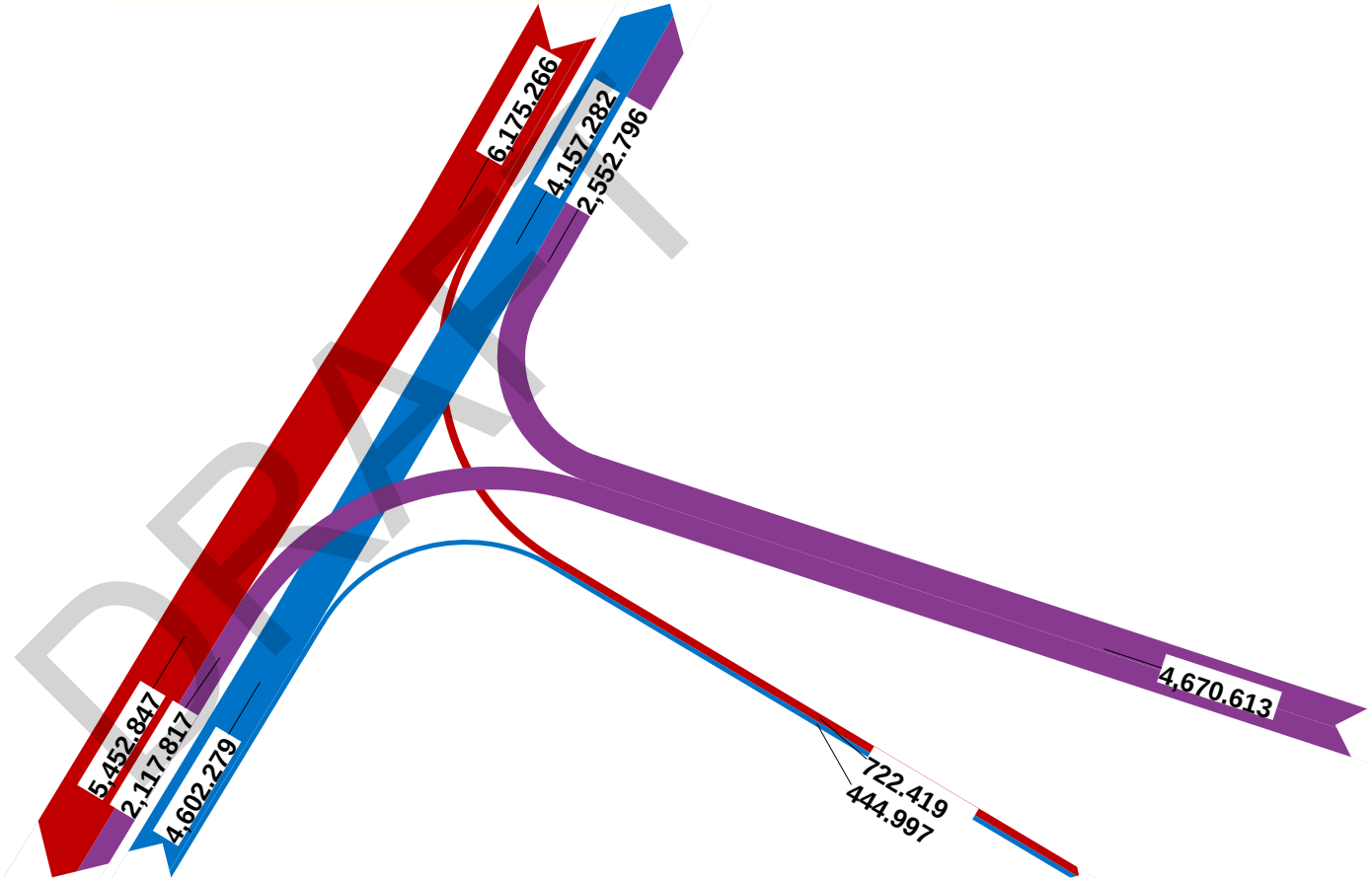
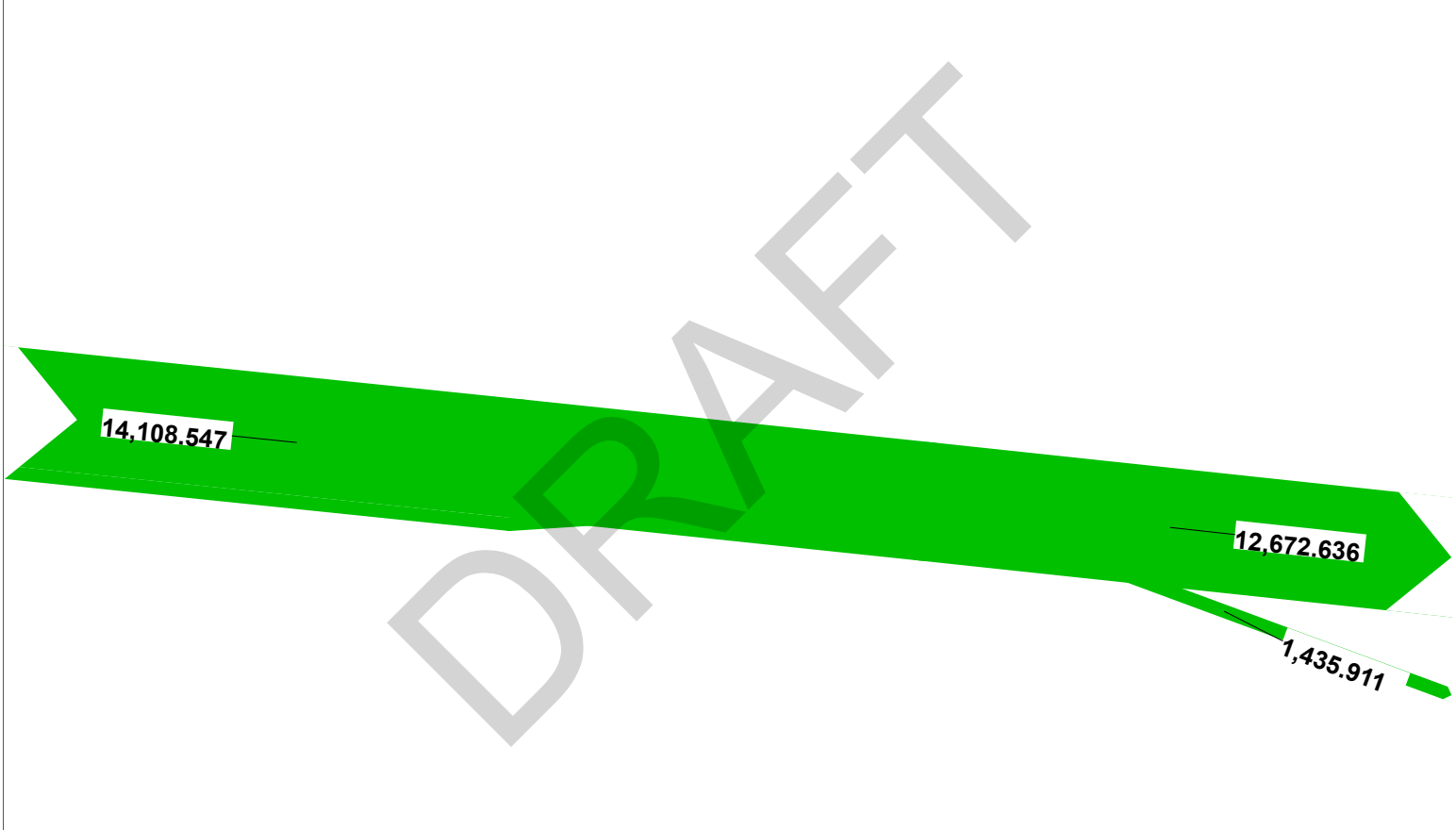
I-10 WB Off Ramp at College Dr



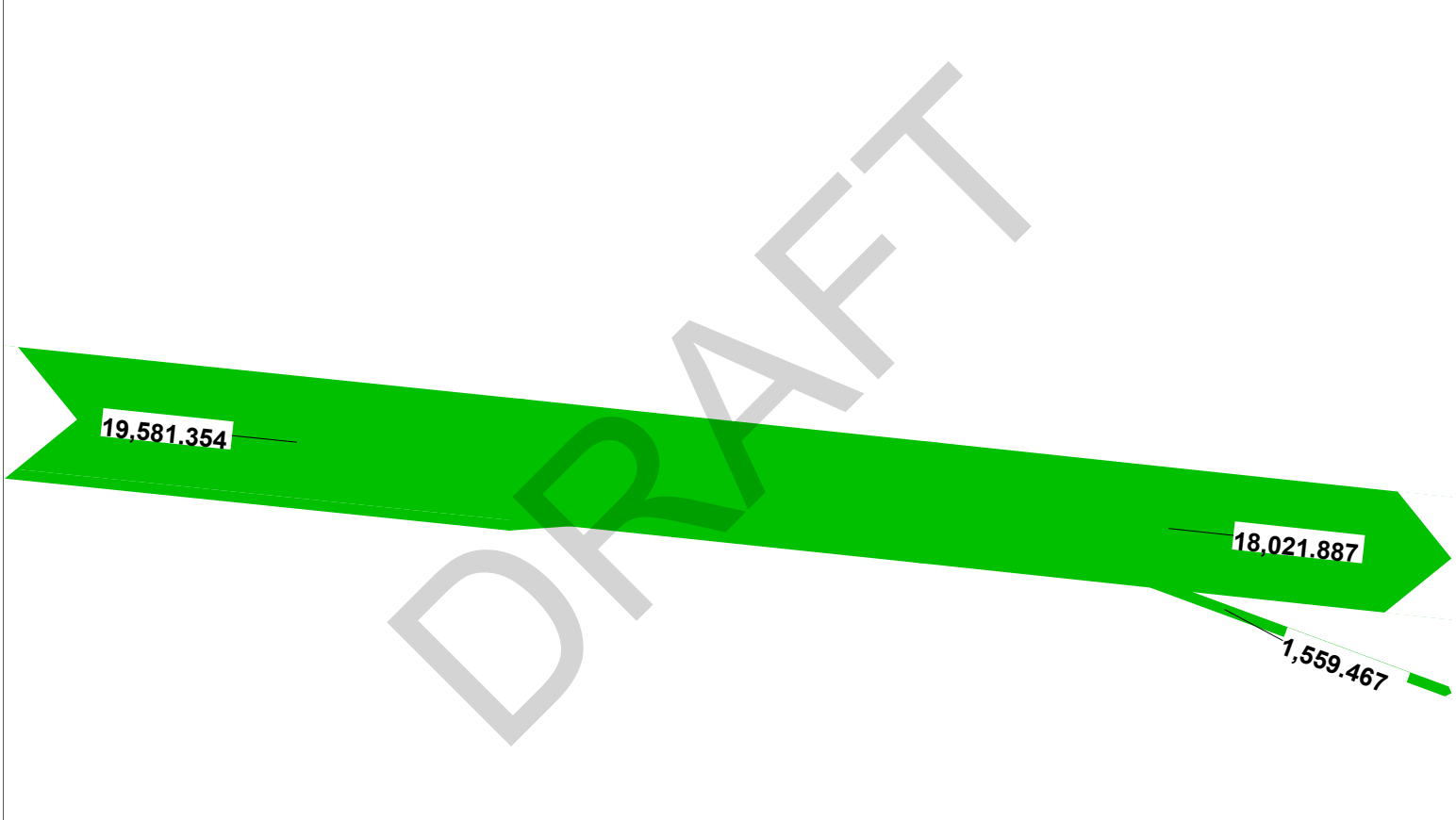
No Build PM Node 6347

I-10 EB off diverge to College Dr



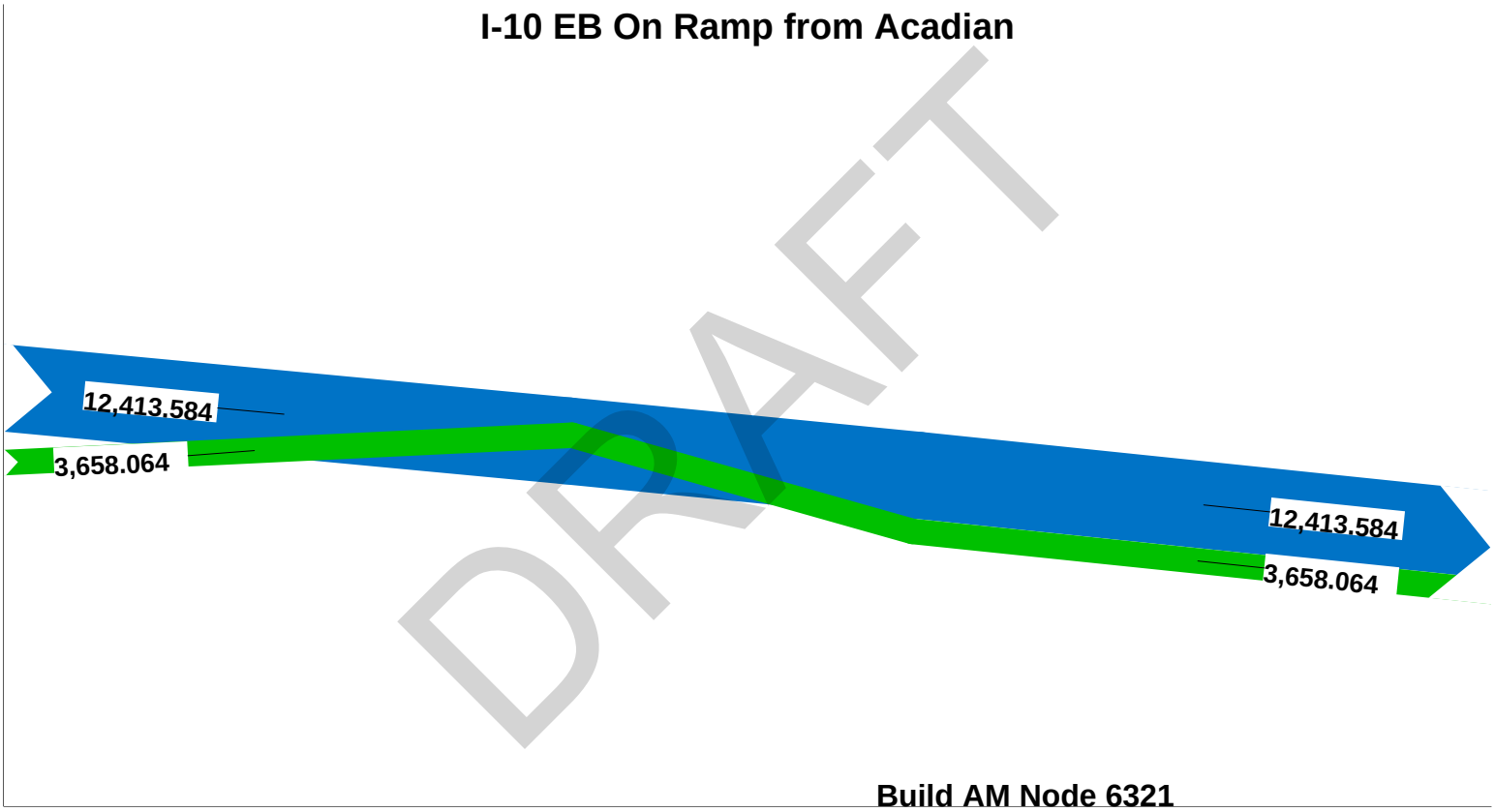
Node 6322 2037 No Build AM

I-10 EB off diverge to College Dr



Node 6322 2037 No Build PM

I-10 EB On Ramp from Acadian



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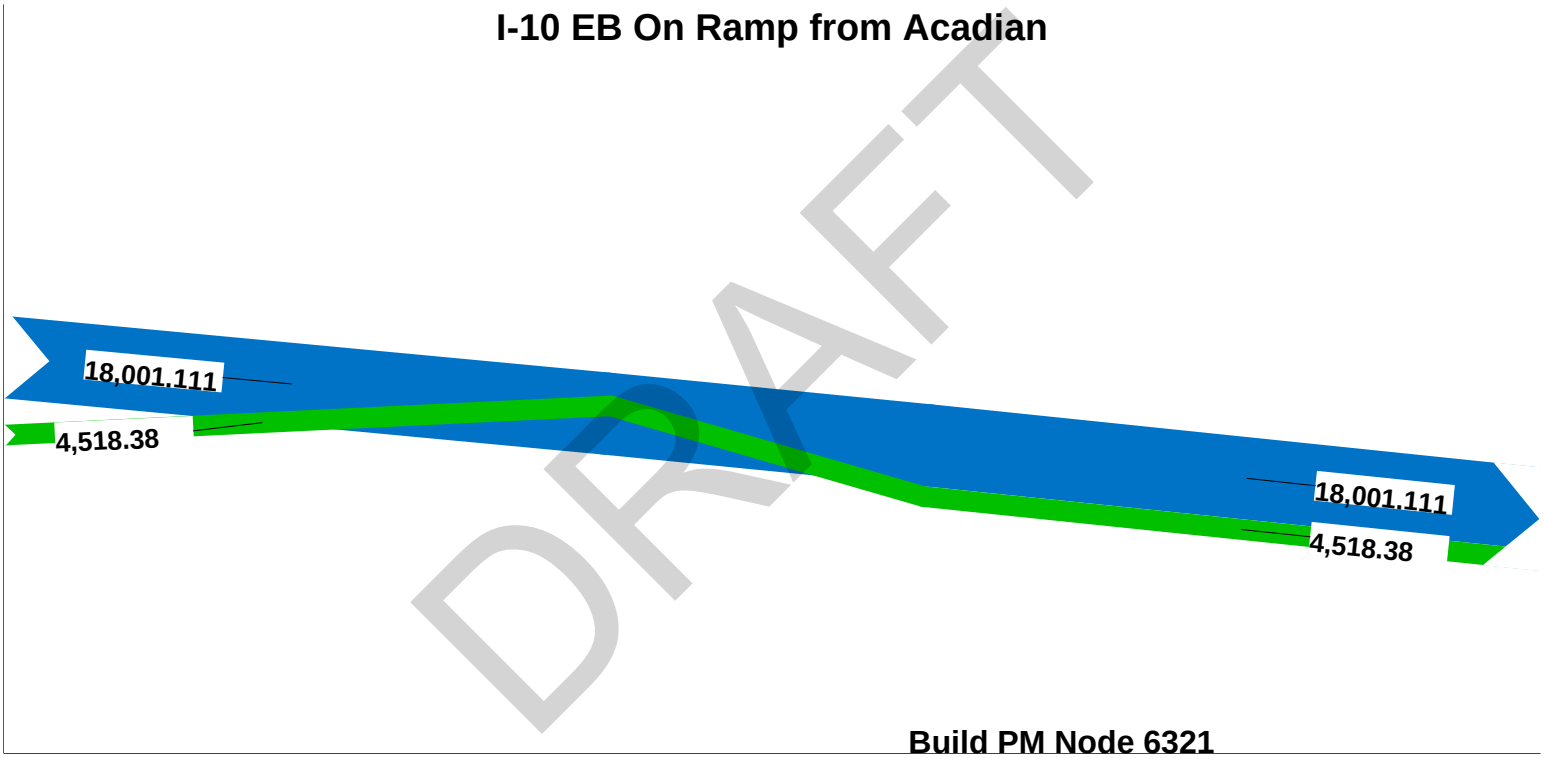
Build AM Node 6321

I-10 EB On Ramp from Acadian



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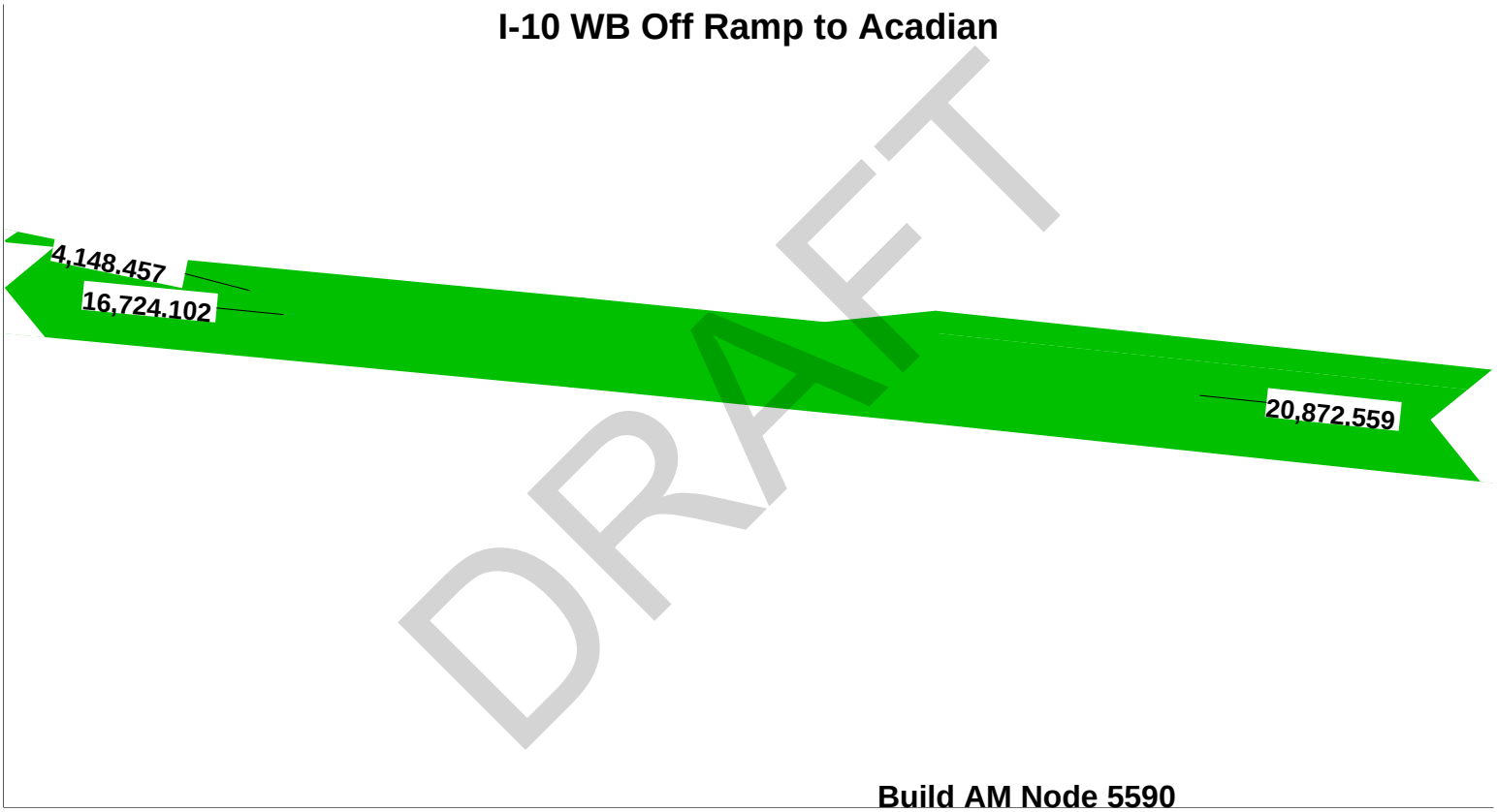
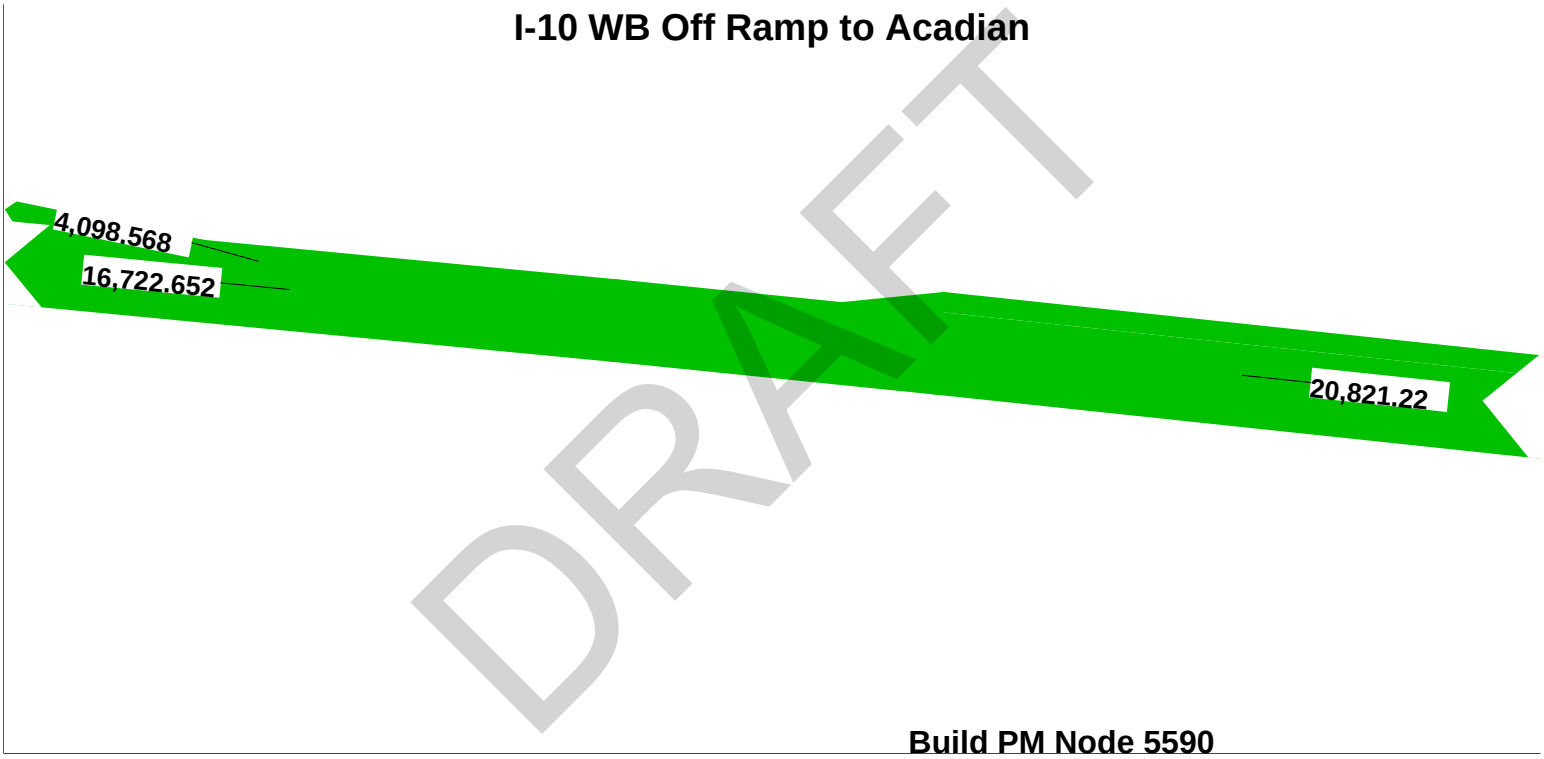
Build PM Node 6321

I-10 WB Off Ramp to Acadian



DRAFT

I-10 WB Off Ramp to Acadian



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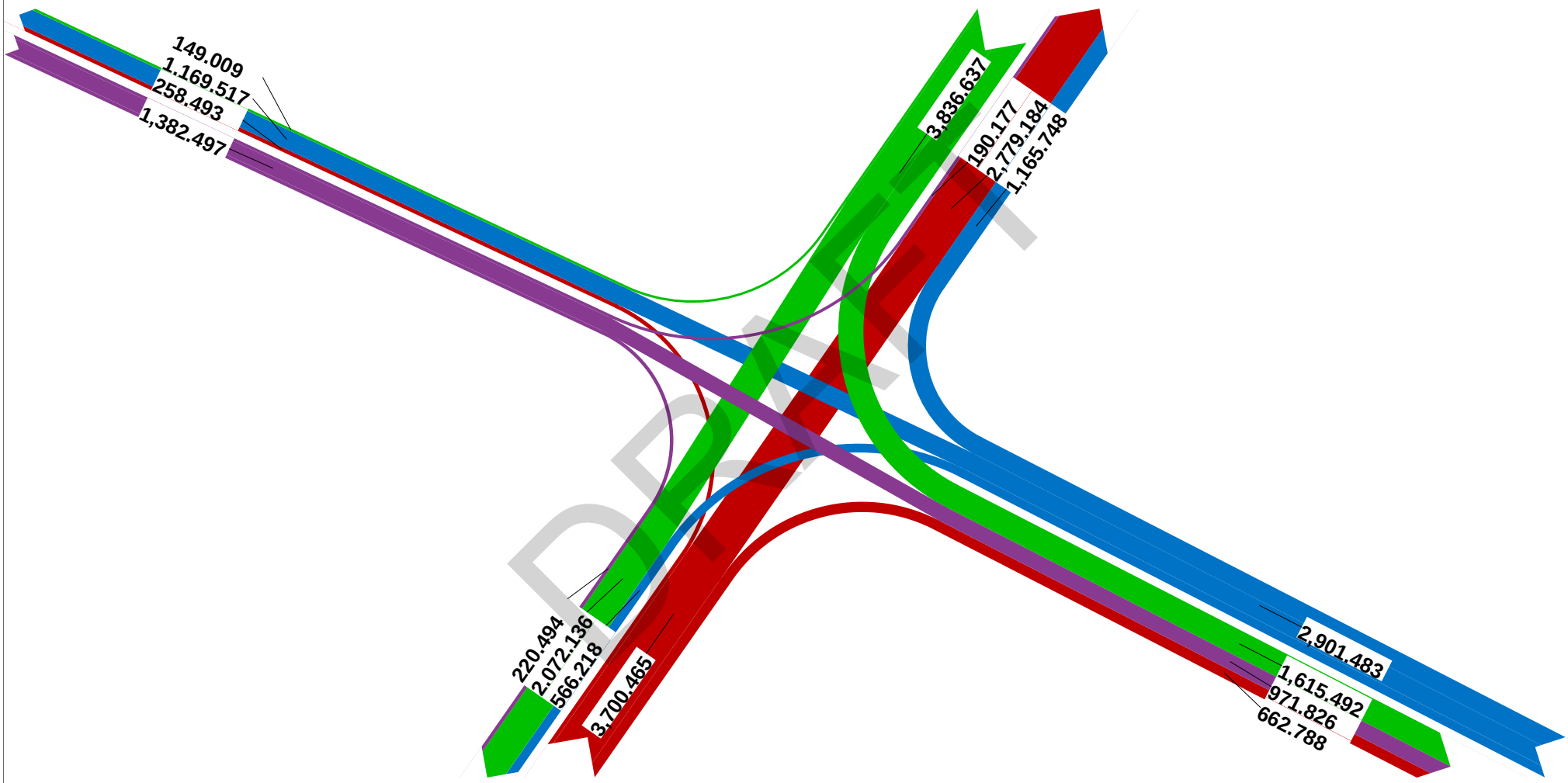
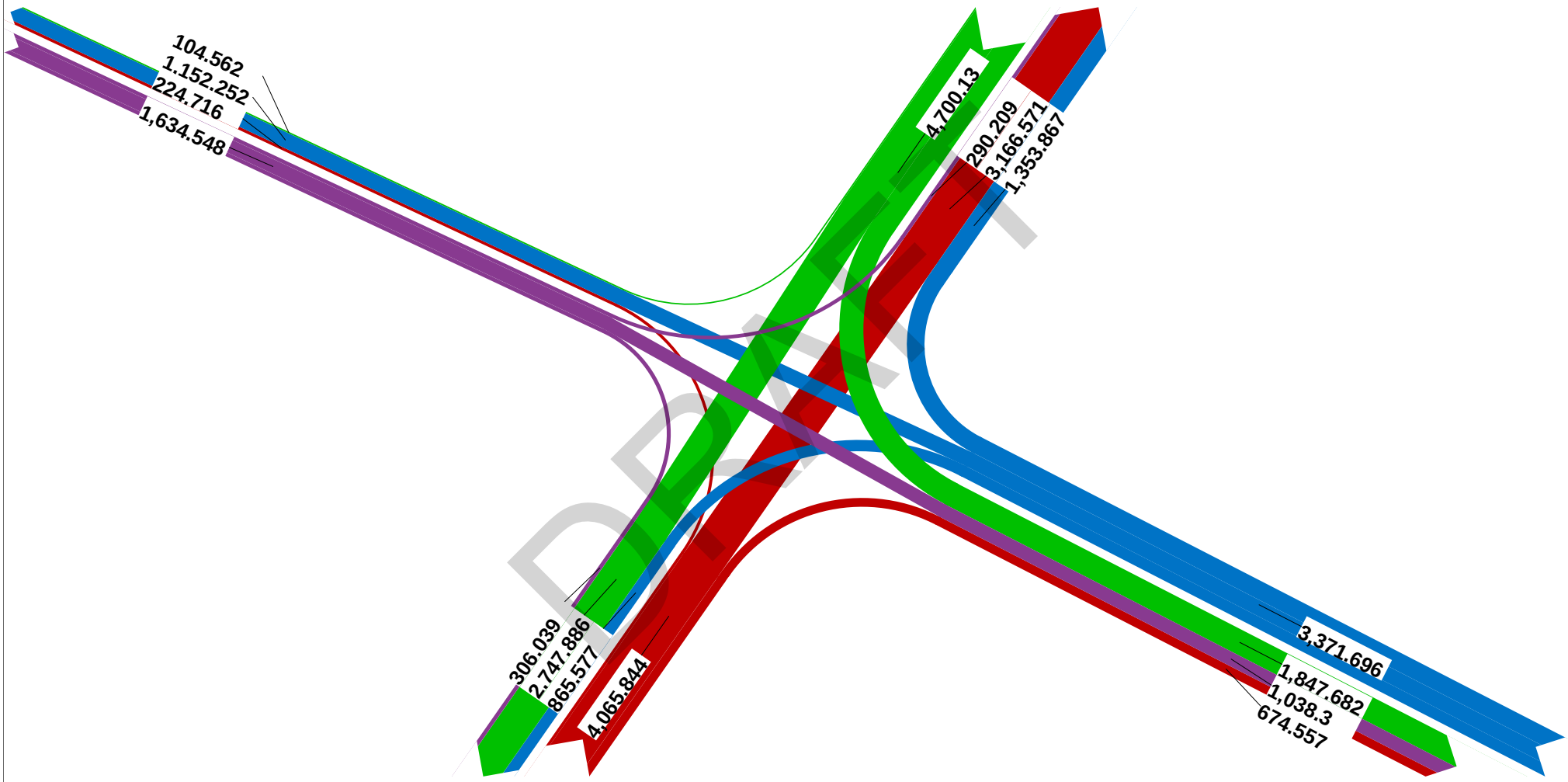
Build PM Node 5590

Acadian at Perkins



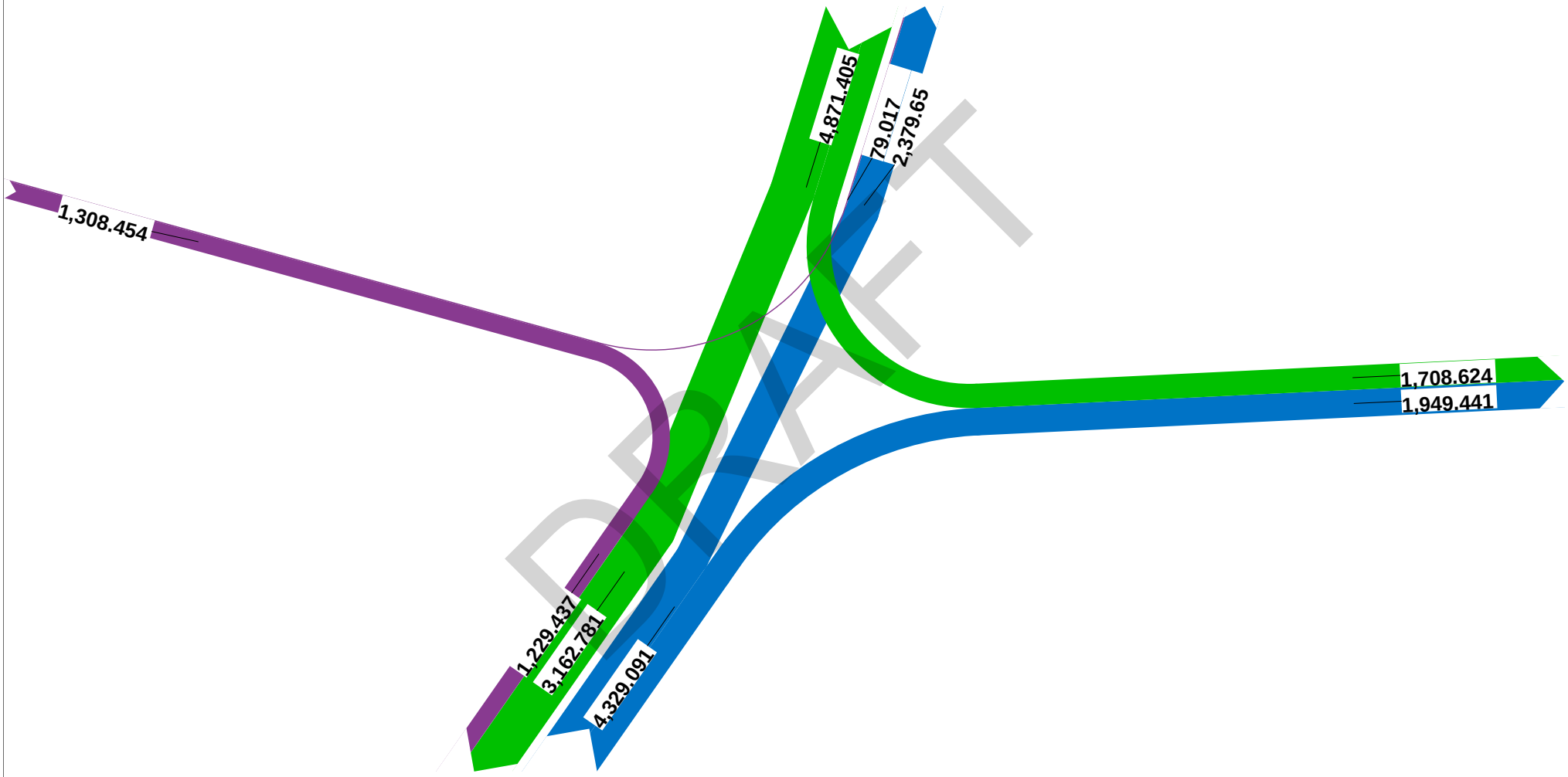
Build AM Node 6324

Acadian at Perkins



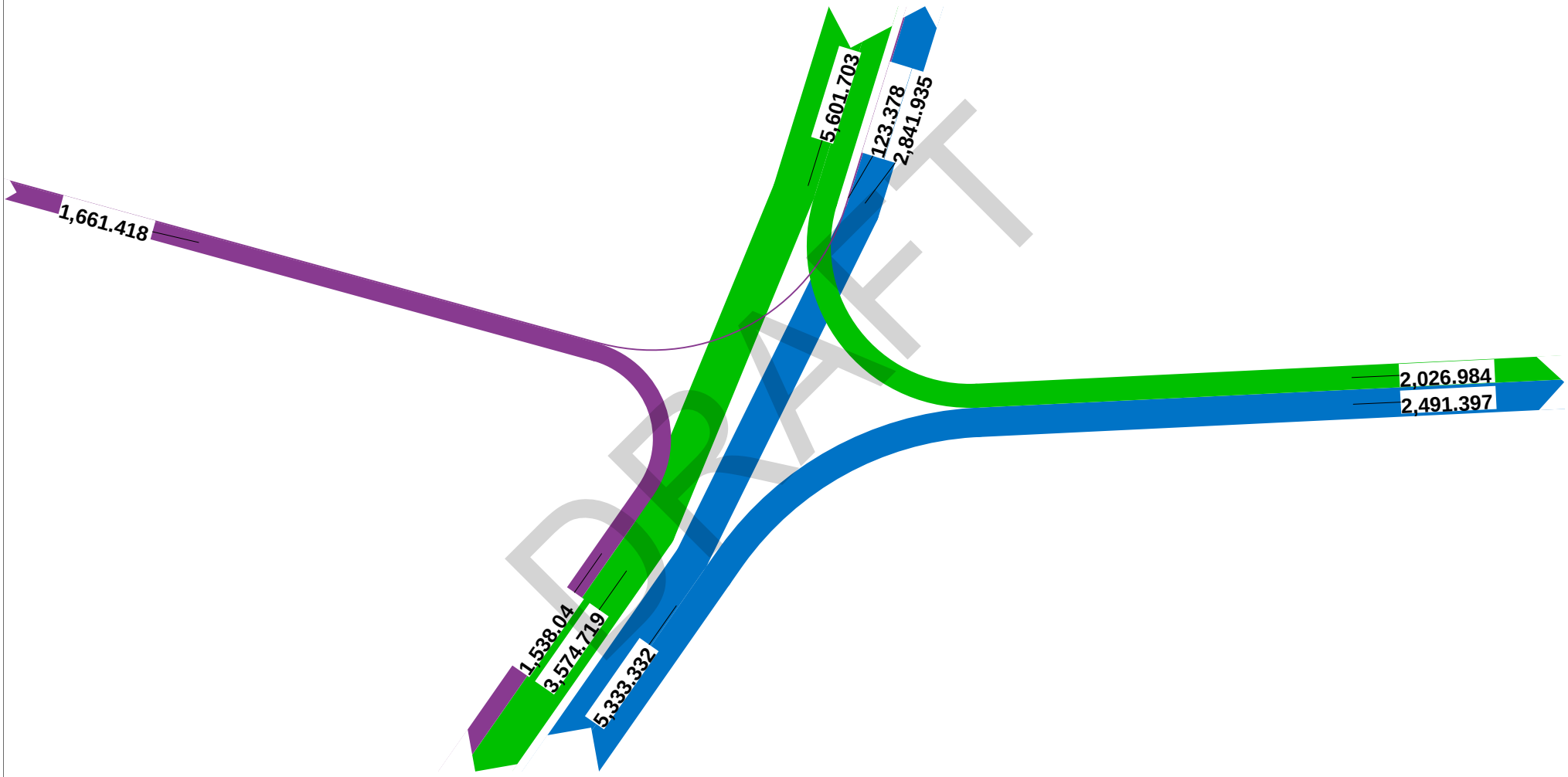
Build PM Node 6324

I-10 EB Off Ramp at Acadian



Build AM Node 6326

I-10 EB Off Ramp at Acadian



Build PM Node 6326

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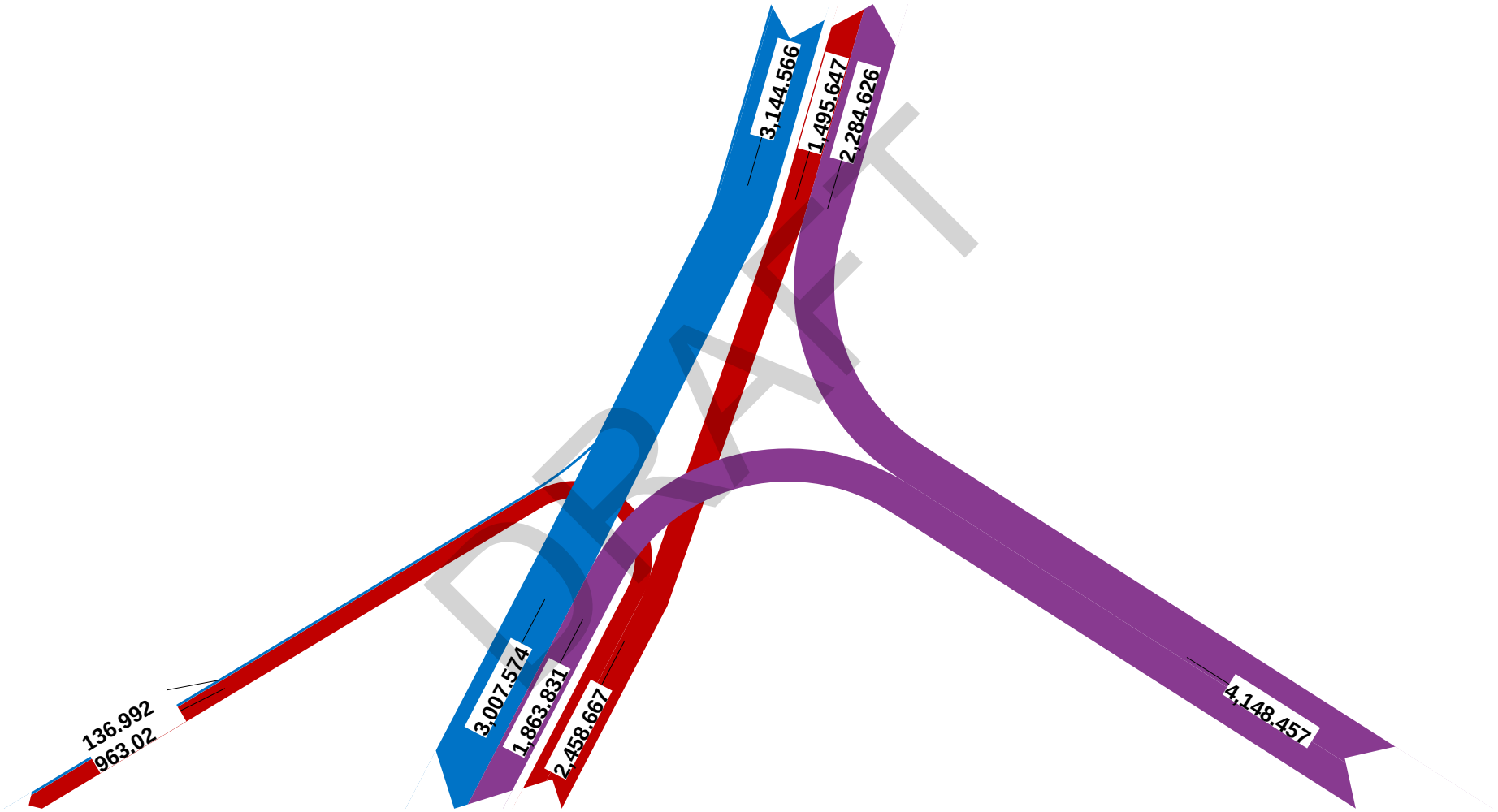
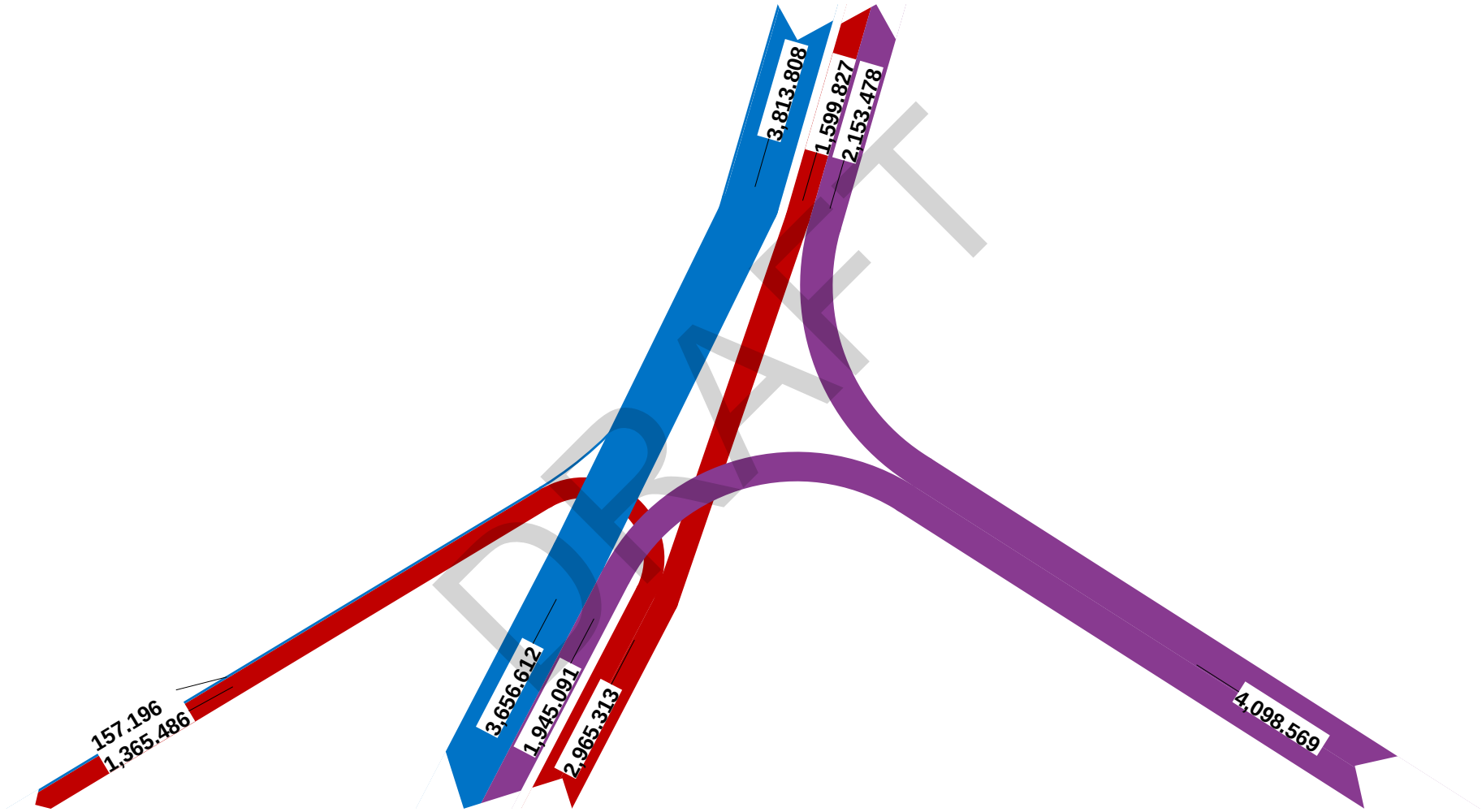


Build AM Node 6328

I-10 WB Off Ramp at Acadian



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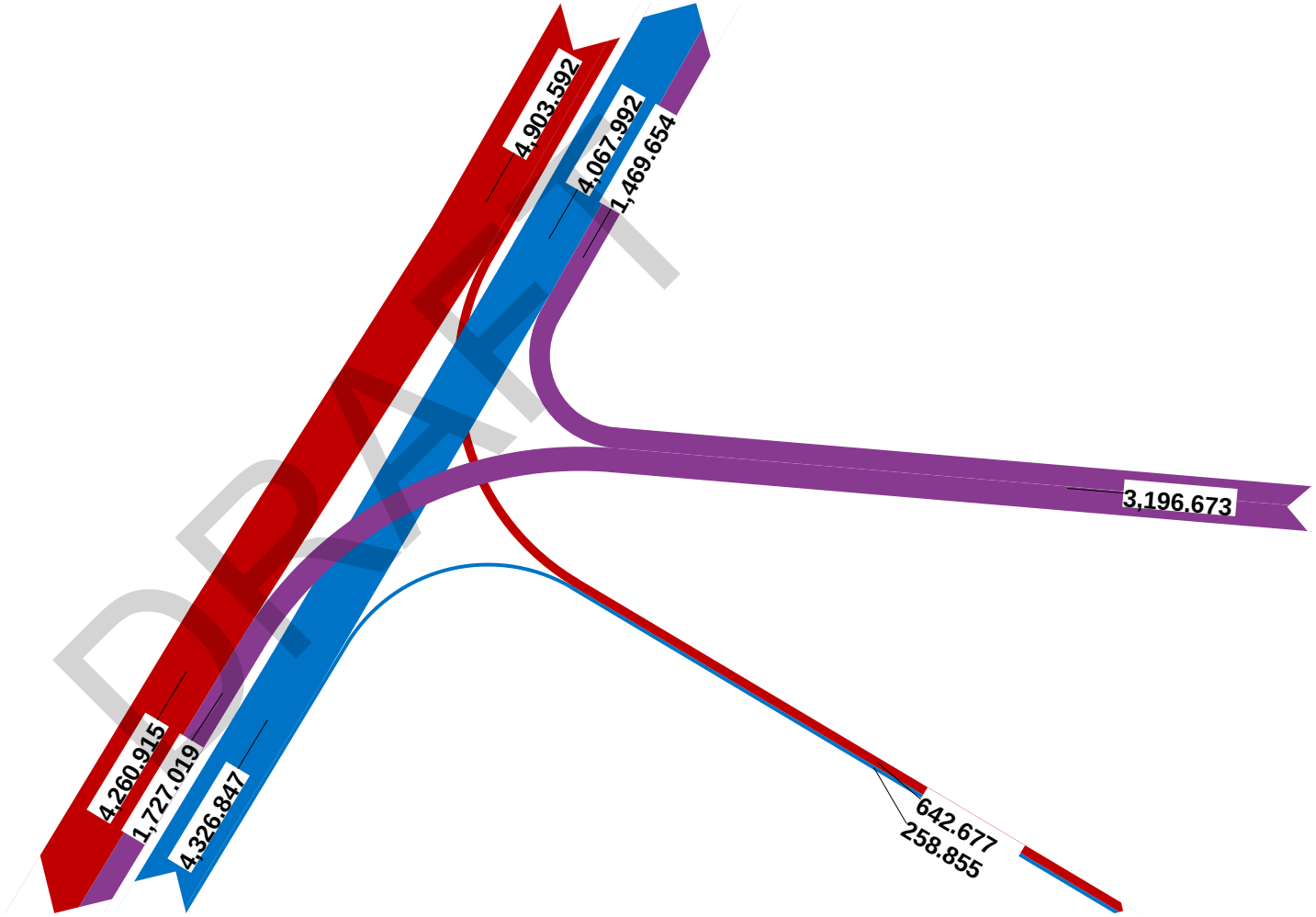
Build PM Node 6328

I-10 WB Off Ramp at College Dr



Build AM Node 6347

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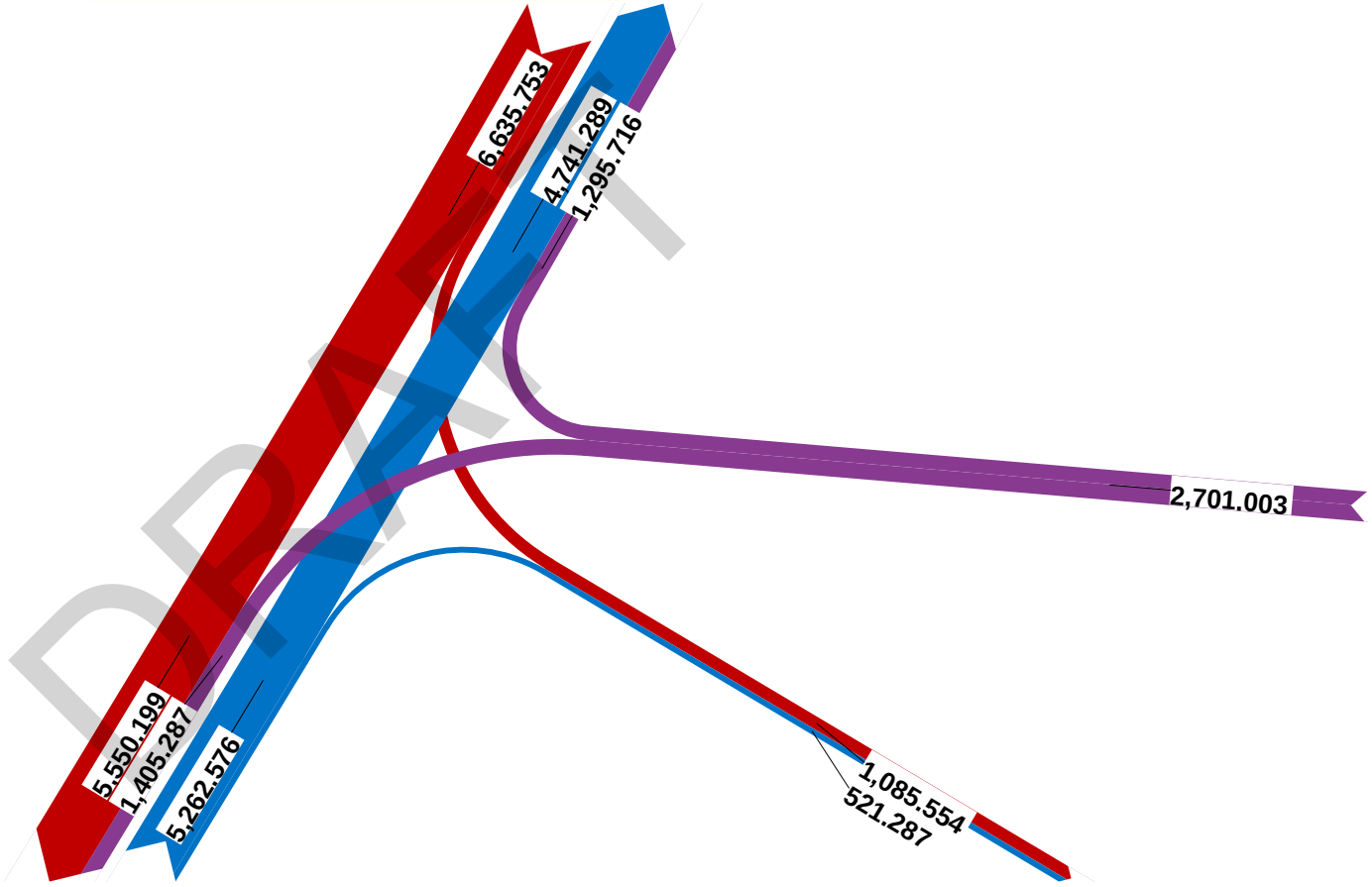
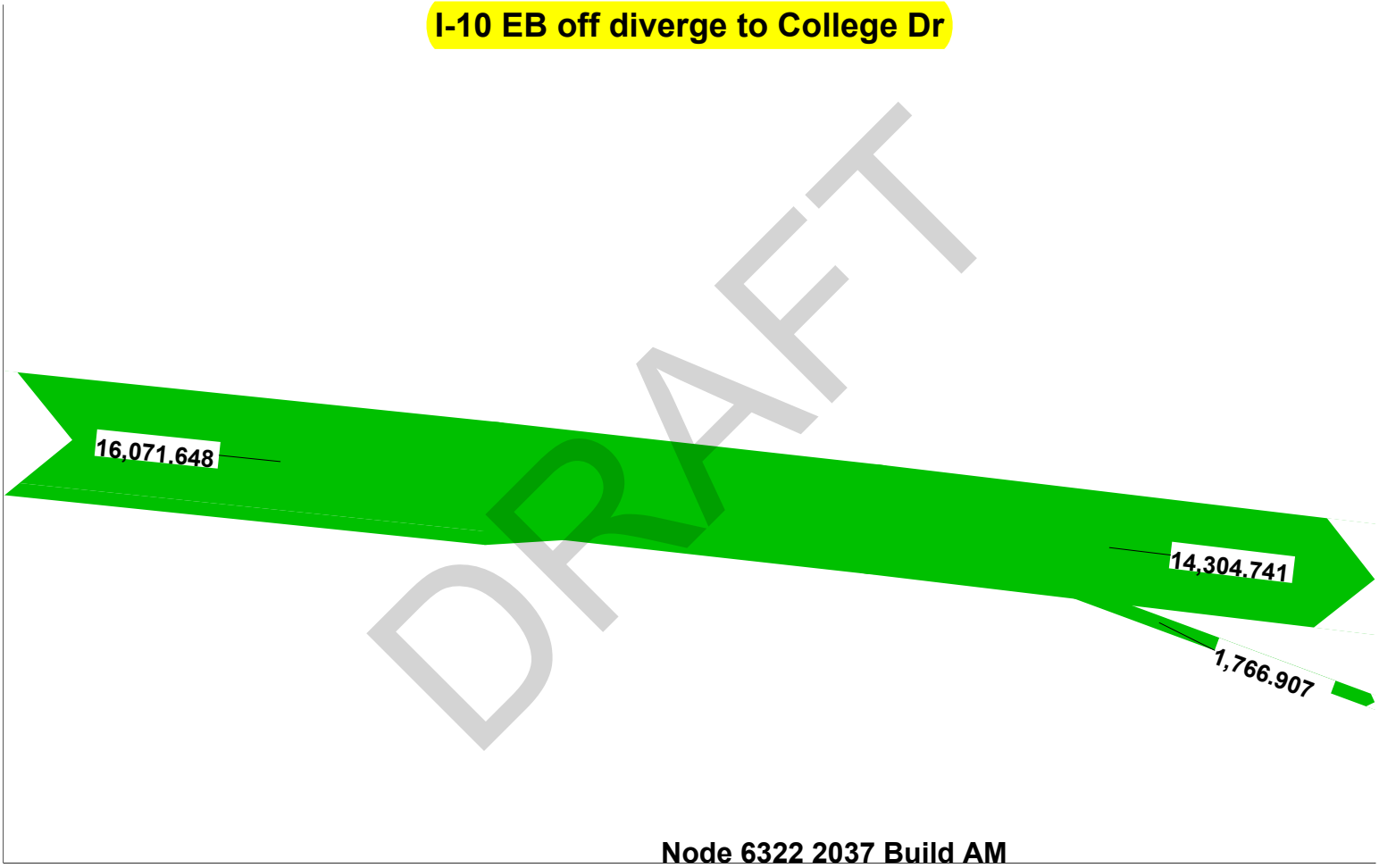
I-10 WB Off Ramp at College Dr



Build PM Node 6347

DRAFT

I-10 EB off diverge to College Dr



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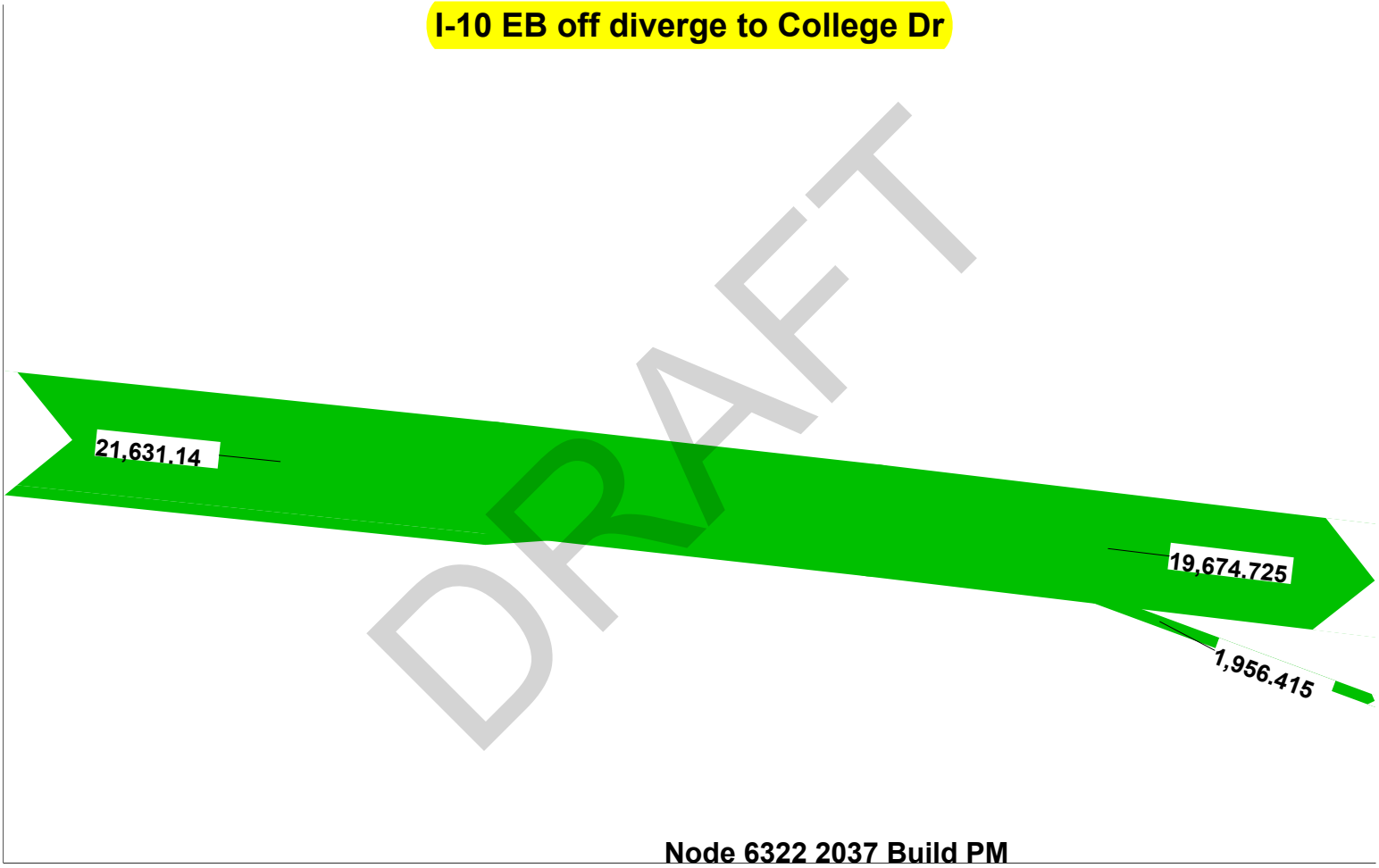
Node 6322 2037 Build AM

I-10 EB off diverge to College Dr



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Node 6322 2037 Build PM

Quality Assurance/Quality Control Form

I-10 Corridor Improvement Stage 1 Environmental Assessment
S.P. No. H.004100
Baton Rouge, Louisiana

Document: ***Acadian / Perkins IMR Chapter 2 and Appendix C***

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Lauren Picou P.E., PTOE, Urban Systems Inc. — Date

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Prepared for:

DOTD
LOUISIANA DEPARTMENT OF TRANSPORTATION & DEVELOPMENT

The information contained herein, and/or any document attached to this email was prepared solely for the purpose of identifying, evaluating and planning safety improvements on public roads which may be implemented utilizing federal aid highway funds; it may be exempt from discovery or admission into evidence pursuant to 23 U.S.C. 409.

DRAFT

Chapter 2 and Appendix C QAQC

Task	Chapter/Appendix	Done by and Date	Checked by and Date
Archive Appendix C pdf with "submittal" and the submittal date in the title U:\Projects\ENGPROJ\2010Proj\10-085-2 EA\Acadian Perkins IMR\PDF Acadian\Ch 2 App C Submittal_old	App C	SJT 6/13/19	LTP 6/18/19
Delete pdf pages and data in tables that will be updated	App C	SJT 6/13/19	LTP 6/18/19
Update input parameters Table for Merge/Diverge/Freeway if needed	App C	SJT 6/13/19	LTP 6/18/19
Update No Build Merge/Diverge/Freeway analyses - see next tab	App C	SJT 6/13/19	LTP 6/18/19
Update Appendix with new Merge/Diverge/Freeway analyses pdf's	App C	SJT 6/14/19	LTP 6/18/19
Weave sensitivity volumes	App C	SJT 6/12/19	LTP 6/25/19
Weave sensitivity figures	App C	LTP 6/17/19	SJT 6/24/2019
Update appendix with weave sensititivity figues	App C	SJT 6/24/19	LTP 6/25/19
Re-pdf reports in No Build AM and PM Synchro using HCM 10 report	App C	SJT 6/14/19	LTP 6/25/19
Replace new HCM 10 Synchro report pdf's in Appendix	App C	SJT 6/14/19	LTP 6/25/20
Copy Table from Ch 2 for Intersection Comparison Table Update	App C	SJT 6/25/19	LTP 6/25/19
Copy Table from Ch 2 Merge/Diverge Comparison Table Update	App C	SJT 6/24/2019	LTP 6/25/19
Update the Build Volume Estimation methodology	App C	SJT 6/18/2019	LTP 6/19/19
Update Table C-1 to include College EB off ramp/ WB on ramp	App C	SJT 6/18/2019	LTP 6/19/19
Update Figure C-1 and C-2	App C	SJT 6/19/2019	LTP 6/19/19
Make sure all needed TransCad sheets are included	App C	SJT 6/19/2019	LTP 6/19/19
create a pdf	App C	SJT 8/5/19	LTP 8/6/19
check the print copy	App C	SJT 8/5/19	LTP 8/6/19
Update QAQC	App C	SJT 8/5/19	LTP 8/5/19
Put analysis files in a zip folder for electronic submittal	App C	SJT 8/6/19	LTP 8/6/19

Archive Ch 2 pdf and word with "submittal" and the submittal date in the title pdf U:\Projects\ENGPROJ\2010Proj\10-085-2 EA\Acadian Perkins IMR\PDF Acadian\Ch 2 App C Submittal_old word U:\Projects\ENGPROJ\2010Proj\10-085-2 EA\Acadian Perkins IMR\MS Office Docs\IMR Chapters_old	Ch 2	SJT 6/13/19	
Delete data out of tables that will be updated	Ch 2	SJT 6/13/19	LTP 6/14/19
Update Figure 2.5 No Build volumes to include College Dr.	Ch 2	SJT 6/13/19	LTP 6/18/19
Update Tables 2.3 and 2.5	Ch 2	SJT 6/14/19	LTP 6/19/19
Update Table 2.4 and 2.6 with HCM 10 report MOE's for Existing and No Build	Ch 2	SJT 6/25/19	LTP 6/25/19
Delete footnote about 95th queue on Tables 2.4 and 2.6	Ch 2	SJT 6/14/19	LTP 6/25/19
Read Ch 2 to make sure nothing else should be updated	Ch 2	SJT 7/25/19	LTP 8/2/19
create a pdf and print	Ch 2	SJT 8/6/19	LTP 8/6/19
check the print copy	Ch 2	SJT 8/6/19	LTP 8/6/19
Update QAQC	Ch 2	SJT 8/6/19	LTP 8/5/19

Sydney Tate — 8/6/19

Sydney J. Tate, P.E. — Date

Lauren Picou — 8/6/19

Lauren Picou, P.E., PTOE — Date