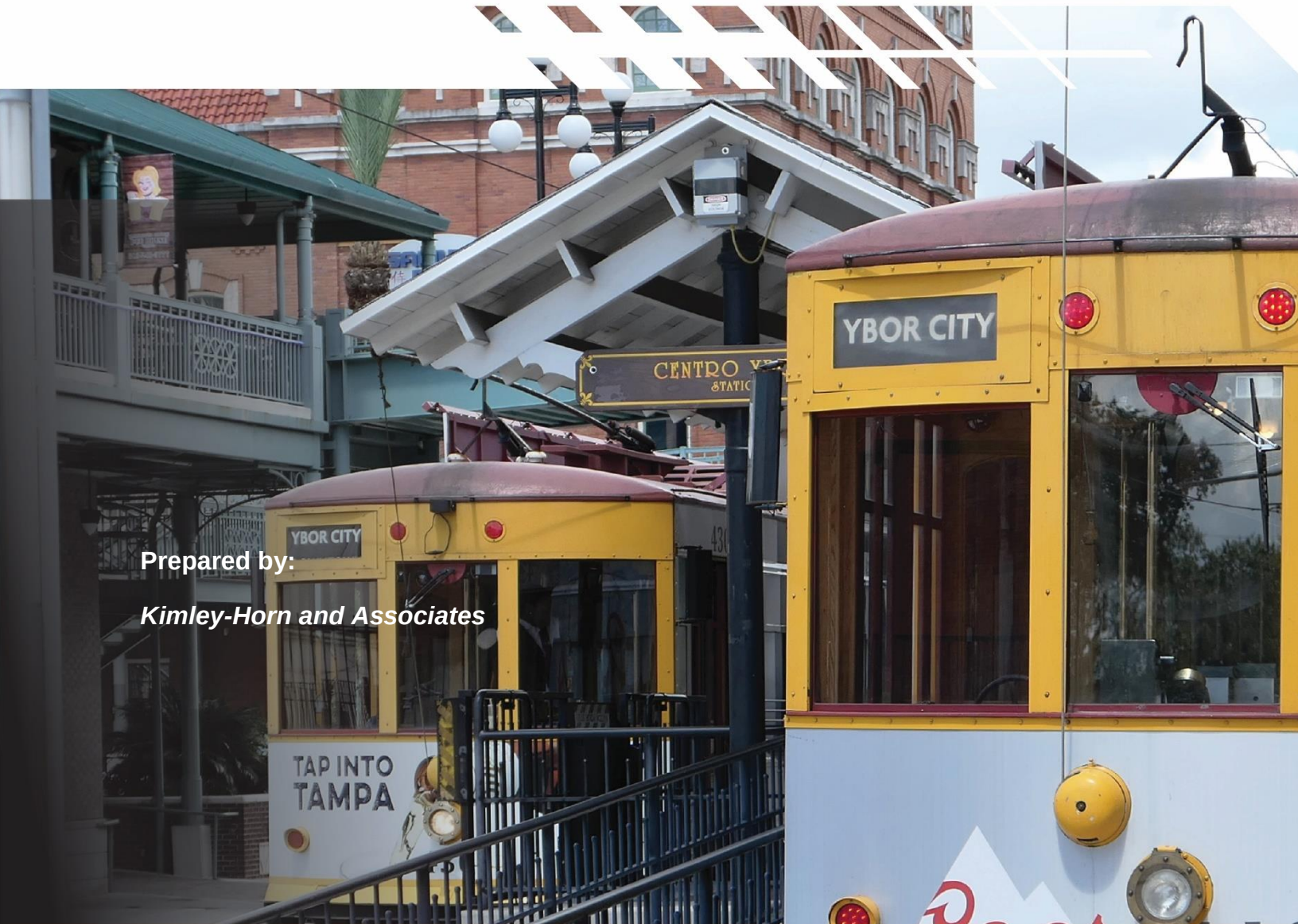


TRAFFIC IMPACT ANALYSIS

DRAFT - November 15, 2019



Prepared by:

Kimley-Horn and Associates

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Appendix A

Project Study Area

Methodology

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DRAFT Lane Elimination Study

Appendix C

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Introduction

The *InVision: Tampa Streetcar Feasibility Study* has been undertaken to evaluate modernization options for the existing streetcar system and facilities, assess the potential for a system extension, and evaluate vehicle technology alternatives. The study is being led by the City of Tampa in partnership with the Florida Department of Transportation (FDOT) and the Hillsborough Area Regional Transit Authority (HART).

Based on the methodology approved by FDOT on August 6, 2019 (attached in Appendix A), the following analysis is provided for the proposed Tampa Historic Streetcar extension from its current alignment that currently terminates at the Whiting Street Station to the north into the downtown core and Tampa Heights. The extension alignment is proposed as an exclusive transit lane or operate as mixed traffic according to the segment conditions. The Preferred Extension Guideway Stops and the Location Map and Alignment & Guideway are included in the methodology.

Study Area

The study area (shown in Figure 1) includes the roadway segments of Florida Avenue and Tampa Street between Brorein Street and Palm Avenue. On Florida Avenue, the alignment is proposed to be an exclusive transit lane from Brorein Street to Harrison Street and in mixed traffic from Harrison Street to Palm Avenue. On Tampa Street, the alignment is proposed to be an exclusive transit lane from Palm Avenue to Kennedy Boulevard and in mixed traffic from Kennedy Boulevard to Whiting Street. Travel lanes are anticipated to be reduced on Florida Avenue between Kennedy Boulevard and Zack Street (0.15 miles) to allow for an exclusive transit lane. The Lane Elimination analysis was submitted for review by FDOT Central Office and is attached as Appendix B.

The following signalized intersections were evaluated in the study due to potential turn lane or travel lane impacts or proposed future signal timing modifications based on coordination with the City of Tampa Traffic Management Engineer.

1. Tampa St & Palm Ave	13. Florida Ave & Palm Ave
2. Tampa St & Kay St	14. Florida Ave & Henderson Ave
3. Tampa St & Scott St	15. Florida Ave & Scott St
4. Tampa St & Tyler St	16. Florida Ave & Fortune St
5. Tampa St & Cass St	17. Florida Ave & Harrison St
6. Tampa St & Polk St	18. Florida Ave & Tyler St
7. Tampa St & Zack St	19. Florida Ave & Cass St
8. Tampa St & Twiggs St	20. Florida Ave & Polk St
9. Tampa St & Madison St	21. Florida Ave & Zack St
10. Tampa St & Kennedy Blvd	22. Florida Ave & Twiggs St
11. Tampa St & Jackson St	23. Florida Ave & Madison St
12. Tampa St & Whiting St	24. Florida Ave & Kennedy Blvd
	25. Florida Ave & Jackson St
	26. Florida Ave & Whiting St
	27. Florida Ave & Brorein St

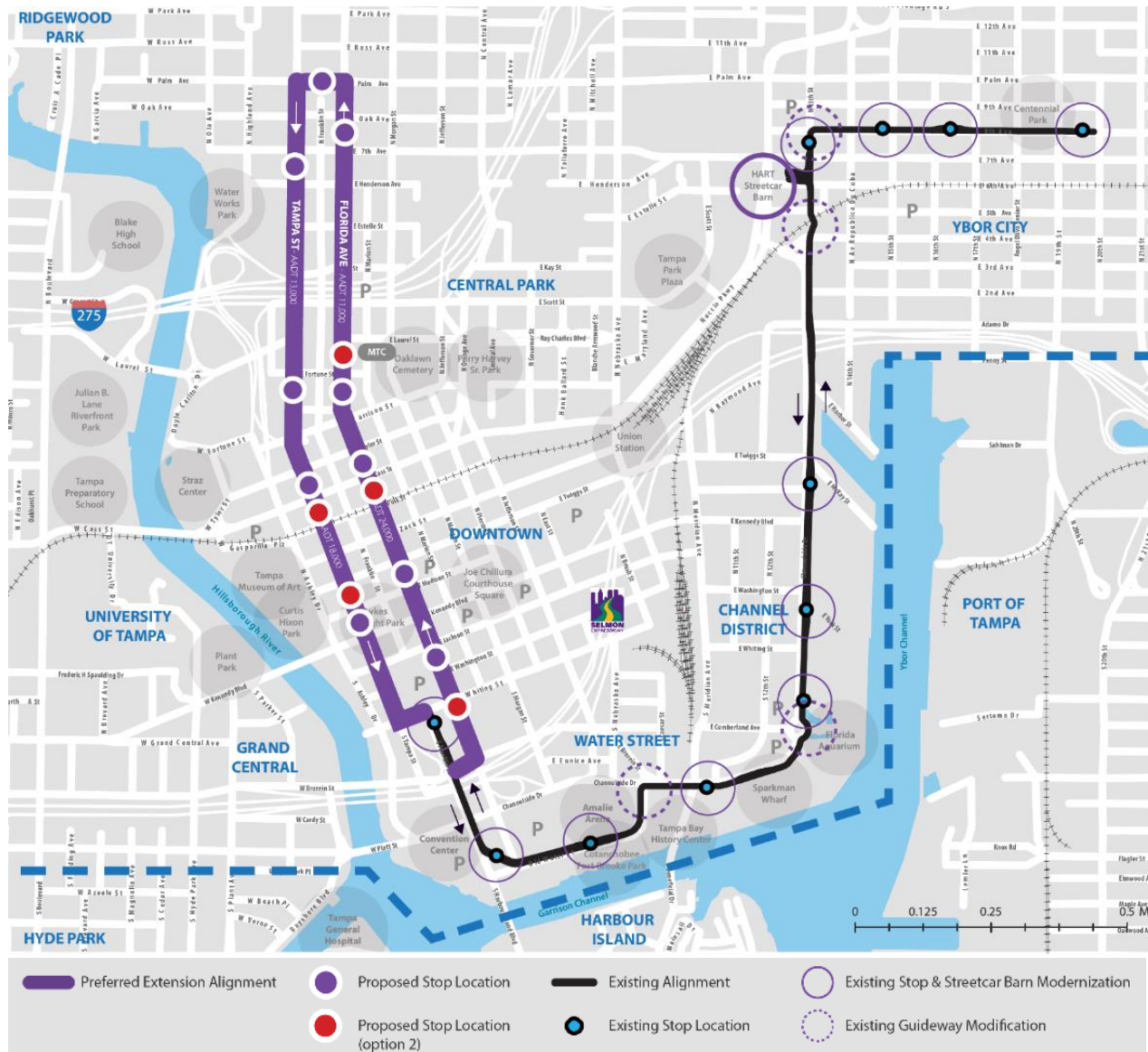


Figure 1: Study Roadway Segment

Existing 2018 Traffic

Data Collection

Existing 2018 Average Annual Daily Traffic (AADT) data was obtained for the study roadway segment from the FDOT Roadway Characteristics Inventory (RCI) database (attached in Appendix C). FDOT's standard K factor for arterials within an urban area is 9.0%. Consistent with FDOT policies, the standard K factor was applied to the AADT to develop design hour volumes. The D factors provided in the FDOT data were applied to the design hour volumes in the analysis to obtain peak-hour roadway segment volumes. Turning movement percentages from the traffic counts were applied to the peak-hour roadway segment volumes to develop the study turning movements. Table 1 is a summary of the AADT, K, and D factors for the study volumes.

Turning movement counts (TMC) were obtained for the study intersections during the a.m. (7:00 a.m. to 9:00 a.m.) and p.m. (4:00 p.m. to 6:00 p.m.) peak-hours based on the most current, readily available data. Table 2 and Table 3 provide a summary of the TMC date and source. The TMC data is attached in Appendix C.

Table 1: Existing 2018 Roadway Segment Volumes

Study Segment	Limits	Existing 2018 AADT	K	D	Design Hour Volume
Brorin Street	Ashley Dr to Jefferson St	11,000	0.09	99.9%	989
Cass Street	Gasparilla Pl to Jefferson St	6,200	0.09	99.9%	557
Florida Avenue	Brorin St to Jackson St	1,650	0.09	99.9%	149
	Jackson St to Kennedy Blvd	9,900	0.09	99.9%	891
	Kennedy Blvd to Harrison St	25,000	0.09	99.9%	2,248
	Harrison St to Kay St	24,000	0.09	99.9%	2,158
	Kay St to Palm Ave	11,500	0.09	99.9%	1,034
Fortune Street	At Florida Ave	841	0.09	99.9%	76
Harrison Street	At Florida Ave	1,315	0.09	59.7%	71
Henderson Avenue	At Florida Ave	3,225	0.09	59.7%	174
Jackson Street	Ashley Dr to Morgan St	9,500	0.09	99.9%	854
Kay Street	Tampa St to Florida Ave	16,000	0.09	99.9%	1,439
Kennedy Boulevard	Ashley Dr to Florida Ave	17,500	0.09	99.9%	1,573
	Florida Ave to Jefferson St	19,000	0.09	99.9%	1,709
Madison Street	Ashley Dr to Pierce St	3,500	0.09	59.7%	189
Palm Avenue	Highland Ave to Morgan St	6,900	0.09	59.7%	371
Polk Street	Ashley Dr to Pierce St	2,900	0.09	59.7%	156
Scott Street	I-275 to Tampa St	7,900	0.09	99.9%	710
	Tampa St to Central Ave	14,000	0.09	99.9%	1,259
Tampa Street	Brorin St to Jackson St	1,500	0.09	99.9%	135
	Jackson St to Harrison St	18,800	0.09	99.9%	1,691
	Harrison St to Kay St	7,500	0.09	99.9%	675
	Kay St to Palm Ave	12,500	0.09	99.9%	1,124
Twiggs Street	Ashley Dr to Channelside Dr	8,000	0.09	59.7%	430
Tyler Street	Gasparilla Pl to Jefferson St	4,500	0.09	59.7%	242
Whiting Street	Ashley Dr to Jefferson St	5,000	0.09	59.7%	269
Zack Street	Ashley Dr to Pierce St	4,500	0.09	59.7%	242

Table 2: TMC Data Collection for Florida Avenue

Study Intersection	Date	Source
Florida Ave & Palm Ave	03/21/2018	Florida Department of Transportation
Florida Ave & Henderson Ave	07/16/2019	Florida Department of Transportation
Florida Ave & Scott St	09/28/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Fortune St	07/16/2019	City of Tampa
Florida Ave & Harrison St	07/16/2019	City of Tampa
Florida Ave & Tyler St	11/29/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Cass St	11/10/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Polk St	11/10/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Zack St	11/09/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Twiggs St	11/09/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Madison St	11/03/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Kennedy Blvd	11/03/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Jackson St	06/09/2016	City of Tampa
Florida Ave & Whiting St	11/09/2016	Tampa Hillsborough Expressway Authority
Florida Ave & Brorein St	11/17/2016	Tampa Hillsborough Expressway Authority

Table 3: TMC Data Collection for Tampa Street

Study Intersection	Date	Source
Tampa St & Palm Ave	03/21/2018	Florida Department of Transportation
Tampa St & Kay St	09/27/2016	Tampa Hillsborough Expressway Authority
Tampa St & Scott St	09/27/2016	Tampa Hillsborough Expressway Authority
Tampa St & Tyler St	10/27/2016	Tampa Hillsborough Expressway Authority
Tampa St & Cass St	10/27/2016	Tampa Hillsborough Expressway Authority
Tampa St & Polk St	10/27/2016	Tampa Hillsborough Expressway Authority
Tampa St & Zack St	10/27/2016	Tampa Hillsborough Expressway Authority
Tampa St & Twiggs St	11/01/2016	Tampa Hillsborough Expressway Authority
Tampa St & Madison St	11/01/2016	Tampa Hillsborough Expressway Authority
Tampa St & Kennedy Blvd	06/19/2018	Florida Department of Transportation
Tampa St & Jackson St	10/26/2017	Florida Department of Transportation
Tampa St & Whiting St	11/01/2016	Tampa Hillsborough Expressway Authority

Existing Roadway Conditions

The existing 2018 daily and peak-hour roadway segment conditions were analyzed for the study roadway segments. The daily and peak-hour service volumes were determined based on the 2012 *FDOT Quality/Level of Service (Q/LOS)* tables for LOS D. As shown in Table 4, the resulting daily and peak-hour roadway segment volumes currently operate at an acceptable Level of Service (LOS D) or below, with the exception of Florida Avenue from Harrison Street to Kay Street.

Table 4: Existing 2018 Roadway Conditions

Roadway Segment	Existing 2018 AADT	Daily Service Volume ¹	Daily LOS	Existing 2018 Peak-Hour Volume	Peak-Hour Service Volume ¹	Peak Hour LOS
Florida Ave from Brorein Street to Jackson Street	1,650	27,000	C	149	2,430	C
Florida Ave from Jackson Street to Kennedy Street	9,900	27,000	C	891	2,430	C
Florida Avenue from Kennedy Boulevard to Zack Street	25,000	30,285	D	2,248	2,727	D
Florida Avenue from Zack Street to Harrison Street	25,000	30,000	D	2,248	2,700	D
Florida Avenue from Harrison Street to Kay Street	24,000	22,500	F	2,158	2,025	F
Florida Avenue from Kay Street to Palm Avenue	11,500	22,500	D	1,034	2,025	D
Tampa Street from Palm Avenue to Kay Street	12,500	30,000	C	1,124	2,700	C
Tampa Street from Kay Street to Harrison Street	7,500	22,500	C	675	2,025	C
Tampa Street from Harrison Street to Jackson Street	18,800	30,000	D	1,691	2,700	D
Tampa Street from Jackson Street to Brorein Street	1,500	27,000	C	135	2,430	C

1. LOS D Service Volume

Existing Intersection Operations

The peak-hour volumes at the study intersections were determined by applying the turning movement percentages to the segment volumes. The intersection volume development worksheets are attached in Appendix C. A yearly growth rate developed from the Tampa Bay Regional Planning Model (TBRPM) and Project Traffic Analysis Report (PTAR) for the Tampa Interstate Study (TIS) Supplemental Environmental Impact Statement (SEIS) data was applied to the turning movements to project to 2018 volumes (2.5%). Growth rate calculations are included in Appendix C. As requested by FDOT, conflicting pedestrian volumes were also included for the intersection evaluation. Existing 2018 study intersection operations were determined using Synchro version 10 and *Highway Capacity Manual 2000*.

As shown in the summary Table 8, Table 9, Table 10, and Table 11, all study intersections currently operate acceptably with an overall LOS at or below LOS D. Intersections with a minor or major approach that currently operates over capacity ($v/c > 1$) are indicated in red. The *HCM 2000* Intersection Summary is attached in Appendix D.

Start of Operation (2024) Traffic

Based on the proposed schedule including preliminary engineering, construction and vehicle procurement, the extension of the Tampa Streetcar system is anticipated to start operation in 2024. A yearly growth rate developed from the TBRPM and PTAR for the TIS SEIS was applied to the existing 2018 AADT to project to 2024 volumes (2.5%). The 2024 roadway segment volumes for the daily and peak-hour conditions are shown in Table 5.

Table 5: Future 2024 Roadway Segment Volumes

Study Segment	Limits	Existing 2018 AADT	Annual Growth Rate	Future 2024 AADT	K	D	Design Hour Volume
Brorein Street	Ashley Dr to Jefferson St	11,000	2.5%	13,000	0.09	99.9%	1,100
Cass Street	Gasparilla Pl to Jefferson St	6,200	2.5%	7,200	0.09	99.9%	650
Florida Avenue	Brorein St to Jackson St	1,650	2.5%	1,900	0.09	99.9%	150
	Jackson St to Kennedy Blvd	9,900	2.5%	11,500	0.09	99.9%	1,000
	Kennedy Blvd to Harrison St	25,000	2.5%	29,000	0.09	99.9%	2,600
	Harrison St to Kay St	24,000	2.5%	28,000	0.09	99.9%	2,500
	Kay St to Palm Ave	11,500	2.5%	13,500	0.09	99.9%	1,200
Fortune Street	At Florida Ave	841	2.5%	1,000	0.09	59.7%	50
Harrison Street	At Florida Ave	1,315	2.5%	1,500	0.09	59.7%	100
Henderson Street	At Florida Ave	3,225	2.5%	3,700	0.09	59.7%	200
Jackson Street	Ashley Dr to Morgan St	9,500	2.5%	11,000	0.09	99.9%	1,000
Kay Street	Tampa St to Florida Ave	16,000	2.5%	18,500	0.09	99.9%	1,700
Kennedy Boulevard	Ashley Dr to Florida Ave	17,500	2.5%	20,500	0.09	99.9%	1,800
	Florida Ave to Jefferson St	19,000	2.5%	22,000	0.09	99.9%	2,000
Madison Street	Ashley Dr to Pierce St	3,500	2.5%	4,100	0.09	59.7%	200
Palm Avenue	Highland Ave to Morgan St	6,900	2.5%	8,000	0.09	59.7%	450
Polk Street	Ashley Dr to Pierce St	2,900	2.5%	3,400	0.09	59.7%	200
Scott Street	I-275 to Tampa St	7,900	2.5%	9,200	0.09	99.9%	800
	Tampa St to Central Ave	14,000	2.5%	16,000	0.09	99.9%	1,500
Tampa Street	Brorein St to Jackson St	1,500	2.5%	1,700	0.09	99.9%	150
	Jackson St to Harrison St	18,800	2.5%	22,000	0.09	99.9%	2,000
	Harrison St to Kay St	7,500	2.5%	8,700	0.09	99.9%	800
	Kay St to Palm Ave	12,500	2.5%	14,500	0.09	99.9%	1,300
Twiggs Street	Ashley Dr to Channelside Dr	8,000	2.5%	9,300	0.09	59.7%	500
Tyler Street	Gasparilla Pl to Jefferson St	4,500	2.5%	5,200	0.09	59.7%	300
Whiting Street	Ashley Dr to Jefferson St	5,000	2.5%	5,800	0.09	59.7%	300
Zack Street	Ashley Dr to Pierce St	4,500	2.5%	5,200	0.09	59.7%	300

Future 2024 Roadway Conditions – No Build

To evaluate the 2024 No Build roadway conditions, the existing roadway geometry was used. The daily and peak-hour service volumes were calculated based on the 2012 *FDOT Q/LOS* tables. As shown in Table 6, based on the projected 2024 AADT and service volumes, Florida Avenue from Harrison Street to Kay Street is anticipated to continue to operate above LOS D with future daily or peak-hour volumes, similarly to existing 2018 conditions.

Table 6: Future 2024 No Build Roadway Conditions

Roadway Segment	Future 2024 AADT	Daily Service Volume ¹ (No Build)	Daily LOS	Future 2024 Peak-Hour Volume	Peak-Hour Service Volume ¹ (No Build)	Peak Hour LOS
Florida Ave from Brorein Street to Jackson Street	2,000	27,000	C	170	2,430	C
Florida Ave from Jackson Street to Kennedy Street	11,500	27,000	C	1,000	2,430	C
Florida Avenue from Kennedy Boulevard to Zack Street	29,000	30,285	D	2,600	2,727	D
Florida Avenue from Zack Street to Harrison Street	29,000	30,000	D	2,600	2,700	D
Florida Avenue from Harrison Street to Kay Street	28,000	22,500	F	2,500	2,025	F
Florida Avenue from Kay Street to Palm Avenue	13,500	22,500	D	1,200	2,025	D
Tampa Street from Palm Avenue to Kay Street	14,500	30,000	D	1,300	2,700	D
Tampa Street from Kay Street to Harrison Street	8,700	22,500	C	800	2,025	C
Tampa Street from Harrison Street to Jackson Street	22,000	30,000	D	2,000	2,700	D
Tampa Street from Jackson Street to Brorein Street	1,700	27,000	C	150	2,430	C

1. LOS D Service Volume

Future 2024 Intersection Conditions – No Build

Future 2024 intersection volumes were determined by applying the existing turning movement percentages to the 2024 design hour roadway segment volumes. The intersection volume development worksheets are attached in Appendix C.

As shown in the summary Table 8, Table 9, Table 10, and Table 11, the intersections that are anticipated to operate over LOS D or have major or minor approaches that operate over capacity ($v/c > 1$) during the a.m. peak-hour or p.m. peak-hour with future peak-hour volumes are indicated in red. The *HCM 2000* Intersection Summary is attached in Appendix D.

Future 2024 Roadway Conditions – Build with Signal Timing Adjustments

To evaluate the 2024 roadway conditions for the build conditions, the following geometry changes were evaluated:

- Florida Avenue from Kennedy Boulevard to Zack Street – Lane elimination from 4 through lanes to 3 through lanes
- Florida Avenue & Whiting – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Kay Street – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Laurel Street (unsignalized) – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Tyler Street – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Kennedy Boulevard – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Jackson Street – Shared through/left-turn lane and left-turn only lane to dedicated left-turn lane only

Enhancements to the roadway operation and capacity are anticipated from the transit service that is proposed to operate in the dedicated transit lane. The proposed vehicles' passenger capacity is 225 which are proposed to travel through the study roadway segment every 15 minutes. This results in a potential of 900 person-capacity per hour. Additionally, based on ridership data from October 2018 to January 2019, the existing service's average daily ridership is approximately 2,000 passengers per day. Based on the proposed design vehicles and existing ridership, the daily and peak-hour volumes are anticipated to be lower than the calculated base volumes due to mode shift.

In addition to the enhanced person-capacity offered by the proposed transit service, intersection operation improvements could include optimized signal timing. The City of Tampa Smart Mobility Division is preparing to implement an Advanced Traffic Management System (ATMS) plan within the next four years that will include the downtown core and project study area. The system is intended to provide more flexibility than a typical actuated system that is retimed every few years.

Signal timing changes were applied to the study intersections. Split times and offsets were optimized for all study intersections during the a.m. and p.m. peak-hour and split times include the existing time required for pedestrian crossings.

To evaluate the 2024 Build roadway conditions, the proposed roadway geometry changes were used. The proposed roadway geometry changes are only anticipated on Florida Avenue from Kennedy Boulevard to Zack Street due to the proposed lane elimination. The 2024 AADT is anticipated to be 29,000 vehicles on the lane elimination segment (Florida Avenue from Kennedy Boulevard to Zack Street) and on the segment north of the lane elimination segment (Florida Avenue from Zack Street to Harrison Street). The existing and proposed laneage on the segment north of the lane elimination segment is three general purpose lane and therefore is anticipated to operate the same as the proposed lane elimination segment.

The daily and peak-hour service volumes were calculated based on the 2012 *FDOT Q/LOS* tables. As shown in Table 7, based on the projected 2024 AADT and service volumes, the following study roadway segments are anticipated to operate similarly to the existing 2018 conditions. Florida Avenue from Harrison Street to Kay Street is anticipated to continue to operate above LOS D with future daily or peak-hour volumes.

Table 7: Future 2024 Build Roadway Conditions

Roadway Segment	Future 2024 AADT	Daily Service Volume ¹ (Proposed Laneage)	Daily LOS	Future 2024 Peak-Hour Volume	Peak-Hour Service Volume ¹ (Proposed Laneage)	Peak Hour LOS
Florida Ave from Brorein Street to Jackson Street	2,000	27,000	C	170	2,430	C
Florida Ave from Jackson Street to Kennedy Street	11,500	27,000	C	1,000	2,430	C
Florida Avenue from Kennedy Boulevard to Zack Street	29,000	22,500	E	2,600	2,025	E
Florida Avenue from Zack Street to Harrison Street	29,000	30,000	D	2,600	2,700	D
Florida Avenue from Harrison Street to Kay Street	28,000	22,500	F	2,500	2,025	F
Florida Avenue from Kay Street to Palm Avenue	13,500	22,500	D	1,200	2,025	D
Tampa Street from Palm Avenue to Kay Street	14,500	30,000	D	1,300	2,700	D
Tampa Street from Kay Street to Harrison Street	8,700	22,500	C	800	2,025	C
Tampa Street from Harrison Street to Jackson Street	22,000	30,000	D	2,000	2,700	D
Tampa Street from Jackson Street to Brorein Street	1,700	27,000	C	150	2,430	C

1. LOS D Service Volume

Future 2024 Intersection Conditions – Build with Signal Timing Adjustments

As shown in the summary Table 8, Table 9, Table 10, and Table 11, the intersections that are anticipated to operate over LOS D or have major or minor approaches that operate over capacity ($v/c > 1$) during the a.m. peak-hour or p.m. peak-hour with future peak-hour volumes, proposed geometry changes, and optimized signal timing are indicated in red. The *HCM 2000* Intersection Summary is attached in Appendix D.

Future 2024 Intersection Conditions – Build with Streetcar Phase

Based on approved methodology and discussions with the City of Tampa Smart Mobility Division, at final buildout of the proposed dedicated transit lane, an additional signal phase for the streetcar is recommended to be analyzed. The signal phase would allow the streetcar in the transit lane to pass through the intersection separate from the existing regular phases. A dedicated phase with 20 second total split was included to each intersection. At this time the streetcar is proposed to operate at 15-minute frequency, and therefore would approach each intersection approximately four times per hour. The streetcar phase could potentially be activated at one intersection but is not anticipated to then be activated at the subsequent intersections. Based on the proposed conceptual track geometry layout, the streetcar track will cross the travel lanes at the following five study intersections: Florida Avenue & Brorin Street, Florida Avenue & Tyler Street, Florida Avenue & Palm Avenue, Tampa Street & Palm Avenue, and Tampa Street & Whiting Street. Therefore, these five study intersections will require the dedicated phase during each cycle that the streetcar is present. For the remaining study intersections, it is anticipated to be an operational decision to allow for the activation of the streetcar phase when necessary.

The study intersections are anticipated to operate similarly with and without the dedicated streetcar phase. The Florida Avenue and Tampa Street approaches were prioritized for the signal timing. As shown in summary Table 8, Table 9, Table 10, and Table 11, the intersections that are anticipated to operate over LOS D or have major or minor approaches that operate over capacity ($v/c > 1$) during the a.m. peak-hour or p.m. peak-hour with future peak-hour volumes, proposed geometry changes, and dedicated streetcar phase are indicated in red. The *HCM 2000* Intersection Summary is attached in Appendix D.

Table 8: Future 2024 AM Peak-Hour Intersection Conditions – Tampa Street

	Existing 2018					Future 2024 (No Build)					Future 2024 (Build)					Future 2024 (Build) w/ Streetcar Phase				
	Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C		
			Tampa Street	EB	WB			Tampa Street	EB	WB			Tampa Street	EB	WB			Tampa Street	EB	WB
Tampa Street & Palm Avenue	C	20.8	0.44	0.26	0.52	C	20.8	0.49	0.30	0.62	C	20.8	0.49	0.30	0.62	C	29.1	0.56	0.39	0.80
Tampa Street & Kay Street	C	30.7	0.53	-	0.88	D	40.3	0.60	-	1.00	D	38.4	0.68	-	0.97	E	70.7	0.98	-	0.98
Tampa Street & Scott Street	C	21.3	0.30	0.47	-	C	21.3	0.34	0.54	-	B	19.4	0.34	0.54	-	B	18.7	0.40	0.63	-
Tampa Street & Tyler Street	B	14.4	0.50	0.45	0.50	B	14.3	0.57	0.53	0.55	B	14.6	0.59	0.53	0.55	C	21.0	0.68	0.51	0.81
Tampa Street & Cass Street	B	17.3	0.56	0.75	0.42	B	19.0	0.64	0.83	0.54	B	20.0	0.64	0.83	0.54	C	26.8	0.77	0.93	0.85
Tampa Street & Polk Street	B	17.1	0.57	0.20	0.32	B	16.9	0.64	0.23	0.36	B	17.0	0.64	0.23	0.36	B	10.3	0.72	0.30	0.47
Tampa Street & Zack Street	B	10.3	0.55	0.52	0.50	B	10.7	0.62	0.59	0.63	B	10.7	0.62	0.59	0.63	B	15.4	0.73	0.69	0.91
Tampa Street & Twiggs Street	B	16.5	0.56	0.59	0.69	B	17.7	0.64	0.66	0.77	B	17.0	0.64	0.66	0.77	C	23.8	0.75	0.77	0.91
Tampa Street & Madison Street	B	11.2	0.55	0.40	0.43	B	11.4	0.63	0.47	0.53	B	11.3	0.63	0.47	0.53	B	13.8	0.71	0.51	0.83
Tampa Street & Kennedy Boulevard	B	16.7	0.68	-	0.64	B	17.5	0.77	-	0.73	C	23.5	0.94	-	0.73	C	30.0	0.98	-	0.98
Tampa Street & Jackson Street	C	21.9	0.76	0.43	-	C	25.1	0.85	0.48	-	C	29.3	0.79	0.48	-	C	29.9	0.95	0.50	-
Tampa Street & Whiting Street	C	22.7	0.05	0.20	0.29	C	21.9	0.06	0.23	0.35	C	21.2	0.06	0.23	0.35	C	20.2	0.09	0.19	0.28

Table 9: Future 2024 PM Peak-Hour Intersection Conditions – Tampa Street

	Existing 2018					Future 2024 (No Build)					Future 2024 (Build)					Future 2024 (Build) w/ Streetcar Phase				
	Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C		
			Tampa Street	EB	WB			Tampa Street	EB	WB			Tampa Street	EB	WB			Tampa Street	EB	WB
Tampa Street & Palm Avenue	C	22.8	0.45	0.38	0.28	C	22.3	0.49	0.42	0.36	C	22.3	0.49	0.42	0.36	C	28.2	0.52	0.58	0.64
Tampa Street & Kay Street	D	45.3	1.15	-	0.64	E	55.3	1.32	-	0.73	C	34.7	0.92	-	0.88	E	65.8	0.98	-	0.99
Tampa Street & Scott Street	C	22.7	0.29	0.46	-	C	23.3	0.33	0.52	-	B	18.8	0.33	0.52	-	B	19.2	0.39	0.61	-
Tampa Street & Tyler Street	C	20.7	0.64	0.26	0.24	C	21.6	0.72	0.29	0.27	C	23.5	0.77	0.29	0.27	C	24.4	0.77	0.41	0.44
Tampa Street & Cass Street	D	50.0	0.67	0.50	0.24	D	48.4	0.76	0.56	0.30	D	47.7	0.76	0.56	0.30	C	22.1	0.79	0.82	0.89
Tampa Street & Polk Street	A	8.0	0.57	0.20	0.37	A	9.3	0.65	0.23	0.41	A	9.0	0.65	0.23	0.41	A	9.3	0.73	0.29	0.58
Tampa Street & Zack Street	B	11.1	0.55	0.34	0.67	B	12.6	0.63	0.40	0.82	B	12.4	0.63	0.40	0.82	B	18.2	0.78	0.41	0.89
Tampa Street & Twiggs Street	D	36.4	0.57	0.88	1.62	E	66.6	0.65	0.97	2.75	C	23.0	0.78	0.72	0.90	D	44.8	1.01	0.76	1.07
Tampa Street & Madison Street	B	10.1	0.59	0.43	0.32	A	9.5	0.68	0.49	0.41	A	9.5	0.68	0.49	0.41	B	13.6	0.80	0.50	0.52
Tampa Street & Kennedy Boulevard	B	13.0	0.71	-	0.61	B	14.8	0.80	-	0.70	B	19.7	0.94	-	0.70	D	39.1	0.97	-	0.94
Tampa Street & Jackson Street	C	28.7	0.76	0.43	-	C	28.7	0.85	0.48	-	C	29.5	0.79	0.48	-	C	31.4	0.93	0.55	-
Tampa Street & Whiting Street	C	28.5	0.05	0.16	0.45	C	28.1	0.06	0.18	0.53	C	27.6	0.06	0.18	0.53	C	31.7	0.07	0.21	0.62

Table 10: Future 2024 AM Peak-Hour Intersection Conditions – Florida Avenue

	Existing 2018					Future 2024 (No Build)					Future 2024 (Build)					Future 2024 (Build) w/ Streetcar Phase				
	Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C		
			Florida Ave	EB	WB			Florida Ave	EB	WB			Florida Ave	EB	WB			Florida Ave	EB	WB
Florida Avenue & Palm Avenue	C	21.7	0.40	0.35	0.60	C	21.7	0.45	0.40	0.67	C	21.7	0.45	0.40	0.67	D	35.7	0.51	0.51	0.82
Florida Avenue & Henderson Avenue	B	11.7	0.40	0.17	0.27	B	11.1	0.44	0.21	0.34	B	11.1	0.44	0.21	0.34	D	38.0	0.86	0.21	0.28
Florida Avenue & Scott Street	C	22.7	0.86	0.95	-	D	40.0	0.98	1.07	-	D	39.9	0.98	1.07	-	F	120.1	1.18	1.19	-
Florida Avenue & Fortune Street	A	3.2	0.71	0.18	-	A	3.4	0.81	0.20	-	A	3.5	0.81	0.20	-	B	10.6	0.90	0.26	-
Florida Avenue & Harrison Street	C	26.0	0.74	0.12	0.17	C	31.4	0.84	0.13	0.20	C	32.2	0.84	0.13	0.20	B	10.5	0.94	0.18	0.09
Florida Avenue & Tyler Street	B	18.9	0.72	0.41	0.53	C	21.8	0.81	0.57	0.60	B	16.6	0.81	0.57	0.60	B	18.6	0.93	0.98	0.74
Florida Avenue & Cass Street	B	13.6	0.72	0.95	0.44	C	21.9	0.81	1.17	0.50	C	21.0	0.82	0.55	0.50	B	15.8	0.92	0.73	0.65
Florida Avenue & Polk Street	B	14.2	0.76	0.36	0.24	B	16.1	0.86	0.41	0.27	B	10.3	0.86	0.41	0.27	B	15.9	0.97	0.55	0.29
Florida Avenue & Zack Street	A	9.3	0.59	0.40	0.53	A	9.4	0.67	0.50	0.59	B	12.5	0.85	0.51	0.60	C	22.2	0.96	0.90	0.69
Florida Avenue & Twiggs Street	B	17.9	0.71	0.24	0.47	B	18.4	0.80	0.27	0.53	B	19.4	0.94	0.31	0.60	B	19.2	0.92	0.56	0.60
Florida Avenue & Madison Street	B	18.8	0.60	0.28	0.28	B	19.8	0.68	0.34	0.32	C	26.2	0.86	0.34	0.32	C	29.5	0.90	0.65	0.36
Florida Avenue & Kennedy Boulevard	C	23.3	0.35	-	0.62	C	23.9	0.39	-	0.70	C	23.9	0.39	-	0.70	C	31.0	0.46	-	0.83
Florida Avenue & Jackson Street	C	22.8	0.35	0.49	-	C	23.3	0.40	0.55	-	C	23.9	0.40	0.55	-	C	30.0	0.45	0.67	-
Florida Avenue & Whiting Street	C	25.8	0.06	0.22	0.22	C	25.0	0.07	0.25	0.24	C	24.9	0.07	0.25	0.24	C	30.2	0.08	0.31	0.30
Florida Avenue & Brorin Street	C	29.8	0.05	-	0.42	C	29.5	0.06	-	0.47	C	29.5	0.06	-	0.47	C	25.6	0.10	-	0.40

Table 11: Future 2024 PM Peak-Hour Intersection Conditions – Florida Avenue

	Existing 2018					Future 2024 (No Build)					Future 2024 (Build)					Future 2024 (Build) w/ Streetcar Phase				
	Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C		
			Florida Ave	EB	WB			Florida Ave	EB	WB			Florida Ave	EB	WB			Florida Ave	EB	WB
Florida Avenue & Palm Avenue	C	21.9	0.40	0.50	0.40	C	22.3	0.45	0.56	0.45	C	22.3	0.45	0.56	0.45	C	29.4	0.49	0.74	0.60
Florida Avenue & Henderson Avenue	B	11.8	0.40	0.39	0.16	B	11.1	0.44	0.41	0.21	B	11.1	0.44	0.41	0.21	C	22.1	0.54	0.85	0.28
Florida Avenue & Scott Street	C	32.4	0.86	1.02	-	D	53.3	0.97	1.15	-	D	53.2	0.97	1.15	-	F	152.5	1.21	1.22	-
Florida Avenue & Fortune Street	A	4.8	0.71	0.17	-	A	5.3	0.81	0.20	-	A	5.3	0.81	0.20	-	C	28.1	0.90	0.26	-
Florida Avenue & Harrison Street	A	7.0	0.74	0.14	0.17	A	7.7	0.84	0.15	0.19	A	7.6	0.84	0.15	0.19	A	7.1	0.89	0.26	0.10
Florida Avenue & Tyler Street	B	11.6	0.71	0.56	0.55	B	12.8	0.81	0.75	0.62	B	12.8	0.81	0.75	0.62	C	22.8	0.98	0.96	0.66
Florida Avenue & Cass Street	C	20.3	0.77	1.12	0.48	B	10.5	0.87	0.56	0.53	B	10.5	0.87	0.56	0.53	C	22.5	0.98	0.94	0.68
Florida Avenue & Polk Street	B	15.8	0.79	0.40	0.26	B	18.5	0.89	0.44	0.29	B	13.4	0.89	0.44	0.29	B	12.8	0.95	0.81	0.34
Florida Avenue & Zack Street	B	12.9	0.59	0.79	0.36	B	15.9	0.67	0.97	0.41	B	17.5	0.86	0.91	0.39	D	37.9	1.01	1.17	0.38
Florida Avenue & Twiggs Street	B	18.0	0.59	0.54	0.41	B	17.8	0.67	0.62	0.46	C	21.1	0.84	0.62	0.46	C	21.5	0.95	0.83	0.30
Florida Avenue & Madison Street	C	21.6	0.60	0.19	0.43	C	22.2	0.68	0.24	0.49	C	21.1	0.76	0.43	0.67	C	31.1	0.90	0.58	0.64
Florida Avenue & Kennedy Boulevard	C	29.4	0.30	-	0.78	C	31.7	0.34	-	0.88	C	31.7	0.35	-	0.88	C	34.4	0.44	-	0.85
Florida Avenue & Jackson Street	C	23.3	0.37	0.52	-	C	23.6	0.42	0.58	-	C	23.9	0.42	0.58	-	D	40.2	0.55	0.56	-
Florida Avenue & Whiting Street	C	23.1	0.05	0.34	0.12	C	22.4	0.06	0.39	0.14	C	22.3	0.07	0.39	0.14	C	32.2	0.09	0.38	0.14
Florida Avenue & Brorin Street	C	30.2	0.06	-	0.44	C	29.9	0.06	-	0.50	A	29.9	0.06	-	0.50	D	38.0	0.07	-	0.60

Future 2024 Queue Analysis

As requested by the FDOT, a queue analysis was completed. The a.m. and p.m. peak-hour Queue Analysis tables are provided in Appendix E.

The a.m. peak-hour analysis indicates that the northbound (on Florida Avenue) or southbound (on Tampa Street) queue are anticipated to be greater than the block's length at the following intersections during build 2024 conditions:

- Florida Avenue & Harrison Street
- Florida Avenue & Tyler Street
- Florida Avenue & Cass Street
- Florida Avenue & Twiggs Street
- Florida Avenue & Madison Street
- Tampa Street & Scott Street
- Tampa Street & Cass Street
- Tampa Street & Polk Street
- Tampa Street & Kennedy Boulevard
- Tampa Street & Jackson Street

The a.m. peak-hour analysis indicates that the northbound (on Florida Avenue) or southbound (on Tampa Street) queue are anticipated to be greater than the block's length at the following intersections during build 2024 conditions with the Streetcar phase:

- Florida Avenue & Polk Street
- Florida Avenue & Zack Street
- Florida Avenue & Madison Street
- Tampa Street & Cass Street
- Tampa Street & Kennedy Boulevard
- Tampa Street & Jackson Street

The p.m. peak-hour analysis indicates that the northbound (on Florida Avenue) or southbound (on Tampa Street) queue are anticipated to be greater than the block's length at the following intersections during build 2024 conditions:

- Florida Avenue & Polk Street
- Florida Avenue & Zack Street
- Florida Avenue & Madison Street
- Tampa Street & Cass Street
- Tampa Street & Twiggs Street
- Tampa Street & Kennedy Boulevard
- Tampa Street & Jackson Street

The p.m. peak-hour analysis indicates that the northbound (on Florida Avenue) or southbound (on Tampa Street) queue are anticipated to be greater than the block's length at the following intersections during build 2024 conditions with the Streetcar phase:

- Florida Avenue & Scott Street
- Florida Avenue & Fortune Street
- Florida Avenue & Tyler Street
- Florida Avenue & Cass Street
- Florida Avenue & Zack Street
- Florida Avenue & Twiggs Street
- Florida Avenue & Madison Street
- Tampa Street & Twiggs Street
- Tampa Street & Kennedy Boulevard
- Tampa Street & Jackson Street

Future 2040 Traffic

A yearly growth rate developed from the TBRPM and PTAR for the TIS SEIS was applied to the existing 2018 AADT to project to 2040 volumes (2.5%). The 2040 roadway segment volumes for the daily and peak-hour conditions are shown in Table 12.

Table 12: Future 2040 Roadway Segment Volumes

Study Segment	Limits	Existing 2018 AADT	Annual Growth Rate	Future 2040 AADT	K	D	Design Hour Volume
Brorein Street	Ashley Dr to Jefferson St	11,000	2.5%	19,000	0.09	99.9%	1,700
Cass Street	Gasparilla Pl to Jefferson St	6,200	2.5%	10,500	0.09	99.9%	550
Florida Avenue	Brorein St to Jackson St	1,650	2.5%	2,800	0.09	99.9%	250
	Jackson St to Kennedy Blvd	9,900	2.5%	17,000	0.09	99.9%	1,500
	Kennedy Blvd to Harrison St	25,000	2.5%	43,000	0.09	99.9%	3,900
	Harrison St to Kay St	24,000	2.5%	41,500	0.09	99.9%	3,700
	Kay St to Palm Ave	11,500	2.5%	20,000	0.09	99.9%	1,800
Fortune Street	At Florida Ave	841	2.5%	1,400	0.09	59.7%	150
Harrison Street	At Florida Ave	1,315	2.5%	2,300	0.09	59.7%	100
Henderson Street	At Florida Ave	3,225	2.5%	5,600	0.09	59.7%	300
Jackson Street	Ashley Dr to Morgan St	9,500	2.5%	16,500	0.09	99.9%	1,500
Kay Street	Tampa St to Florida Ave	16,000	2.5%	27,500	0.09	99.9%	2,500
Kennedy Boulevard	Ashley Dr to Florida Ave	17,500	2.5%	30,000	0.09	99.9%	2,700
	Florida Ave to Jefferson St	19,000	2.5%	32,500	0.09	99.9%	2,900
Madison Street	Ashley Dr to Pierce St	3,500	2.5%	6,000	0.09	59.7%	300
Palm Avenue	Highland Ave to Morgan St	6,900	2.5%	12,000	0.09	59.7%	650
Polk Street	Ashley Dr to Pierce St	2,900	2.5%	5,000	0.09	59.7%	250
Scott Street	I-275 to Tampa St	7,900	2.5%	13,500	0.09	99.9%	1,200
	Tampa St to Central Ave	14,000	2.5%	24,000	0.09	99.9%	2,200
Tampa Street	Brorein St to Jackson St	1,500	2.5%	2,600	0.09	99.9%	250
	Jackson St to Harrison St	18,800	2.5%	32,500	0.09	99.9%	2,900
	Harrison St to Kay St	7,500	2.5%	13,000	0.09	99.9%	1,200
	Kay St to Palm Ave	12,500	2.5%	21,500	0.09	99.9%	1,900
Twiggs Street	Ashley Dr to Channelside Dr	8,000	2.5%	14,000	0.09	59.7%	750
Tyler Street	Gasparilla Pl to Jefferson St	4,500	2.5%	7,700	0.09	59.7%	400
Whiting Street	Ashley Dr to Jefferson St	5,000	2.5%	8,600	0.09	59.7%	450
Zack Street	Ashley Dr to Pierce St	4,500	2.5%	7,700	0.09	59.7%	400

Future 2040 Roadway Conditions – No Build

To evaluate the 2040 No Build roadway conditions, the existing roadway geometry was used. The daily and peak-hour service volumes were calculated based on the 2012 FDOT Q/LOS tables. As shown in Table 13, based on the projected 2040 AADT and service volumes, the following study roadway segments are anticipated to operate above LOS D with future daily or peak-hour volumes:

- Florida Avenue from Kennedy Boulevard to Zack Street
- Florida Avenue from Zack Street to Harrison Street
- Florida Avenue from Harrison Street to Kay Street
- Tampa Street from Harrison Street to Jackson Street

Table 13: Future 2040 No Build Roadway Conditions

Roadway Segment	Future 2040 AADT	Daily Service Volume ¹ (No Build)	Daily LOS	Future 2040 Peak-Hour Volume	Peak-Hour Service Volume ¹ (No Build)	Peak Hour LOS
Florida Ave from Brorein Street to Jackson Street	2,800	27,000	C	250	2,430	C
Florida Ave from Jackson Street to Kennedy Street	17,000	27,000	D	1,500	2,430	D
Florida Avenue from Kennedy Boulevard to Zack Street	43,000	30,285	F	3,900	2,727	F
Florida Avenue from Zack Street to Harrison Street	43,000	30,000	E	3,900	2,700	E
Florida Avenue from Harrison Street to Kay Street	41,500	22,500	F	3,700	2,025	F
Florida Avenue from Kay Street to Palm Avenue	20,000	22,500	D	1,800	2,025	D
Tampa Street from Palm Avenue to Kay Street	21,500	30,000	D	1,900	2,700	D
Tampa Street from Kay Street to Harrison Street	13,000	22,500	D	1,200	2,025	D
Tampa Street from Harrison Street to Jackson Street	32,500	30,000	E	3,000	2,700	E
Tampa Street from Jackson Street to Brorein Street	2,600	27,000	C	250	2,430	C

1. LOS D Service Volume

Future 2040 Intersection Conditions – No Build

Future 2040 intersection volumes were determined by applying the existing turning movement percentages to the 2040 design hour roadway segment volumes. The intersection volume development worksheets are attached in Appendix C.

As shown in summary Table 15, Table 16, Table 17, Table 18, the intersections that are anticipated to operate over LOS D or have major or minor approaches that operate over capacity ($v/c > 1$) during the a.m. peak-hour or p.m. peak-hour with future peak-hour volumes are indicated in red.

The HCM 2000 Intersection Summary is attached in Appendix D.

Future 2040 Roadway Conditions – Build with Signal Timing Adjustments

To evaluate the 2040 roadway conditions for the build conditions, the following geometry changes were evaluated:

- Florida Avenue from Kennedy Boulevard to Zack Street – Lane elimination from 4 through lanes to 3 through lanes
- Florida Avenue & Whiting – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Kay Street – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Laurel Street (unsignalized) – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Tyler Street – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Kennedy Boulevard – Exclusive right-turn to shared through/right-turn lane
- Tampa Street & Jackson Street – Shared through/left-turn lane and left-turn only lane to dedicated left-turn lane only

Based on the 2040 existing geometry and no build volumes (assuming 2.5% annual growth), the study area roadway segments are anticipated to operate over capacity. Without improvements, this may lead to increased queues and potential diversion from these congested roadway segments. Therefore, the streetcar extension is proposed and intended to promote mode shift. Based on the proposed design vehicles and existing ridership, the daily and peak-hour volumes are anticipated to be lower than the calculated base volumes due to mode shift. The sustained ATMS implementation will continue to optimize and integrate the vehicular and streetcar operation on the roadway and intersection network.

Due to the proposed geometry changes, related signal timing changes were applied to the study intersections. The signal control type was modeled as pretimed and phasing split times were adjusted. Split times and offsets were optimized for all study intersections during the a.m. and p.m. peak-hour.

To evaluate the 2040 Build roadway conditions, the proposed roadway geometry changes were used. The proposed roadway geometry changes are only anticipated on Florida Avenue from Kennedy Boulevard to Zack Street due to the proposed lane elimination. The 2040 AADT is anticipated to be 43,039 on the lane elimination segment (Florida Avenue from Kennedy Boulevard to Zack Street) and on the segment north of the lane elimination segment (Florida Avenue from Zack Street to Harrison Street). The existing and proposed laneage on the segment north of the lane elimination segment is three general purpose lane and therefore is anticipated to operate the same as the proposed lane elimination segment.

The daily and peak-hour service volumes were calculated based on the 2012 *FDOT Q/QLOS* tables. As shown in Table 14, based on the projected 2040 AADT and service volumes, the following study roadway segments are anticipated to operate above LOS D with future daily or peak-hour volumes:

- Florida Avenue from Kennedy Boulevard to Zack Street
- Florida Avenue from Zack Street to Harrison Street
- Florida Avenue from Harrison Street to Kay Street
- Tampa Street from Harrison Street to Jackson Street

Table 14: Future 2040 Build Roadway Conditions

Roadway Segment	Future 2040 AADT	Daily Service Volume ¹ (Proposed Laneage)	Daily LOS	Future 2040 Peak-Hour Volume	Peak-Hour Service Volume ¹ (Proposed Laneage)	Peak Hour LOS
Florida Ave from Brorein Street to Jackson Street	2,800	27,000	C	250	2,430	C
Florida Ave from Jackson Street to Kennedy Street	17,000	27,000	D	1,500	2,430	D
Florida Avenue from Kennedy Boulevard to Zack Street	43,000	22,500	F	3,900	2,025	F
Florida Avenue from Zack Street to Harrison Street	43,000	30,000	E	3,900	2,700	E
Florida Avenue from Harrison Street to Kay Street	41,500	22,500	F	3,700	2,025	F
Florida Avenue from Kay Street to Palm Avenue	20,000	22,500	D	1,800	2,025	D
Tampa Street from Palm Avenue to Kay Street	21,500	30,000	D	1,900	2,700	D
Tampa Street from Kay Street to Harrison Street	13,000	22,500	D	1,200	2,025	D
Tampa Street from Harrison Street to Jackson Street	32,500	30,000	E	3,000	2,700	E
Tampa Street from Jackson Street to Brorein Street	2,600	27,000	C	250	2,430	C

1. LOS D Service Volume

Future 2040 Intersection Conditions – Build with Signal Timing Adjustments

There is minimal impact due to the proposed geometry changes and optimized signal timing from the 2040 no build scenario to the 2040 build scenario with signal timing adjustments. The Florida Avenue and Tampa Street approaches were prioritized in the signal timing adjustments.

The following intersections are anticipated to have improved overall LOS and approach v/c with the proposed geometry changes and optimized signal timing conditions:

- Tampa Street & Palm Avenue
- Tampa Street & Scott Street
- Tampa Street & Tyler Street
- Tampa Street & Zack Street
- Tampa Street & Twiggs Street
- Florida Avenue & Fortune Street
- Florida Avenue & Harrison Street
- Florida Avenue & Kennedy Boulevard

The following intersections are anticipated to have worsened overall LOS and approach v/c with the proposed geometry changes and optimized signal timing conditions:

- Tampa Street & Kennedy Boulevard
- Florida Avenue & Zack Street
- Florida Avenue & Twiggs Street
- Florida Avenue & Madison Street

As shown in the summary Table 15, Table 16, Table 17, Table 18, the study intersections that are anticipated to operate over LOS D or have major or minor approaches that operate over capacity ($v/c > 1$) during the a.m. peak-hour or p.m. peak-hour with future peak-hour volumes, proposed geometry changes, and optimized signal timing are indicated in red. The *HCM 2000* Intersection Summary is attached in Appendix D.

In addition, the southbound right-turn queue was reviewed at the unsignalized intersection of Tampa Street & Laurel Street. At buildout, the dedicated southbound right-turn lane is proposed to be removed and a shared through-right-turn lane will be provided, and the intersection will remain unsignalized. The southbound right-turn is anticipated to remain a free-flow movement. Synchro and HCM analyses do not provide a queue length for free-flow right-turn movements. The southbound queue was reviewed at the next downstream signalized intersection of Tampa Street & Tyler Street to determine any potential impacts to the intersection of Tampa Street & Laurel Street during 2040 Build conditions. The 95th percentile southbound queue at the intersection of Tampa Street & Tyler Street is anticipated to be 740 feet in the a.m. peak-hour and 1,031 feet in the p.m. peak-hour. The intersection of Tampa Street & Laurel Street is approximately 1,250 feet north of Tampa Street & Tyler Street and therefore is not anticipated to be impacted by this queue.

Future 2040 Intersection Conditions – Build with Streetcar Phase

The study intersections are anticipated to operate similarly with and without the dedicated streetcar phase. The Florida Avenue and Tampa Street approaches were prioritized for the signal timing. As shown in the summary Table 15, Table 16, Table 17, Table 18, the intersections that are anticipated to operate over LOS D or have major or minor approaches that operate over capacity ($v/c > 1$) during the a.m. peak-hour or p.m. peak-hour with future peak-hour volumes, proposed geometry changes, and dedicated streetcar phase are indicated in red. The *HCM 2000* Intersection Summary is attached in Appendix D.

Table 15: Future 2040 AM Peak-Hour Intersection Conditions – Tampa Street

	Existing 2018					Future 2040 (No Build)					Future 2040 (Build)					Future 2040 (Build) w/ Streetcar Phase				
	Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C		
			Tampa Street	EB	WB			Tampa Street	EB	WB			Tampa Street	EB	WB			Tampa Street	EB	WB
Tampa Street & Palm Avenue	C	20.8	0.44	0.26	0.52	D	35.8	0.73	0.44	1.18	C	31.0	0.80	0.39	0.96	D	52.5	0.97	0.46	1.14
Tampa Street & Kay Street	C	30.7	0.53	-	0.88	F	153.8	0.90	-	1.48	F	158.6	0.98	-	1.48	F	257.4	1.37	-	1.52
Tampa Street & Scott Street	C	21.3	0.30	0.47	-	C	25.7	0.52	0.80	-	C	22.4	0.52	0.80	-	C	28.2	0.61	0.94	-
Tampa Street & Tyler Street	B	14.4	0.50	0.45	0.50	C	27.4	0.84	0.85	1.33	C	27.6	0.92	0.75	0.96	E	76.5	1.10	0.67	1.33
Tampa Street & Cass Street	B	17.3	0.56	0.75	0.42	D	48.7	0.95	1.26	1.25	D	44.1	0.99	1.15	1.25	F	92.7	1.07	1.68	1.25
Tampa Street & Polk Street	B	17.1	0.57	0.20	0.32	C	25.1	0.95	0.37	0.54	C	24.8	0.95	0.37	0.54	C	21.2	0.99	0.58	1.15
Tampa Street & Zack Street	B	10.3	0.55	0.52	0.50	E	5.6	0.92	0.91	2.19	C	32.4	0.98	0.81	1.38	F	134.4	1.23	0.82	1.62
Tampa Street & Twiggs Street	B	16.5	0.56	0.59	0.69	E	62.7	0.94	1.00	2.66	D	44.2	1.00	0.90	1.81	F	145.2	1.31	0.88	1.81
Tampa Street & Madison Street	B	11.2	0.55	0.40	0.43	B	19.7	0.93	0.72	1.18	B	16.1	0.98	0.65	0.97	E	69.8	1.09	0.75	1.80
Tampa Street & Kennedy Boulevard	B	16.7	0.68	-	0.64	E	65.8	1.14	-	1.08	F	122.1	1.23	-	1.25	F	222.6	1.56	-	1.33
Tampa Street & Jackson Street	C	21.9	0.76	0.43	-	F	102.5	1.27	1.02	-	E	56.4	1.09	1.09	-	E	78.8	1.22	1.12	-
Tampa Street & Whiting Street	C	22.7	0.05	0.20	0.29	C	24.5	0.09	0.36	0.65	C	24.5	0.09	0.36	0.65	C	23.6	0.14	0.30	0.52

Table 16: Future 2040 PM Peak-Hour Intersection Conditions – Tampa Street

	Existing 2018					Future 2040 (No Build)					Future 2040 (Build)					Future 2040 (Build) w/ Streetcar Phase				
	Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C		
			Tampa Street	EB	WB			Tampa Street	EB	WB			Tampa Street	EB	WB			Tampa Street	EB	WB
Tampa Street & Palm Avenue	C	22.8	0.45	0.38	0.28	C	26.4	0.51	0.63	0.85	C	26.2	0.63	0.49	0.51	D	35.4	0.66	0.65	0.93
Tampa Street & Kay Street	D	45.3	1.15	-	0.64	F	147.9	2.03	-	1.09	F	144.3	1.48	-	1.25	F	243.9	1.55	-	1.42
Tampa Street & Scott Street	C	22.7	0.29	0.46	-	C	27.2	0.50	0.77	-	B	12.4	0.61	0.65	-	C	26.7	0.58	0.91	-
Tampa Street & Tyler Street	C	20.7	0.64	0.26	0.24	E	57.6	1.07	0.44	0.44	D	37.5	0.94	0.62	0.79	E	62.4	1.05	0.76	1.57
Tampa Street & Cass Street	D	50.0	0.67	0.50	0.24	F	101.4	1.13	0.84	1.10	E	68.8	1.12	0.86	1.20	F	192.6	1.44	0.90	1.67
Tampa Street & Polk Street	A	8.0	0.57	0.20	0.37	B	19.7	0.96	0.37	0.75	B	13.2	0.94	0.39	0.82	D	53.0	0.98	0.61	1.89
Tampa Street & Zack Street	B	11.1	0.55	0.34	0.67	E	58.3	0.93	0.62	1.82	D	49.0	1.07	0.48	1.07	F	137.7	1.18	0.59	1.82
Tampa Street & Twiggs Street	D	36.4	0.57	0.88	1.62	F	139.4	0.97	1.46	4.06	F	190.6	1.47	0.84	1.78	F	393.7	1.98	0.90	2.79
Tampa Street & Madison Street	B	10.1	0.59	0.43	0.32	C	26.4	1.00	0.74	0.90	B	19.0	0.98	0.78	1.02	F	97.7	1.17	0.81	1.53
Tampa Street & Kennedy Boulevard	B	13.0	0.71	-	0.61	E	67.9	1.19	-	1.04	F	122.3	1.21	-	1.21	F	205.6	1.47	-	1.37
Tampa Street & Jackson Street	C	28.7	0.76	0.43	-	F	116.7	1.34	0.72	-	C	26.5	0.99	0.98	-	E	57.7	1.06	1.09	-
Tampa Street & Whiting Street	C	28.5	0.05	0.16	0.45	D	36.1	0.09	0.28	0.89	B	11.6	0.24	0.15	0.42	D	43.6	0.12	0.30	0.98

Table 17: Future 2040 AM Peak-Hour Intersection Conditions – Florida Avenue

	Existing 2018					Future 2040 (No Build)					Future 2040 (Build)					Future 2040 (Build) w/ Streetcar Phase				
	Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C		
			Florida Ave	EB	WB			Florida Ave	EB	WB			Florida Ave	EB	WB			Florida Ave	EB	WB
Florida Avenue & Palm Avenue	C	21.7	0.40	0.35	0.60	C	32.5	0.67	0.75	1.00	C	30.8	0.69	0.75	0.96	D	39.3	0.91	0.75	0.98
Florida Avenue & Henderson Avenue	B	11.7	0.40	0.17	0.27	B	13.4	0.65	0.45	0.62	B	13.4	0.65	0.45	0.62	F	102.2	1.16	0.55	0.54
Florida Avenue & Scott Street	C	22.7	0.86	0.95	-	F	251.5	1.46	1.60	-	F	257.6	1.46	1.60	-	F	379.5	1.74	1.81	-
Florida Avenue & Fortune Street	A	3.2	0.71	0.18	-	F	92.5	1.20	0.29	-	B	15.9	0.99	0.57	-	F	124.0	1.27	0.47	-
Florida Avenue & Harrison Street	C	26.0	0.74	0.12	0.17	F	144.0	1.25	0.20	0.30	C	33.4	0.98	0.93	0.83	F	153.3	1.33	0.31	0.13
Florida Avenue & Tyler Street	B	18.9	0.72	0.41	0.53	F	122.8	1.21	2.20	0.89	F	128.8	1.23	1.73	0.85	F	238.2	1.56	1.93	0.85
Florida Avenue & Cass Street	B	13.6	0.72	0.95	0.44	F	196.9	1.20	3.10	0.74	F	199.0	1.37	1.84	0.60	F	363.3	1.80	1.93	0.61
Florida Avenue & Polk Street	B	14.2	0.76	0.36	0.24	F	124.0	1.28	0.70	0.40	E	79.5	1.16	1.09	0.52	F	189.2	1.44	1.09	0.46
Florida Avenue & Zack Street	A	9.3	0.59	0.40	0.53	C	31.2	1.00	1.39	0.89	F	134.4	1.27	1.46	0.90	F	269.1	1.56	1.89	0.88
Florida Avenue & Twiggs Street	B	17.9	0.71	0.24	0.47	F	84.0	1.18	0.41	0.80	F	98.8	1.21	0.69	1.22	F	154.9	1.37	0.98	1.10
Florida Avenue & Madison Street	B	18.8	0.60	0.28	0.28	D	44.5	1.02	0.63	0.48	F	86.9	1.14	1.06	0.65	F	169.1	1.33	1.54	0.61
Florida Avenue & Kennedy Boulevard	C	23.3	0.35	-	0.62	D	51.0	0.58	-	1.06	C	30.7	0.66	-	0.95	D	42.4	0.91	-	0.99
Florida Avenue & Jackson Street	C	22.8	0.35	0.49	-	C	29.4	0.59	0.82	-	C	29.6	0.59	0.82	-	D	37.5	0.70	0.95	-
Florida Avenue & Whiting Street	C	25.8	0.06	0.22	0.22	C	26.1	0.10	0.42	0.37	C	25.7	0.10	0.42	0.37	C	32.3	0.12	0.52	0.45
Florida Avenue & Brorein Street	C	29.8	0.05	-	0.42	C	34.0	0.09	-	0.70	C	34.0	0.09	-	0.70	C	28.8	0.15	-	0.60

Table 18: Future 2040 PM Peak-Hour Intersection Conditions – Florida Avenue

	Existing 2018					Future 2040 (No Build)					Future 2040 (Build)					Future 2040 (Build) w/ Streetcar Phase				
	Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C			Overall LOS	Overall Control Delay	Max V/C		
			Florida Ave	EB	WB			Florida Ave	EB	WB			Florida Ave	EB	WB			Florida Ave	EB	WB
Florida Avenue & Palm Avenue	C	21.9	0.40	0.50	0.40	C	31.6	0.67	0.83	0.68	C	22.5	0.78	0.69	0.57	D	38.4	0.80	0.96	0.78
Florida Avenue & Henderson Avenue	B	11.8	0.40	0.39	0.16	B	14.0	0.65	0.74	0.42	B	15.6	0.65	0.74	0.42	F	103.3	1.16	0.84	0.31
Florida Avenue & Scott Street	C	32.4	0.86	1.02	-	F	265.6	1.45	1.71	-	F	281.3	1.57	1.54	-	F	403.8	1.81	1.82	-
Florida Avenue & Fortune Street	A	4.8	0.71	0.17	-	F	93.4	1.20	0.29	-	A	6.8	1.00	0.57	-	F	706.6	2.53	0.28	-
Florida Avenue & Harrison Street	A	7.0	0.74	0.14	0.17	F	114.3	1.25	0.24	0.29	D	45.1	1.07	0.52	0.49	F	142.5	1.30	0.54	0.15
Florida Avenue & Tyler Street	B	11.6	0.71	0.56	0.55	F	127.6	1.20	3.02	0.92	F	139.5	1.33	1.33	0.75	F	267.3	1.65	1.78	0.79
Florida Avenue & Cass Street	C	20.3	0.77	1.12	0.48	F	126.1	1.30	1.60	0.80	F	253.3	1.52	1.91	0.61	F	431.5	1.95	2.17	0.63
Florida Avenue & Polk Street	B	15.8	0.79	0.40	0.26	F	141.6	1.33	0.82	0.43	F	99.7	1.22	1.16	0.53	F	193.7	1.41	1.79	0.56
Florida Avenue & Zack Street	B	12.9	0.59	0.79	0.36	E	58.2	0.99	1.95	0.61	F	161.8	1.28	1.79	0.58	F	304.2	1.63	1.86	0.52
Florida Avenue & Twiggs Street	B	18.0	0.59	0.54	0.41	C	25.1	1.00	0.99	0.70	F	104.4	1.05	1.87	1.17	F	177.4	1.34	1.61	0.59
Florida Avenue & Madison Street	C	21.6	0.60	0.19	0.43	D	46.2	1.01	0.54	0.73	E	65.0	0.99	1.69	1.92	F	171.2	1.34	1.62	1.03
Florida Avenue & Kennedy Boulevard	C	29.4	0.30	-	0.78	F	127.3	0.50	-	1.32	C	25.1	0.78	-	0.88	D	45.4	0.97	-	0.98
Florida Avenue & Jackson Street	C	23.3	0.37	0.52	-	C	29.1	0.63	0.86	-	C	22.0	0.72	0.73	-	C	32.2	0.84	0.86	-
Florida Avenue & Whiting Street	C	23.1	0.05	0.34	0.12	C	24.0	0.09	0.61	0.20	B	13.2	0.21	0.33	0.15	C	20.8	0.23	0.41	0.16
Florida Avenue & Brorstein Street	C	30.2	0.06	-	0.44	C	34.8	0.10	-	0.74	B	15.1	0.19	-	0.44	C	24.0	0.20	-	0.54

Conclusion

A goal of the *InVision: Tampa Streetcar* planning process is to create a viable transportation choice for people who live, work or visit downtown. Choice to ride the proposed streetcar system will meet this goal while increasing person-capacity on the corridor and support acceptable operation for all roadways users. Also aligned with the *InVision* plan, more on-street parking is anticipated to be provided compared to the existing on-street parking supply. Signal retiming based on the City's Smart Mobility Division ATMS plan will also benefit the vehicle and streetcar operation in the future. Support from the community for the Tampa Streetcar project has been consistently positive throughout the feasibility and planning process and has continued while briefing FDOT, City of Tampa and HART leadership.

Based on opening year conditions (2024), all study intersections are anticipated to operate at or below LOS D with Build conditions. With the addition of the Streetcar phase, the study intersections are anticipated to operate at or below LOS D with build conditions, with the exception of Florida Avenue & Scott Street and Tampa Street & Kay Street.

Based on the anticipated growth in 2040 in the No Build and Build scenarios, the study area intersections are anticipated to operate over capacity ($v/c > 1$) and operate over LOS D. Operating conditions in 2040 may be improved by additional factors including mode shift and innovation signal timing enhancements. It is anticipated that after buildout of the streetcar, ridership and traffic monitoring will occur as needed. During the current Project Development phase, to provide a conservative analysis, the Tampa Streetcar Traffic Impact Analysis did not consider additional factors which may be considered in the future design phase.

Appendix A

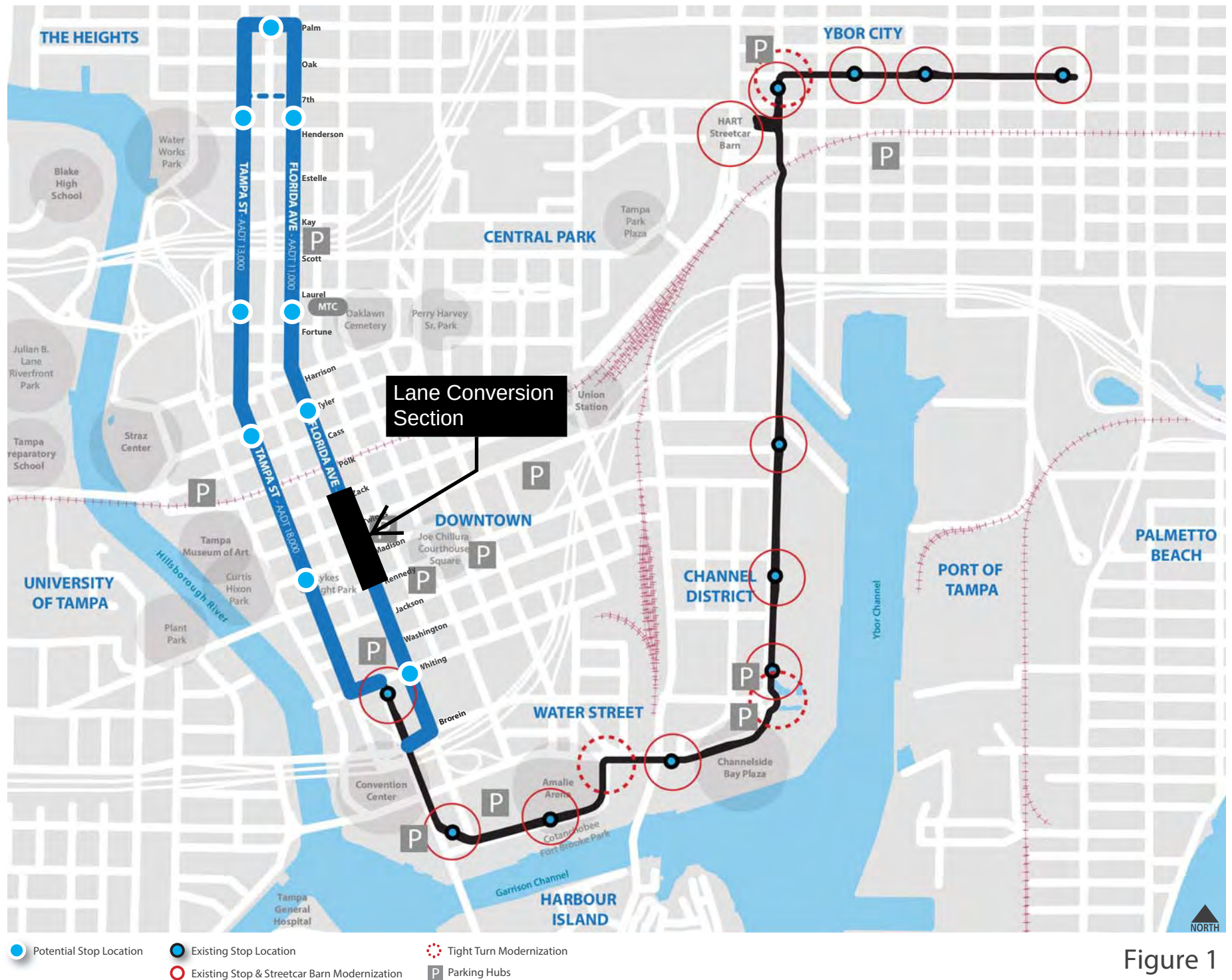


Figure 1

Traffic Impact Analysis Methodology

Date: August 15, 2019

Project: InVision Tampa Streetcar

To: Waddah Farah, FDOT District 7 Interchange Review Coordinator

From: Danni Jorgenson, City of Tampa Chief Transportation Planning Engineer

Subject: Revised Traffic Impact Analysis Methodology

Introduction

Please find for your review and comment the revised traffic study methodology for the Streetcar Extension and Modernization Feasibility Study. The revisions are intended to address the Florida Department of Transportation's (Department) previous comments, dated April 24, 2019 and July 12, 2019. A copy of the Study Team's responses to the Department's comments is attached as Appendix A.

The analysis will be provided for the proposed extension of the existing Tampa Historic Streetcar from its current alignment that terminates at the Whiting Street Station to the north into the downtown core and Tampa Heights. The alignment is proposed to be an exclusive transit lane or in mixed traffic. The Preferred Extension Guideway Stops is attached as Appendix B and the Location Map and Alignment & Guideway are attached as Appendix C.

Based upon your review and comments, this transportation methodology will be updated to address transportation issues related to the extension. Once the traffic study methodology has been agreed to, a traffic impact analysis will be completed to summarize the procedures and findings of the analysis.

Traffic Study Objective

The objective of the study is to determine the level of impact of the proposed extension of the existing Tampa Historic Streetcar on the study roadway segments and intersections previously discussed with the Department.

Traffic Study Area

The study area (attached in Appendix A) will include the roadway segments of Florida Avenue and Tampa Street between Brorein Street and Palm Avenue. On Florida Avenue, the alignment is proposed to be an exclusive transit lane from Brorein Street to Harrison Street and in mixed traffic from Harrison Street to Palm Avenue. On Tampa Street, the alignment is proposed to be an exclusive transit lane from Palm Avenue to Kennedy Boulevard and in mixed traffic from Kennedy Boulevard to Whiting Street. Travel lanes are anticipated to be impacted on Florida Avenue between Kennedy Boulevard and Zack Street (0.15 miles), which is a reduction from 4 to 3 through lanes. It is the City of Tampa's opinion that the existing lane operates as an auxiliary lane and its character should not qualify for a lane elimination analysis. However, we will coordinate with the Department and determine if the lane elimination analysis is required.

The following signalized intersections will be evaluated in the study due to potential turn lane or travel lane impacts or proposed future signal timing modifications based on coordination with the City of Tampa Traffic Management Engineer. Additionally, a queue analysis will be completed at the following signalized intersections and the intersection of the Tampa Street & Laurel Street to evaluate potential impact to the dedicated southbound right-turn lane.

- Tampa St & Palm Ave
- Tampa St & Kay St
- Tampa St & Scott St
- Tampa St & Tyler St
- Tampa St & Cass St
- Tampa St & Polk St
- Tampa St & Zack St
- Tampa St & Twiggs St
- Tampa St & Madison St
- Tampa St & Kennedy Blvd
- Tampa St & Jackson St
- Tampa St & Whiting St
- Florida Ave & Palm Ave
- Florida Ave & Henderson Ave
- Florida Ave & Scott St
- Florida Ave & Fortune St
- Florida Ave & Harrison St
- Florida Ave & Tyler St
- Florida Ave & Cass St
- Florida Ave & Polk St
- Florida Ave & Zack St
- Florida Ave & Twiggs St
- Florida Ave & Madison St
- Florida Ave & Kennedy Blvd
- Florida Ave & Jackson St
- Florida Ave & Whiting St
- Florida Ave & Brorein St

Analysis Scenarios

The traffic analysis will be conducted for the Existing 2018 traffic, No Build 2040 traffic, and Build 2040 traffic, during the a.m. peak-hour and p.m. peak-hour. The Build 2040 scenario will consider an alignment in mixed traffic or in an exclusive transit lane at buildout of the project. The exclusive transit lane is anticipated to be located within the existing curb to curb of the roadway and would not require a travel lane elimination. Existing signal timing will be assumed for the Existing 2018 and No Build 2040 scenarios. Signal timing modifications may be applied to the Build 2040 based on the results of the Traffic Impact Analysis and Coordination with the City of Tampa Traffic Management Engineer.

The a.m. peak-hour and p.m. peak-hour analyses will be based on volumes developed using the AADT x K x D x TMC% method for existing and buildout year scenarios. AADT data will be utilized from the *Hillsborough MPO 2015 Level of Service Report* and the *FDOT 2018 Historical AADT Report* with the most current, readily available TMC to develop the a.m. and p.m. peak-hour volumes.

Total Traffic

Data was obtained at all study area intersections during the a.m. peak-hour and p.m. peak-hour periods from September 2016 to November 2018. The 2040 No Build and 2040 Build traffic scenarios will consist of existing traffic identified in the traffic counts adjusted to 2040 volumes based on an annual growth rate. Based on review of the Project Traffic Analysis Report (PTAR) for the Tampa Interstate Study (TIS) Supplemental Environmental Impact Statement (SEIS), and the data developed in the Tampa Bay Regional Planning Model (TBRPM) for the Existing 2018, No-Build 2025, and No-Build 2045 scenarios, the yearly growth rate is 2.5%. The growth rate calculations are attached as Appendix D.

Work programs for Hillsborough County and FDOT will be reviewed for improvements with the study area that are currently planned and funded for construction within the buildout time frame.

Traffic Analysis

Roadway analysis procedures will evaluate directional study roadway segments using the *FDOT Quality/Level of Service Handbook Tables*. Intersections will be analyzed using Synchro version 10. In the event the two methods produce different results, the more detailed Synchro analysis will be used to determine future operating conditions. Performance measures will include level of service, volume to capacity ratios, and delay.

It should be noted that the study area is within the City of Tampa's Transportation Concurrency Exception Area and reductions in roadway operational efficiencies concurrent with increased mobility via the streetcar may be consistent with the achievement of other goals and policies of the City's comprehensive plan. Therefore, this analysis will be performed to quantify the impacts of the proposed Streetcar Extension on the operation of the impacted roadway network.

Additional clarifying information is attached.

We will follow-up with you to determine if you have any questions or comments regarding this transportation methodology. We look forward to working with you on this traffic study.

Attachments: Appendix A – Response to FDOT Comments on Methodology (dated 4/24/2019)
 Response to FDOT Comments on Methodology (dated 7/12/2019)
 Appendix B – Preferred Extension Guideway & Stops
 Appendix C – Location Map, Alignment & Guideway, and Study Area
 Appendix D – Growth Calculations

**APPENDIX A -
Response to FDOT Comments on
Methodology (dated 4/24/2019)**

**Response to FDOT Comments on
Methodology (dated 7/12/2019)**

Traffic Impact Analysis Methodology Comment Response

Date: June 12, 2019

Project: InVision Tampa Streetcar

To: Waddah Farah, FDOT District 7 Interchange Review Coordinator

From: Danni Jorgenson, City of Tampa Chief Transportation Planning Engineer

Subject: Traffic Impact Analysis Methodology – Comment Response

Introduction

On behalf of City of Tampa, Kimley-Horn and Associates, Inc is providing you with the following responses to comments on the Traffic Impact Analysis Methodology dated 4/24/2019. The Traffic Impact Analysis Methodology for the Tampa Streetcar Extension and Modernization (Streetcar) project has been revised to reflect the following comments and responses.

Comment Response

Comment 1: Please provide a concept.

Response 1: The methodology has been updated to include an attachment of the proposed track layout.

Comment 2: Page 2, Second Paragraph, Second Sentence. The methodology states that ... “Travel lanes are anticipated to be impacted on Florida Avenue between Kennedy Boulevard and Zack Street (0.15 miles), which is a reduction from 4 to 3 through lanes. Per discussion with the City of Tampa, the existing lane operates as an auxiliary lane and its character should not qualify for a lane elimination analysis.” This lane goes for four city blocks and drops at Polk Street. Other segments remove on-street parking or exclusive right turn lanes. Please coordinate with Chad Stewart on Lane Elimination for appropriate documentation and analysis for these lanes that will be repurposed.

Response 2: On Wednesday, June 12th, 2019, the project team met with the Lane Elimination Committee (Chad Stewart, Ken Spitz, and Peter Hsu) to conduct the Initial Meeting required as part of the Lane Elimination process.

Comment 3: Please provide the source and date of the traffic data.

Response 3: The intersection turning movement counts (TMC) were collected for the Tampa Hillsborough Expressway Authority (THEA) Downtown Traffic Study Analysis from September 2016 to November 2016. Additionally, 2017 and 2018 turning movement counts were obtained at 5 locations.

Comment 4: Please coordinate with Ken Spitz on the future traffic projects. An annual growth rate of 2.16% for the northern portion of downtown Tampa may not be similar to Jackson Street. There

is the I-275 SEIS and Heights Mobility Studies that is ongoing project. The forecasted traffic/methodology should be reviewed and compared for consistency.

Response 4: Based on review of the Project Traffic Analysis Report (PTAR) for the Tampa Interstate Study (TIS) Supplemental Environmental Impact Statement (SEIS), and the data developed in the 2018, 2025, and 2045 Tampa Bay Regional Planning Model (TBRPM), the yearly growth rate is 1.7%. The methodology has been updated to include this yearly growth rate. The growth calculations are attached to the revised methodology.

Comment 5: Please include delay as a performance measure.

Response 5: The methodology has been updated to include delay as a performance measure.

Comment 6: The typical section of the proposed streetcar extension depicts an inside use of travel lanes. This will result in a conflict point between the street car running through the intersections and vehicles turning left at intersections. The impact of left turn restrictions and the implications of left turning vehicles blocking through vehicles that occupy the same lane needs to be evaluated.

Response 6: As part of the Synchro analysis, we will evaluate the impact streetcars have on turning vehicles. Signal timing modifications may be applied based on coordination with the City of Tampa Traffic Management Engineer. The methodology has been updated to include evaluation of all signalized intersections.

Comment 7: How does the streetcar switch sides from westside of Florida Avenue to the eastside in the area of Harrison Street? Will this be a new signal location? Please include in analysis.

Response 7: The Streetcar is proposed to travel from the westside to the eastside at the signalized intersection of Florida Avenue & Tyler Street. The proposed track layout is provided as an attachment in the revised methodology. Signal timing modifications may be applied based on coordination with the City of Tampa Traffic Management Engineer. The methodology has been updated to evaluate the intersection of Florida Avenue & Tyler Street.

Comment 8: The MTC is a block away from Florida Avenue, yet several of the figures represents it located along Florida Avenue.

Response 8: The methodology and figures have been updated to show MTC between Marion Street and Morgan Street.

Comment 9: Is the Tampa Street southbound right turn lane being removed at Laurel Street?

Response 9: Based on the proposed track layout for the Streetcar project, the existing dedicated right-turn lane is anticipated to become a shared through and right-turn lane.

Comment 10: How does this concept work with the Downtown Interchange alternatives and coordinate with the ongoing Heights Mobility Study.

Response 10: Our understanding of the Tampa Interstate Study (TIS) Supplemental Environmental Impact Statement (SEIS) alternatives is as follows:

- Option A: Existing Interchange with Elevated Express Lanes North Option – same impact as for existing conditions
- Option B: Existing Interchange with Elevated Express Lanes South Option – same impact as for existing conditions
- Option C: Reconstructed Interchange with Express Lanes to the North – same impact as for existing conditions, plus interaction with new/relocated on and off ramps.
- Option D: Reconstructed Interchange without Express Lanes to the North – same impact as for existing conditions, plus interaction with new/relocated on and off ramps.

At this time, the proposed buildout and timeline for the Streetcar project is ahead of the Downtown Interchange. Until a preferred alternative is identified for the TIS, the Project Development phase for the Streetcar project will evaluate existing conditions. We will be glad meet with the Department to review the preferred alternative for the TIS SEIS.

The Heights Mobility Study is coordinating with the Tampa Streetcar. The Height's Mobility Study has documented pending/committed pedestrian crossings at Florida Ave & 7th Ave and Tampa Street & Henderson Ave and a pending/committed signal at Tampa Street & 7th Ave. These changes are not expected to have a significant impact on the Streetcar operation.

Comment 11: Please use existing signal timings for all analyses.

Response 11: Existing signal timing will be used for the Existing 2018 and No Build 2040 scenarios. Signal timing modifications may be applied to the Build 2040 scenario based on the results of the Traffic Impact Analysis and coordination with the City of Tampa Traffic Management Engineer.

Comment 12: Please confirm that the street car will not use any preemptive signal timings.

Response 12: Signal timing modifications, including phases similar to queue jumps or Transit Signal Priority (TSP), may be applied to the Build 2040 scenario based on the results of the Traffic Impact Analysis and coordination with the City of Tampa Traffic Management Engineer. No other preemptive signal timings are anticipated.

Comment 13: Please document whether or not there will be any impacts to the interstate ramps. Please compare existing versus proposed condition.

Response 13: The Traffic Impact Analysis will evaluate the Existing 2018, No-Build 2040, and Build 2040 and scenarios of proposed Streetcar project at the signalized intersections of Florida Ave & Scott Street, Tampa Street & Kay Street (which includes an on-ramp), and Tampa Street & Scott Street (which includes an on-ramp), and Tampa Street & Tyler Street.

Comment 14: Are there plans for reducing lanes along Ashley Street that would place a higher demand of traffic on Florida Avenue and Tampa Street?

Response 14: There are no existing plans for lane reduction on Ashley Street.

Comment 15: The typical section of the proposed streetcar extension depicts an inside use of travel lanes. This will result in a conflict point between the street car running through the intersections and vehicles turning left at intersections. Please consider evaluating the impact of

left turn restrictions and the implications of left turning vehicles blocking through vehicles that occupy the same lane. A comparison of existing and future proposed should be conducted

Response 15: See comment and response #6.

Comment 16: The Downtown Tampa street grid is operated assuming the progression of a vehicle platoon along the one-way streets of Florida Avenue and Tampa Street. In order to accurately analyze the select number of study intersections, it would appear that there is a need to code in the Synchro model the adjacent signalized intersections. This will ensure that the traffic analysis is being completed assuming a system of intersections rather than the study intersections operating independently.

Response 16: As part of the revised methodology for the Traffic Impact Analysis, all signalized intersections along Florida Avenue and Tampa Street between Brorin Street and Palm Avenue will be coded in the Synchro version 10 model and documented in the report appendices. The study intersections listed in the methodology will be evaluated and documented in the report for the analysis scenarios.

Comment 17: The Jackson Street methodology is almost 3 years old. This needs to be updated with recent data. TBRPM base and horizon year socioeconomic data have recently been updated by the Hillsborough MPO. This will affect the growth rate percentages, they will have to be recomputed.

Response 17: Based on review of the PTAR for the TIS SEIS, and the 2018, 2025, and 2045 TBRPM, the yearly growth rate is 1.7%. The methodology has been updated to include this yearly growth rate.

Comment 18: The “current” year needs to be consistent and clearly defined, the report shows 2016, 2017 and 2018.

Response 18: The Traffic Impact Analysis will be completed using readily available 2016 intersection turning movement counts to assign the FDOT 2018 Historical AADT Report data to the respective intersection approach movements. The methodology has been revised to reflect this.

Comment 19: There is reference to historical traffic data, the years used need to be clearly stated and updated to include 2018 and available 2019 counts.

Response 19: We will coordinate with the Department for available 2019 turning movement counts at the study intersections, if needed. The Traffic Impact Analysis will be completed using the FDOT 2018 Historical AADT Report and readily available 2016 intersection turning movement counts.

Traffic Impact Analysis Methodology Comment Response

Date: July 15, 2019

Project: InVision Tampa Streetcar

To: Waddah Farah, FDOT District 7 Interchange Review Coordinator

From: Danni Jorgenson, City of Tampa Chief Transportation Planning Engineer

Subject: Traffic Impact Analysis Methodology – Comment Response

Introduction

On behalf of City of Tampa, Kimley-Horn and Associates, Inc is providing you with the following responses to comments on the Traffic Impact Analysis Methodology dated 7/12/2019. The Traffic Impact Analysis Methodology for the Tampa Streetcar Extension and Modernization (Streetcar) project has been revised to reflect the following comments and responses.

Comment Response

Comment 1: Several of the stations take up a travel lane. The diagrams do not address what happens to the travel lane at these locations.

Response 1: The stations will be located either in a designated lane which alternates with parallel parking or outside of the existing curb-to-curb on the sidewalk. Three general purpose lanes will be provided along the study corridor.

Comment 2: Even though the growth rate was changed to reflect the SEIS PTAR the comment on growth rate is not yet resolved, please still coordinate with Ken Spitz and get future growth rate agreement.

Response 2: The growth rate calculation documentation will be provided to Ken Spitz for review and approval.

Comment 3: Thank you for meeting with the Lane Elimination Committee, what are the next steps? Please update the methodology accordingly.

Response 3: This comment is noted. As discussed at the Lane Elimination meeting, an analysis for only the lane elimination section on Florida Avenue from Kennedy Boulevard to Zack Street will be reviewed by the Lane Elimination Committee.

Comment 4: Please ensure Standard K is used.

Response 4: This comment is noted. The Standard K factor of 9% will be used in the analysis.

Comment 5: Please clarify response to comment 10 on whether the pedestrian crossings are pending or committed.

Response 5: The pedestrian crossings are pending and are not anticipated to impact Streetcar operations.

Comment 6: Please ensure that if preemptive signal timings are utilized for the future analysis that they are documented in the study.

Response 6: This comment is noted. Signal timing modifications will be applied and documented in the future conditions analysis, as needed.

Comment 7: A queue analysis is noted to be done for Tampa Street and Laurel Street. Please document the queues at the impacted signalized intersections also.

Response 7: The methodology has been updated to reflect this comment.

Comment 8: Please use Synchro to document both the existing and future conditions including roadway segments.

Response 8: This comment is noted. Synchro will be used to document the existing and future intersection and roadway conditions.

Comment 9: Appendix C does not provide enough detail in the development of the growth rate. Please provide more information, such as the PTAR date/source, which Option (A, B, C, D) was used, and the use of the exponential and linear growth rates.

Response 9: Based on the proposed buildout and timeline, the Streetcar project is ahead of the Downtown Interchange and therefore the Project Development Phase will evaluate the existing geometry conditions. Appendix D has been updated to include pages from the March 2019 PTAR for the Existing 2018, No-Build 2025 and No-Build 2045 DDHVs. The exponential growth rate will be utilized in the analysis.

Comment 10: Please review the AM Tampa South (Volume Source #3) 2045 values, it is different from our documentation.

Response 10: The 2045 volumes are based on the March 2019 PTAR No-Build 2045 DDHVs as shown in Appendix D.

Comment 11: Please review the PM Florida South, Florida North, and Tampa South (Volume Sources #1, #2, #3) 2045 values, they are different from our documentation.

Response 11: The 2045 volumes are based on the March 2019 PTAR No-Build 2045 DDHVs as shown in Appendix D.

Comment 12: Please review the AM & PM 2025 values, they are different from our documentation.

Response 12: The 2025 volumes are based on the March 2019 PTAR No-Build 2025 DDHVs as shown in Appendix D.

Comment 13: Please recalculate the growth rate based on the updates to the volumes. They will change, especially the PM.

Response 13: The growth rate will be recalculated based on the approval of the March 2019 PTAR DDHVs.

APPENDIX B - PREFERRED EXTENSION GUIDEWAY & STOPS

Figure 2. Extension Guideway & Stops - Sheet 01

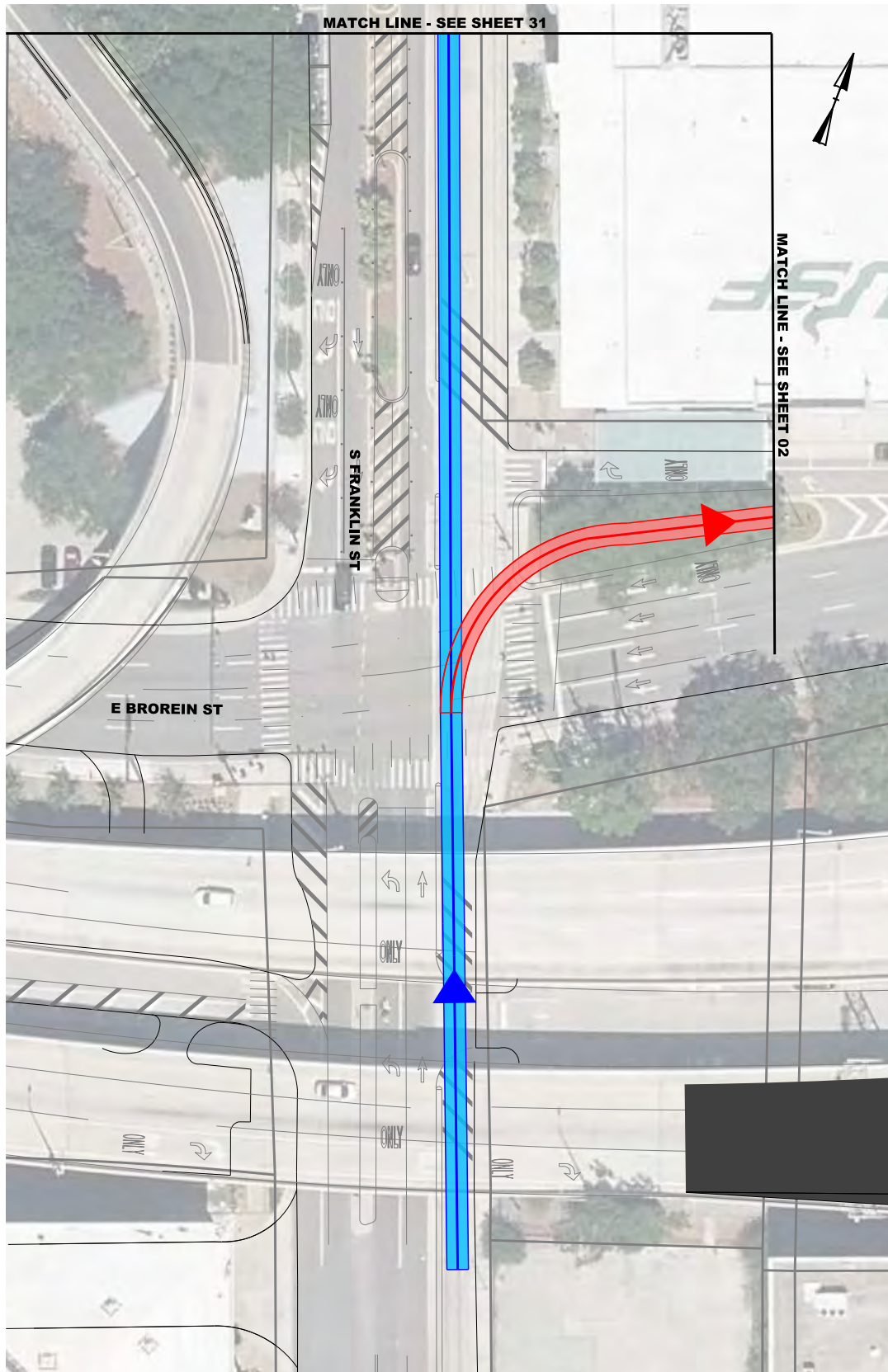


Figure 3. Extension Guideway & Stops - Sheet 02

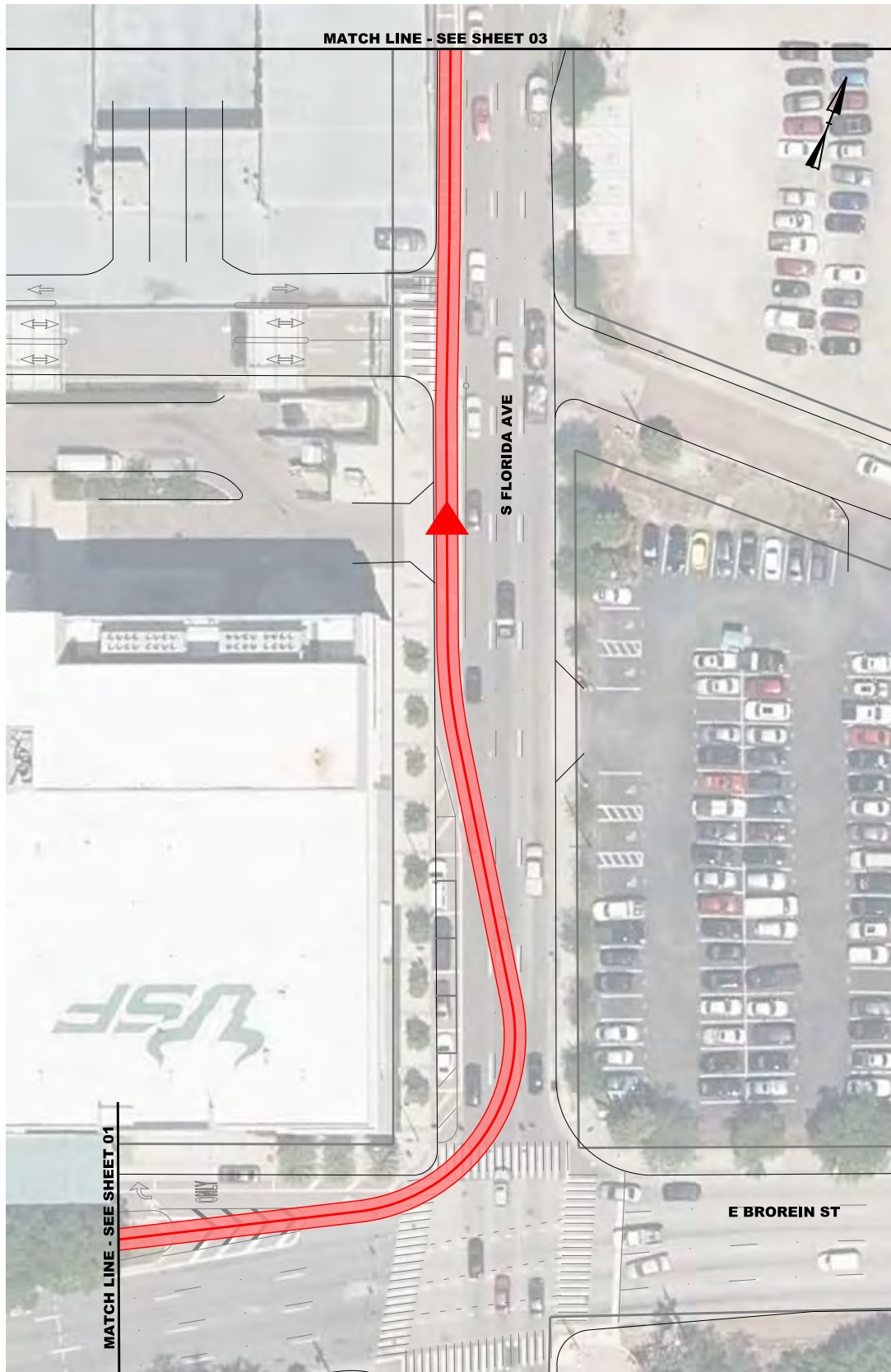


Figure 4. Extension Guideway & Stops - Sheet 03

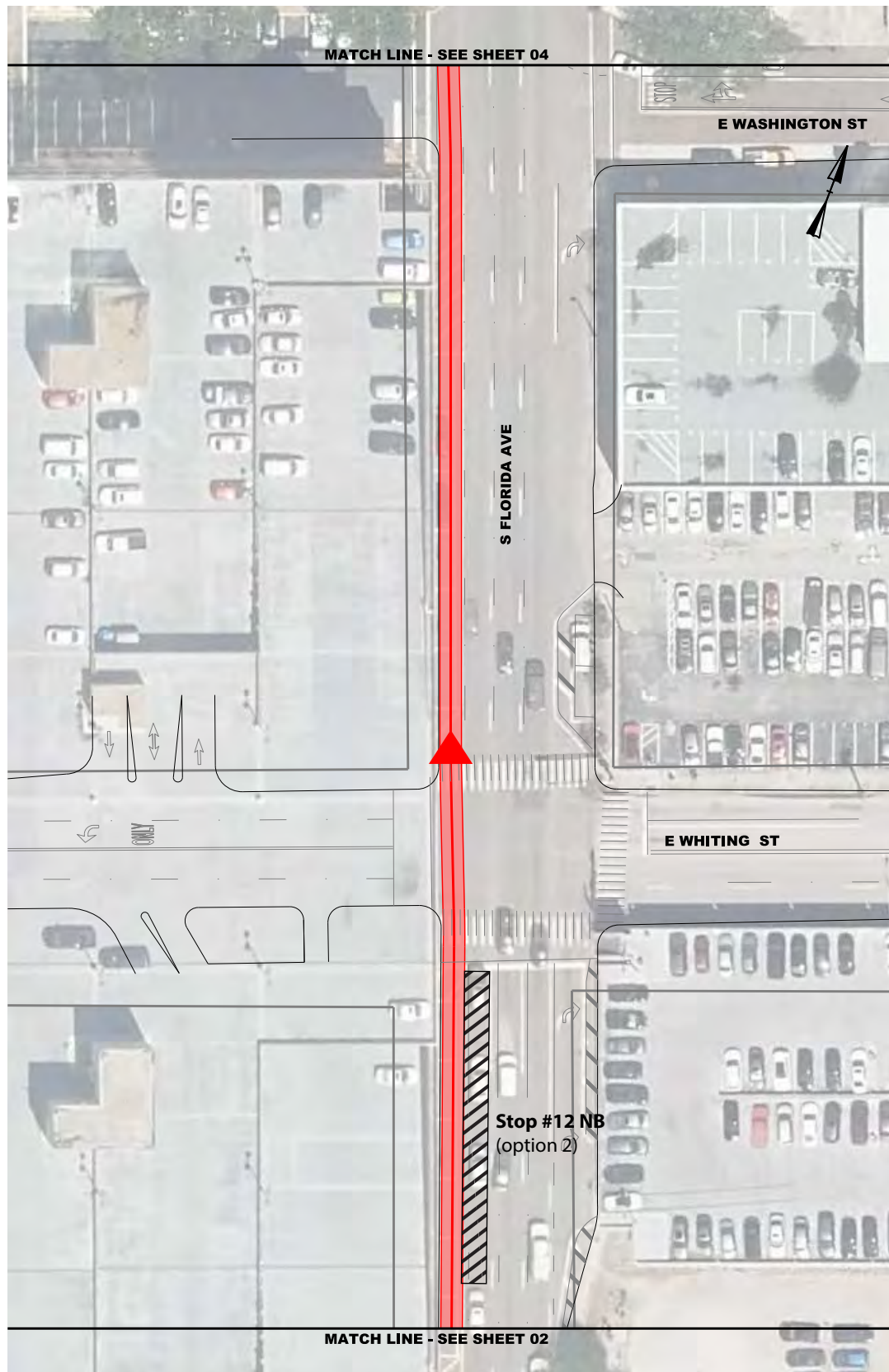


Figure 5. Extension Guideway & Stops - Sheet 04

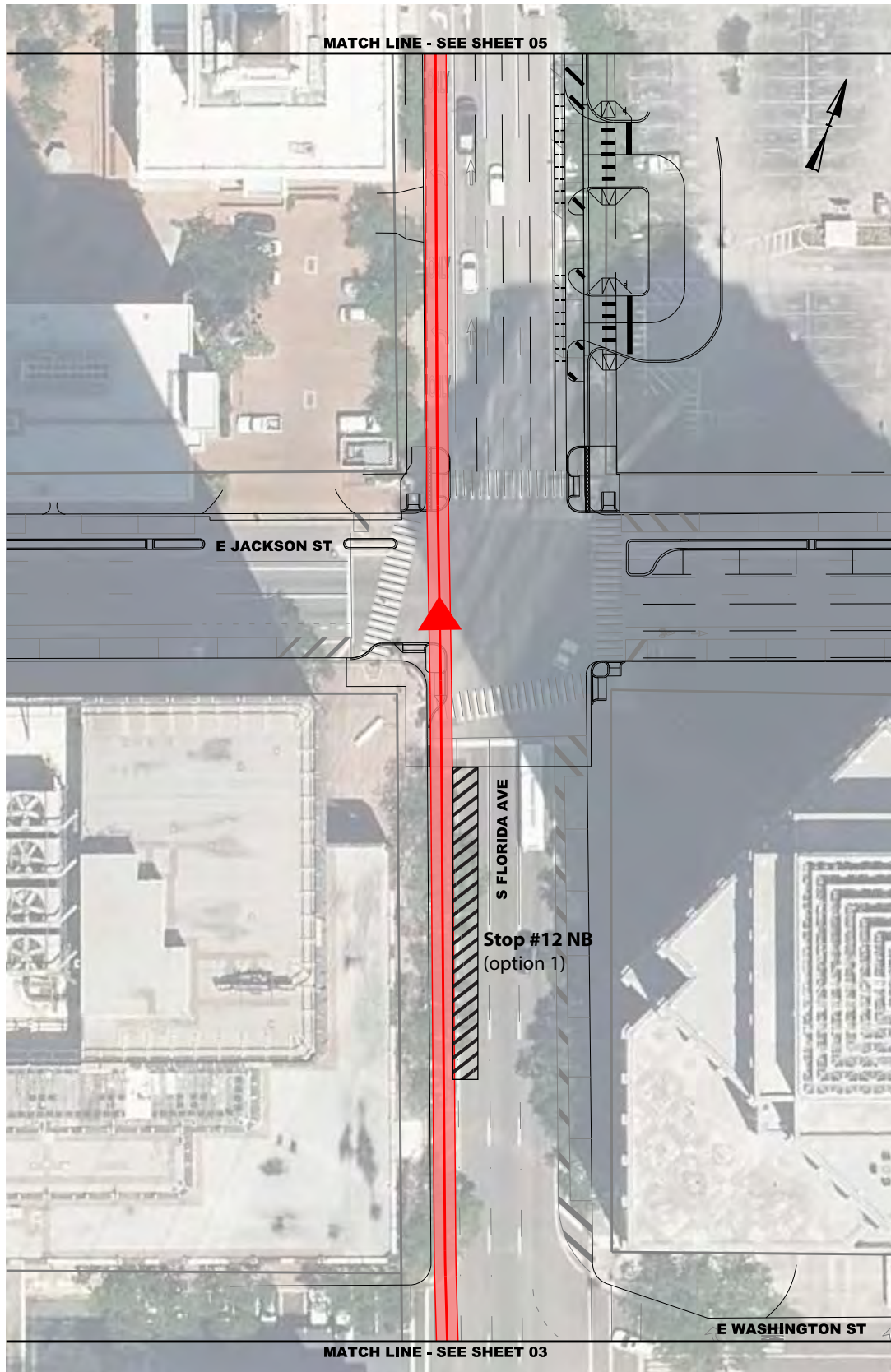


Figure 6. Extension Guideway & Stops - Sheet 05

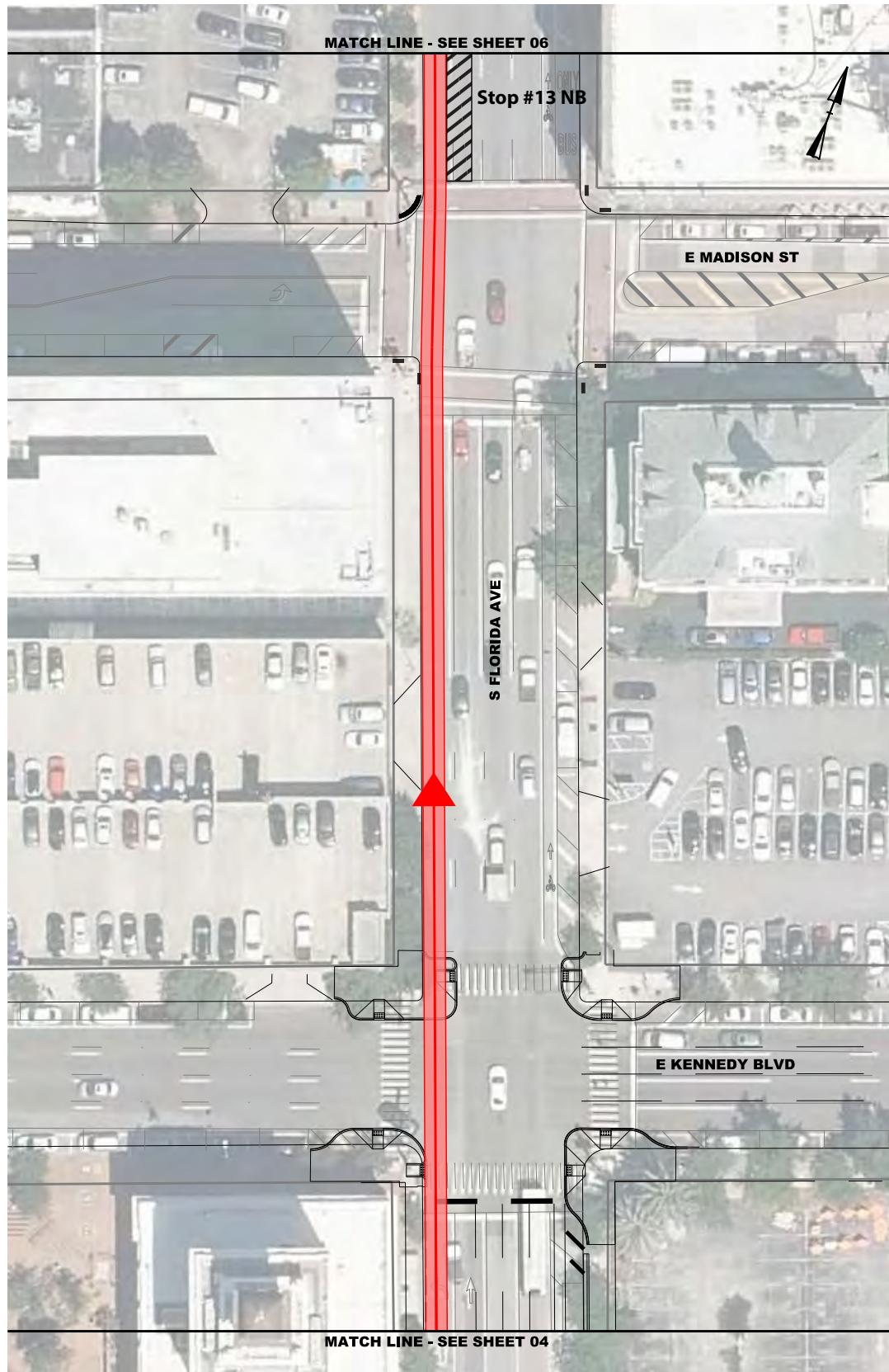


Figure 7. Extension Guideway & Stops - Sheet 06

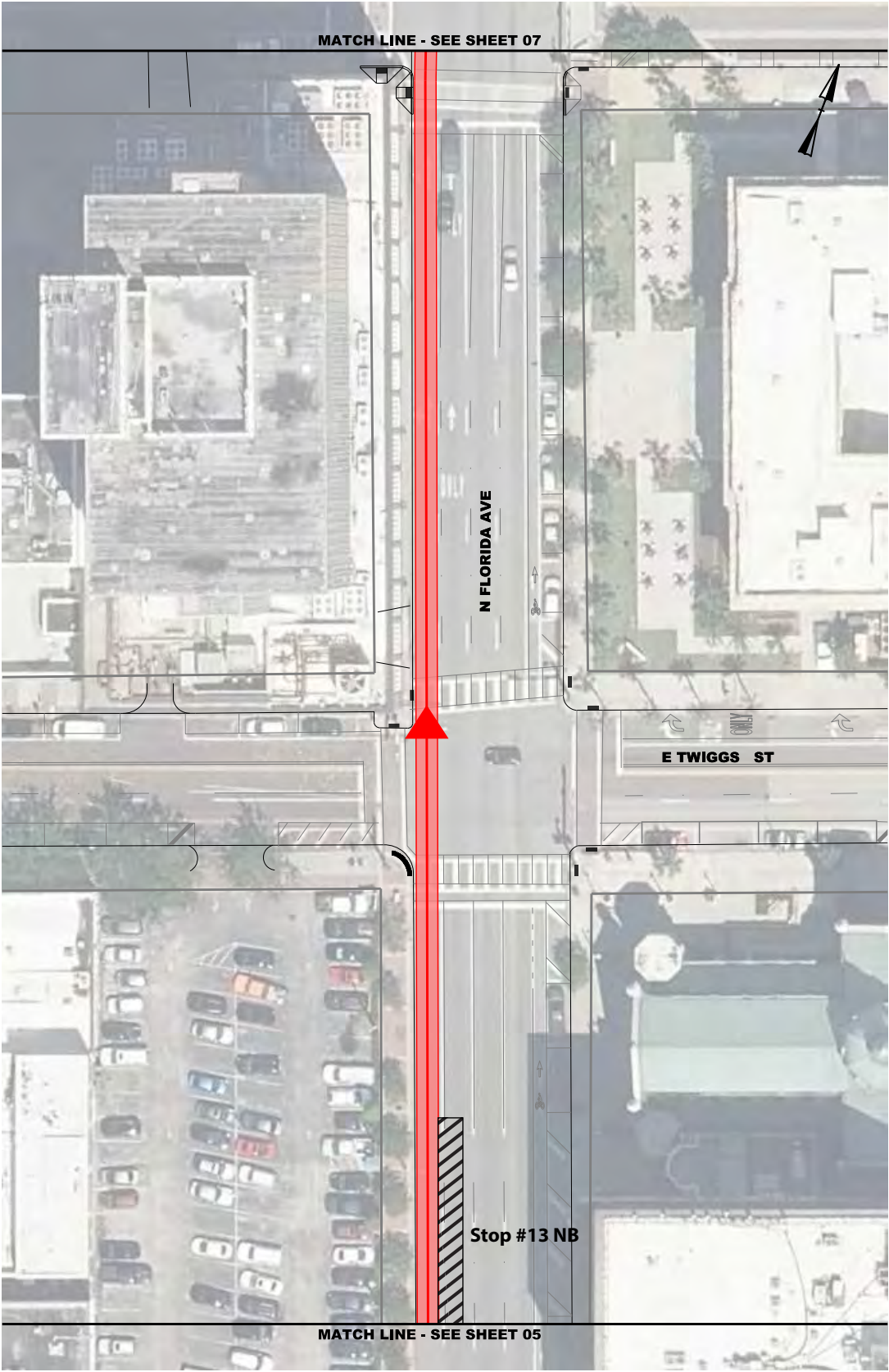


Figure 8. Extension Guideway & Stops - Sheet 07

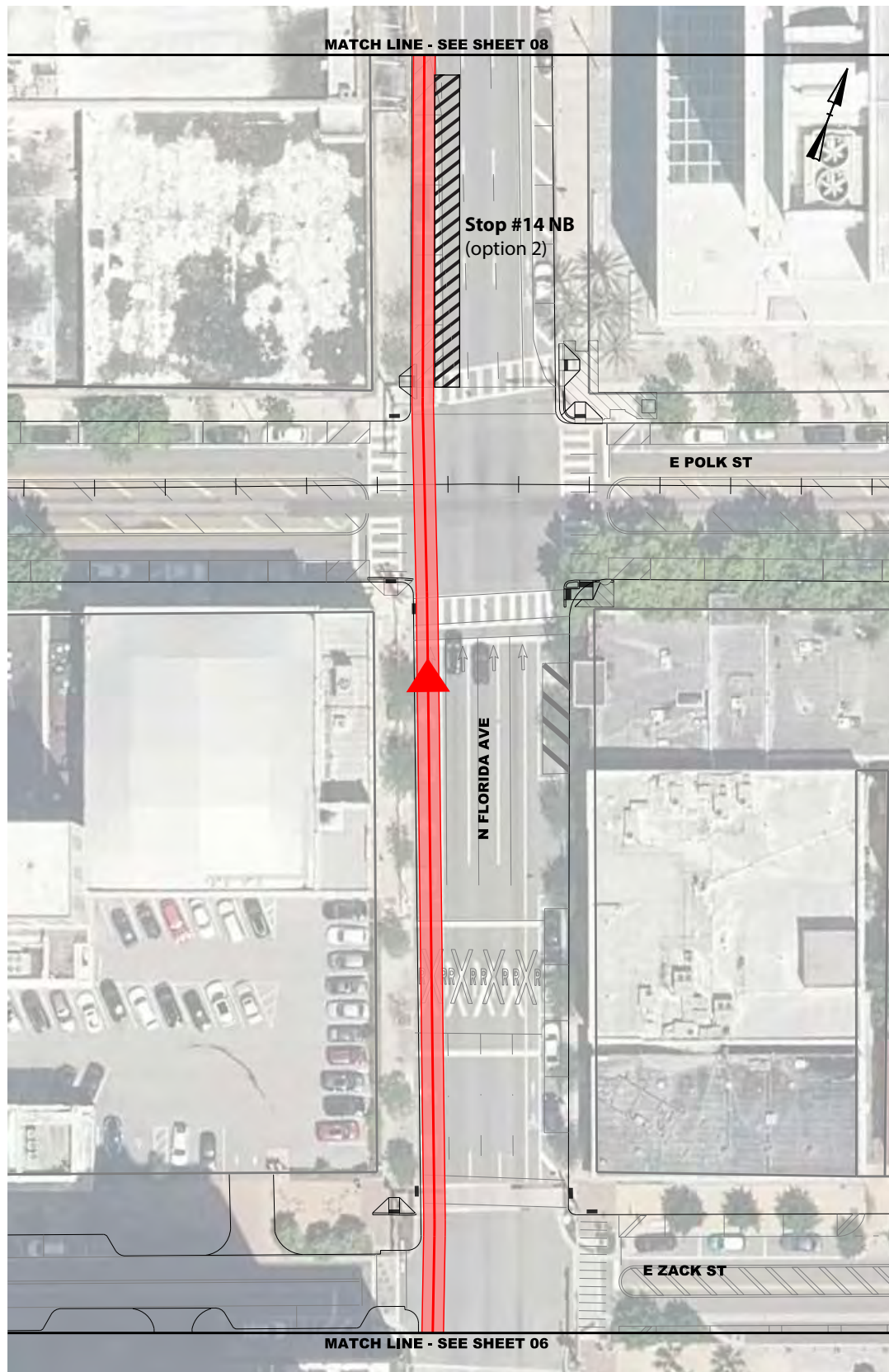


Figure 9. Extension Guideway & Stops - Sheet 08

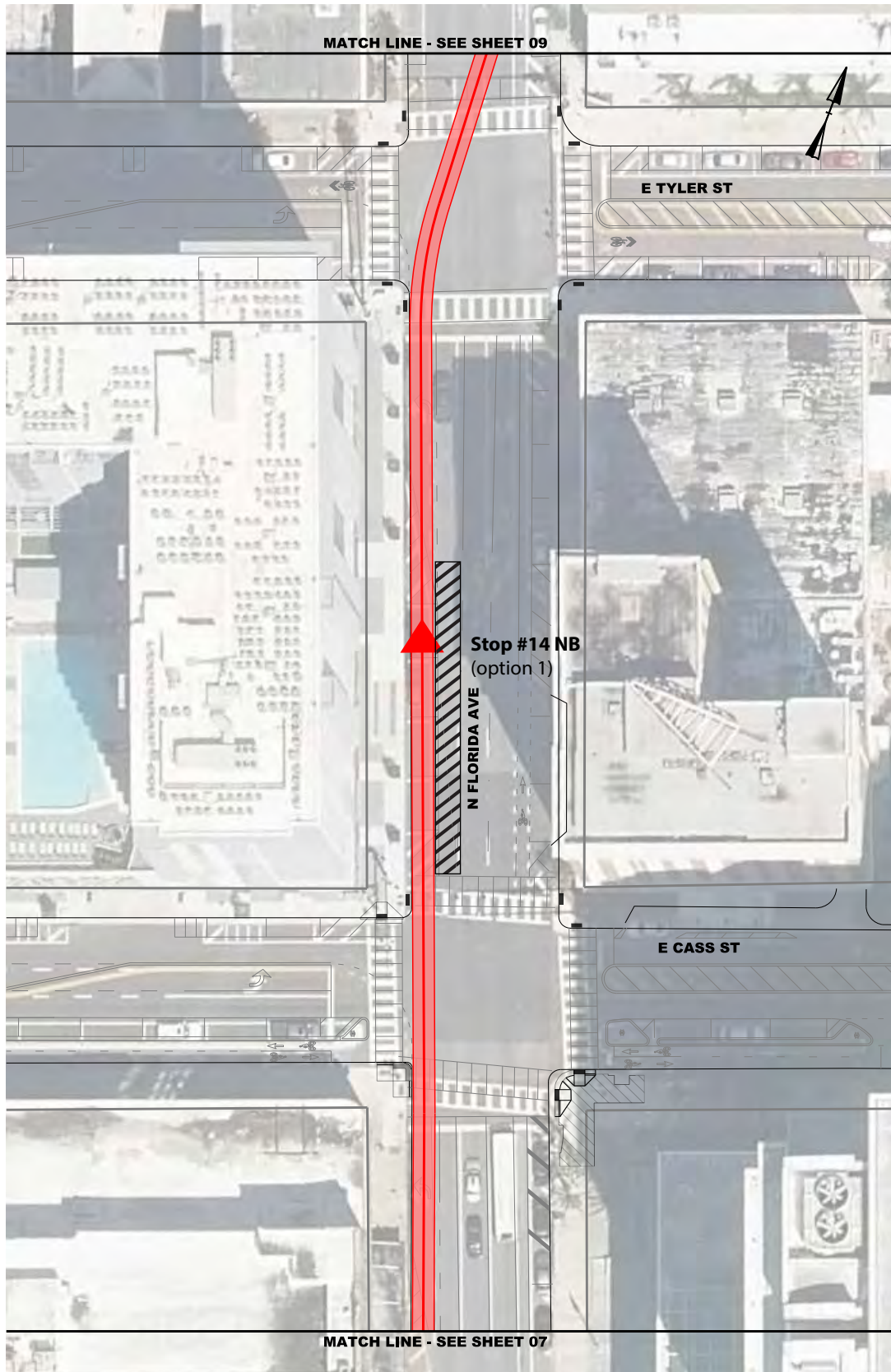


Figure 10. Extension Guideway & Stops - Sheet 09

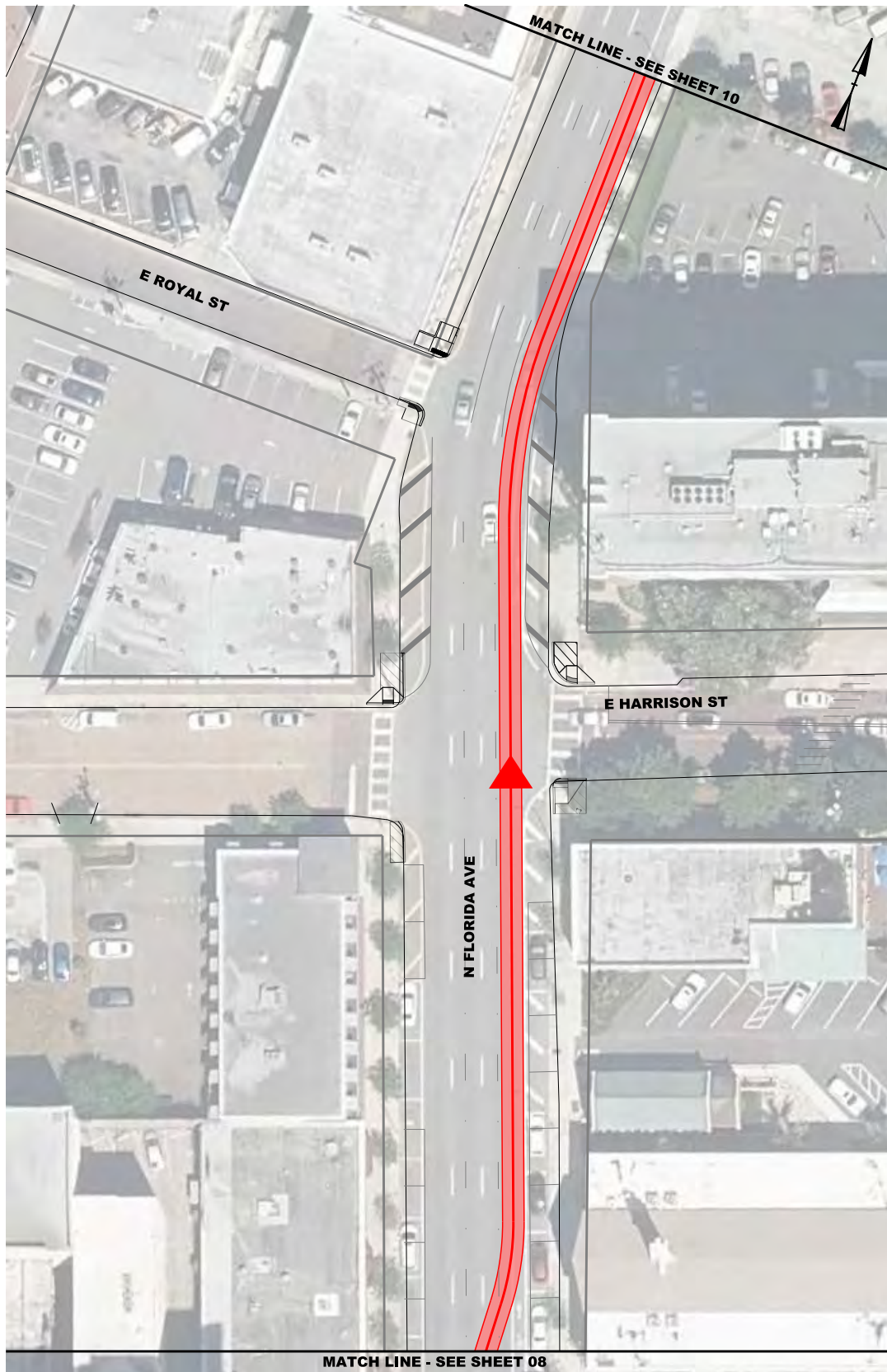


Figure 11. Extension Guideway & Stops - Sheet 10

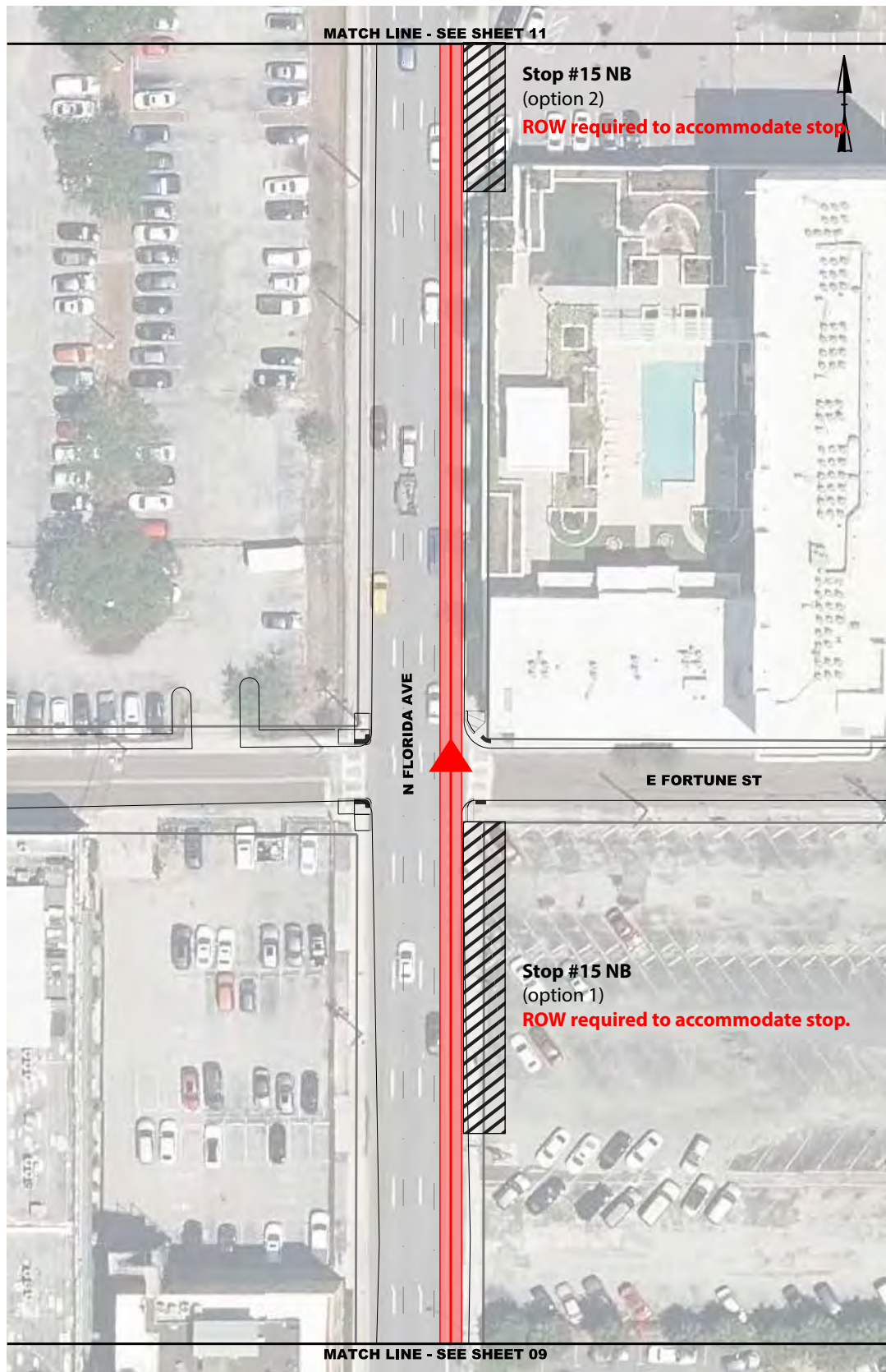


Figure 12. Extension Guideway & Stops - Sheet 11

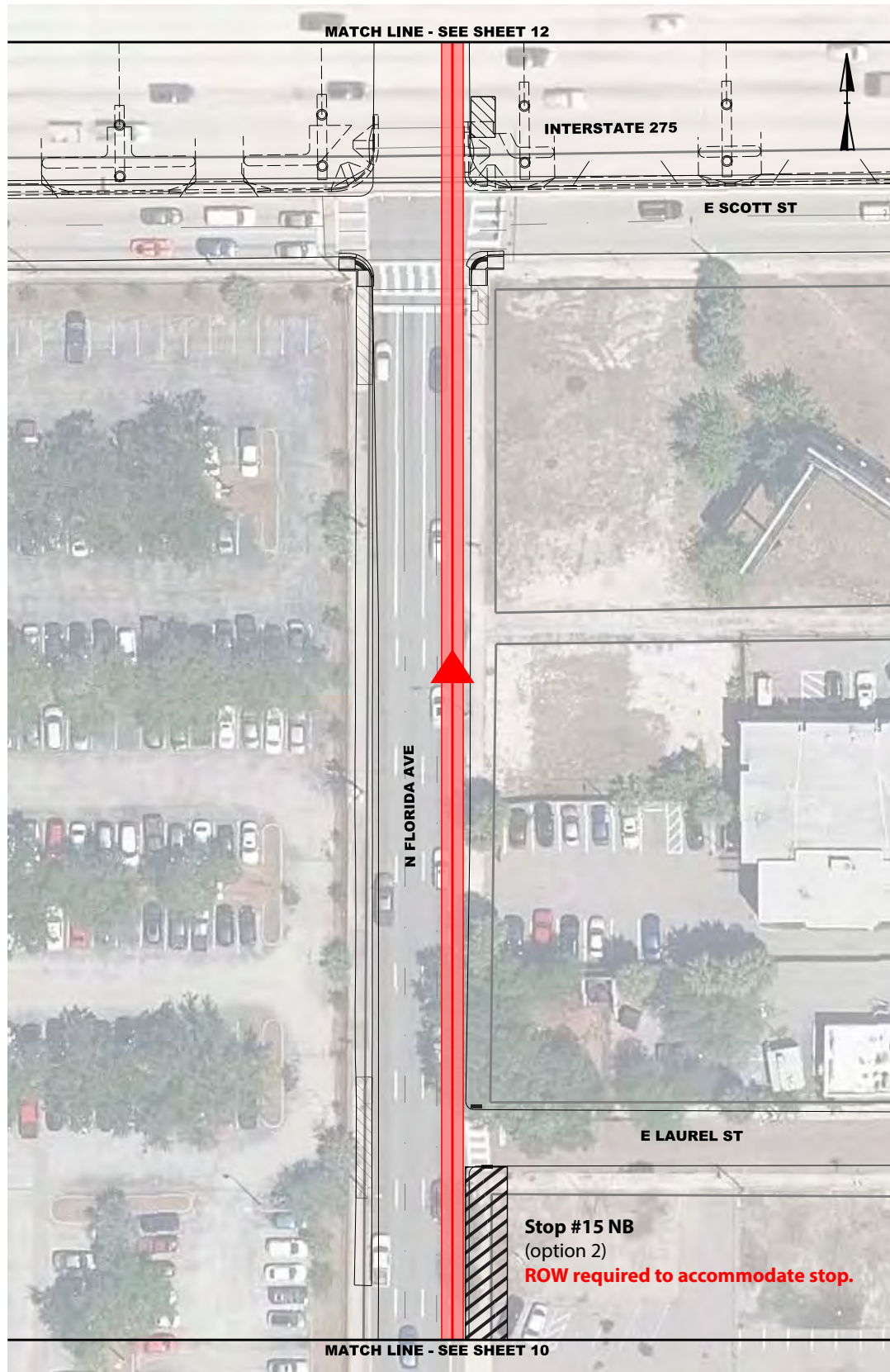


Figure 13. Extension Guideway & Stops - Sheet 12

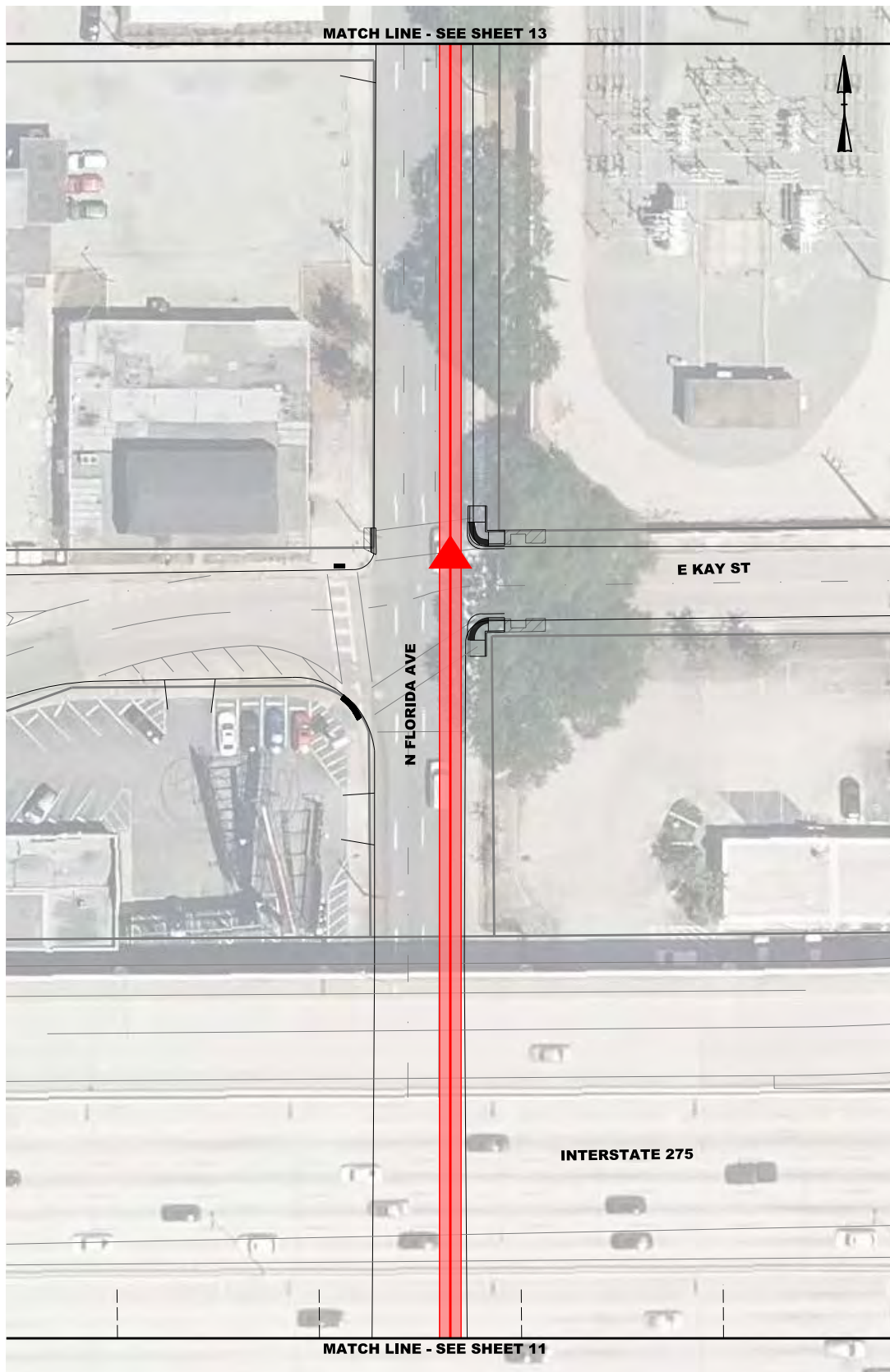


Figure 14. Extension Guideway & Stops - Sheet 13

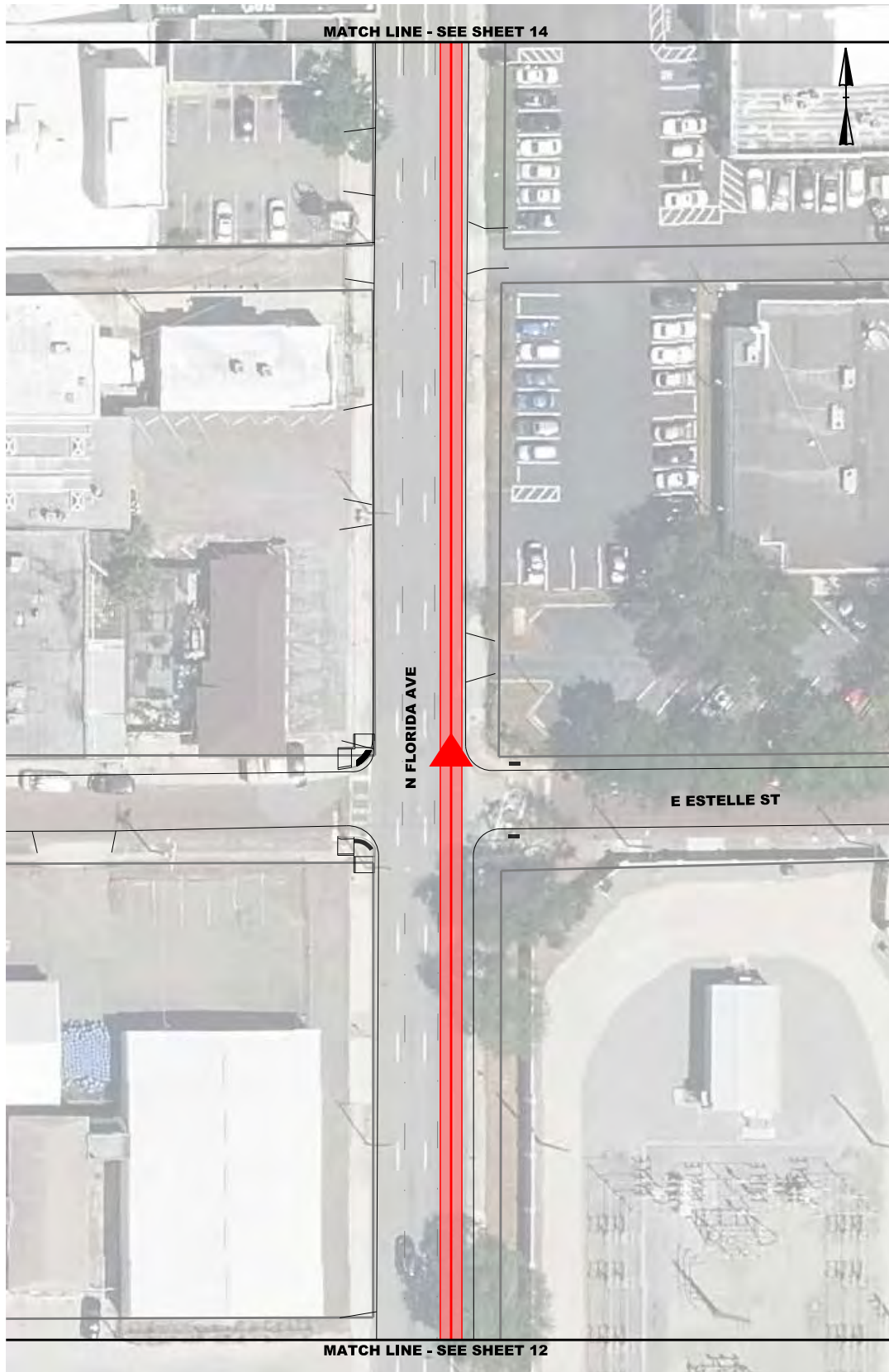


Figure 15. Extension Guideway & Stops - Sheet 14

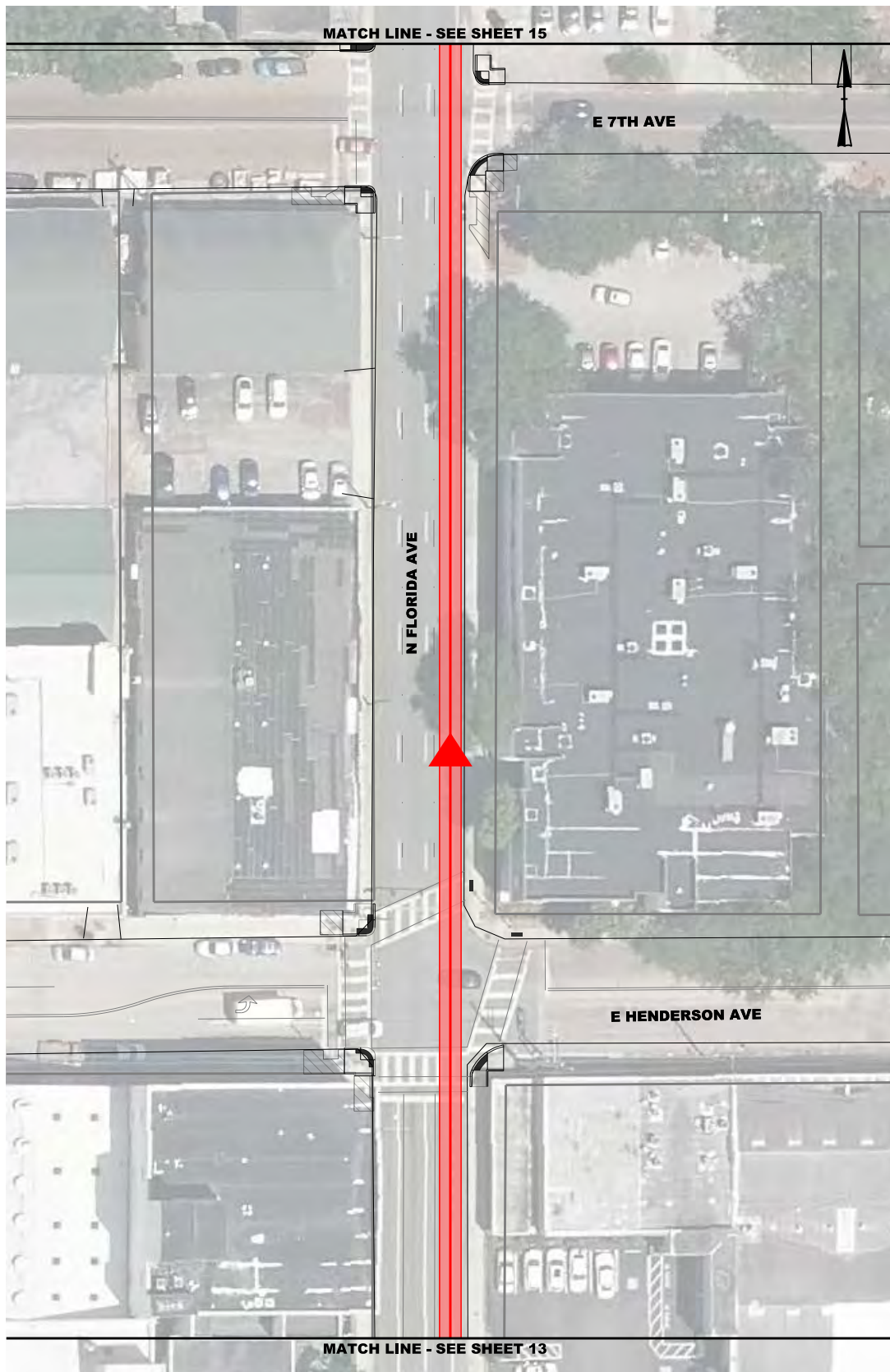


Figure 16. Extension Guideway & Stops - Sheet 15

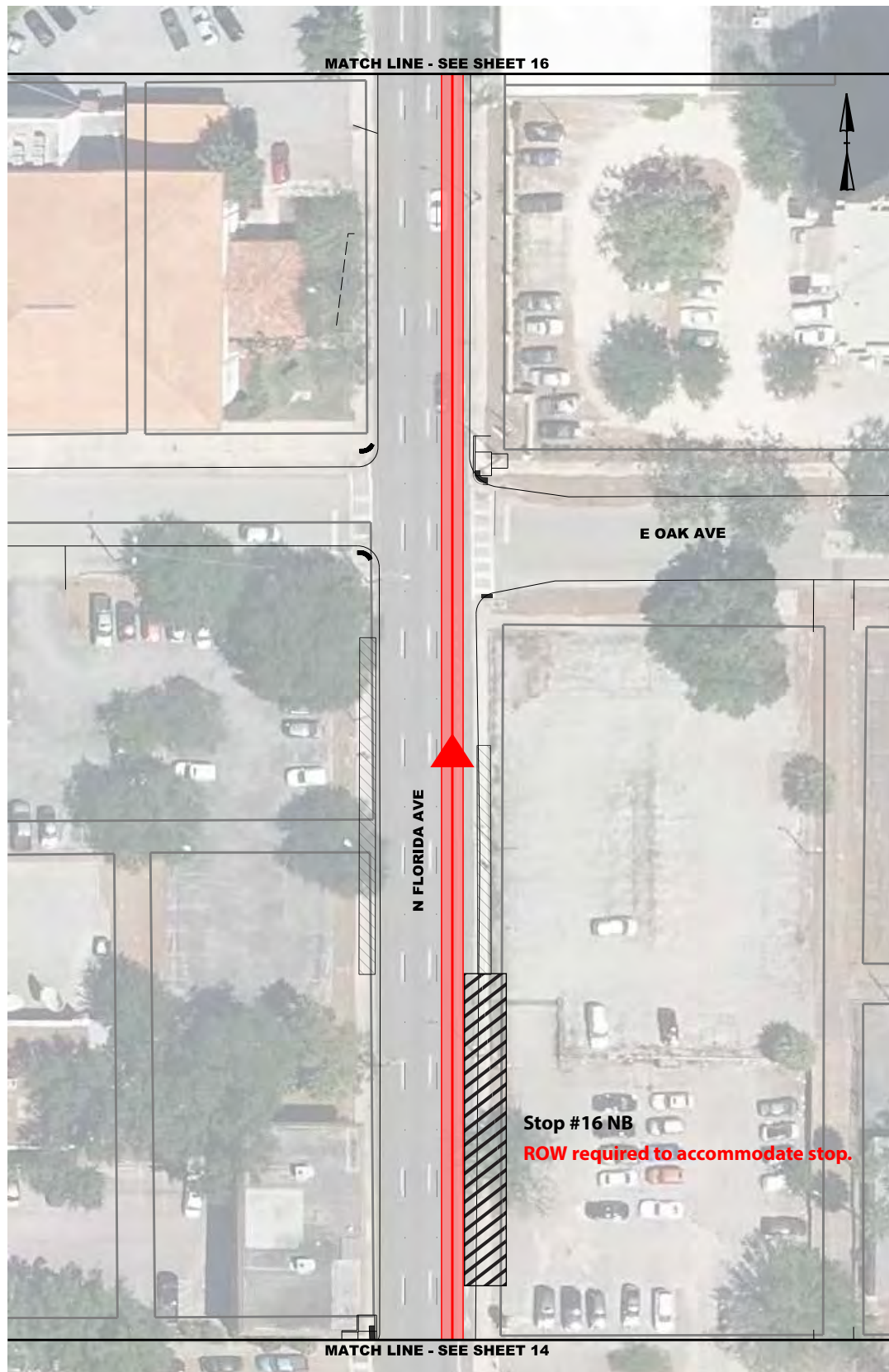


Figure 17. Extension Guideway & Stops - Sheet 16

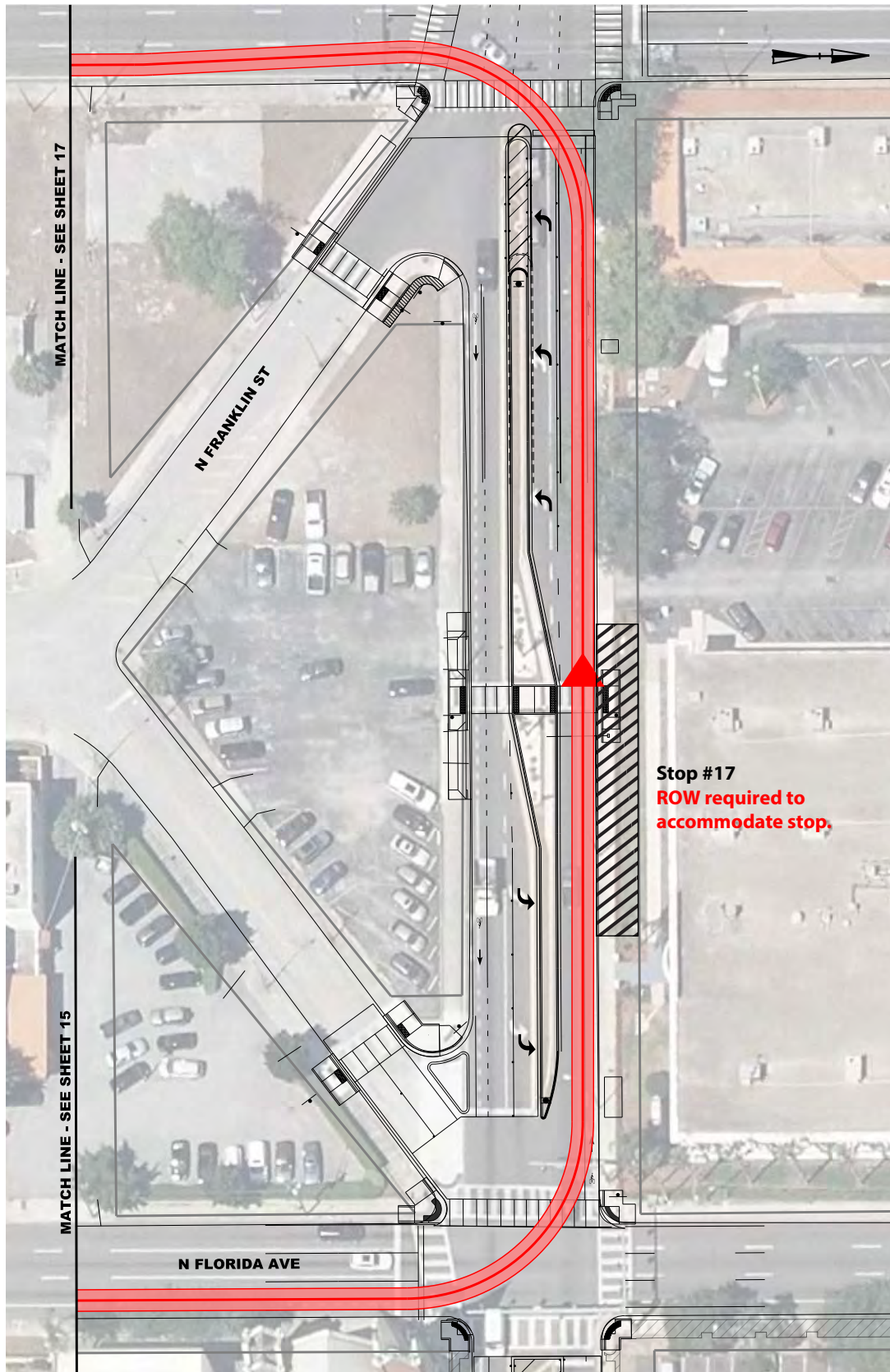


Figure 18. Extension Guideway & Stops - Sheet 17

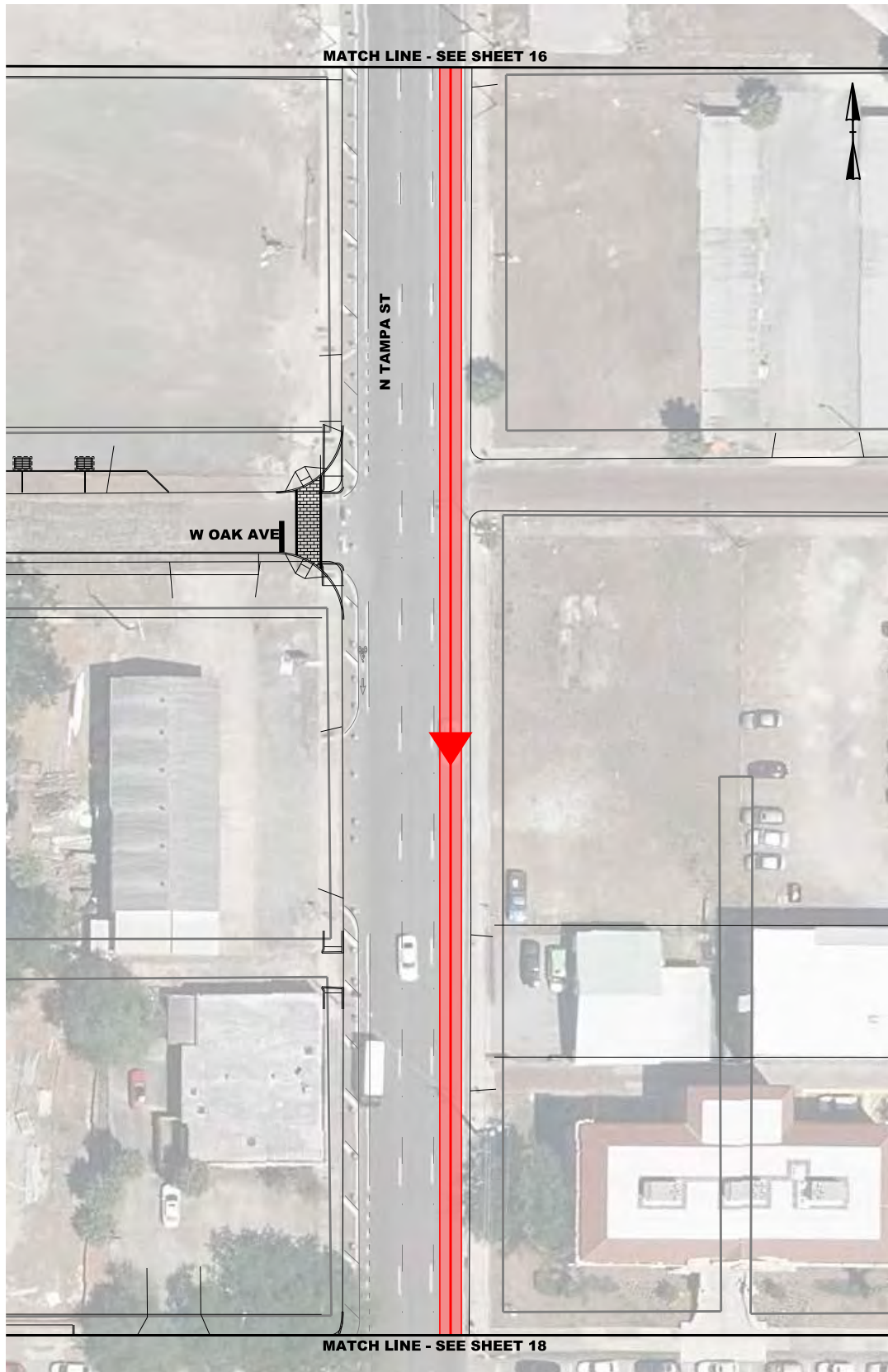


Figure 19. Extension Guideway & Stops - Sheet 18

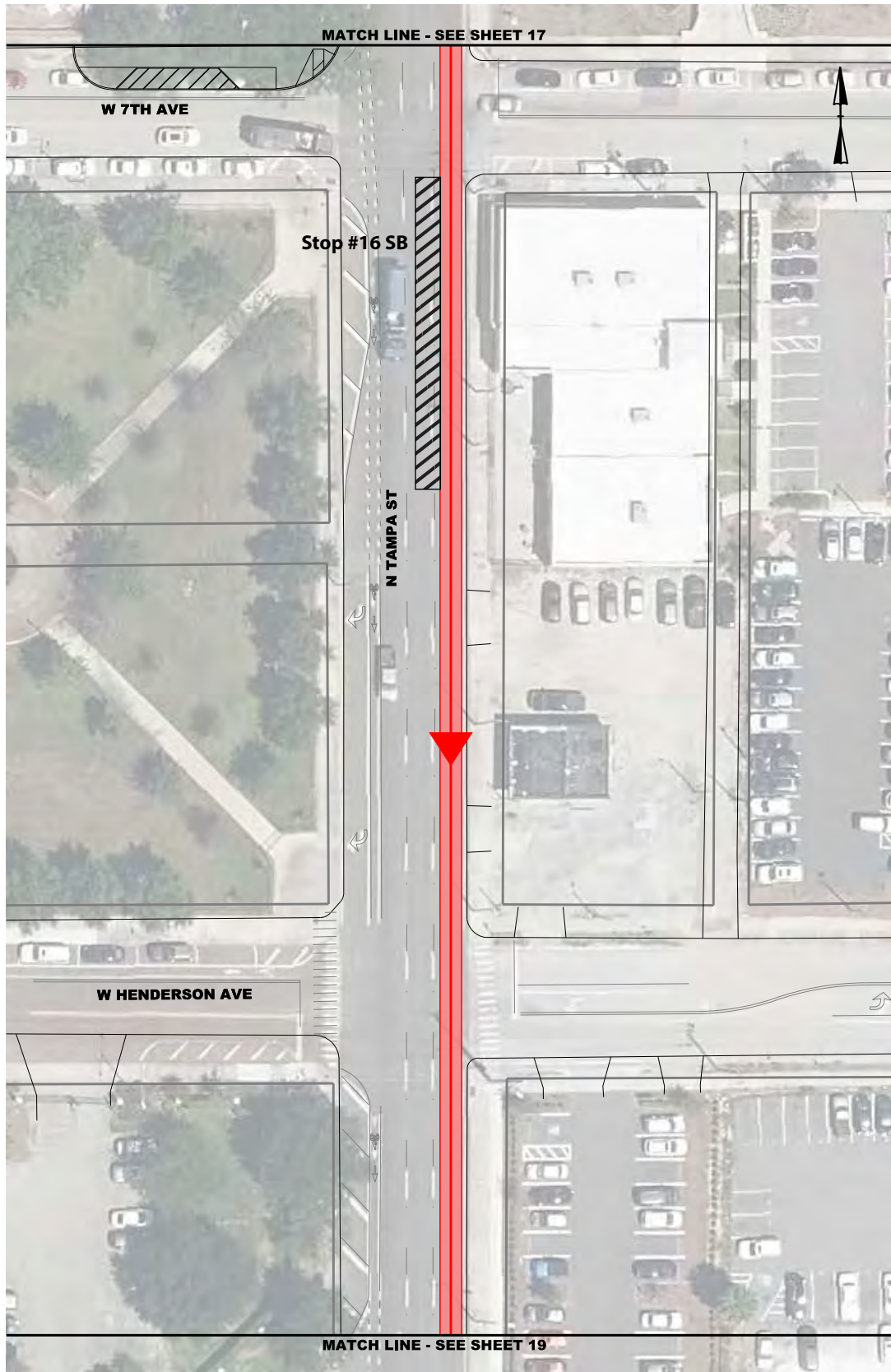


Figure 20. Extension Guideway & Stops - Sheet 19

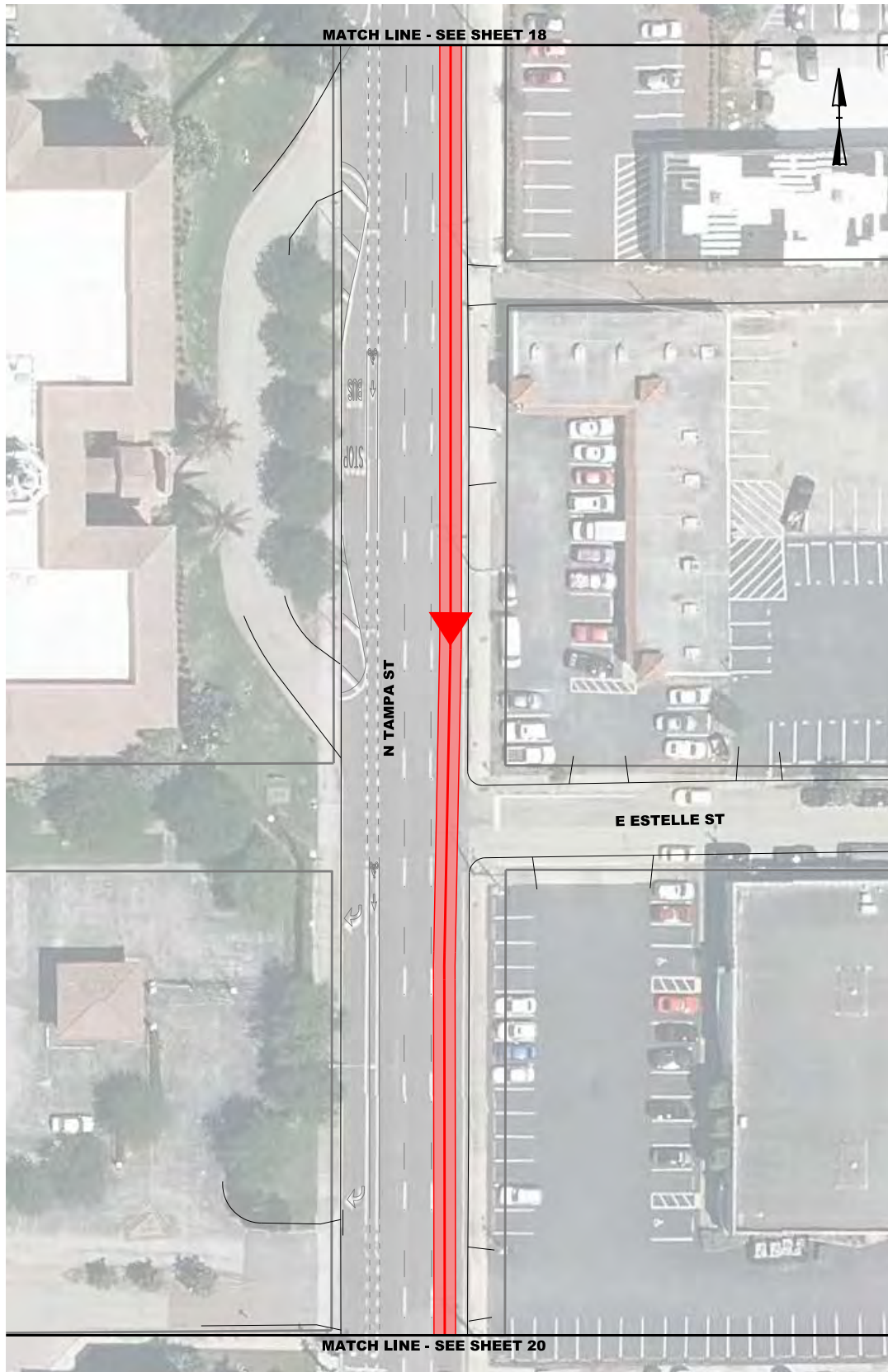


Figure 21. Extension Guideway & Stops - Sheet 20

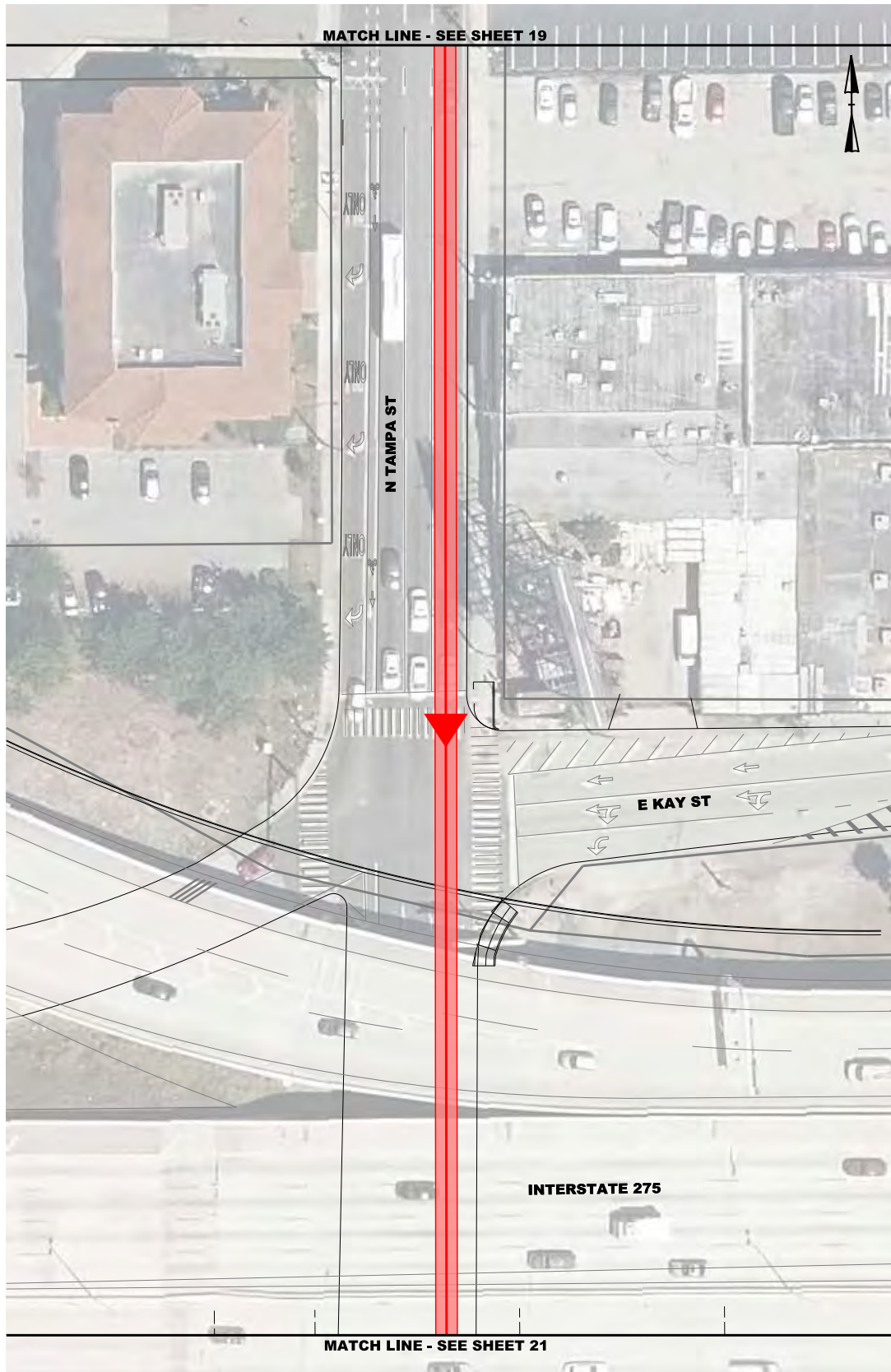


Figure 22. Extension Guideway & Stops - Sheet 21



Figure 23. Extension Guideway & Stops - Sheet 22

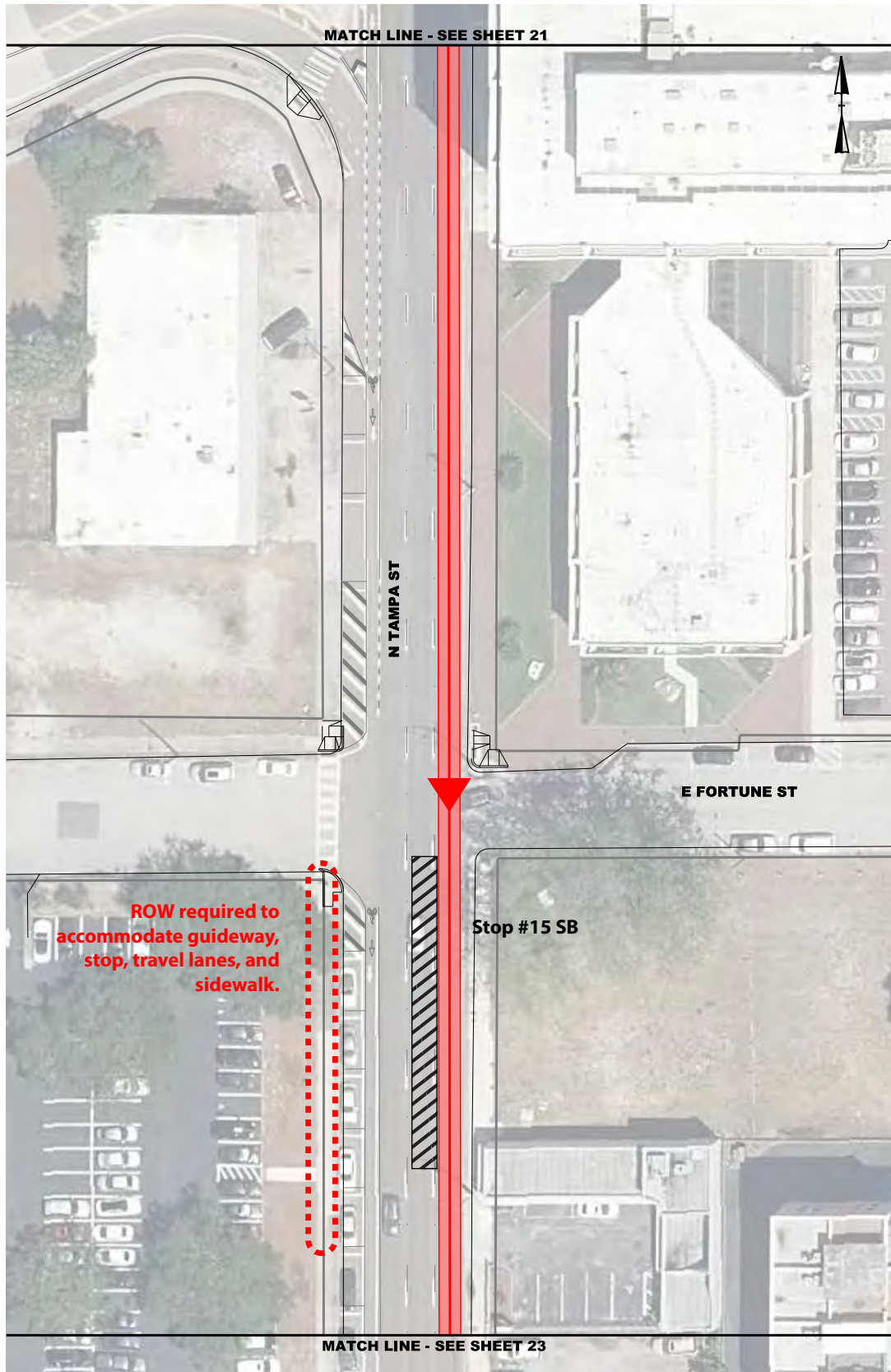


Figure 24. Extension Guideway & Stops - Sheet 23

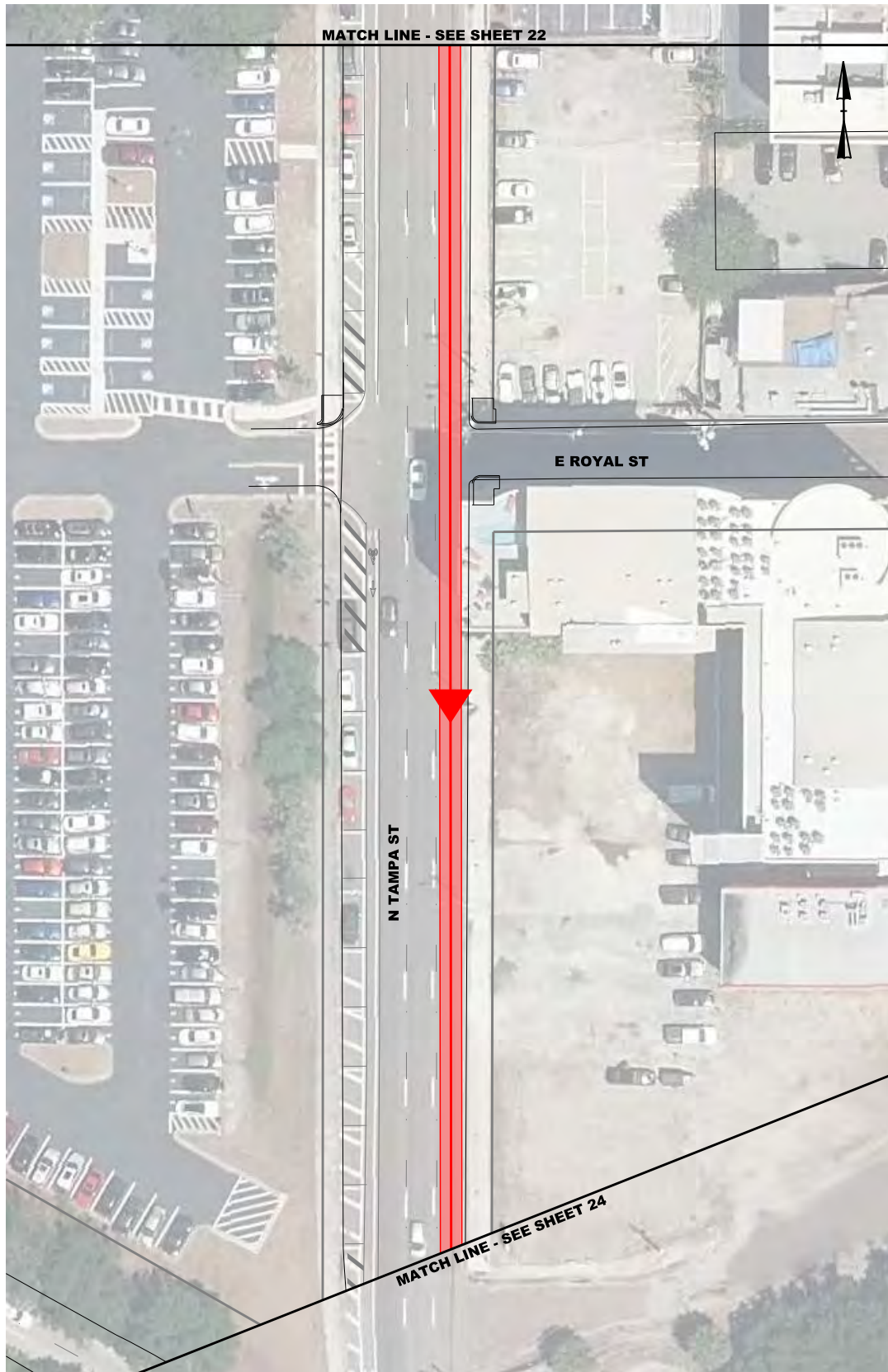


Figure 25. Extension Guideway & Stops - Sheet 24

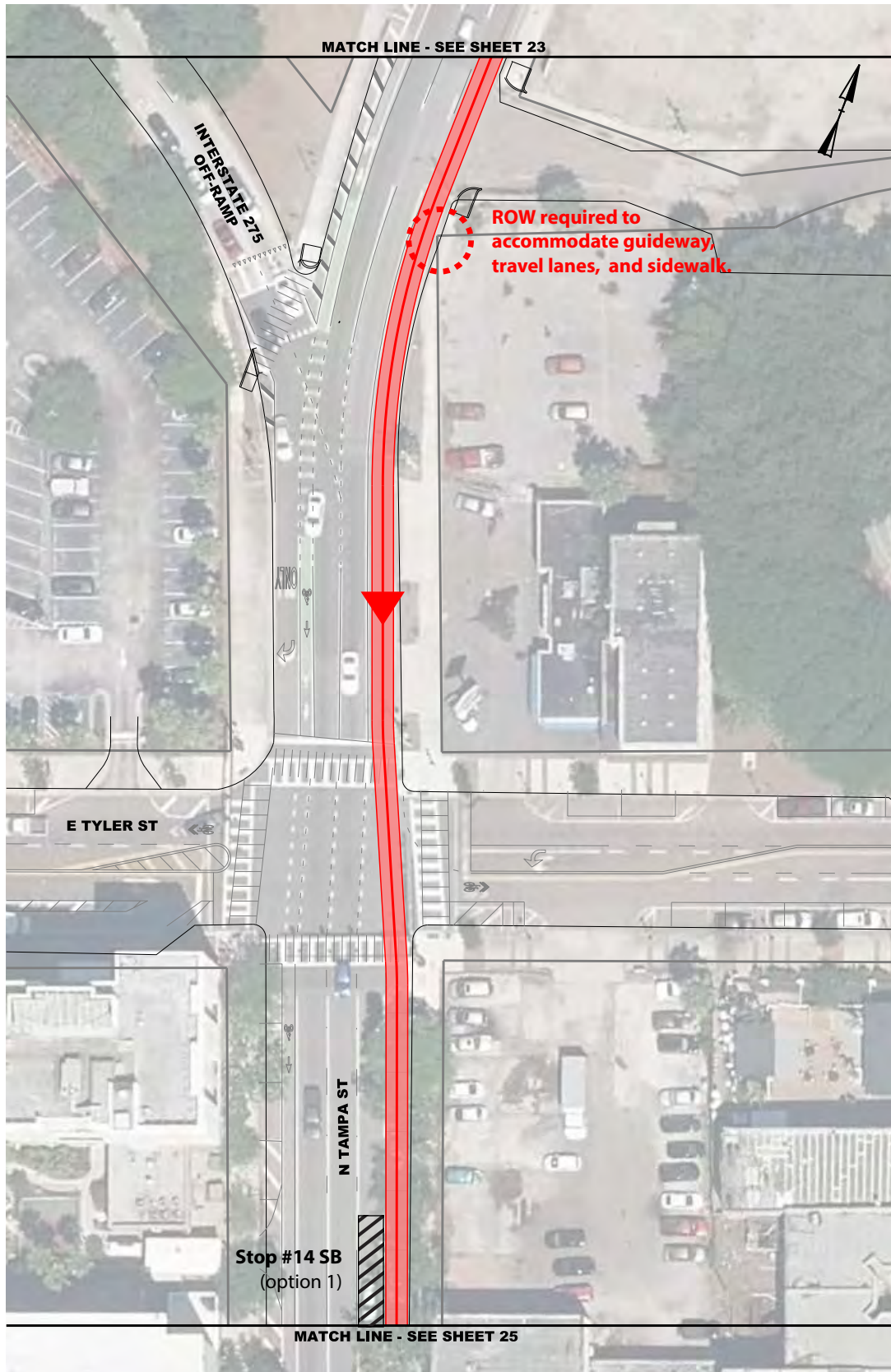


Figure 26. Extension Guideway & Stops - Sheet 25

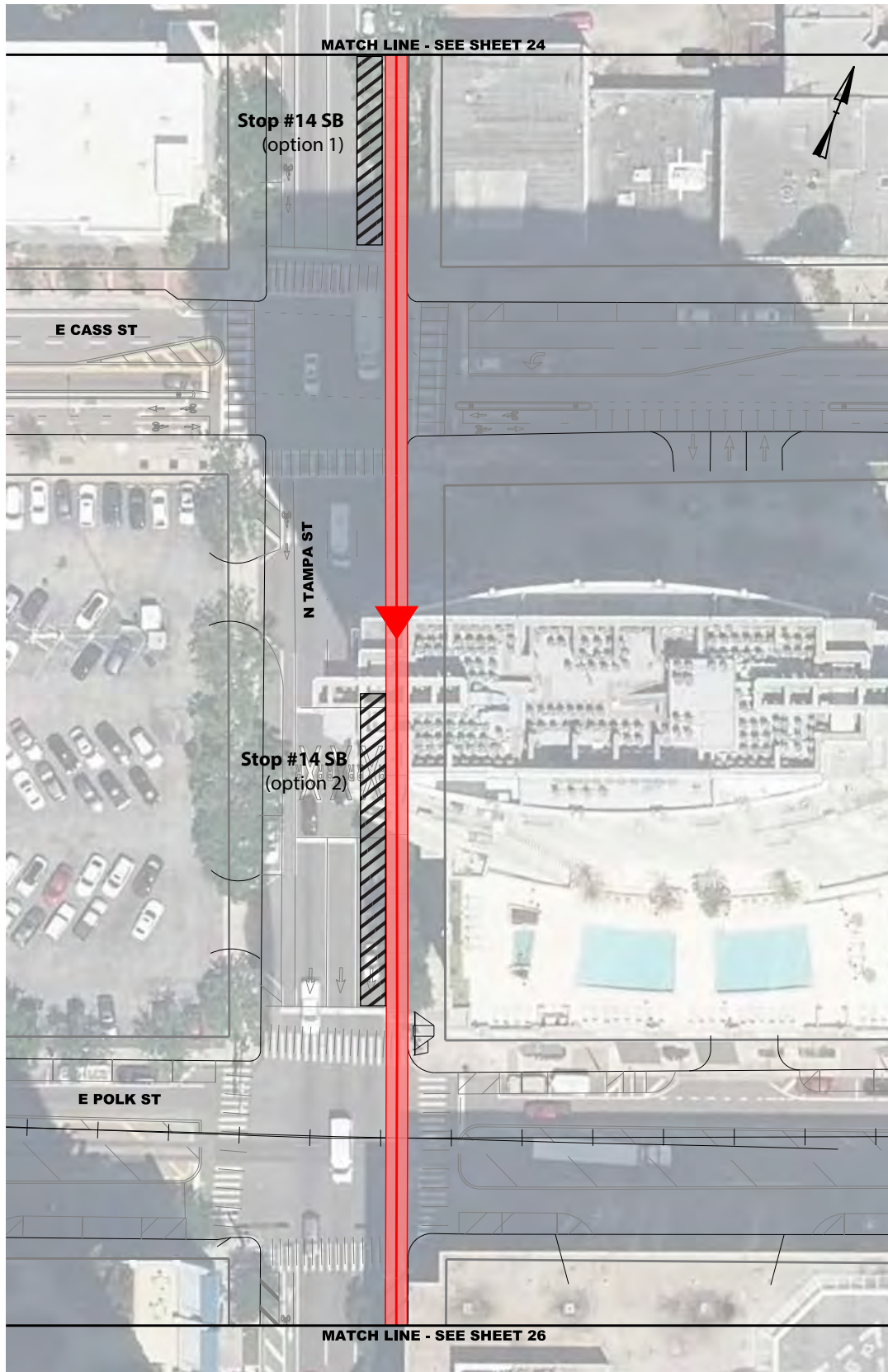


Figure 27. Extension Guideway & Stops - Sheet 26



Figure 28. Extension Guideway & Stops - Sheet 27



Figure 29. Extension Guideway & Stops - Sheet 28

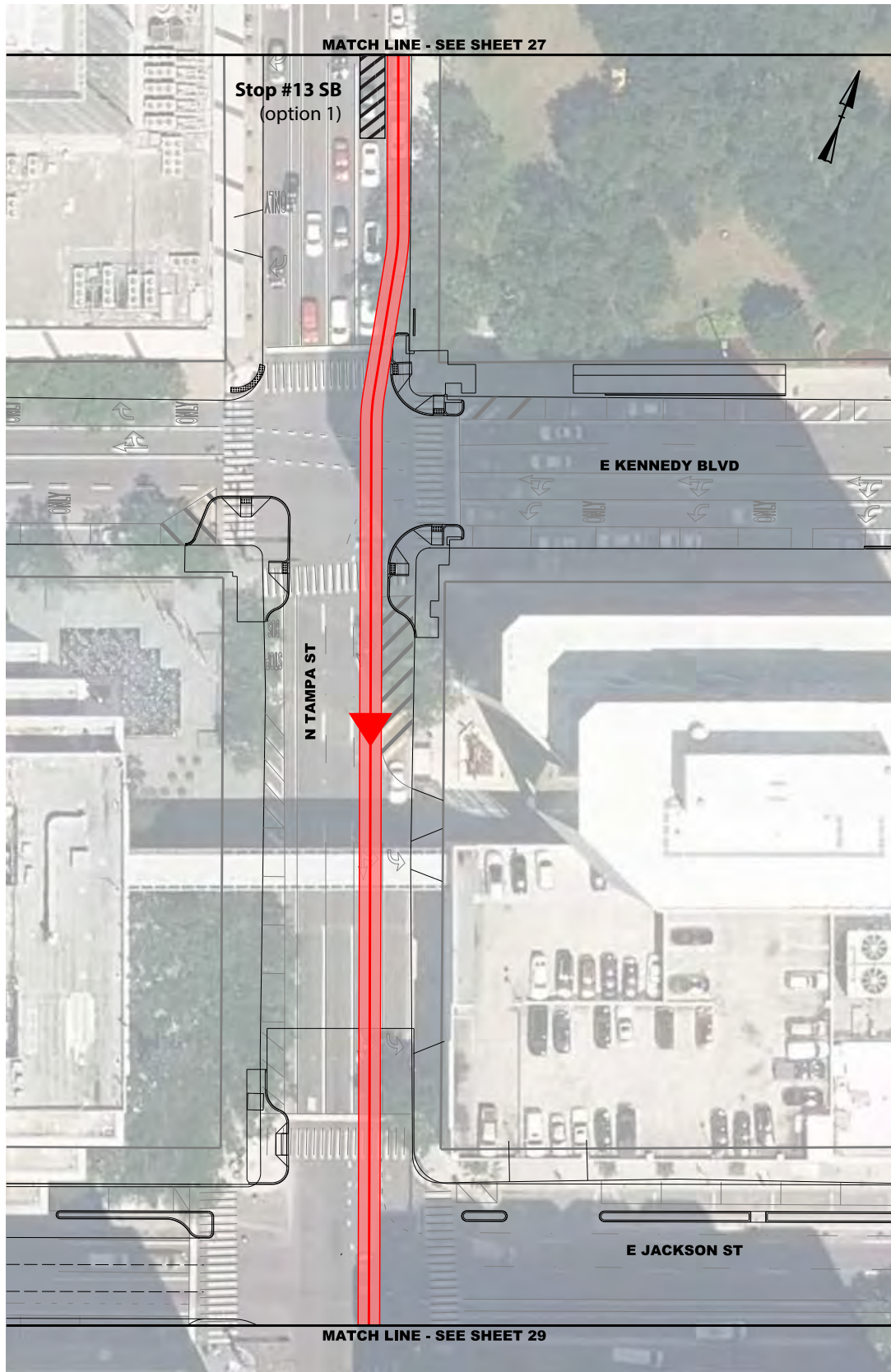


Figure 30. Extension Guideway & Stops - Sheet 29



Figure 31. Extension Guideway & Stops - Sheet 30

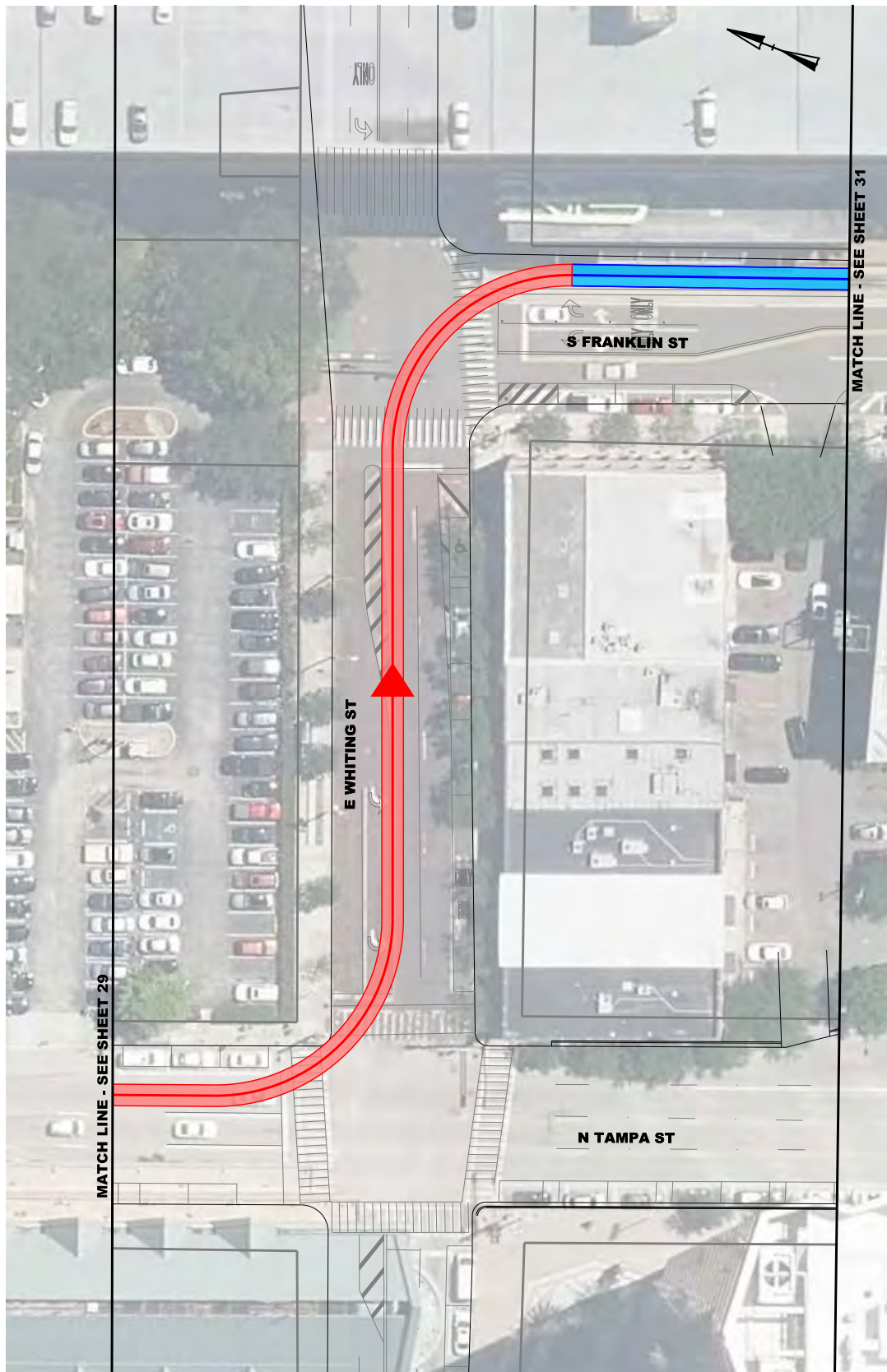
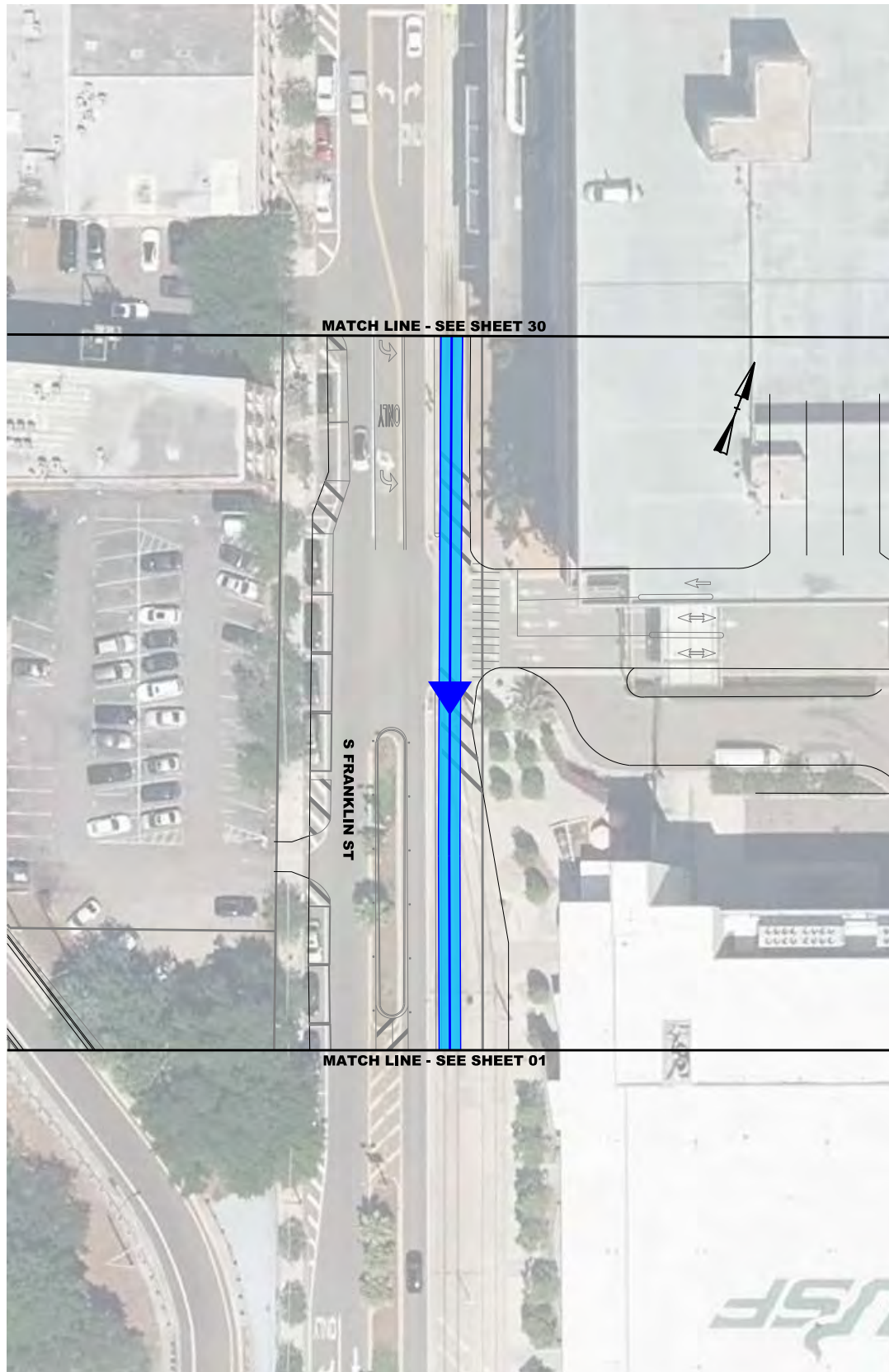


Figure 32. Extension Guideway & Stops - Sheet 31



APPENDIX C - Location Map, Alignment & Guideway, and Study Area

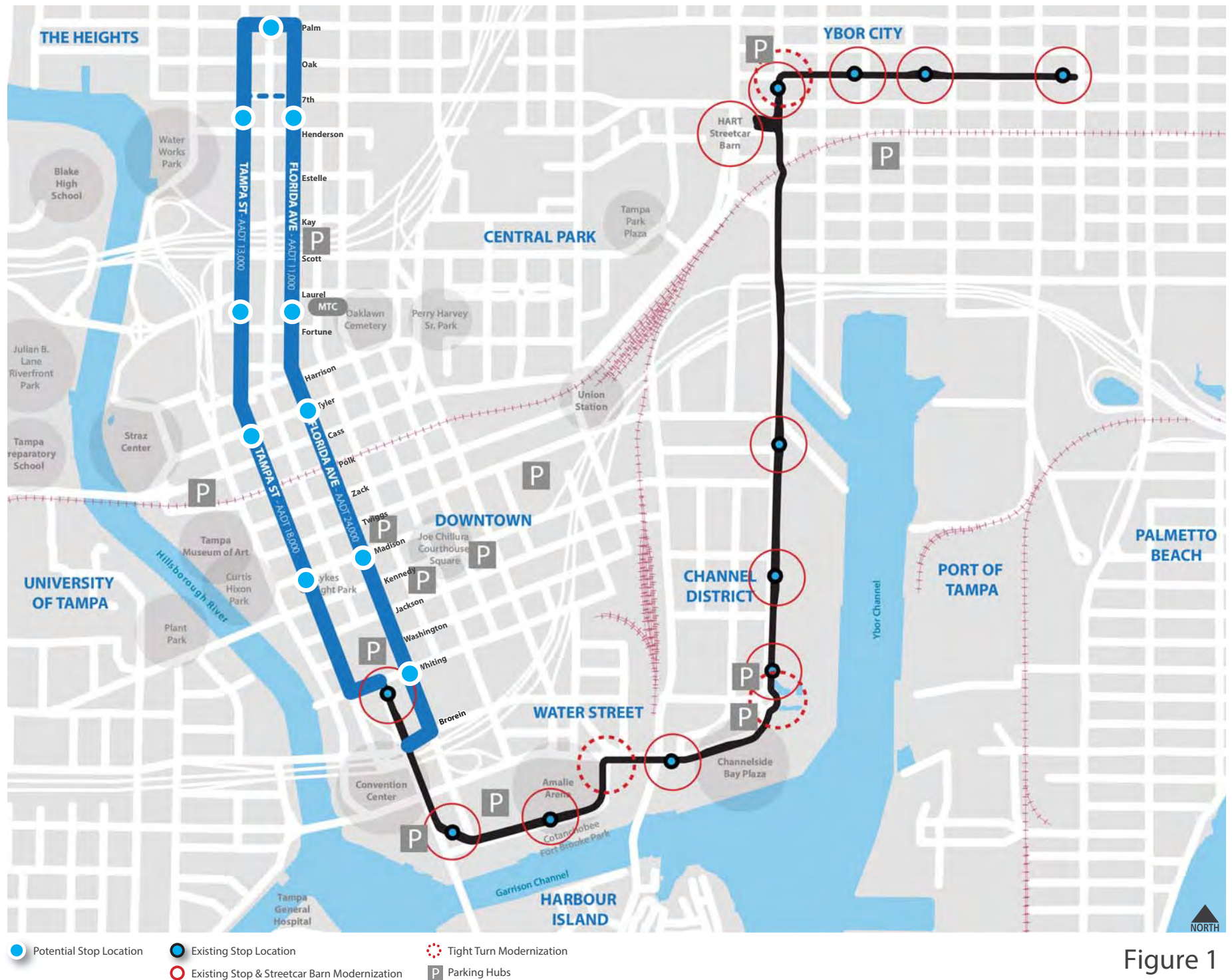
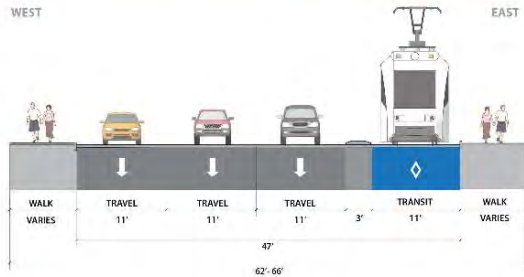


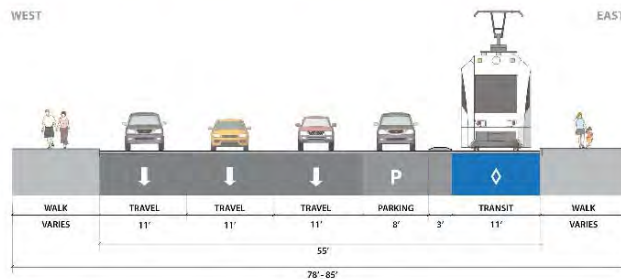
Figure 1

Alignment & Guideway

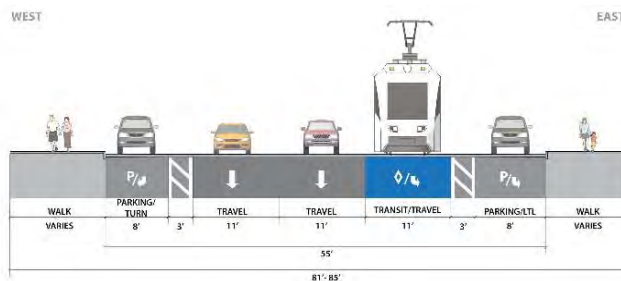
3 Tampa Street from Palm Avenue to Tyler Street East Side Running in Exclusive Transit Lane



4 Tampa Street from Tyler Street to Kennedy Boulevard East Side Running in Exclusive Transit Lane

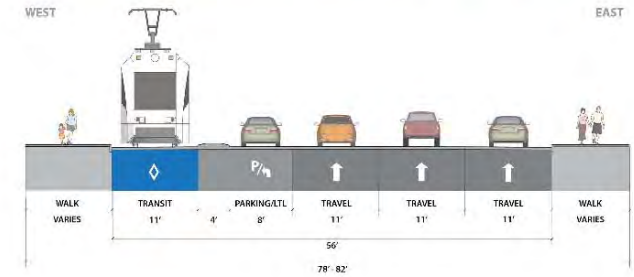


5 Tampa Street from Kennedy Boulevard to Whiting Street East Side Running in Shared Lane

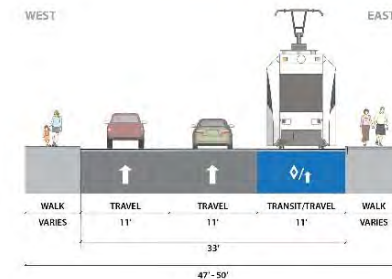


- Potential Stop Location
- Existing Stop Location
- Extension Alignment
- Existing Streetcar
- - - Extension Alignment Option

1 Florida Avenue from Brorein Street to Harrison Street West Side Running in Exclusive Transit Lane



2 Florida Avenue from Harrison Street to Palm Avenue East Side Running in Shared Lane



RECOMMENDED GUIDEWAY NOTES

- » All typical sections are within existing right-of-way.
- » Franklin Street alignment is not recommended.

Figure 2



Figure 3 Study Area

APPENDIX D - Growth Calculations

Project: Streetcar
Location: Florida Ave/Tampa St
Notes: PTAR

Volume Source #1: Florida South AM
Volume Source #2: Florida North AM
Volume Source #3: Tampa South AM
Volume Source #4: Tampa North AM
Volume Source #5:
Volume Source #6:

Line	Month	Year	Volume Source #1	Volume Source #2	Volume Source #3	Volume Source #4	Volume Source #5	Volume Source #6	Average Volume
1		2018	1410	755	940	1170			1068.75
2		2025	1755	845	1410	1850			1465
3		2045	2175	1100	2830	3490			2398.75
4									
5									
6									
7									
8									
9									
10									

INPUT DATA

Line	Month	Year	Aggregate Traffic Volume
1		2018	1068.75
2		2025	1465
3		2045	2398.75
4			
5			
6			
7			
8			
9			
10			

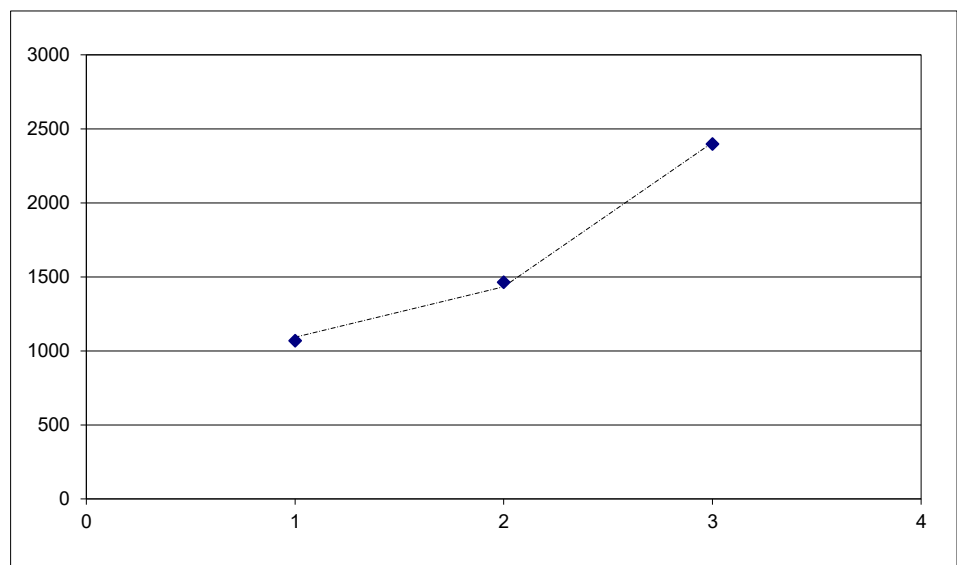
OUTPUT DATA

Line	Month	Year	Best Fit Volume Trend
1		2018	1092.328098
2		2025	1433.169567
3		2045	2407.002334
4			
5			
6			
7			
8			
9			
10			

Slope: 48.69163837
Intercept: -97167.39813
R²: 0.998244475
Standard Error: 40.46238021

Exponential
Growth Rate:
 Future = Existing (1+Growth)^N

Linear
Growth Rate:
 Future = Existing (1+Growth*N)



Project: Streetcar
Location: Florida Ave/Tampa St
Notes: PTAR

Volume Source #1: Florida South PM
Volume Source #2: Florida North PM
Volume Source #3: Tampa South PM
Volume Source #4: Tampa North PM
Volume Source #5:
Volume Source #6:

Line	Month	Year	Volume Source #1	Volume Source #2	Volume Source #3	Volume Source #4	Volume Source #5	Volume Source #6	Average Volume
1		2018	2340	1235	500	905			1245
2		2025	2340	1205	820	1510			1468.75
3		2045	3010	1370	1530	2775			2171.25
4									
5									
6									
7									
8									
9									
10									

INPUT DATA

Line	Month	Year	Aggregate Traffic Volume
1		2018	1245
2		2025	1468.75
3		2045	2171.25
4			
5			
6			
7			
8			
9			
10			

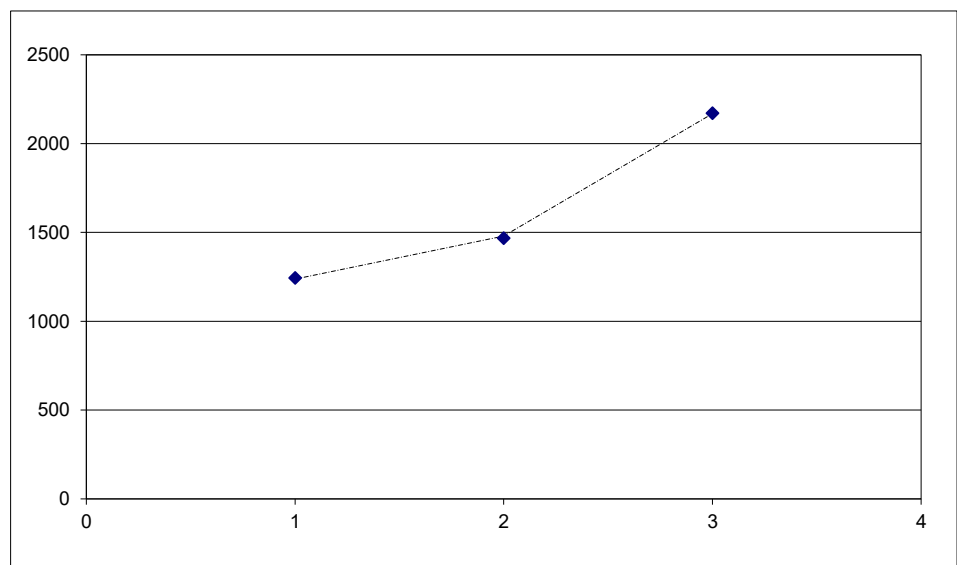
OUTPUT DATA

Line	Month	Year	Best Fit Volume Trend
1		2018	1237.487267
2		2025	1478.89219
3		2045	2168.620543
4			
5			
6			
7			
8			
9			
10			

Slope: 34.48641766
Intercept: -68356.10357
R²: 0.9996442
Standard Error: 12.8926036

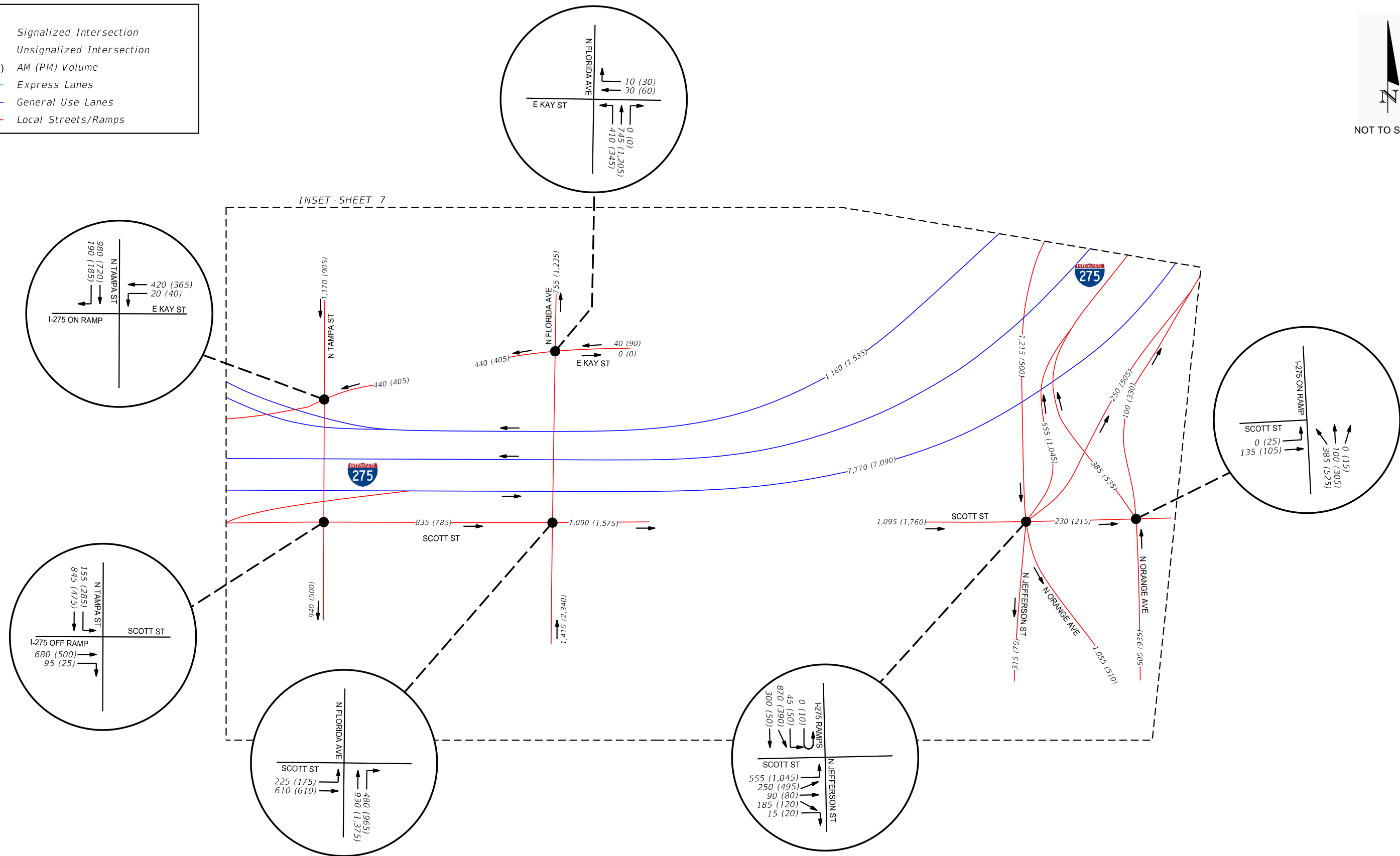
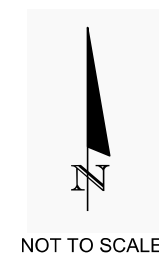
Exponential
Growth Rate:
 Future = Existing (1+Growth)^N

Linear
Growth Rate:
 Future = Existing (1+Growth*N)



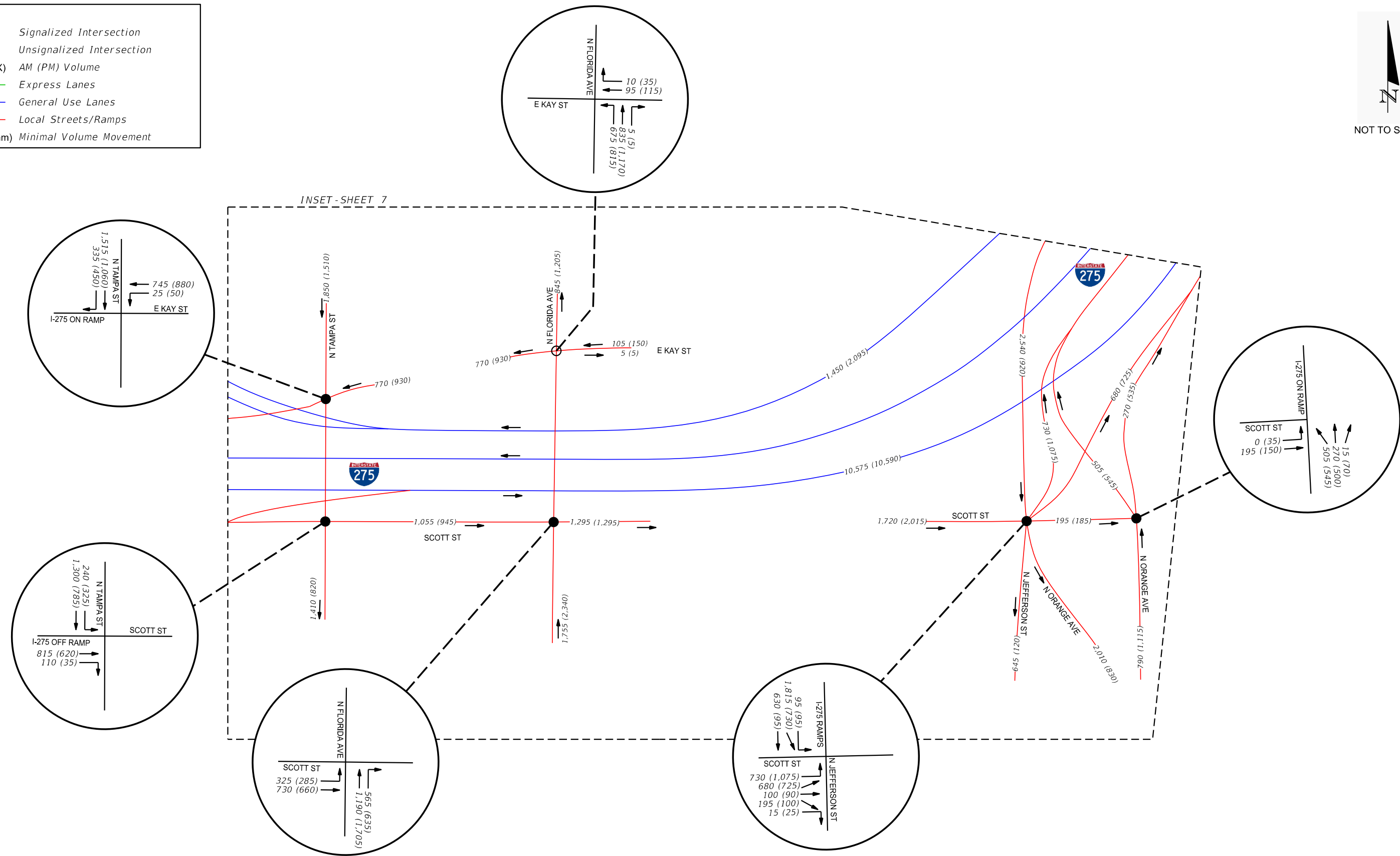
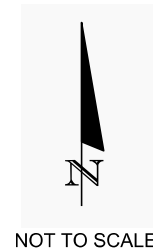
LEGEND

- Signalized Intersection
- Unsignalized Intersection
- XX (XX) AM (PM) Volume
- Express Lanes
- General Use Lanes
- Local Streets/Ramps



LEGEND

- Signalized Intersection
- Unsignalized Intersection
- XX (XX) AM (PM) Volume
- Express Lanes
- General Use Lanes
- Local Streets/Ramps
- mm (mm) Minimal Volume Movement



LEGEND

- Signalized Intersection
- Unsignalized Intersection
- XX (XX) AM (PM) Volume
- Express Lanes
- General Use Lanes
- Local Streets/Ramps

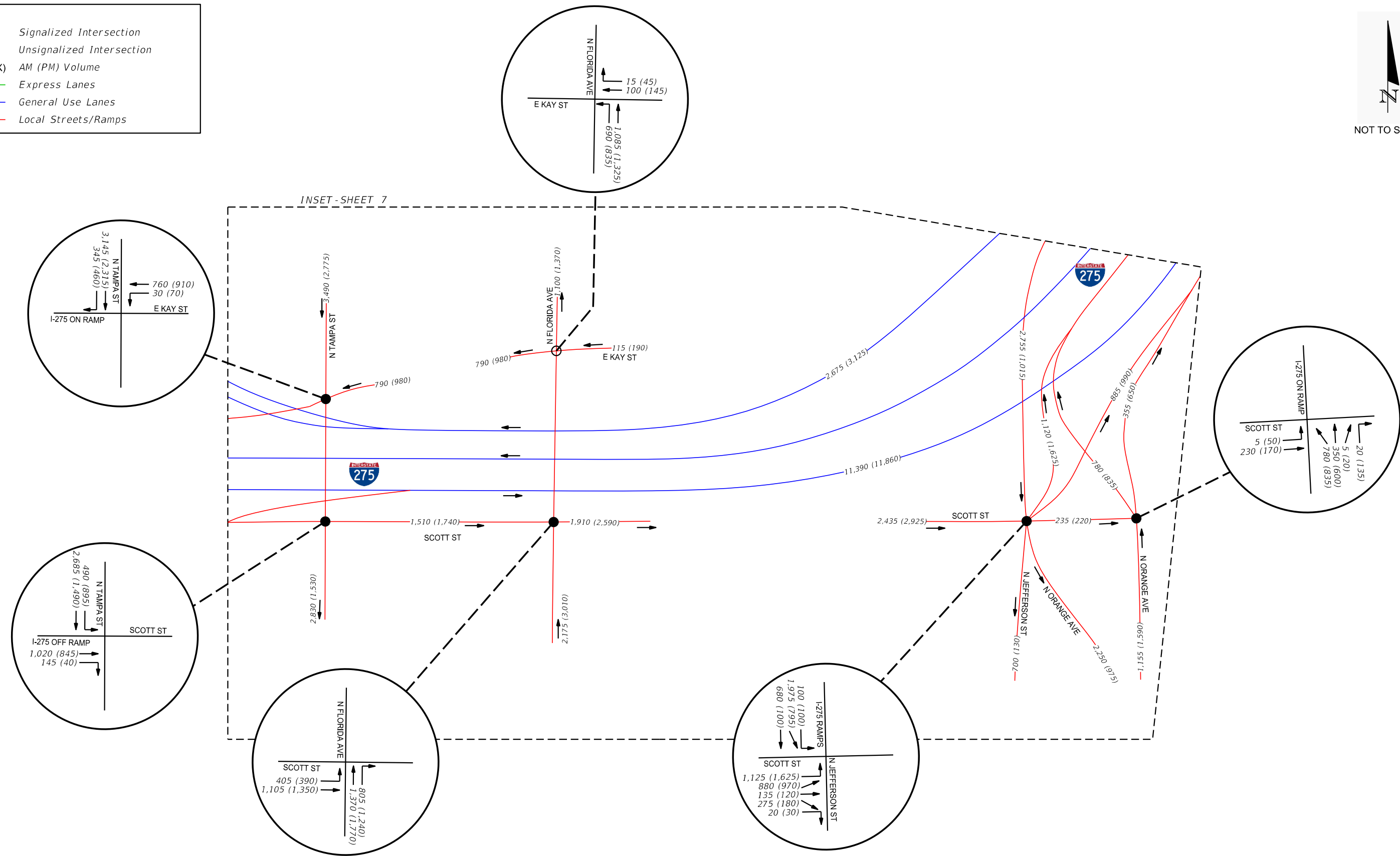
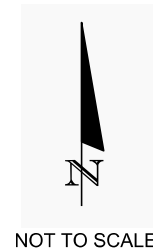


Figure 5-13 Cost Feasible Projects for New Capacity: Non-SIS Major Corridors

Project ID	Facility	From	To	Existing	2040 Needs	Design Costs (in Millions)		Right Of Way Costs (in Millions)		Construction Costs (in Millions)		Total Cost (in Millions)		Funding Sources
						Present Day Cost	Year of Expenditure Cost	Present Day Cost	Year of Expenditure Cost	Present Day Cost	Year of Expenditure Cost	Present Day Cost	Year of Expenditure Cost	
60	Fixed Guideway Transit	Downtown	USF	0	DMU on Existing Track (100% Local Share)	\$38.70	2021-2025	\$-	\$47.60	\$258.00	2031-2040	\$296.70	\$478.46	Sales Tax or Equivalent
60	Fixed Guideway Transit	Downtown	USF	0	15 Years of Op. & Maint. (75% Local Share)	\$-	\$-	\$20.25	2026-2030	\$40.50	2031-2040	\$60.75	\$95.78	Sales Tax or Equivalent
61	Fixed Guideway Transit	Downtown	Westshore	0	Modern Tram (50% Local Share)	\$29.74	2021-2025	\$-	\$36.58	\$198.25	2026-2030	\$227.99	\$312.14	Sales Tax or Equivalent
61	Fixed Guideway Transit	Downtown	Westshore	0	15 Years of Op. & Maint (75% Local Share)	\$-	\$-	\$21.38	2026-2030	\$42.75	2031-2040	\$64.13	\$101.10	Sales Tax or Equivalent
62	Fixed Guideway Transit	Westshore	Tampa Intl Airport	0	Automated People Mover (100% Local)	\$26.94	2021-2025	\$-	\$33.13	\$179.57	2026-2030	\$206.51	\$282.74	Sales Tax or Equivalent
62	Fixed Guideway Transit	Westshore	Tampa Intl Airport	0	15 Years of Op. & Maint. (75% Local Share)	\$-	\$-	\$14.25	2026-2030	\$28.50	2031-2040	\$42.75	\$67.40	Sales Tax or Equivalent
95	Fixed Guideway Transit	Ybor	Downtown	Street car	Capital Maint./ Modernization	\$-	\$-	\$-	\$-	\$39.01	2021-2025	\$39.01	\$47.99	Sales Tax or Equivalent
83	Fixed Guideway Transit Center - Westshore	Cypress St	at Trask St	0	New Construction	\$4.57	2019-2020	\$-	\$5.16	\$50.47	2021-2025	\$35.04	\$42.64	Sales Tax or Equivalent
21	Fixed Guideway Transit Centers - Other			0	New Construction	\$5.00	2021-2025	\$-	\$6.15	\$35.00	2026-2030	\$40.00	\$54.80	Sales Tax or Equivalent
21	Transit Corridor Right-of-Way Fund			0	Fixed Guideway	\$-	\$-	\$-	\$-	\$100.00	2021-2025	\$100.00	\$123.00	Sales Tax or Equivalent

Appendix B

LANE ELIMINATION STUDY

REVISED – November 5, 2019



Prepared by:

Kimley-Horn and Associates

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Appendix

Appendix A

Project Study Area

Methodology

Imagine 2040: Hillsborough LRTP Figure 5-13

Appendix B

Lane Elimination Initial Meeting Minutes

Lane Elimination Form 126-A, B, C, D

Concept Plan Sheets

Appendix C

Public Outreach Summary

Appendix D

Crash Data

FDOT RCI AADT

TMC Data Sheet

2012 FDOT Q/LOS Tables

Intersection Volume Development Sheets

Growth Calculations

Appendix E

Highway Capacity Manual 2000 Intersection Summaries

Introduction

The *InVision: Tampa Streetcar Feasibility Study* has been undertaken to define and evaluate modernization options for the existing streetcar system and facilities, assess the potential for an extension of the system, and evaluate vehicle technology alternatives. The study is being led by the City of Tampa in partnership with the Florida Department of Transportation (FDOT) and the Hillsborough Area Regional Transit Authority (HART).

Based on guidance provided by the FDOT Lane Elimination Review Team at the Initial Meeting held on June 12, 2019, a Lane Elimination study is required for the segment of Florida Avenue from Kennedy Boulevard to Zack Street. The Initial Meeting minutes are attached in Appendix B. The purpose of this Lane Elimination study is to document the proposed lane elimination impacts on the study roadway segment. The study roadway segment consists of Florida Avenue (SR 685/USB 41) from Kennedy Boulevard to Zack Street as shown in Figure 1 and in Appendix A. The study intersections consist of Florida Avenue & Madison Street, Florida Avenue & Twiggs Street, and Florida Avenue & Zack Street.

The overall study roadway – identified in blue in Figure 1 – includes the roadway segments of Florida Avenue and Tampa Street between Brorein Street and Palm Avenue which will be evaluated and submitted separately from the Lane Elimination Study. On Florida Avenue (35 MPH), the alignment is proposed to be a dedicated transit lane from Brorein Street to Harrison Street and in mixed traffic from Harrison Street to Palm Avenue. On Tampa Street (30 MPH), the alignment is proposed to be a dedicated transit lane from Palm Avenue to Kennedy Boulevard and in mixed traffic from Kennedy Boulevard to Whiting Street. The existing posted and design speeds are not anticipated to change based on the extension of the streetcar alignment.

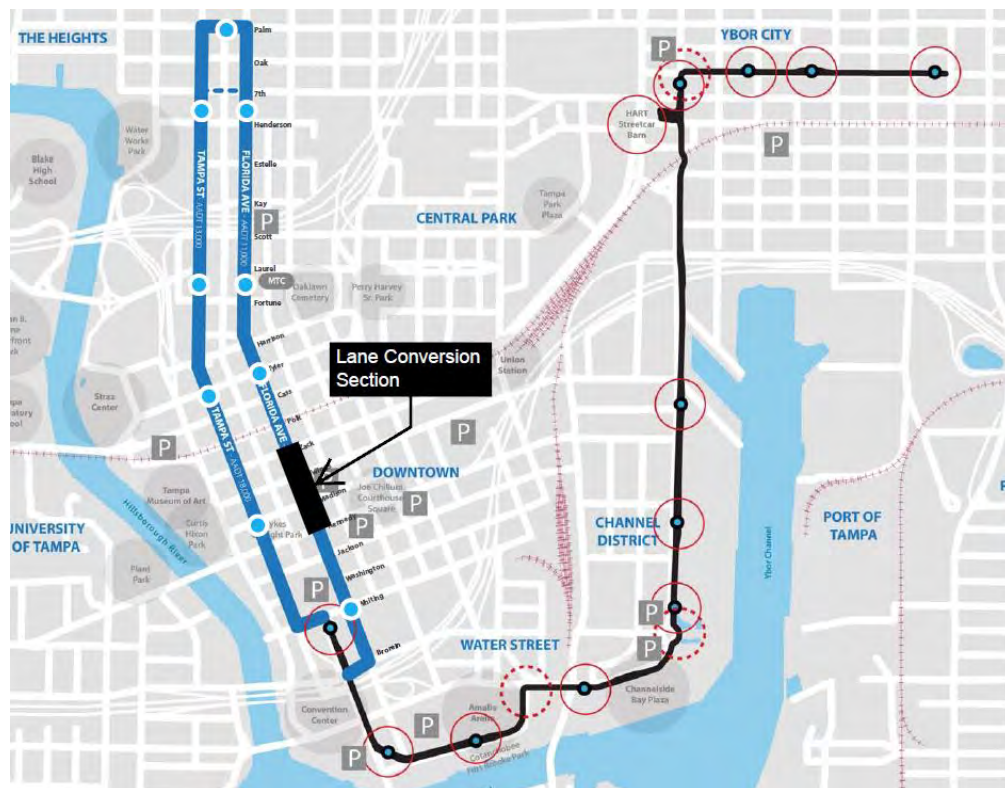


Figure 1: Study Roadway Segment

Conceptual Design for Lane Elimination

As shown in the typical section in Figure 2 and the Concept Plan Sheets attached in Appendix B, the westernmost lane on Florida Avenue is proposed to be repurposed as an 11-foot guideway for a dedicated transit lane. The existing east-side parking is proposed to be relocated adjacent to the dedicated transit lane and will allow for a right-side transit stop within the study roadway segment. The parking lane width is proposed to be 8 feet and the buffer between the parking lane and transit lane is proposed to be 4 feet. This section will also allow for left-turn lanes where a dedicated left-turn lane already exists. The remainder of the roadway width will allow for three, 11-foot, general purpose lanes. The existing general-purpose lanes are 11 feet wide.

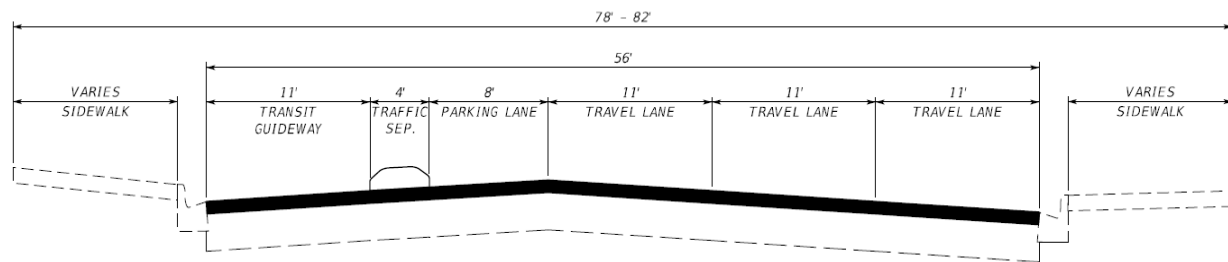


Figure 2: Proposed Typical Section

The concept plan in Figure 3 (and attached in Appendix B) shows the proposed lane elimination, transit stop area, relocated parking, and transit only lane. No changes are proposed to the speed limit. No traffic signals are proposed to be added or removed. Modifications to the traffic signals may be required to accommodate the transit signal phase and include blank out signs. No design variations or exceptions are anticipated at this time. Final design will occur during the engineering phase of the project.

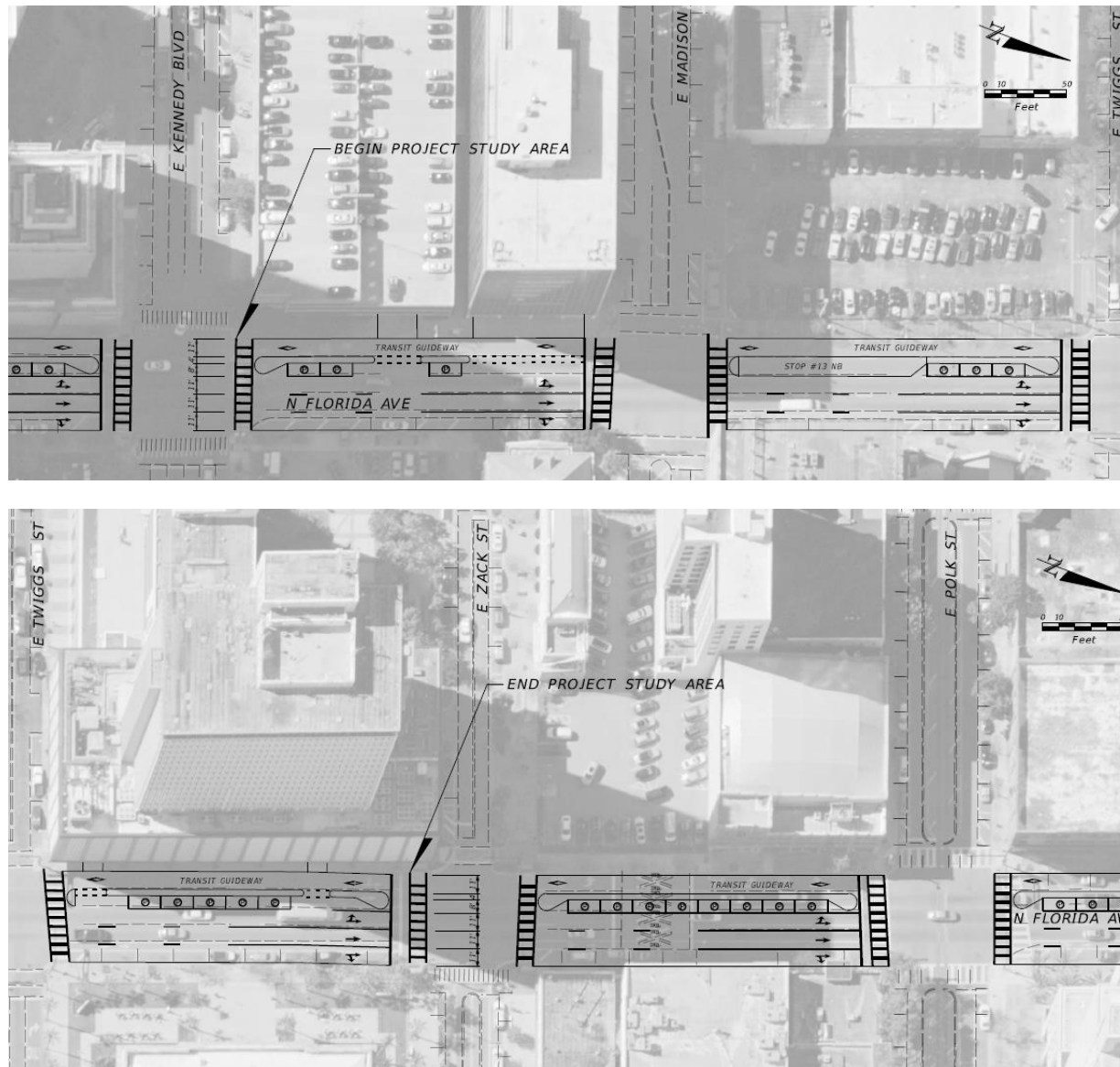


Figure 3: Concept Plan

Public Involvement and Local Support

Significant levels of public and stakeholder involvement have been undertaken as part of the overall project for the *Tampa Streetcar Feasibility Study* of which the lane elimination improvement is a part. As of June 2019, the City's project team has held five large-scale public workshops to review project concepts and recommendations, 23 small group meetings and briefings, and 20 agency stakeholder meetings. These meetings have included workshops and presentations with the Tampa City Council, the Tampa Downtown CRA Advisory Committee, the Hillsborough MPO staff and Board of Directors, the HART Board of Directors, the HART Policy Committee, and the Tampa Historic Streetcar Inc. Board of Directors. Additionally, the City of Tampa has maintained a project-specific web site for the project which provides an accessible method for stakeholders to provide feedback on the project and includes a summary of the public engagement (https://www.tampagov.net/capital_projects/studies/streetcar_extension_study).

The following past meetings and open house events were held:

- First InVision: Tampa Streetcar Brainstorm Session (March 7, 2017)
- Second InVision: Tampa Streetcar Brainstorm Session (April 4, 2017)
- InVision: Tampa Streetcar Results Roundtable (May 2, 2017)
- InVision: Tampa Streetcar Preferred Alternative Workshop (October 24, 2017)
- InVision: Tampa Streetcar Project Recommendations Open House (December 12, 2018)

In addition to the public workshops and stakeholder engagement activities identified above, a Public Hearing on the project will be held with the Tampa City Council and additional briefings and workshops will be held with the HART Board of Directors, the Hillsborough MPO, and others. The streetcar extension and modernization project, of which the lane elimination improvement is a part, has been adopted in the Hillsborough MPO's Long Range Transportation Plan, titled *Imagine Hillsborough 2040*. The project is included in the adopted plan as a cost feasible project and is shown as Project ID 61 and 95 in Figure 5-13 Cost Feasible Projects for New Capacity: Non-SIS Major Corridors on page 168 (attached in Appendix A). Based upon discussions with the MPO, the 2045 Long Range Transportation Plan will include the streetcar project in the Cost Feasible program.

Additional public outreach documentation is provided in Appendix C and on the City of Tampa website link. The City of Tampa created a project specific webpage and project email list to receive comments about the project. Social media channels were used to provide information about the public meetings. The City's Community Partnerships and Neighborhood Engagement Division provided meeting notices to all neighborhood association presidents and the City's Public Information Officer issued press releases.

Funding and Implementation Strategy

The preliminary funding strategy includes support from Federal Transit Administration (FTA) Small Starts, and FDOT New Starts with local funding from the All for Transportation surtax revenue. The City of Tampa and HART have initiated a process to establish governance roles, financing strategies, and delivery methods for the project's implementation. A project specific Policy Committee has been formed to guide this effort.

The anticipated total project cost is \$235 million including the alignment extension, modernization improvements to the stops, existing alignment, and vehicles, and the vehicle maintenance facility. It is anticipated that design and construction funds will be available in years 2020-2022, and construction is anticipated to occur in years 2021-2023.

Multimodal Impacts

Existing transit service along the study roadway segment includes three HART routes – Route 1, Route 19, and Route 30 – with 30- to 60-minute headways on weekdays and weekends. There are no existing HART transit stops along the study roadway segment. The proposed Lane Elimination will not impact the existing HART transit routes. Future bus service along the corridor will be coordinated with HART and the FDOT to determine the appropriate lane assignments, transit signal phasing, and transit service stops.

The project is proposed to add a dedicated transit lane on the west side of the study roadway segment. The proposed embedded track design and right-side stops will allow for shared use with other transit operations including Bus Rapid Transit. Within the study roadway segment, one stop location is proposed and is between Madison Street and Twiggs Street, as shown in the attached conceptual design.

As discussed with FDOT, the existing 5-foot bike lane on the east side of the roadway is proposed to be relocated on the adjacent roadway, Franklin Street. On Franklin Street, vehicles travel at a lower speed and in small scale context which provides bicyclists safe, direct access to the adjacent business and commercial uses.

Parking Impacts

Between Kennedy Boulevard and Zack Street, there are currently 10 parking spaces on the east side of the study roadway segment. As shown in the proposed concept plan, an additional 9 parking spaces (total of 19) are anticipated to be provided between the dedicated transit lane and the three general purpose lanes. The additional parking spaces are well supported by the business community and have received positive feedback during public involvement.

Truck and Emergency Routes

The study roadway segment is not designated as an evacuation route. It is anticipated that emergency response vehicles may use the dedicated transit lane to bypass regular traffic.

Florida Avenue is listed as a truck route on the Hillsborough County Truck Route Plan. Turn radii will be designed accordingly for the concept plan to accommodate trucks. The existing travel lanes along North Florida Avenue are 11 feet. The travel lanes are proposed to remain 11 feet to continue to accommodate trucks.

Crash Analysis

Historical crash data was reviewed from the Florida Department of Transportation (FDOT) Crash Data Management System (CDMS) from 2012 to 2016. The crash data included Florida Avenue from north of Kennedy Boulevard to Zack Street (excluding Kennedy Boulevard). A total of 45 crashes (average of nine crashes per year) were identified along this segment. Eight crashes occurred in cloudy weather conditions and sixteen occurred in dark-lighted, dusk, or dawn lighting conditions. A summary of crash type is shown in Table 1. The crash data is included in Appendix D.

Table 1: 2012 to 2016 CDMS Crash Type

Crash Type	Number of Crashes
Angle	24
Hit Fixed Object	2
Pedestrian	2
Rear End	8
Sideswipe	9

The location of the proposed dedicated transit lane will replace the existing westernmost lane which only exists for a few blocks. Due to its short length, it is currently used by aggressive drivers who enter the lane for a block or two then merge back into the adjacent lane to continue traveling through. Removal of the lane would prevent such aggressive behavior and therefore may reduce crashes associated with weaving from the westernmost lane to the three continuous travel lanes. Additionally, the dedicated transit lane will provide a buffer between pedestrians and vehicular traffic traveling at greater speeds than the proposed modern streetcar vehicle.

Traffic Impact Analysis Methodology

The methodology for the traffic impact analysis was approved on August 16, 2019 and was agreed upon by FDOT at the Initial Meeting to be used for the concurrent Lane Elimination study (attached in Appendix A). The Methodology Checklist (Form 126-B) is attached in Appendix B. The Initial Meeting was held on June 12, 2019 and the meeting minutes and remaining forms (Form 126-A, Form 126-C, Form 126-D) are also attached in Appendix B.

Existing 2018 Traffic

Data Collection

Existing 2018 Average Annual Daily Traffic (AADT) was obtained for study roadway segment from the FDOT Roadway Characteristics Inventory (RCI) database (attached in Appendix D). FDOT's standard K factor for arterials within an urban area is 9.0%. Consistent with FDOT policies, the standard K factor was applied to the AADT to develop design hour volumes. The D factors provided in the FDOT data were applied to the design hour volumes in the analysis to obtain peak-hour roadway segment volumes. Turning movement percentages from the traffic counts were applied to the peak-hour roadway segment volumes to develop the study turning movements. Table 2 is a summary of the AADT, K, and D factors for the study volumes.

Turning movement counts (TMC) were obtained for the study intersections during the a.m. (7:00 a.m. to 9:00 a.m.) and p.m. (4:00 p.m. to 6:00 p.m.) peak-hours based on the most current, readily available data. Table 3 is a summary of the TMC date and source. The TMC data is attached in Appendix D.

Table 2: Existing 2018 Roadway Segment Volumes

Study Segment	Existing 2018 AADT	K	D	Design Hour Volume
Florida Avenue	25,000	0.09	99.9%	2,250
Madison Street	3,500	0.09	59.7%	200
Twiggs Street	8,000	0.09	59.7%	450
Zack Street	4,500	0.09	59.7%	250

Table 3: TMC Data Collection

Study Intersection	Date	Source
Florida Ave & Madison St	November 3, 2016	Tampa Hillsborough Expressway Authority
Florida Ave & Twiggs St	November 9, 2016	Tampa Hillsborough Expressway Authority
Florida Ave & Zack St	November 9, 2016	Tampa Hillsborough Expressway Authority

Existing 2018 Roadway Conditions

The existing 2018 daily and peak-hour roadway segment conditions were analyzed for Florida Avenue from Kennedy Boulevard to Zack Street. The daily and peak-hour service volumes were determined based on the 2012 FDOT Quality/Level of Service (Q/LOS) tables for LOS D. The resulting daily and peak-hour roadway segment volumes currently operate at an acceptable Level of Service (LOS D) as shown in Table 4.

As shown in Table 4 the existing 2018 AADT is 25,000 from Kennedy Boulevard to Harrison Street. North of the study roadway segment, from Zack Street to Harrison Street, the existing and proposed laneage is three general purpose lanes and therefore has an existing service volume that is equal to the proposed lane elimination service volume.

Table 4: Existing 2018 Roadway Conditions

Roadway Segment	Existing 2018 AADT	Daily Service Volume ¹	Daily LOS	Existing 2018 Peak-Hour Volume	Peak-Hour Service Volume ¹	Peak Hour LOS
Florida Avenue from Kennedy Boulevard to Zack Street	25,000	30,285 ³	D	2,248	2,727 ⁴	D
Florida Avenue from Zack Street to Harrison Street ²	25,000	30,000	D	2,248	2,700	D

1. LOS D Service Volume
2. Segment north of study roadway segment
3. $67,300 \times 0.75 \times 0.60 = 30,285$
4. $6,060 \times 0.75 \times 0.60 = 2,727$

Existing 2018 Intersection Operations

The peak-hour volumes at the study intersections were determined by applying the turning movement percentages to the segment volumes. A yearly growth rate developed from the Tampa Bay Regional Planning Model (TBRPM) and Project Traffic Analysis Report (PTAR) for the Tampa Interstate Study (TIS) Supplemental Environmental Impact Statement (SEIS) data was applied to the turning movements to adjust to 2018 volumes (2.5%). Growth rate calculations are included in Appendix D. The existing 2018 study intersection operations were determined using Synchro version 10 and *Highway Capacity Manual 2000*. As shown in Table 5, all study intersections operate acceptably. The intersection volume development worksheets are attached in Appendix D.

Table 5: Existing 2018 Intersection Conditions

Intersection	Existing 2018 AM Peak-Hour					Existing 2018 PM Peak-Hour				
	Overall LOS	Overall Control Delay (s)	Max V/C			Overall LOS	Overall Control Delay (s)	Max V/C		
			Florida Ave	EB Minor Street	WB Minor Street			Florida Ave	EB Minor Street	WB Minor Street
Florida Avenue & Madison Street	B	18.8	0.60	0.28	0.28	C	21.6	0.60	0.19	0.43
Florida Avenue & Twiggs Street	B	17.9	0.71	0.24	0.47	B	18.0	0.59	0.54	0.41
Florida Avenue & Zack Street	A	9.3	0.59	0.40	0.53	B	12.9	0.59	0.79	0.36

Field Observations

Based on the nature of the westernmost lane on Florida Avenue between Kennedy Boulevard and Zack Street, the lane is underutilized. This lane serves as a through and left-turn lane for three blocks (0.17 miles), preceded by a bulb out at the northern leg of Florida Avenue & Kennedy Boulevard and followed by a left-turn only lane at northbound approach of Florida Avenue & Polk Street (intersection north of Zack Street). Additionally, several gaps in the platoons were identified in the field as shown in Figure 4 and Figure 5 below.

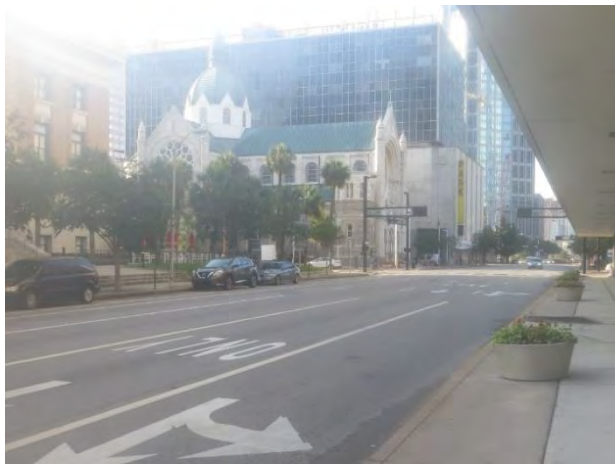


Figure 4: A.M. Peak-Hour Platoon Gap



Figure 5: P.M. Peak-Hour Lane Utilization

Start of Operation (2024) Traffic

Based on the proposed schedule including preliminary engineering, construction and vehicle procurement, the extension of the Tampa Streetcar system is anticipated to start operation in 2024. A yearly growth rate developed from the TBRPM and PTAR for the TIS SEIS was applied to the existing 2018 AADT to project to 2024 volumes (2.5%). The 2024 roadway segment volumes for the daily and peak-hour conditions are shown in Table 6.

Table 6: Future 2024 Roadway Segment Volumes

Study Segment	Existing 2018 AADT	Annual Growth Rate	Future 2024 AADT	K	D	Design Hour Volume
Florida Avenue	25,000	2.5%	29,000	0.09	99.9%	2,600
Madison Street	3,500	2.5%	4,000	0.09	59.7%	200
Twiggs Street	8,000	2.5%	9,300	0.09	59.7%	500
Zack Street	4,500	2.5%	5,200	0.09	59.7%	300

Future 2024 Operating Conditions – No Build

To evaluate the 2024 No Build roadway conditions, the existing roadway geometry was used. The daily and peak-hour service volumes were calculated based on the 2012 FDOT Q/LOS tables. Based on the projected 2024 AADT and service volumes, the study roadway segment is anticipated to operate at an acceptable Level of Service (LOS D) with future daily and peak-hour volumes, as shown in Table 7.

Table 7: Future 2024 No Build Roadway Conditions

Roadway Segment	Future 2024 AADT	Daily Service Volume ¹ (No Build)	Daily LOS	Future 2024 Peak-Hour Volume	Peak-Hour Service Volume ¹ (No Build)	Peak Hour LOS
Florida Avenue from Kennedy Boulevard to Zack Street	29,000	30,285 ³	D	2,600	2,727 ⁴	D
Florida Avenue from Zack Street to Harrison Street ²	29,000	30,000	D	2,600	2,700	D

1. LOS D Service Volume
2. Segment north of study roadway segment
3. LOS D: $67,300 \times 0.75 \times 0.60 = 30,285$
4. LOS D: $6,060 \times 0.75 \times 0.60 = 2,727$

Future 2024 intersection volumes were determined by applying the existing turning movement percentages to the 2024 design hour roadway segment volumes. The intersection volume development worksheets are attached in Appendix D. As shown in Table 8, the study intersections are anticipated to operate acceptably with future peak-hour volumes in 2024. The HCM 2000 Intersection Summary is attached in Appendix E.

Table 8: Future 2024 No Build Intersection Conditions

Intersection	Future 2024 (No Build) AM Peak-Hour					Future 2024 (No Build) PM Peak-Hour				
	Overall LOS	Overall Control Delay (s)	Max V/C			Overall LOS	Overall Control Delay (s)	Max V/C		
			Florida Ave	EB Minor Street	WB Minor Street			Florida Ave	EB Minor Street	WB Minor Street
Florida Avenue & Madison Street	B	19.8	0.68	0.34	0.32	C	22.2	0.68	0.24	0.49
Florida Avenue & Twiggs Street	B	18.4	0.80	0.27	0.53	B	17.8	0.67	0.62	0.46
Florida Avenue & Zack Street	A	9.4	0.67	0.50	0.59	B	15.9	0.67	0.97	0.41

Future 2024 Operating Conditions – Lane Elimination

To evaluate the 2024 roadway conditions with the lane elimination, the daily and peak-hour service volumes for a one-way, 3-lane segment were calculated based on the 2012 *FDOT Q/LOS* tables. Based on the projected future 2024 AADT, service volumes, and lane elimination geometry, the study roadway segment is anticipated to operate at LOS E for the daily and peak-hour periods.

Table 9: Future 2024 Lane Elimination Roadway Conditions

Roadway Segment	Future 2024 AADT	Daily Service Volume ¹ (Proposed Laneage)	Daily LOS	Future 2024 Peak-Hour Volume	Peak-Hour Service Volume ¹ (Proposed Laneage)	Peak Hour LOS
Florida Avenue from Kennedy Boulevard to Zack Street	29,000	22,500 ³	E	2,600	2,025 ⁴	E
Florida Avenue from Zack Street to Harrison Street ²	29,000	30,000	D	2,600	2,700	D

1. LOS D Service Volume
2. Segment north of study roadway segment
3. LOS D: $50,000 \times 0.75 \times 0.60 = 22,500$
4. LOS D: $4,500 \times 0.75 \times 0.60 = 2,025$

Future 2024 intersection volumes were determined by applying the existing turning movement percentages to the future 2024 design hour roadway segment volumes. The intersection volume development worksheets are attached in Appendix D. As shown in Table 10, the overall intersection LOS will remain acceptable (LOS D or above) with future peak-hour volumes and lane elimination geometry in 2024. The northbound approach of Florida Avenue & Twiggs Street is anticipated to operate with a v/c ratio greater than 1.0. The *HCM 2000* Intersection Summary is attached in Appendix E.

Table 10: Future 2024 Lane Elimination Intersection Conditions

Intersection	Future 2024 (Lane Elimination) AM Peak-Hour					Future 2024 (Lane Elimination) PM Peak-Hour				
	Overall LOS	Overall Control Delay (s)	Max V/C			Overall LOS	Overall Control Delay (s)	Max V/C		
			Florida Ave	EB Minor Street	WB Minor Street			Florida Ave	EB Minor Street	WB Minor Street
Florida Avenue & Madison Street	C	26.2	0.86	0.34	0.32	C	28.9	0.86	0.24	0.49
Florida Avenue & Twiggs Street	C	31.6	1.02	0.27	0.54	B	18.9	0.84	0.62	0.46
Florida Avenue & Zack Street	B	11.4	0.85	0.51	0.60	B	17.3	0.84	0.97	0.41

Future 2024 Operating Conditions – Lane Elimination with Streetcar Phase

Based on approved methodology and discussion with the City of Tampa Smart Mobility Division, at final buildout of the proposed dedicated transit lane, an additional signal phase for the streetcar was analyzed. The signal phase would allow the streetcar in the transit lane to pass through the intersection separate from the existing regular phases. A dedicated phase with 20 second total split was included at each intersection. At this time the streetcar is proposed to operate at 15-minute frequency, and therefore would approach each intersection four times per hour. The streetcar phase could potentially be activated at one intersection but is not anticipated to then be activated at the subsequent intersections. It is anticipated to be an operational decision to allow for the activation of the streetcar phase when necessary.

As indicated in Table 11, with the assumed signal timings, when the streetcar phase is activated, the overall intersection LOS will remain acceptable (LOS D or above). The streetcar phase will impact the minor street as indicated in the overall control delay and increased v/c ratios of the minor street. The eastbound approach of Florida Avenue & Zack Street is anticipated to operate with a v/c ratio greater than 1.0 with the streetcar phase.

Table 11: Future 2024 Lane Elimination + Streetcar Phase Intersection Conditions

Intersection	Future 2024 (Lane Elimination + Streetcar Phase) AM Peak-Hour					Future 2024 (Lane Elimination + Streetcar Phase) PM Peak-Hour				
	Overall LOS	Overall Control Delay (s)	Max V/C			Overall LOS	Overall Control Delay (s)	Max V/C		
			Florida Ave	EB Minor Street	WB Minor Street			Florida Ave	EB Minor Street	WB Minor Street
Florida Avenue & Madison Street	C	29.5	0.90	0.65	0.36	C	31.1	0.90	0.58	0.64
Florida Avenue & Twiggs Street	B	19.8	0.92	0.56	0.60	C	22.0	0.95	0.83	0.30
Florida Avenue & Zack Street	C	22.6	0.96	0.90	0.69	C	35.0	0.97	1.33	0.41

Future 2024 Queue Analysis

As requested by the FDOT, a queue analysis was completed. As shown in Table 12, the a.m. peak-hour analysis indicates that the northbound queue is anticipated to be greater than the block's length at the intersection of Florida Avenue & Twiggs Street with the lane elimination. As shown in Table 13, the p.m. peak-hour analysis indicates that the northbound queue is anticipated to be greater than the block's length at the intersection of Florida Avenue & Zack Street with the lane elimination.

The streetcar phase is anticipated to increase the 95th percentile queue on Florida Avenue. The phase is not anticipated to be activated during every cycle and will an operational decision to allow for the activation of the streetcar phase when necessary.

Table 12: A.M. Peak-Hour Queue Analysis

Intersection	AM Peak-Hour Scenario	95th Percentile Queue				
		Florida Avenue	Minor Street			
			EBL	EB	WB	WBR
Florida Avenue & Madison Street	Storage	200	100	200	200	--
	Existing 2018	499	98	115	154	--
	No Build 2024	598	111	129	176	--
	Build 2024 Lane Elimination	864	111	129	176	--
	Build 2024 LE + Streetcar Phase	889	144	134	153	--
Florida Avenue & Twiggs Street	Storage	200	--	220	200	200
	Existing 2018	105	--	61	156	271
	No Build 2024	117	--	77	175	317
	Build 2024 Lane Elimination	845	--	78	177	321
	Build 2024 LE + Streetcar Phase	188	--	123	241	244
Florida Avenue & Zack Street	Storage	200	--	200	200	--
	Existing 2018	64	--	85	283	--
	No Build 2024	72	--	106	330	--
	Build 2024 Lane Elimination	131	--	112	334	--
	Build 2024 LE + Streetcar Phase	564	--	275	325	--

Table 13: P.M. Peak-Hour Queue Analysis

Intersection	PM Peak-Hour Scenario	95th Percentile Queue				
		Florida Avenue	Minor Street			
			EBL	EB	WB	WBR
Florida Avenue & Madison Street	<i>Storage</i>	200	100	200	200	--
	Existing 2018	530	54	84	226	--
	No Build 2024	628	56	86	260	--
	Build 2024 Lane Elimination	903	56	86	260	--
	Build 2024 LE + Streetcar Phase	842	64	78	254	--
Florida Avenue & Twiggs Street	<i>Storage</i>	200	--	220	200	200
	Existing 2018	47	--	253	130	204
	No Build 2024	55	--	267	145	234
	Build 2024 Lane Elimination	70	--	267	145	234
	Build 2024 LE + Streetcar Phase	486	--	196	161	87
Florida Avenue & Zack Street	<i>Storage</i>	200	--	200	200	--
	Existing 2018	79	--	356	190	--
	No Build 2024	126	--	468	220	--
	Build 2024 Lane Elimination	257	--	468	220	--
	Build 2024 LE + Streetcar Phase	590	--	525	197	--

Future 2040 Traffic

A yearly growth rate developed from the TBRPM and PTAR for the TIS SEIS was applied to the existing 2018 AADT to project to 2040 volumes (2.5%). The 2040 roadway segment volumes for the daily and peak-hour conditions are shown in Table 14.

Table 14: Future 2040 Roadway Segment Volumes

Study Segment	Existing 2018 AADT	Annual Growth Rate	Future 2040 AADT	K	D	Design Hour Volume
Florida Avenue	25,000	2.5%	43,000	0.09	99.9%	3,900
Madison Street	3,500	2.5%	6,000	0.09	59.7%	300
Twiggs Street	8,000	2.5%	14,000	0.09	59.7%	700
Zack Street	4,500	2.5%	7,700	0.09	59.7%	400

Future 2040 Operating Conditions – No Build

To evaluate the 2040 No Build roadway conditions, the existing roadway geometry was used. The daily and peak-hour service volumes were calculated based on the 2012 FDOT Q/LOS tables. Based on the projected 2040 AADT and service volumes, the study roadway segment is anticipated to operate over LOS D service volumes with future daily and peak-hour volumes, as shown in Table 15.

As shown in Table 15 the 2040 AADT is anticipated to be 43,000 from Kennedy Boulevard to Harrison Street. North of the study roadway segment, from Zack Street to Harrison Street, the existing and proposed laneage is three general purpose lanes and therefore has a service volume that is equal to the proposed lane elimination service volume. Similarly, the segment south of the proposed segment has three lanes and the corresponding service volume equal to the proposed lane elimination service volume.

Table 15: Future 2040 No Build Roadway Conditions

Roadway Segment	Future 2040 AADT	Daily Service Volume ¹ (No Build)	Daily LOS	Future 2040 Peak-Hour Volume	Peak-Hour Service Volume ¹ (No Build)	Peak Hour LOS
Florida Avenue from Kennedy Boulevard to Zack Street	43,00	30,285 ³	F	3,800	2,727 ⁴	F
Florida Avenue from Zack Street to Harrison Street ²	43,00	30,000	F	3,800	2,700	F

1. LOS D Service Volume
2. Segment north of study roadway segment
3. LOS D: $67,300 \times 0.75 \times 0.60 = 30,285$
4. LOS D: $6,060 \times 0.75 \times 0.60 = 2,727$

Future 2040 intersection volumes were determined by applying the existing turning movement percentages to the 2040 design hour roadway segment volumes. The intersection volume development worksheets are attached in Appendix D. The results of the 2040 No Build intersection analysis are shown in Table 16. The HCM 2000 Intersection Summary is attached in Appendix E.

The intersection of Florida Avenue & Madison Street is anticipated to operate acceptably with future peak-hour volumes. The northbound approach is anticipated to operate over capacity ($v/c > 1$) during the a.m. and p.m. peak-hour.

The intersection of Florida Avenue & Twiggs Street is anticipated to operate over LOS D with future peak-hour volumes during the a.m. and p.m. peak-hour. The northbound approach is anticipated to operate over capacity ($v/c > 1$) during the a.m. and p.m. peak-hour.

The intersection of Florida Avenue & Zack Street is anticipated to operate at LOS E during the p.m. peak-hour. The eastbound approach is anticipated to operate over capacity ($v/c > 1$) during the a.m. and p.m. peak-hour.

Table 16: Future 2040 No Build Intersection Conditions

Intersection	Future 2040 (No Build) AM Peak-Hour					Future 2040 (No Build) PM Peak-Hour				
	Overall LOS	Overall Control Delay (s)	Max V/C			Overall LOS	Overall Control Delay (s)	Max V/C		
			Florida Ave	EB Minor Street	WB Minor Street			Florida Ave	EB Minor Street	WB Minor Street
Florida Avenue & Madison Street	D	44.5	1.02	0.63	0.48	D	46.2	1.01	0.54	0.73
Florida Avenue & Twiggs Street	F	84.0	1.18	0.41	0.80	C	25.1	1.00	0.99	0.70
Florida Avenue & Zack Street	C	31.2	1.00	1.39	0.89	E	58.2	0.99	1.95	0.61

Future 2040 Operating Conditions – Lane Elimination

To evaluate the 2040 roadway conditions with the lane elimination, the daily and peak-hour service volumes for a one-way, 3-lane segment were calculated based on the 2012 *FDOT Q/LOS* tables. The roadway geometry in the Synchro model was modified to remove one through lane and retain the existing shared through and left lane and shared through and right lane. Based on the projected future 2040 AADT, service volumes, and lane elimination geometry, the study roadway segment is anticipated to operate over LOS D service volumes for the daily and peak-hour periods.

Table 17: Future 2040 Lane Elimination Roadway Conditions

Roadway Segment	Future 2040 AADT	Daily Service Volume ¹ (Proposed Laneage)	Daily LOS	Future 2040 Peak-Hour Volume	Peak-Hour Service Volume ¹ (Proposed Laneage)	Peak Hour LOS
Florida Avenue from Kennedy Boulevard to Zack Street	43,00	22,500 ³	F	3,800	2,025 ⁴	F
Florida Avenue from Zack Street to Harrison Street ²	43,00	30,000	F	3,800	2,700	F

1. LOS D Service Volume
2. Segment north of study roadway segment
3. LOS D: $50,000 * 0.75 * 0.60 = 22,500$
4. LOS D: $4,500 * 0.75 * 0.60 = 2,025$

Future 2040 intersection volumes were determined by applying the existing turning movement percentages to the future 2040 design hour roadway segment volumes. The intersection volume development worksheets are attached in Appendix D. The results of the 2040 Lane Elimination intersection analysis are shown in Table 16. The *HCM 2000* Intersection Summary is attached in Appendix E.

The intersection of Florida Avenue & Madison Street is anticipated to operate at LOS F with future volumes and lane elimination geometry during the a.m. and p.m. peak-hour. The northbound approach is anticipated to operate over capacity ($v/c > 1$) during the a.m. and p.m. peak-hour.

The intersection of Florida Avenue & Twiggs Street is anticipated to operate similarly with and without the proposed lane elimination. The overall intersection is anticipated to operate at LOS F with future volumes and lane elimination geometry during the a.m. peak-hour and p.m. peak-hour. The northbound approach is anticipated to operate over capacity ($v/c > 1$) during the a.m. peak-hour and p.m. peak-hour and the eastbound approach is anticipated to operate over capacity ($v/c > 1$) during the p.m. peak-hour.

The intersection of Florida Avenue & Zack Street is anticipated to operate similarly with and without the proposed lane elimination. The overall intersection is anticipated to operate over LOS D with future volumes and lane elimination geometry during the a.m. and p.m. peak-hour. The northbound and eastbound approach are anticipated to operate over capacity ($v/c > 1$) during the a.m. and p.m. peak-hour.

Table 18: Future 2040 Lane Elimination Intersection Conditions

Intersection	Future 2040 (Lane Elimination) AM Peak-Hour					Future 2040 (Lane Elimination) PM Peak-Hour				
	Overall LOS	Overall Control Delay (s)	Max V/C			Overall LOS	Overall Control Delay (s)	Max V/C		
			Florida Ave	EB Minor Street	WB Minor Street			Florida Ave	EB Minor Street	WB Minor Street
Florida Avenue & Madison Street	F	141.5	1.28	0.63	0.48	F	142.6	1.28	0.54	0.73
Florida Avenue & Twiggs Street	F	194.9	1.51	0.81	0.41	F	107.5	1.25	0.99	0.70
Florida Avenue & Zack Street	F	133.5	1.27	1.46	0.90	F	149.1	1.25	1.95	0.61

Future 2040 Operating Conditions – Lane Elimination with Signal Timing Adjustments

Enhancements to the roadway operation and capacity are anticipated from the transit service that is proposed to operate in the dedicated transit lane. The proposed vehicles' passenger capacity is 225 which will travel through the study roadway segment every 15 minutes. This results in a potential of 900 person-capacity per hour. Additionally, based on ridership data from October 2018 to January 2019, the existing service's average daily ridership is approximately 2,000 per day. Based on the proposed design vehicles and existing ridership, the daily and peak-hour volumes on Florida Avenue are anticipated to be lower than the calculated base volumes due to mode shift.

In addition to the enhanced person-capacity offered by the proposed transit service, intersection operation improvements could include optimized signal timing. The City of Tampa Smart Mobility Division is preparing to

implement an Advanced Traffic Management System (ATMS) plan within the next four years that will include the downtown core and project study area. The ATMS will create an optimized system of intersections and integrate the vehicular and streetcar operation. This system is intended to provide more flexibility than a typical actuated system that is retimed every few years.

Signal timing changes were applied to the study intersections. The signal offsets and phasing split times were optimized. The results of the signal timing adjustments are shown in Table 19. The *HCM 2000* Intersection Summary is attached in Appendix E.

The intersection of Florida Avenue & Madison Street is anticipated to operate at LOS E with future volumes, lane elimination geometry, and signal timing adjustments. The northbound and eastbound approach are anticipated to operate over capacity ($v/c > 1$) during the a.m. peak-hour and p.m. peak-hour.

The intersection of Florida Avenue & Twiggs Street is anticipated to operate at LOS F with future volumes, lane elimination geometry, and signal timing adjustments. Due to the prioritization of the northbound approach of Florida Avenue, the westbound approach and eastbound approach are anticipated to operate over capacity ($v/c > 1$) during the a.m. peak-hour and p.m. peak-hour, respectively.

The intersection of Florida Avenue & Zack Street is anticipated to operate over LOS D with future volumes, lane elimination geometry, and signal timing adjustments. Due to the prioritization of the northbound approach of Florida Avenue, the eastbound approach is anticipated to operate over capacity ($v/c > 1$) during the a.m. peak-hour and p.m. peak-hour.

Table 19: Future 2040 Lane Elimination with Signal Timing Adjustments Intersection Conditions

Intersection	Future 2040 (Lane Elimination with Timing Adjustments) AM Peak-Hour					Future 2040 (Lane Elimination with Timing Adjustments) PM Peak-Hour				
	Overall LOS	Overall Control Delay (s)	Max V/C			Overall LOS	Overall Control Delay (s)	Max V/C		
			Florida Ave	EB Minor Street	WB Minor Street			Florida Ave	EB Minor Street	WB Minor Street
Florida Avenue & Madison Street	F	91.9	1.15	1.00	0.63	E	65.0	0.99	1.69	1.92
Florida Avenue & Twiggs Street	F	95.0	1.19	0.72	1.25	F	104.3	1.05	1.87	1.17
Florida Avenue & Zack Street	F	134.6	1.27	1.46	0.90	F	161.8	1.28	1.79	0.58

Future 2040 Operating Conditions – Lane Elimination with Streetcar Phase

Based on approved methodology and discussion with the City of Tampa Smart Mobility Division, at final buildout of the proposed dedicated transit lane, an additional signal phase for the streetcar is recommended. The signal phase would allow the streetcar in the transit lane to pass through the intersection separate from the existing regular phases. A dedicated phase with 20 second total split was included at each intersection. At this time the streetcar is proposed to operate at 15-minute frequency, and therefore would approach each intersection four times per hour. The streetcar phase could potentially be activated at one intersection but is

not anticipated to then be activated at the subsequent intersections. It is anticipated to be an operational decision to allow for the activation of the streetcar phase when necessary. Table 20 shows the intersection conditions with the additional signal phase for the streetcar.

The intersections of Florida Avenue & Madison Street, Florida Avenue & Twiggs Street, and Florida Avenue & Zack Street are anticipated to operate similarly with and without the proposed dedicated streetcar phase. The overall intersections are anticipated to operate over LOS D with future volumes, lane elimination geometry, and signal timing modifications during the a.m. and p.m. peak-hour. Due to the prioritization of the northbound approach of Florida Avenue, the eastbound approaches are anticipated to operate over capacity ($v/c > 1$) during the a.m. and p.m. peak-hour.

Table 20: Future 2040 Lane Elimination with Timing Adjustments + Streetcar Phase Intersection Conditions

Intersection	Future 2040 (Lane Elimination with Timing Adjustments + Streetcar Phase) AM Peak-Hour					Future 2040 (Lane Elimination with Timing Adjustments + Streetcar Phase) PM Peak-Hour				
	Overall LOS	Overall Control Delay (s)	Max V/C			Overall LOS	Overall Control Delay (s)	Max V/C		
			Florida Ave	EB Minor Street	WB Minor Street			Florida Ave	EB Minor Street	WB Minor Street
Florida Avenue & Madison Street	F	170.4	1.33	1.54	0.61	F	171.4	1.34	1.62	1.03
Florida Avenue & Twiggs Street	F	160.2	1.41	0.88	1.03	F	186.8	1.41	1.37	0.51
Florida Avenue & Zack Street	F	272.4	1.58	1.70	0.86	F	271.3	1.44	3.03	0.65

Conclusion

A goal of the *InVision: Tampa Streetcar* planning process is to create a viable transportation choice for people who live, work or visit downtown. Choice to ride the proposed streetcar system will meet this goal while increasing person-capacity on the corridor and support acceptable operation for all roadways users. Also aligned with the *InVision* plan, more on-street parking is anticipated to be provided compared to the existing on-street parking supply. Signal retiming based on the City's Smart Mobility Division ATMS plan will also benefit the vehicle and streetcar operation in the future. Support from the community for the Tampa Streetcar project has been consistently positive throughout the feasibility and planning process and has continued while briefing FDOT, City of Tampa and HART leadership.

Based on opening year (2024) conditions, the study area intersections are anticipated to operate acceptably with the lane elimination. Based on the anticipated growth in 2040 in No Build and Lane Elimination conditions, the study roadway segment and study intersections are anticipated over capacity ($v/c > 1$) and operate over LOS D. Operating conditions in 2040 may be improved by additional factors including mode shift and innovation signal timing enhancements. During the current Project Development phase, to provide a conservative analysis, the Tampa Streetcar Lane Elimination Study did not consider additional factors which may be considered in the future design phase.

In conclusion, the proposed geometry and signal timing changes support the consideration and approval of the lane elimination. It is recommended that the proposed lane elimination be implemented on three blocks of Florida Avenue from Kennedy Boulevard to Zack Street.

Lane Elimination Initial Meeting

MEETING INFORMATION

<i>Date & Time:</i>	Wednesday, June 12, 2019, 9:30 am	
<i>Place:</i>	D7-HQ	
<i>Project:</i>	Streetcar Extension and Modernization Feasibility Study and Project Development	
	InVision: Tampa Streetcar	
	Agreement:	16-D-000002 (Resolution 2016-671)
	FDOT FPID:	437608-1-14-01
	FDOT JPA:	G0833
	Consultant:	HDR Engineering, Inc. / Kimley-Horn and Associates, Inc.
	HDR No.	10049509
<i>Attendees:</i>	Name	Department/Company
	Kenneth Spitz	FDOT Transportation Planning
	Chad Stewart	FDOT Traffic Design
	Ming Gao	FDOT Modal Development
	Peter Hsu	FDOT Traffic Operations
	Ed McKinney	FDOT Planning and Environmental
	Milton Martinez	City of Tampa Project Manager
	Clarence Eng	Kimley-Horn Project Manager
	Kelly Fearon	Kimley-Horn
	Mike Woodward	Kimley-Horn
	Caroline Fraser	Kimley-Horn

The following represents the main items discussed at the Lane Elimination Initial Meeting. If there are any additional comments, please advise immediately.

The Lane Elimination Initial Meeting was conducted to discuss the process and requirements for the lane elimination request, consistent with the Preliminary Review process described in Section 126.3.1 of the FDM, concerning the 3-block roadway segment identified in Tampa Streetcar project and to gain concurrency on the next steps for the traffic impact analysis.

MEETING MINUTES

1. The study area for the request is N Florida Avenue from Kennedy Blvd to Zack St
 - a. Concept plans to include the transitions across the respective intersections
2. It was noted the lane utilization is poor since it only serves as a through and left lane for a short distance. The recently implemented bulb outs on Kennedy Blvd have further reduced the usage of the lane. A left-turn lane and then on-street parking are located beyond the northern end of the segment.
3. The City noted that the Streetcar Extension and Modernization project was co-funded by the City of Tampa and FDOT and is in the FTA Project Development phase. Ongoing coordination with the FTA and NEPA documentation is in progress, in anticipation of a submittal for FTA Small

Starts funding at the end of Summer 2019. Therefore, the City would like to expedite the Lane Elimination review process.

4. FDOT noted that the process will be followed on every project but that time frames can be compressed to some degree assuming that the required information is provided and complete.
5. The process and expected timeframes are as follows:
 - a. City to submit first 3 pages of FDM Form 126 & minutes from the Initial Meeting (today's meeting) including project limits
 - b. City to submit report to FDOT D7 (Chad Stewart)
 - c. FDOT D7 to review then issue comments within a timeframe of approximately 2 weeks
 - d. City to revise report based on comments and resubmit to FDOT D7 (Chad Stewart)
 - e. FDOT D7 to submit with the appropriate signatures (Ed McKinney, Alan Arbonas and Ron Chin) to Central Office
 - f. Central Office to review and approve in 2-3 weeks, assuming all is well
6. The Lane Elimination will move forward concurrent with the overall traffic study being performed for the streetcar project. This clarification was made since a comment was made on the methodology for the streetcar study pertaining to the lane reduction.
7. The growth rate needs to be tied to the future volumes/growth as shown in the regionally adopted travel demand model. Other growth rates will not be readily acceptable by FDOT.
8. Analysis for the lane elimination to include daily and peak hour volumes.
9. Concept plans to have an aerial backdrop, show lane widths, and show pavement markings.
10. It is understood that there may not be readily apparent crash modification factors due to the nature of the proposed changes. A crash analysis will be provided to document existing conditions and other conclusions, as appropriate.
11. Comments & political support from Public Meetings will be documented in the report
12. If information on Form 126-A is not applicable, it will be marked as N/A

INITIAL MEETING CHECKLIST

Basic information about the project

☒ Project Location	☒ Jurisdiction(s) in which the Project is Located
☒ Project Limits	☒ Proposed Change in Lane Configuration
☒ Project Length	☒ Project Schedule
☒ Project Purpose	☒ Context Classification

This is a list of items that the Applicant should be prepared to discuss at the Initial Meeting:

☒ Conceptual plan (including transitions to and from the lane elimination section)	☒ Anticipated changes (if any) in functional classification and access management classification
☒ Existing and long-range future AADT (the latter based on historical growth and the regional travel demand model, if applicable)	☒ Anticipated changes (if any) in posted speed limits
☒ Consistency of the proposed project with the applicable Long-Range Transportation Plan (LRTP), Transportation Improvement Program (TIP), Transit Development Plan (TDP), comprehensive plan, master plans, visions, and Complete Streets initiatives	☒ Need for design variations or design exceptions to support the lane elimination project
☒ Status of the roadway as an Evacuation Route, freight route, and part of the Strategic Intermodal System (SIS)	☒ Plan for obtaining input and review from businesses, residents, and other stakeholders
☒ Status of the roadway as a major transit corridor per the LRTP or TDP	☒ Plan for receiving endorsement from elected officials
☒ Proposed use(s) for the right-of-way after lanes are eliminated (e.g., widened sidewalks, bicycle lanes, landscaping, on-street parking, transit lanes)	☒ Funding source
☒ Existing right-of-way width and any proposed changes to the right-of-way width	☒ Potential implementation strategy and partner commitments
☒ Anticipated changes (if any) in jurisdictional responsibility for ownership or maintenance of the roadway	

Methodology Checklist

This is an illustrative list of items that the District Review Team may require the Applicant to address in a Concept Report, as needed:

☒ Conceptual design plans (including proposed typical sections) that meet FDOT design standards for all transportation modes	☒ Crash data summary and analysis, which may include identification of high-crash locations (by crash type) and locations on FDOT's 5% lists (i.e., the lists of the 5% of segments and intersections with the highest number of crashes) and estimation of the potential increase or decrease in crashes using Crash Modification Factors (CMFs) from the Highway Safety Manual, CMFs from the FHWA CMF Clearinghouse website, or other appropriate methodologies
☒ Need for any design variations or exceptions	
☒ Size of impact area	
☒ Near- and long-range traffic forecasts with and without the proposed (with changes in travel patterns clearly shown)	
☒ Near- and long-range level of service (LOS) and queuing analysis for intersections and segments in the impact area under the build and no-build scenarios • LOS analyses may be daily or peak hour analyses at the District Review Team's discretion. • The District Review Team and the Applicant should agree on an analysis methodology.	☒ Impact on trucks and designated truck routes (including appropriateness of turn radii and lane widths and possible relocation of designated truck routes)
	☐ Impact on evacuations routes and emergency response N/A
	☒ Conceptual funding plan (includes cost estimates and funding sources)
	☒ Conceptual implementation plan (including an implementation schedule and a list of the commitments that the applicant will make in support of the lane elimination project)
☒ Mitigation to address significant and adverse LOS impacts on State roads and the regional transportation system resulting from the lane elimination	☒ Existing posted speed and desired posted speed after the lane elimination
☒ Impact on pedestrian and bicycle infrastructure (e.g., sidewalks, bicycle lanes, and multi-use paths) and connectivity	☒ The need to add, remove, or modify traffic signals
☒ Impact on transit routes and transit stops locations (including appropriateness of turn radii and lane widths)	☐ Impacts on school crossing locations and/or midblock pedestrian crossing locations N/A
☒ Impact on parking supply	☐ Case-specific special considerations to be determined (e.g., railroad crossing improvements) N/A

Lane Elimination Initial Notice to Central Office

To: Maria Overton From: Chad Stewart Date: _____
Systems Management Administrator *District Lane Elimination Coordinator*

The intent of this message is to inform Central Office that District 7 has received a request for lane elimination on a State Highway.

PROJECT INFORMATION

State Road: US 41B / SR 685

Project Location: City of Tampa (N Florida Avenue from Kennedy Boulevard to Zack Street)

Roadway ID: 10020000

Context Classification: C6 - Urban Core

Project Limits (MP): From 0.000 to 0.167

Applicant: City of Tampa

Project Description: Modernization and extension of the Tampa Historic Streetcar System operating in a dedicated, fixed guideway on N Florida Avenue.

Proposed Change in Cross Section: From 4 lanes to 3 lanes

☐ SIS ☐ NHS

ACTIONS AND OUTCOMES TO DATE

District staff participated in a meeting with the City of Tampa and Kimley-Horn and Associates on June 12, 2019 to formally commence the lane elimination review process. At that meeting, District staff provided an overview of the lane elimination review process and the Applicant shared initial information about the lane elimination project. The District determined the specific review process and analysis methodology for the lane elimination request.

NEXT STEPS

The Applicant will submit a Draft Concept Report (containing a proposed typical section) as the lane elimination review process proceeds. If the District reviewers find the Draft Concept Report acceptable, the District will recommend that the Applicant submit a formal Application Package (including the Final Concept Report). If the Application Package is complete and acceptable, the District will approve the lane elimination request with the concurrence of Central Office.

Concurrences:

District Planning and Environmental Administrator Date: _____

District Design Engineer Date: _____

District Traffic Operations Engineer Date: _____

**Lane Elimination
Final Review and Approval
Notice to Central Office**

The intent of this message is to inform Central Office that District 7 has received a request for lane elimination on a State Highway.

PROJECT INFORMATION

State Road: US 41B / SR 685

Project Location: City of Tampa (N Florida Avenue from Kennedy Boulevard to Zack Street)

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Proposed Change in Cross Section: From 4 lanes to 3 lanes

☐ SIS ☐ NHS

District Concurrences:

District Planning and Environmental Administrator

Date: _____

District Design Engineer

Date: _____

District Traffic Operations Engineer

Date: _____

Central Office Concurrence:

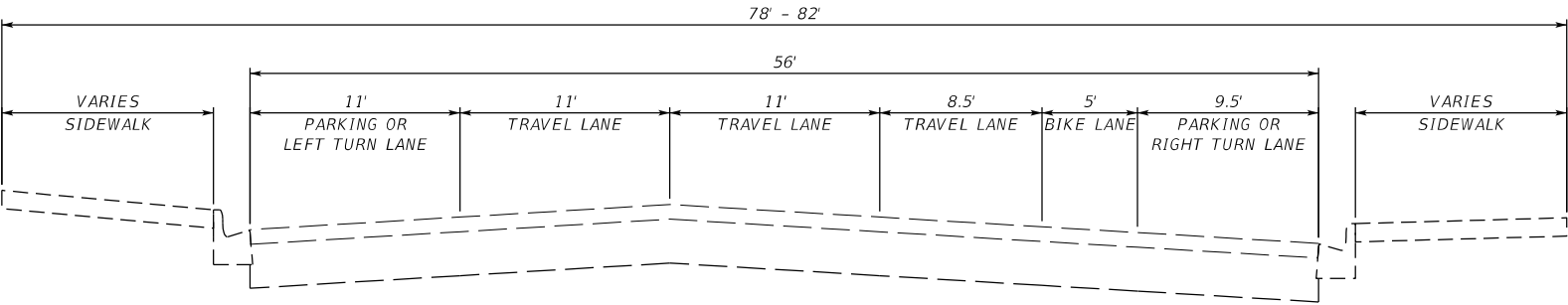
Chief Planner

Date: _____

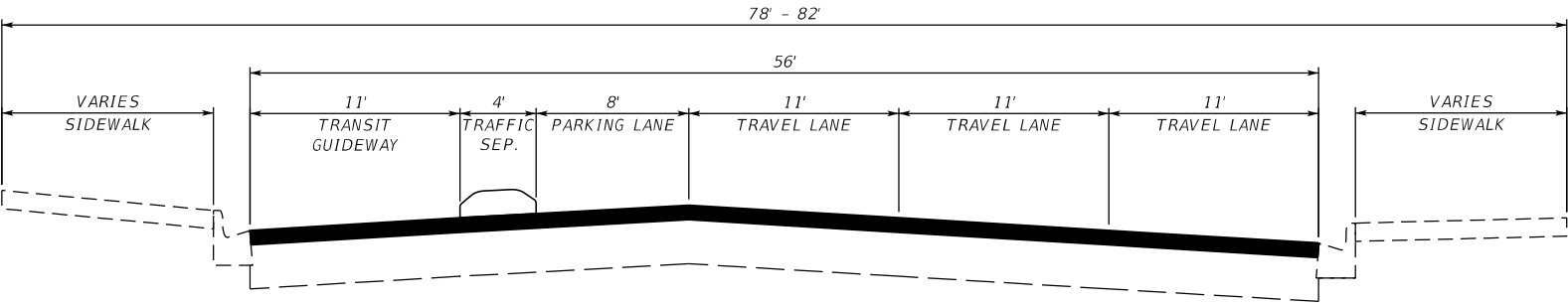
Final Approval:

Chief Engineer

Date: _____

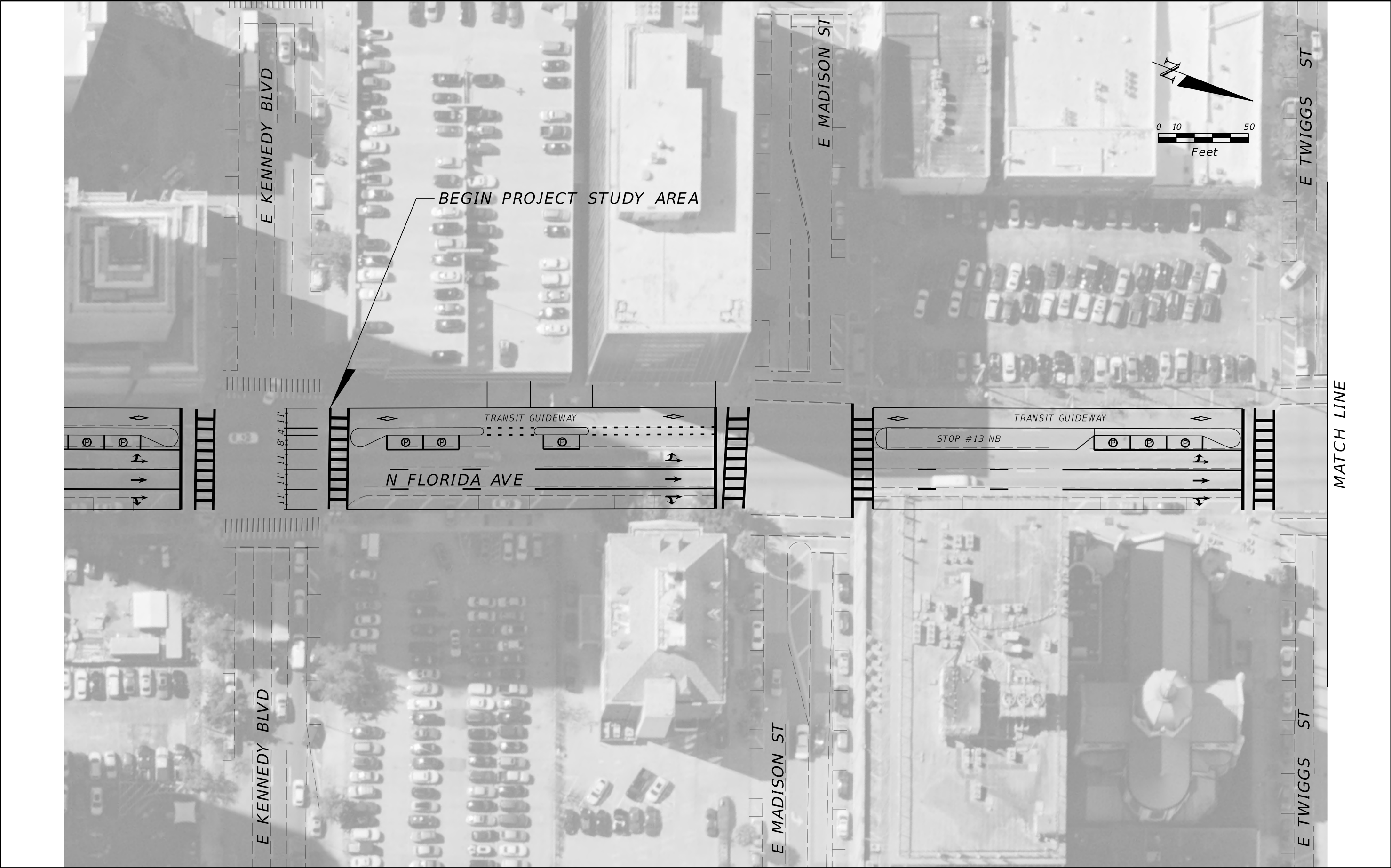


N. FLORIDA AVENUE
EXISTING TYPICAL SECTION
E. KENNEDY BOULEVARD TO E. POLK STREET

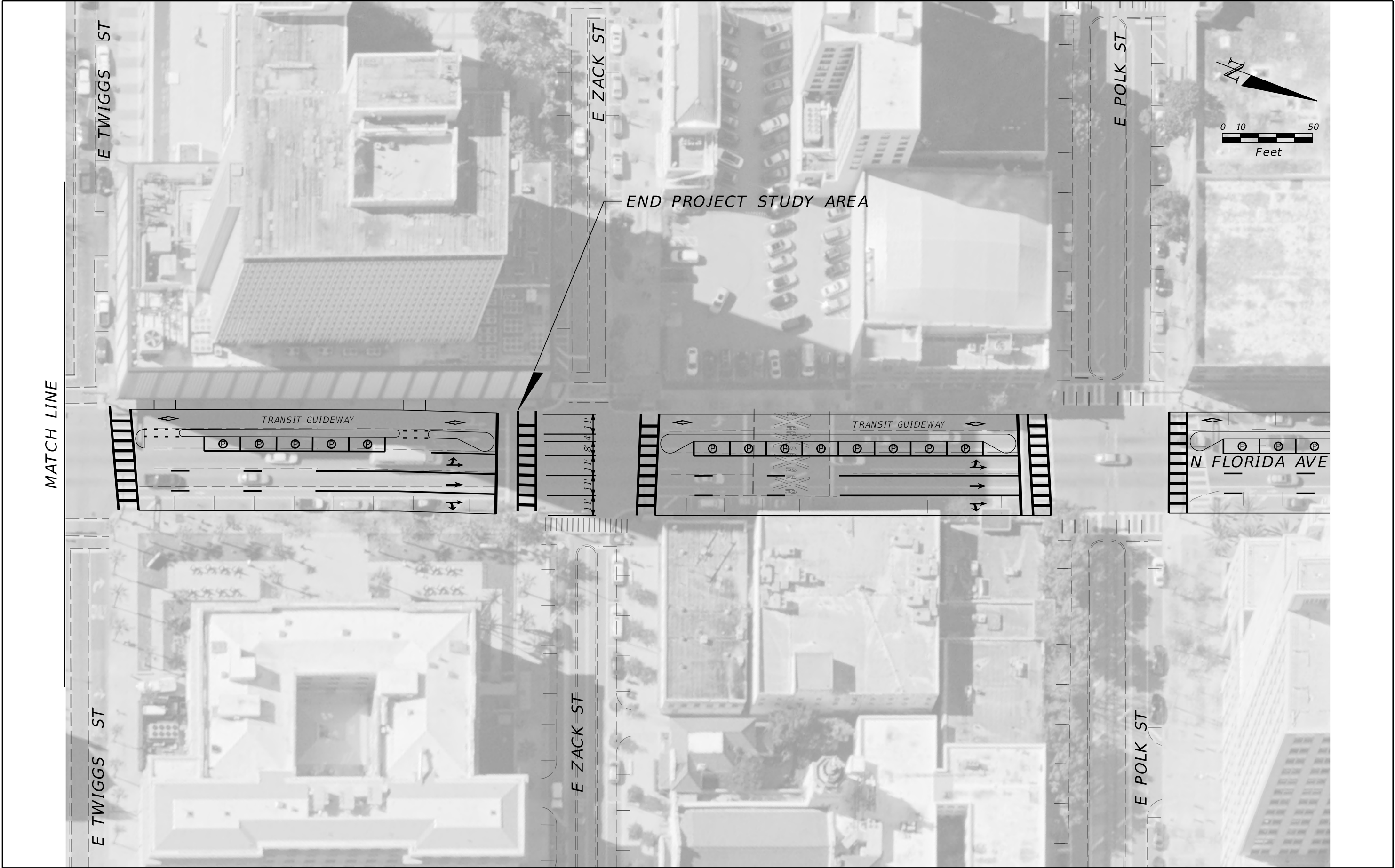


N. FLORIDA AVENUE
PROPOSED TYPICAL SECTION
E. KENNEDY BOULEVARD TO E. POLK STREET

REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION	N. FLORIDA AVENUE TYPICAL SECTIONS		SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION				
				ROAD NO.	COUNTY	FINANCIAL PROJECT ID	1
					HILLSBOROUGH		



REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			N. FLORIDA AVENUE CONCEPT PLAN SHEET (1)	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION					
					ROAD NO.	COUNTY	FINANCIAL PROJECT ID	2
						HILLSBOROUGH		



REVISIONS				STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			N. FLORIDA AVENUE CONCEPT PLAN SHEET (2)	SHEET NO.
DATE	DESCRIPTION	DATE	DESCRIPTION					
					ROAD NO.	COUNTY		3
						HILLSBOROUGH		

Appendix C

FDOT GIS Roadway Characteristics Inventory (RCI) - 2018 AADT

FID	Shape *	YEAR_	DISTRICT	COSITE	ROADWAY	DESC_FRM	DESC_TO	AADT	AADTFLG	KFLG	K100FLG	DFLG	TFLG	COUNTYDOT	COUNTY	MNG_DIST	BEGIN_POST	END_POST	KFCTR	K100FCTR	DFCTR	TFCTR	Shape_Leng
3181	Polyline	2018	7	108000	10000063	W TYLER ST	N/A	6200	X	F	F	W	F	10	Hillsborough	7	1.18	1.745	9	0	99.9	7.1	909.6756
3053	Polyline	2018	7	109039	10000077	N GARCIA AVE	N 22ND ST	6900	V	F	F	F	F	10	Hillsborough	7	0.05	2.017	9	0	59.7	5.7	3168.3038
3004	Polyline	2018	7	109040	10000082	CHANNELSIDE DR	N ASHLEY DR	8000	V	F	F	F	F	10	Hillsborough	7	0	0.949	9	0	59.7	5.7	1528.4064
2954	Polyline	2018	7	109006	10000085	CHANNELSIDE DR	E JACKSON ST	1650	E	F	F	F	F	10	Hillsborough	7	0.117	0.445	9	0	99.9	5.7	524.2622
3214	Polyline	2018	7	109042	10000095	N ASHLEY DR	N PIERCE ST	3500	V	F	F	F	F	10	Hillsborough	7	0	0.335	9	0	59.7	5.7	540.089
3190	Polyline	2018	7	109045	10000097	N ASHLEY DR	PIERCE ST N	4500	V	F	F	F	F	10	Hillsborough	7	0	0.336	9	0	59.7	5.7	537.1938
3468	Polyline	2018	7	108003	10000098	N PIERCE ST	N ASHLEY DR	2900	E	F	F	F	A	10	Hillsborough	7	0.055	0.391	9	0	59.7	1.3	538.1467
3447	Polyline	2018	7	109045	10000099	PIERCE ST N	N/A	4500	V	F	F	F	F	10	Hillsborough	7	0.08	0.517	9	0	59.7	5.7	709.1138
3569	Polyline	2018	7	102845	10000169	E JACKSON ST	E BROREIN ST	1500	E	F	F	W	F	10	Hillsborough	7	0	0.23	9	0	99.9	10	370.6082
46	Polyline	2018	7	109131	10000203	S ASHLEY DR	S JEFFERSON ST	5000	S	F	F	F	2	10	Hillsborough	7	0	0.364	9	0	59.7	2.6	588.1963
122	Polyline	2018	7	108006	10000551	N TAMPA ST	CENTRAL AVE	14000	C	F	F	W	A	10	Hillsborough	7	0	0.363	9	0	99.9	2.1	584.5561
25	Polyline	2018	7	101257	10000552	N MORGAN ST	USB41/SR685/N	7700	X	F	F	F	F	10	Hillsborough	7	0	0.088	9	0	59.7	5.7	142.5848
482	Polyline	2018	7	102639	10000552	USB41/SR685/N FL	USB41S/R685/ N	16000	S	F	F	W	F	10	Hillsborough	7	0.088	0.178	9	0	99.9	3.8	143.5452
269	Polyline	2018	7	109224	10000616	CHANNELSIDE DR	S ARMENIA AVE	11000	E	F	F	W	F	10	Hillsborough	7	0	2.212	9	0	99.9	5.7	3551.4878
609	Polyline	2018	7	105317	10020000	E ESTELLE ST	E PALM AVE	11500	S	F	F	W	2	10	Hillsborough	7	0.743	1.009	9	0	99.9	2.7	428.305
685	Polyline	2018	7	105295	10020000	E HARRISON ST	E ESTELLE ST	24000	C	F	F	W	A	10	Hillsborough	7	0.385	0.743	9	0	99.9	2	576.5615
785	Polyline	2018	7	105297	10020000	KENNEDY BLVD E	E HARRISON ST	25000	C	F	F	W	A	10	Hillsborough	7	0	0.385	9	0	99.9	2.1	619.9261
936	Polyline	2018	7	105329	10020000	E PALM AVE	E COLUMBUS DR	10500	S	F	F	W	2	10	Hillsborough	7	1.009	1.328	9	0	99.9	3.3	513.7417
761	Polyline	2018	7	105298	10020101	N ASHLEY DR	E JACKSON ST	18800	E	F	F	W	F	10	Hillsborough	7	2.818	3.245	9	0	99.9	4.2	687.7377
838	Polyline	2018	7	105296	10020101	RAMP 10190183	N ASHLEY DR	7500	C	F	F	W	A	10	Hillsborough	7	2.497	2.818	9	0	99.9	3.4	517.1788
935	Polyline	2018	7	105294	10020101	W COLUMBUS DR	RAMP 10190183	12500	C	F	F	W	A	10	Hillsborough	7	1.822	2.497	9	0	99.9	4.7	1087.2071
658	Polyline	2018	7	109147	10020102	EB SR-60/JACKSON	WB SR-60/KENNE	9900	S	F	F	W	2	10	Hillsborough	7	0	0.056	9	0	99.9	2.3	87.9194
1248	Polyline	2018	7	105315	10080000	ASHLEY DR	N MORGAN ST	9500	E	F	F	W	D	10	Hillsborough	7	3.254	3.526	9	0	99.9	5.3	437.4141
1138	Polyline	2018	7	105316	10080101	USB41/SR685/N FL	N ASHLEY DR	17500	C	F	F	W	A	10	Hillsborough	7	0.439	0.607	9	0	99.9	1.8	273.1272
1203	Polyline	2018	7	105314	10080101	N JEFFERSON ST	USB41/SR685/N	19000	C	F	F	W	A	10	Hillsborough	7	0.218	0.439	9	0	99.9	1.4	359.4893
1337	Polyline	2018	7	102638	10190004	I-275/SR-93 NB	N TAMPA ST	7900	S	F	F	W	F	10	Hillsborough	7	0	0.166	9	0	99.9	3.8	269.7493
1330	Polyline	2018	7	102639	10190183	N TAMPA ST	I-275 SB	16000	S	F	F	W	F	10	Hillsborough	7	0	0.188	9	0	99.9	3.8	310.2071

Study Name Florida Ave @ Brorein St
Start Date 11/17/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

Start Time	Florida Ave Southbound				Brorein St Westbound				Florida Ave Northbound				Brorein St Eastbound				Total	Peak Hour		PHF
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn		Period	Volume	
7:00 AM	0			0	37	305			229	4			0	0			575	7:00 to 8:00	2952	0.910
7:15 AM	0			0	77	360			330	13			0	0			780	7:15 to 8:15	3151	0.971
7:30 AM	0			0	69	419			313	10			0	0			811	7:30 to 8:30	3205	0.961
7:45 AM	0			0	66	314			384	22			0	0			786	7:45 to 8:45	3224	0.966
8:00 AM	0			0	72	358			322	22			0	0			774	8:00 to 9:00	3067	0.919
8:15 AM	0			0	93	380			340	21			0	0			834			
8:30 AM	0			0	109	378			323	20			0	0			830			
8:45 AM	0			0	66	287			258	18			0	0			629			
4:00 PM	0			0	41	219			359	13			0	0			632	4:00 to 5:00	2336	0.924
4:15 PM	0			0	24	192			336	8			0	0			560	4:15 to 5:15	2357	0.902
4:30 PM	0			0	24	211			323	21			0	0			579	4:30 to 5:30	2494	0.895
4:45 PM	0			0	24	212			310	19			0	0			565	4:45 to 5:45	2534	0.909
5:00 PM	0			0	21	249			364	19			0	0			653	5:00 to 6:00	2546	0.913
5:15 PM	0			0	23	295			349	30			0	0			697			
5:30 PM	0			0	16	229			339	35			0	0			619			
5:45 PM	0			0	27	230			305	15			0	0			577			
PH AM - Sum	0	0	0	0	340	1430	0	0	0	1369	85	0	0	0	0	0	3224			
PH PM - Sum	0	0	0	0	87	1003	0	0	0	1357	99	0	0	0	0	0	2546			

Study Name Tampa St at Kay St
Start Date 09/27/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

Start Time	Tampa St Southbound				Kay St Westbound				Northbound Approach Northbound				Eastbound Approach Eastbound				Total	Peak Hour		PHF
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn		Period	Volume	
7:00 AM	60	163				206	4				0	0	0			0	433	7:00 to 8:00	2141	0.861
7:15 AM	82	203				204	3				0	0	0			0	492	7:15 to 8:15	2300	0.924
7:30 AM	87	232				273	2				0	0	0			0	594	7:30 to 8:30	2374	0.954
7:45 AM	121	267				233	1				0	0	0			0	622	7:45 to 8:45	2331	0.937
8:00 AM	102	258				230	2				0	0	0			0	592	8:00 to 9:00	2240	0.946
8:15 AM	105	211				248	2				0	0	0			0	566			
8:30 AM	111	223				214	3				0	0	0			0	551			
8:45 AM	83	174				263	11				0	0	0			0	531			
4:00 PM	106	131				226	10				0	0	0			0	473	4:00 to 5:00	1818	0.961
4:15 PM	93	120				241	2				0	0	0			0	456	4:15 to 5:15	1819	0.959
4:30 PM	104	118				227	7				0	0	0			0	456	4:30 to 5:30	1829	0.965
4:45 PM	83	133				214	3				0	0	0			0	433	4:45 to 5:45	1797	0.948
5:00 PM	117	151				203	3				0	0	0			0	474	5:00 to 6:00	1756	0.926
5:15 PM	77	143				239	7				0	0	0			0	466			
5:30 PM	86	137				193	8				0	0	0			0	424			
5:45 PM	76	148				158	10				0	0	0			0	392			
PH AM - Sum	415	968				984	7				0	0	0			0	2374			
PH PM - Sum	381	545				883	20				0	0	0			0	1829			

Study Name Tampa St at Scott St
 Start Date 09/27/2016
 Start Time 7:00 AM
 Site Code
 Project 16-0763 THEA Planning and Design

Type Road
 Classification Totals

	Tampa St Southbound				Westbound Approach Westbound				Northbound Approach Northbound				Scott St Eastbound							
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Peak Hour	PHF	
7:00 AM		122	44										21	117	0		304	7:00 to 8:00	1512	0.861
7:15 AM		153	55										18	131	0		357	7:15 to 8:15	1672	0.901
7:30 AM		183	49										17	163	0		412	7:30 to 8:30	1731	0.933
7:45 AM		215	46										14	164	0		439	7:45 to 8:45	1730	0.932
8:00 AM		234	50										27	153	0		464	8:00 to 9:00	1629	0.878
8:15 AM		173	45										26	172	0		416			
8:30 AM		199	43										22	147	0		411			
8:45 AM		138	26										21	153	0		338			
4:00 PM		105	36										2	75	0		218	4:00 to 5:00	892	0.957
4:15 PM		93	34										9	97	0		233	4:15 to 5:15	938	0.888
4:30 PM		77	30										7	114	0		228	4:30 to 5:30	1002	0.843
4:45 PM		93	33										4	83	0		213	4:45 to 5:45	1056	0.889
5:00 PM		98	40										13	113	0		264	5:00 to 6:00	1137	0.957
5:15 PM		141	29										8	119	0		297			
5:30 PM		109	25										6	142	0		282			
5:45 PM		145	33										6	110	0		294			
PH AM - Sum	0	805	190	0	0	0	0	0	0	0	0	0	84	652	0	0	1731			
PH PM - Sum	0	493	127	0	0	0	0	0	0	0	0	0	33	484	0	0	1137			

Study Name Florida Ave at Scott St
 Start Date 09/28/2016
 Start Time 7:00 AM
 Site Code
 Project 16-0763 THEA Planning and Design

Type Road
 Classification Totals

	Southbound Approach Southbound				Westbound Approach Westbound				Florida Ave Northbound				Scott St Eastbound							
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Peak Hour		PHF
7:00 AM				0	0			0	89	253				124	31		497	7:00 to 8:00	2426	0.915
7:15 AM				0	0			0	118	346				113	37		614	7:15 to 8:15	2572	0.970
7:30 AM				0	0			0	150	355				112	46		663	7:30 to 8:30	2515	0.948
7:45 AM				0	0			0	132	323				135	62		652	7:45 to 8:45	2496	0.957
8:00 AM				0	0			0	123	353				111	56		643	8:00 to 9:00	2446	0.950
8:15 AM				0	0			0	100	275				133	49		557			
8:30 AM				0	0			0	111	369				109	55		644			
8:45 AM				0	0			0	113	309				126	54		602			
4:00 PM				0	0			0	179	393				90	43		705	4:00 to 5:00	2887	0.958
4:15 PM				0	0			0	154	409				93	32		688	4:15 to 5:15	2938	0.972
4:30 PM				0	0			0	159	429				114	51		753	4:30 to 5:30	3086	0.923
4:45 PM				0	0			0	152	462				92	35		741	4:45 to 5:45	3125	0.935
5:00 PM				0	0			0	130	471				110	45		756	5:00 to 6:00	3045	0.911
5:15 PM				0	0			0	164	554				79	39		836			
5:30 PM				0	0			0	126	492				111	63		792			
5:45 PM				0	0			0	117	403				95	46		661			
PH AM - Sum	0	0	0	0	0	0	0	0	523	1377	0	0	0	471	201	0	2572			
PH PM - Sum	0	0	0	0	0	0	0	0	572	1979	0	0	0	392	182	0	3125			

Study Name Tampa St @ Tyler St
 Start Date 10/27/2016
 Start Time 7:00 AM
 Site Code
 Project 16-0763 THEA Planning and Design

Type Road
 Classification Totals

	Tampa St Southbound				Tyler ST Westbound				Tampa St Northbound				Tyler ST Eastbound							
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Peak Hour	PHF	
7:00 AM	15	364	2	0	0	11	5	0					1	2	0	0	400	7:00 to 8:00	1832	0.819
7:15 AM	9	384	2	0	0	6	5	0					4	4	0	0	414	7:15 to 8:15	1919	0.858
7:30 AM	14	418	2	0	0	13	4	0					6	1	0	1	459	7:30 to 8:30	2022	0.904
7:45 AM	10	526	5	0	0	7	3	0					8	0	0	0	559	7:45 to 8:45	2043	0.914
8:00 AM	15	434	4	0	0	17	5	0					6	6	0	0	487	8:00 to 9:00	1992	0.963
8:15 AM	24	460	9	0	0	13	7	0					1	3	0	0	517			
8:30 AM	18	431	3	0	0	16	5	0					7	0	0	0	480			
8:45 AM	25	456	4	0	0	14	1	0					6	2	0	0	508			
4:00 PM	10	179	4	0	0	15	4	0					2	2	0	0	216	4:00 to 5:00	1137	0.787
4:15 PM	12	220	3	0	0	11	10	0					5	7	0	0	268	4:15 to 5:15	1291	0.872
4:30 PM	28	301	5	0	0	10	5	0					6	6	0	0	361	4:30 to 5:30	1423	0.889
4:45 PM	24	238	5	0	0	19	2	0					2	2	0	0	292	4:45 to 5:45	1442	0.901
5:00 PM	16	293	8	0	0	26	8	0					6	13	0	0	370	5:00 to 6:00	1509	0.943
5:15 PM	14	336	2	0	0	21	10	1					9	7	0	0	400			
5:30 PM	23	314	2	0	0	16	9	0					7	9	0	0	380			
5:45 PM	11	309	6	0	0	12	8	0					8	5	0	0	359			
PH AM - Sum	67	1851	21	0	0	53	20	0	0	0	0	0	22	9	0	0	2043			
PH PM - Sum	64	1252	18	0	0	75	35	1	0	0	0	0	30	34	0	0	1509			

Study Name Florida Ave @ Tyler St
Start Date 11/29/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

Start Time	Florida Ave Southbound				Tyler St Westbound				Florida Ave Northbound				Tyler St Eastbound				Total	Peak Hour		
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn		Period	Volume	PHF
7:00 AM	0		0	0	4	10		0	1	338	9		3	2	0		367	7:00 to 8:00	1839	0.882
7:15 AM	0		0	0	0	5		0	2	499	8		3	3	1		521	7:15 to 8:15	1950	0.936
7:30 AM	0		0	0	2	7		0	1	465	1		1	1	0		478	7:30 to 8:30	1898	0.993
7:45 AM	0		0	0	1	7		0	1	453	8		2	1	0		473	7:45 to 8:45	1926	0.952
8:00 AM	0		0	0	4	7		0	2	448	6		6	5	0		478	8:00 to 9:00	1863	0.920
8:15 AM	0		0	0	2	11		0	1	442	7		4	2	0		469			
8:30 AM	0		0	0	0	6		0	4	481	9		6	0	0		506			
8:45 AM	0		0	0	6	6		0	0	385	5		4	4	0		410			
4:00 PM	0		0	0	8	4		0	1	603	8		2	0	0		626	4:00 to 5:00	2324	0.928
4:15 PM	0		0	0	7	5		0	1	458	4		3	3	0		481	4:15 to 5:15	2232	0.915
4:30 PM	0		0	0	7	3		0	2	584	6		3	5	0		610	4:30 to 5:30	2375	0.952
4:45 PM	0		0	0	9	12		0	2	571	9		2	2	0		607	4:45 to 5:45	2415	0.929
5:00 PM	0		0	0	12	18		0	2	476	8		8	10	0		534	5:00 to 6:00	2402	0.924
5:15 PM	0		0	0	7	15		0	0	578	15		4	5	0		624			
5:30 PM	0		0	0	3	16		0	3	593	23		2	10	0		650			
5:45 PM	0		0	0	4	7		0	1	548	29		3	2	0		594			
PH AM - Sum	0	0	0	0	7	26	0	0	6	1865	23	0	0	12	10	1	1950			
PH PM - Sum	0	0	0	0	31	61	0	0	7	2218	55	0	0	16	27	0	2415			

Study Name Tampa St @ Cass St
 Start Date 10/27/2016
 Start Time 7:00 AM
 Site Code
 Project 16-0763 THEA Planning and Design

Type Road
 Classification Totals

	Tampa St Southbound				Cass ST Westbound				Tampa St Northbound				Cass St Eastbound					Peak Hour			
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Period	Volume	PHF	
7:00 AM	5	343	17			17	2	0	0			0	0	7	18		0	409	7:00 to 8:00	2024	0.804
7:15 AM	2	381	20			27	4	0	0			0	0	11	31		0	476	7:15 to 8:15	2165	0.860
7:30 AM	2	407	14			29	8	0	0			0	0	17	33		0	510	7:30 to 8:30	2261	0.899
7:45 AM	5	488	27			39	13	0	0			0	0	19	38		0	629	7:45 to 8:45	2313	0.919
8:00 AM	6	441	14			32	8	0	0			0	0	13	36		0	550	8:00 to 9:00	2268	0.971
8:15 AM	2	464	9			42	4	0	0			0	0	13	38		0	572			
8:30 AM	5	443	13			52	5	0	0			0	0	13	31		0	562			
8:45 AM	5	455	18			34	5	0	0			0	0	23	44		0	584			
4:00 PM	2	217	17			18	1	0	0			0	0	7	59		0	321	4:00 to 5:00	1471	0.849
4:15 PM	2	225	16			24	8	0	0			0	0	12	60		0	347	4:15 to 5:15	1594	0.898
4:30 PM	5	301	22			19	2	0	0			0	0	19	65		0	433	4:30 to 5:30	1748	0.872
4:45 PM	1	232	10			30	11	0	0			0	0	13	73		0	370	4:45 to 5:45	1787	0.892
5:00 PM	3	302	20			24	8	0	0			0	0	14	73		0	444	5:00 to 6:00	1897	0.947
5:15 PM	8	334	24			31	7	0	0			0	0	17	80		0	501			
5:30 PM	8	327	13			34	8	0	0			0	0	12	70		0	472			
5:45 PM	4	326	24			18	17	0	0			0	0	16	75		0	480			
PH AM - Sum	18	1836	63	0	0	165	30	0	0	0	0	0	0	58	143	0	0	2313			
PH PM - Sum	23	1289	81	0	0	107	40	0	0	0	0	0	0	59	298	0	0	1897			

Study Name Florida Ave @ Cass St
Start Date 11/10/2016
Start Time 7:00 AM
Site Code
Project

Type Road
Classification Totals

	Florida Ave Southbound				Cass St Westbound				Florida Ave Northbound				Cass St Eastbound					Peak Hour		
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Period	Volume	PHF
7:00 AM	0		0	0	5	17		0	6	391	7		16	12	0		454	7:00 to 8:00	2100	0.924
7:15 AM	0		0	0	6	16		0	5	489	10		35	7	0		568	7:15 to 8:15	2193	0.965
7:30 AM	0		0	0	8	29		0	6	448	14		28	9	0		542	7:30 to 8:30	2098	0.959
7:45 AM	0		0	0	7	24		0	8	431	10		42	14	0		536	7:45 to 8:45	2072	0.947
8:00 AM	0		0	0	5	24		0	14	454	6		32	12	0		547	8:00 to 9:00	2061	0.942
8:15 AM	0		0	0	8	32		0	9	373	11		28	12	0		473			
8:30 AM	0		0	0	6	18		0	4	435	12		28	13	0		516			
8:45 AM	0		0	0	12	19		0	10	427	15		29	13	0		525			
4:00 PM	0		0	0	11	21		0	6	410	7		49	21	0		525	4:00 to 5:00	2202	0.802
4:15 PM	0		0	0	9	11		0	12	565	10		54	25	0		686	4:15 to 5:15	2358	0.859
4:30 PM	0		0	0	5	27		0	10	376	7		59	13	0		497	4:30 to 5:30	2376	0.844
4:45 PM	0		1	0	4	16		0	30	352	15		66	10	0		494	4:45 to 5:45	2496	0.886
5:00 PM	0		0	0	13	29		0	12	541	2		62	22	0		681	5:00 to 6:00	2560	0.909
5:15 PM	0		0	0	4	23		0	17	575	8		55	22	0		704			
5:30 PM	0		0	0	8	23		0	9	486	10		62	19	0		617			
5:45 PM	1		0	0	5	18		0	11	425	10		63	25	0		558			
PH AM - Sum	0	0	0	0	26	93	0	0	33	1822	40	0	0	137	42	0	2193			
PH PM - Sum	1	0	0	0	30	93	0	0	49	2027	30	0	0	242	88	0	2560			

Study Name Tampa St @ Polk St
Start Date 10/27/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

Start Time	Tampa St Southbound				Polk St Westbound				Tampa St Northbound				Polk St Eastbound				Total	Peak Hour		
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn		Period	Volume	PHF
7:00 AM	1	310	6			10	3	0	0			0	0	0	0	0	330	7:00 to 8:00	1682	0.809
7:15 AM	1	374	11			5	0	0	0			0	0	0	1	0	392	7:15 to 8:15	1843	0.886
7:30 AM	6	388	14			18	2	0	0			0	0	5	7	0	440	7:30 to 8:30	1929	0.927
7:45 AM	1	489	11			14	2	0	0			0	0	0	3	0	520	7:45 to 8:45	1975	0.950
8:00 AM	6	438	13			22	6	0	0			0	0	2	4	0	491	8:00 to 9:00	1926	0.981
8:15 AM	3	445	15			11	1	0	0			0	0	1	2	0	478			
8:30 AM	0	455	7			18	0	0	0			0	0	3	3	0	486			
8:45 AM	4	436	13			13	0	0	0			0	0	1	4	0	471			
4:00 PM	4	233	7			14	4	0	0			0	0	4	13	0	279	4:00 to 5:00	1214	0.865
4:15 PM	3	243	10			15	3	0	0			0	0	4	11	0	289	4:15 to 5:15	1290	0.908
4:30 PM	5	306	10			10	4	0	0			0	0	5	11	0	351	4:30 to 5:30	1393	0.888
4:45 PM	2	248	13			14	7	0	0			0	0	4	7	0	295	4:45 to 5:45	1407	0.897
5:00 PM	5	283	14			18	10	0	0			0	0	11	14	0	355	5:00 to 6:00	1500	0.957
5:15 PM	7	318	18			11	10	1	0			0	0	9	18	0	392			
5:30 PM	3	310	14			12	7	0	0			0	0	8	11	0	365			
5:45 PM	5	308	27			23	8	0	0			0	0	4	13	0	388			
PH AM - Sum	10	1827	46	0	0	65	9	0	0	0	0	0	6	12	0	0	1975			
PH PM - Sum	20	1219	73	0	0	64	35	1	0	0	0	0	32	56	0	0	1500			

Study Name Florida Ave @ Polk St
Start Date 11/10/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

	Florida Ave Southbound				Polk St Westbound				Florida Ave Northbound				Polk St Eastbound					Peak Hour		
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Period	Volume	PHF
7:00 AM	0		0	0	2	0		0	2	421	8		7	6	0		446	7:00 to 8:00	1980	0.908
7:15 AM	0		0	0	3	5		0	4	516	6		11	0	0		545	7:15 to 8:15	1987	0.911
7:30 AM	0		0	0	0	4		0	2	429	8		11	6	0		460	7:30 to 8:30	1907	0.901
7:45 AM	0		0	0	5	5		0	6	494	11		5	3	0		529	7:45 to 8:45	1873	0.885
8:00 AM	0		0	0	10	6		0	4	410	5		14	4	0		453	8:00 to 9:00	1841	0.926
8:15 AM	0		0	0	3	11		0	3	421	11		14	2	0		465			
8:30 AM	0		0	0	2	2		0	7	399	11		4	1	0		426			
8:45 AM	0		0	0	2	1		0	8	465	10		6	5	0		497			
4:00 PM	0		0	0	15	13		0	10	425	8		6	5	0		482	4:00 to 5:00	1959	0.836
4:15 PM	0		0	0	12	9		0	3	533	7		17	5	0		586	4:15 to 5:15	2103	0.840
4:30 PM	0		0	0	14	5		0	2	399	7		12	9	0		448	4:30 to 5:30	2183	0.819
4:45 PM	0		0	1	11	5		1	5	359	40		15	6	0		443	4:45 to 5:45	2278	0.855
5:00 PM	0		0	0	20	11		0	2	555	14		16	8	0		626	5:00 to 6:00	2326	0.873
5:15 PM	0		0	0	12	11		0	2	576	30		26	8	1		666			
5:30 PM	0		0	0	6	7		0	4	486	8		23	9	0		543			
5:45 PM	0		0	0	9	5		1	5	447	5		12	7	0		491			
PH AM - Sum	0	0	0	0	18	20	0	0	16	1849	30	0	0	41	13	0	1987			
PH PM - Sum	0	0	0	0	47	34	0	1	13	2064	57	0	0	77	32	1	2326			

Study Name Tampa St @ Zack St
Start Date 10/27/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

Start Time	Tampa St Southbound				Zack St Westbound				Tampa St Northbound				Zack St Eastbound				Total	Peak Hour		PHF
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn		Period	Volume	
7:00 AM	0	318	12		4	2	0	0	0		0	0	2	9		0	347	7:00 to 8:00	1700	0.813
7:15 AM	3	356	16		6	3	0	0			0	0	5	7		0	396	7:15 to 8:15	1820	0.870
7:30 AM	1	396	11		8	3	0	0			0	0	4	11		0	434	7:30 to 8:30	1901	0.909
7:45 AM	1	467	26		6	0	0	0			0	0	9	14		0	523	7:45 to 8:45	1962	0.938
8:00 AM	1	417	17		7	4	0	0			0	0	8	13		0	467	8:00 to 9:00	1926	0.973
8:15 AM	1	425	22		8	3	0	0			0	0	3	15		0	477			
8:30 AM	3	437	10		14	5	0	0			0	0	12	14		0	495			
8:45 AM	1	414	31		14	4	0	0			0	0	7	16		0	487			
4:00 PM	5	228	5		12	4	0	0			0	0	2	7		0	263	4:00 to 5:00	1173	0.852
4:15 PM	4	243	4		9	10	0	0			0	0	1	8		0	279	4:15 to 5:15	1286	0.855
4:30 PM	8	305	9		8	6	0	0			0	0	1	7		0	344	4:30 to 5:30	1416	0.866
4:45 PM	3	245	7		11	4	0	0			0	0	7	10		0	287	4:45 to 5:45	1455	0.889
5:00 PM	9	321	5		21	5	0	0			0	0	8	7		0	376	5:00 to 6:00	1544	0.944
5:15 PM	9	346	11		16	6	0	0			0	0	8	13		0	409			
5:30 PM	10	326	14		9	3	0	0			0	0	8	13		0	383			
5:45 PM	5	310	14		18	10	0	0			0	0	6	13		0	376			
PH AM - Sum	6	1746	75	0	0	35	12	0	0	0	0	0	32	56	0	0	1962			
PH PM - Sum	33	1303	44	0	0	64	24	0	0	0	0	0	30	46	0	0	1544			

Study Name Florida Ave @ Zack St
 Start Date 11/09/2016
 Start Time 7:00 AM
 Site Code
 Project 16-0763 THEA Planning and Design

Type Road
 Classification Totals

	Florida Ave Southbound				Zack St Westbound				Florida Ave Northbound				Zack ST Eastbound								
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Peak Hour		PHF	
7:00 AM	0		0	0	19	11		0	8	399	6			6	2	0	451	7:00 to 8:00	2171	0.923	
7:15 AM	0		0	0	9	14		0	7	502	14			10	5	0	561	7:15 to 8:15	2222	0.945	
7:30 AM	0		0	0	18	11		0	11	506	13			11	1	0	571	7:30 to 8:30	2150	0.914	
7:45 AM	0		0	0	20	13		0	9	504	24			13	5	0	588	7:45 to 8:45	2111	0.898	
8:00 AM	0		0	0	20	9		0	14	424	22			12	1	0	502	8:00 to 9:00	2006	0.943	
8:15 AM	0		0	0	15	14		0	8	421	15			12	4	0	489				
8:30 AM	0		0	0	21	30		0	5	451	15			8	2	0	532				
8:45 AM	0		0	0	22	20		0	10	395	21			8	7	0	483				
9:00 AM	0		0	0	0	0		0	0	0	0			0	0	0					
4:00 PM	0		0	0	8	5		0	8	561	8			5	11	0	606	4:00 to 5:00	2423	0.951	
4:15 PM	0		0	0	14	6		0	4	508	10			7	11	0	560	4:15 to 5:15	2463	0.953	
4:30 PM	0		0	0	15	9		0	4	576	8			7	18	0	637	4:30 to 5:30	2578	0.955	
4:45 PM	0		0	0	9	9		0	5	568	8			12	9	0	620	4:45 to 5:45	2515	0.931	
5:00 PM	0		0	0	19	11		0	3	568	14			12	19	0	646	5:00 to 6:00	2471	0.915	
5:15 PM	0		0	0	12	8		0	5	625	6			6	13	0	675				
5:30 PM	0		0	0	8	6		0	5	521	10			15	9	0	574				
5:45 PM	0		0	0	8	6		0	3	528	10			10	11	0	576				
6:00 PM	0		0	0	0	0		0	0	1	0			0	0	0					
PH AM - Sum	0	0	0	0	67	47	0	0	41	1936	73	0	0	46	12	0	2222				
PH PM - Sum	0	0	0	0	55	37	0	0	17	2337	36	0	0	37	59	0	2578				

Study Name Tampa St @ Twiggs St
 Start Date 11/1/2016
 Start Time 7:00 AM
 Site Code
 Project 16-0763 THEA Planning and Design

Type Road
 Classification Totals

	Tampa St Southbound				Twiggs St Westbound				Tampa St Northbound				Twiggs St Eastbound					Peak Hour		
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Period	Volume	PHF
7:00 AM	2	218	9		52	6	0	0			0	0	2	7		0	296	7:00 to 8:00	1445	0.885
7:15 AM	6	291	18		63	9	0	0			0	0	3	3		0	393	7:15 to 8:15	1537	0.942
7:30 AM	4	273	9		47	11	0	0			0	0	1	3		0	348	7:30 to 8:30	1498	0.918
7:45 AM	4	337	5		47	9	0	0			0	0	1	5		0	408	7:45 to 8:45	1562	0.948
8:00 AM	6	314	8		43	9	0	0			0	0	3	5		0	388	8:00 to 9:00	1487	0.902
8:15 AM	3	274	10		45	11	0	0			0	0	2	9		0	354			
8:30 AM	8	338	9		37	9	0	0			0	0	5	6		0	412			
8:45 AM	10	241	9		39	19	0	0			0	0	6	9		0	333			
4:00 PM	3	209	31		34	13	0	0			0	0	7	29		0	326	4:00 to 5:00	1320	0.951
4:15 PM	4	204	37		24	8	0	0			0	0	5	23		0	305	4:15 to 5:15	1445	0.801
4:30 PM	3	236	32		31	7	0	0			0	0	5	28		0	342	4:30 to 5:30	1558	0.864
4:45 PM	5	228	28		33	9	0	0			0	0	6	38		0	347	4:45 to 5:45	1668	0.923
5:00 PM	1	307	51		23	14	0	0			0	0	9	46		0	451	5:00 to 6:00	1701	0.941
5:15 PM	1	268	46		30	25	0	0			0	0	9	39		0	418			
5:30 PM	9	304	52		25	18	0	0			0	0	15	29		0	452			
5:45 PM	5	255	41		28	15	0	0			0	0	11	25		0	380			
PH AM - Sum	21	1263	32	0	0	172	38	0	0	0	0	0	11	25	0	0	1562			
PH PM - Sum	16	1134	190	0	0	106	72	0	0	0	0	0	44	139	0	0	1701			

Study Name Florida Ave @ Twigggs St
Start Date 11/09/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

	Florida Ave Southbound				Twigggs St Westbound				Florida Ave Northbound				Twigggs St Eastbound								
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Peak Hour		PHF	
7:00 AM	0		0	0	134	88		0	14	287	5			23	3	0	554	7:00 to 8:00	2503	0.924	
7:15 AM	0		0	0	135	69		0	13	368	5			26	2	0	618	7:15 to 8:15	2560	0.945	
7:30 AM	0		0	0	138	73		0	23	405	8			29	1	0	677	7:30 to 8:30	2524	0.932	
7:45 AM	0		0	0	109	70		0	28	407	13			25	2	0	654	7:45 to 8:45	2451	0.937	
8:00 AM	0		0	0	112	68		0	23	357	12			36	3	0	611	8:00 to 9:00	2350	0.962	
8:15 AM	0		0	0	74	76		0	28	358	13			29	4	0	582				
8:30 AM	0		0	0	92	68		0	31	376	10			23	4	0	604				
8:45 AM	0		0	0	87	56		0	31	332	12			27	8	0	553				
4:00 PM	0		0	0	28	23		0	13	545	4			48	8	0	669	4:00 to 5:00	2690	0.966	
4:15 PM	0		0	0	32	32		0	14	493	12			46	13	0	642	4:15 to 5:15	2725	0.968	
4:30 PM	0		0	0	37	18		0	13	540	9			61	18	0	696	4:30 to 5:30	2825	0.952	
4:45 PM	0		0	0	34	18		0	12	524	5			70	20	0	683	4:45 to 5:45	2795	0.942	
5:00 PM	0		0	0	41	28		0	15	523	4			74	19	0	704	5:00 to 6:00	2773	0.934	
5:15 PM	0		0	0	39	23		0	16	566	4			71	23	0	742				
5:30 PM	0		0	0	22	15		0	20	501	10			83	15	0	666				
5:45 PM	0		0	0	25	26		0	16	489	15			73	17	0	661				
6:00 PM	0		0	0	0	0		0	0	0	0			0	0	0					
PH AM - Sum	0	0	0	0	494	280	0	0	87	1537	38	0	0	116	8	0	2560				
PH PM - Sum	0	0	0	0	151	87	0	0	56	2153	22	0	0	276	80	0	2825				

Study Name Tampa St @ Madison St
Start Date 11/01/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

	Tampa St Southbound				Madison St Westbound				Tampa St Northbound				Madison ST Eastbound					Peak Hour		
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Period	Volume	PHF
7:00 AM	1	280	5	0	0	1	4	0	0	0	0	0	10	5	0	0	306	7:00 to 8:00	1569	0.774
7:15 AM	3	359	11	0	0	2	4	0	0	0	0	0	10	7	0	0	396	7:15 to 8:15	1728	0.852
7:30 AM	4	310	10	0	0	7	10	0	0	0	0	0	11	8	0	0	360	7:30 to 8:30	1829	0.902
7:45 AM	3	452	14	0	0	4	12	0	0	0	0	0	13	9	0	0	507	7:45 to 8:45	1938	0.956
8:00 AM	4	406	12	0	0	1	11	0	0	0	0	0	19	12	0	0	465	8:00 to 9:00	1885	0.948
8:15 AM	4	442	12	0	0	1	5	0	0	0	0	0	21	12	0	0	497			
8:30 AM	2	420	15	0	0	1	8	0	0	0	0	0	15	8	0	0	469			
8:45 AM	3	398	12	0	0	0	6	0	0	0	0	0	22	13	0	0	454			
4:00 PM	5	235	5	0	0	10	7	0	0	0	0	0	7	15	0	1	285	4:00 to 5:00	1139	0.910
4:15 PM	1	198	5	0	0	9	5	0	0	0	0	0	13	12	0	1	244	4:15 to 5:15	1197	0.872
4:30 PM	2	244	11	0	0	9	6	0	0	0	0	0	12	13	0	0	297	4:30 to 5:30	1360	0.835
4:45 PM	1	239	6	0	0	14	13	0	0	0	0	0	23	17	0	0	313	4:45 to 5:45	1416	0.870
5:00 PM	7	279	13	0	0	8	7	0	0	0	0	0	20	9	0	0	343	5:00 to 6:00	1457	0.895
5:15 PM	5	326	8	0	0	13	11	0	0	0	0	0	23	21	0	0	407			
5:30 PM	3	296	10	0	0	4	11	0	0	0	0	0	16	12	0	1	353			
5:45 PM	8	290	11	0	0	4	12	0	0	0	0	0	16	13	0	0	354			
PH AM - Sum	13	1720	53	0	0	7	36	0	0	0	0	0	68	41	0	0	1938			
PH PM - Sum	23	1191	42	0	0	29	41	0	0	0	0	0	75	55	0	1	1457			

Study Name Florida Ave @ Madison St
Start Date 11/03/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

	Florida Ave Southbound				Madison St Westbound				Florida Ave Northbound				Madison St Eastbound								
Start Time	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Peak Hour		PHF	
7:00 AM	0		0	0	3	1		0	3	312	5			7	6	0	337	7:00 to 8:00	1601	0.827	
7:15 AM	0		0	0	7	3		0	2	339	5			4	10	0	370	7:15 to 8:15	1693	0.874	
7:30 AM	0		0	0	6	3		0	1	375	5			10	10	0	410	7:30 to 8:30	1813	0.925	
7:45 AM	0		0	0	11	5		0	7	433	7			12	9	0	484	7:45 to 8:45	1921	0.927	
8:00 AM	0		0	0	8	3		0	6	368	15			18	11	0	429	8:00 to 9:00	1908	0.921	
8:15 AM	0		0	0	7	5		0	11	451	4			5	7	0	490				
8:30 AM	0		0	0	13	7		0	8	439	20			16	15	0	518				
8:45 AM	0		0	0	8	1		0	4	424	9			12	13	0	471				
9:00 AM	0		0	0	0	0		0	0	0	0			0	0	0					
4:00 PM	0		0	0	9	7		0	5	574	11			11	14	0	631	4:00 to 5:00	2422	0.922	
4:15 PM	0		0	0	14	5		0	10	527	3			13	9	0	581	4:15 to 5:15	2419	0.920	
4:30 PM	0		0	0	22	14		0	5	576	10			20	10	0	657	4:30 to 5:30	2434	0.926	
4:45 PM	0		0	0	16	11		0	5	486	5			19	11	0	553	4:45 to 5:45	2346	0.934	
5:00 PM	0		0	0	32	14		0	2	548	5			16	11	0	628	5:00 to 6:00	2307	0.918	
5:15 PM	0		0	0	24	15		0	5	516	3			21	12	0	596				
5:30 PM	0		0	0	9	7		0	8	523	6			9	7	0	569				
5:45 PM	0		0	0	11	8		0	9	449	1			23	13	0	514				
PH AM - Sum	0	0	0	0	39	20	0	0	32	1691	46	0	0	51	42	0	1921				
PH PM - Sum	0	0	0	0	94	54	0	0	17	2126	23	0	0	76	44	0	2434				

Study Name Florida Ave @ Kennedy Blvd
 Start Date 11/03/2016
 Start Time 7:00 AM
 Site Code
 Project 16-0763 THEA Planning and Design

Type Road
 Classification Totals

Start Time	Florida Ave Southbound				Kennedy Blvd Westbound				Florida Ave Northbound				Kennedy Blvd Eastbound				Total	Peak Hour		PHF
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn		Period	Volume	
7:00 AM	0			0	101	403				249	22			0	0		775	7:00 to 8:00	3184	0.933
7:15 AM	0			0	121	388				230	13			0	0		752	7:15 to 8:15	3248	0.952
7:30 AM	0			0	109	417				297	30			0	0		853	7:30 to 8:30	3326	0.975
7:45 AM	0			0	112	329				330	33			0	0		804	7:45 to 8:45	3337	0.966
8:00 AM	0			0	128	386				283	42			0	0		839	8:00 to 9:00	3328	0.963
8:15 AM	0			0	106	365				315	44			0	0		830			
8:30 AM	0			0	126	382				309	47			0	0		864			
8:45 AM	0			0	121	343				284	47			0	0		795			
4:00 PM	0			0	102	221				452	44			0	0		819	4:00 to 5:00	3236	0.964
4:15 PM	0			0	81	269				453	36			0	0		839	4:15 to 5:15	3262	0.965
4:30 PM	0			0	81	217				454	45			0	0		797	4:30 to 5:30	3253	0.962
4:45 PM	0			0	87	253				396	45			0	0		781	4:45 to 5:45	3331	0.952
5:00 PM	0			0	86	254				438	67			0	0		845	5:00 to 6:00	3288	0.939
5:15 PM	0			0	96	275				401	58			0	0		830			
5:30 PM	0			0	81	290				437	67			0	0		875			
5:45 PM	0			0	70	268				358	42			0	0		738			
PH AM - Sum	0	0	0	0	472	1462	0	0	0	1237	166	0	0	0	0	0	3337			
PH PM - Sum	0	0	0	0	350	1072	0	0	0	1672	237	0	0	0	0	0	3331			

Study Name Tampa St @ Whiting St
Start Date 11/01/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

Start Time	Tampa St Southbound				Whiting St Westbound				Tampa St Northbound				Whiting St Eastbound				Total	Peak Hour		PHF
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn		Period	Volume	
7:00 AM	0	134	65		19	16	0	0	0		0	0	2	18		0	254	7:00 to 8:00	1195	0.818
7:15 AM	0	162	87		10	11	0	0	0		0	0	5	21		0	296	7:15 to 8:15	1287	0.882
7:30 AM	0	148	66		17	14	0	0	0		0	0	11	24		0	280	7:30 to 8:30	1359	0.923
7:45 AM	0	192	103		16	17	0	0	0		0	0	10	27		0	365	7:45 to 8:45	1426	0.969
8:00 AM	2	174	100		16	13	0	0	0		0	0	15	26		0	346	8:00 to 9:00	1394	0.947
8:15 AM	0	179	116		23	14	0	0	0		0	0	14	22		0	368			
8:30 AM	0	167	97		13	28	0	0	0		0	0	15	27		0	347			
8:45 AM	0	159	82		23	24	0	0	0		0	0	16	29		0	333			
4:00 PM	1	185	19		28	10	0	0	0		0	0	6	26		0	275	4:00 to 5:00	1142	0.903
4:15 PM	0	171	19		22	7	0	0	0		0	0	9	14		0	242	4:15 to 5:15	1252	0.813
4:30 PM	0	208	24		21	25	0	0	0		0	0	13	25		0	316	4:30 to 5:30	1452	0.821
4:45 PM	0	209	28		24	18	0	0	0		0	0	10	20		0	309	4:45 to 5:45	1513	0.856
5:00 PM	0	248	32		22	24	0	0	0		0	0	12	47		0	385	5:00 to 6:00	1574	0.890
5:15 PM	0	288	25		45	37	0	0	0		0	0	10	37		0	442			
5:30 PM	0	252	45		22	20	0	0	0		0	0	5	33		0	377			
5:45 PM	0	266	26		21	21	0	0	0		0	0	12	24		0	370			
PH AM - Sum	2	712	416	0	0	68	72	0	0	0	0	0	54	102	0	0	1426			
PH PM - Sum	0	1054	128	0	0	110	102	0	0	0	0	0	39	141	0	0	1574			

Study Name Florida Ave @ Whiting St
Start Date 11/09/2016
Start Time 7:00 AM
Site Code
Project 16-0763 THEA Planning and Design

Type Road
Classification Totals

	Florida Ave Southbound				Whiting St Westbound				Florida Ave Northbound				Whiting St Eastbound							
	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Right	Thru	Left	U-Turn	Total	Peak Hour	PHF	
7:00 AM	0		0	0	3	12		0	9	243	3			17	22	0	309	7:00 to 8:00	1800	0.805
7:15 AM	0		0	0	11	25		0	13	281	4			23	23	0	380	7:15 to 8:15	1943	0.869
7:30 AM	0		0	0	18	39		0	11	421	11			34	25	0	559	7:30 to 8:30	2089	0.934
7:45 AM	0		0	0	18	42		0	13	415	10			32	22	0	552	7:45 to 8:45	1961	0.888
8:00 AM	0		0	0	11	50		0	10	326	13			26	16	0	452	8:00 to 9:00	1874	0.891
8:15 AM	0		0	0	10	50		0	11	386	19			28	22	0	526			
8:30 AM	0		0	0	6	42		0	12	309	5			30	27	0	431			
8:45 AM	0		0	0	9	35		0	16	363	11			16	15	0	465			
4:00 PM	0		0	0	18	16		0	15	361	7			21	44	0	482	4:00 to 5:00	1969	0.969
4:15 PM	0		0	0	16	8		0	22	365	7			22	39	0	479	4:15 to 5:15	2077	0.880
4:30 PM	0		0	0	26	26		0	18	362	4			34	38	0	508	4:30 to 5:30	2110	0.894
4:45 PM	0		0	0	9	14		0	25	370	7			34	41	0	500	4:45 to 5:45	2193	0.928
5:00 PM	0		0	0	35	25		0	18	402	9			65	36	0	590	5:00 to 6:00	2162	0.915
5:15 PM	0		0	0	29	22		0	18	294	10			70	69	0	512			
5:30 PM	0		0	0	20	20		0	16	404	14			48	69	0	591			
5:45 PM	0		0	0	15	24		0	10	325	5			36	54	0	469			
6:00 PM	0		0	0	0	0		0	0	0	0			0	0	0				
PH AM - Sum	0	0	0	0	57	181	0	0	45	1548	53	0	0	120	85	0	2089			
PH PM - Sum	0	0	0	0	93	81	0	0	77	1470	40	0	0	217	215	0	2193			

Intersection Turning Movement Count

City/County: Tampa/Hillsborough
Weather: Rain 3:05-3:40pm
Comments:

File Name : kennedy&tampa
Site Code : 13100488
Start Date : 6/19/2018
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Motorcycles - UTurns

	TAMPA STREET Southbound					KENNEDY BOULEVARD Westbound					
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	App. Total	Int. Total	
07:00 AM	0	242	34	11	287	39	340	0	379	666	
07:15 AM	0	279	42	6	327	52	357	0	409	736	
07:30 AM	0	238	49	8	295	55	342	0	397	692	
07:45 AM	0	309	52	2	363	50	290	0	340	703	
Total	0	1068	177	27	1272	196	1329	0	1525	2797	
08:00 AM	0	324	47	7	378	69	339	0	408	786	
08:15 AM	0	305	46	8	359	50	251	0	301	660	
08:30 AM	0	313	35	8	356	58	276	0	334	690	
08:45 AM	0	343	44	10	397	40	258	0	298	695	
Total	0	1285	172	33	1490	217	1124	0	1341	2831	

*** BREAK ***

11:00 AM	0	162	37	8	207	38	160	0	198	405
11:15 AM	0	187	44	3	234	48	182	0	230	464
11:30 AM	0	214	47	5	266	48	198	0	246	512
11:45 AM	0	228	50	5	283	37	195	0	232	515
Total	0	791	178	21	990	171	735	0	906	1896
12:00 PM	0	169	45	5	219	37	191	0	228	447
12:15 PM	0	194	47	4	245	41	172	0	213	458
12:30 PM	0	195	46	8	249	45	177	0	222	471
12:45 PM	0	213	59	10	282	43	155	0	198	480
Total	0	771	197	27	995	166	695	0	861	1856

*** BREAK ***

[illegible]

Intersection Turning Movement Count

City/County: Tampa/Hillsborough
Weather: Clear
Comments:

File Name : Florida&Palm
Site Code : 13100440
Start Date : 3/21/2018
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Motorcycles - UTurns

	PALM AVENUE Westbound					FLORIDA AVENUE Northbound					PALM AVENUE Eastbound					Int. Total
Start Time	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	Left	Thru	Right	RTOR	App. Total	
07:00 AM	0	53	27	3	83	6	68	19	7	100	5	48	0	0	53	236
07:15 AM	0	101	31	4	136	6	97	17	8	128	7	54	0	0	61	325
07:30 AM	0	70	30	6	106	7	135	27	7	176	7	62	0	0	69	351
07:45 AM	0	80	37	5	122	10	124	20	9	163	4	74	0	0	78	363
Total	0	304	125	18	447	29	424	83	31	567	23	238	0	0	261	1275
08:00 AM	0	89	35	4	128	11	112	18	7	148	5	55	0	0	60	336
08:15 AM	0	67	35	1	103	2	86	22	5	115	6	52	0	0	58	276
08:30 AM	0	89	33	10	132	9	99	19	5	132	7	56	0	0	63	327
08:45 AM	0	72	30	1	103	5	77	22	8	112	5	44	0	0	49	264
Total	0	317	133	16	466	27	374	81	25	507	23	207	0	0	230	1203
*** BREAK ***																
11:00 AM	0	58	9	5	72	18	85	18	0	121	8	33	0	0	41	234
11:15 AM	0	44	9	3	56	20	83	8	6	117	18	36	0	0	54	227
11:30 AM	0	47	14	3	64	15	94	8	4	121	9	32	0	0	41	226
11:45 AM	0	58	17	2	77	19	112	20	4	155	12	40	0	0	52	284
Total	0	207	49	13	269	72	374	54	14	514	47	141	0	0	188	971
12:00 PM	0	46	25	8	79	11	106	15	5	137	15	46	0	0	61	277
12:15 PM	0	69	25	3	97	7	105	25	2	139	12	36	0	0	48	284
12:30 PM	0	61	24	1	86	10	100	13	4	127	12	38	0	0	50	263
12:45 PM	0	72	23	0	95	10	102	20	2	134	12	45	0	0	57	286
Total	0	248	97	12	357	38	413	73	13	537	51	165	0	0	216	1110
*** BREAK ***																
02:00 PM	0	66	27	3	96	7	113	11	2	133	12	59	0	0	71	300
02:15 PM	0	82	17	2	101	8	115	12	3	138	19	63	0	0	82	321
02:30 PM	0	63	19	1	83	7	126	12	4	149	17	67	0	0	84	316
02:45 PM	0	56	20	1	77	3	139	9	1	152	22	79	0	0	101	330
Total	0	267	83	7	357	25	493	44	10	572	70	268	0	0	338	1267
03:00 PM	0	59	27	1	87	10	126	17	3	156	24	77	0	0	101	344
03:15 PM	0	71	25	0	96	9	137	13	1	160	18	85	0	0	103	359
03:30 PM	0	43	26	4	73	5	181	13	1	200	25	76	0	0	101	374
03:45 PM	1	74	32	2	109	6	177	18	0	201	14	83	0	0	97	407
Total	1	247	110	7	365	30	621	61	5	717	81	321	0	0	402	1484
04:00 PM	0	77	33	1	111	4	269	20	1	294	19	101	0	0	120	525
04:15 PM	0	70	30	2	102	14	273	13	1	301	17	101	0	0	118	521
04:30 PM	0	62	39	7	108	8	245	18	0	271	15	102	0	0	117	496
04:45 PM	0	63	35	5	103	3	326	24	1	354	14	100	0	0	114	571
Total	0	272	137	15	424	29	1113	75	3	1220	65	404	0	0	469	2113
05:00 PM	0	87	43	4	134	9	314	26	0	349	20	106	0	0	126	609
05:15 PM	0	81	35	3	119	10	369	20	0	399	21	97	0	0	118	636
05:30 PM	0	90	30	0	120	2	312	17	1	332	13	118	0	0	131	583
05:45 PM	0	86	34	0	120	10	264	15	0	289	27	110	0	0	137	546
Total	0	344	142	7	493	31	1259	78	1	1369	81	431	0	0	512	2374
Grand Total	1	2206	876	95	3178	281	5071	549	102	6003	441	2175	0	0	2616	11797
Apprch %	0	69.4	27.6	3		4.7	84.5	9.1	1.7		16.9	83.1	0	0		
Total %	0	18.7	7.4	0.8	26.9	2.4	43	4.7	0.9	50.9	3.7	18.4	0	0	22.2	
Passenger Vehicles	0	2137	855	94	3086	275	4938	521	99	5833	423	2115	0	0	2538	11457
% Passenger Vehicles	0	96.9	97.6	98.9	97.1	97.9	97.4	94.9	97.1	97.2	95.9	97.2	0	0	97	97.1
Heavy Vehicles	0	65	17	1	83	6	117	25	3	151	14	54	0	0	68	302
% Heavy Vehicles	0	2.9	1.9	1.1	2.6	2.1	2.3	4.6	2.9	2.5	3.2	2.5	0	0	2.6	2.6
Motorcycles	0	4	4	0	8	0	16	3	0	19	1	6	0	0	7	34
% Motorcycles	0	0.2	0.5	0	0.3	0	0.3	0.5	0	0.3	0.2	0.3	0	0	0.3	0.3
UTurns	1	0	0	0	1	0	0	0	0	0	3	0	0	0	3	4
% UTurns	100	0	0	0	0	0	0	0	0	0	0.7	0	0	0	0.1	0

Intersection Turning Movement Count

City/County: Tampa/Hillsborough
Weather: Clear
Comments:

File Name : Tampa&Palm
Site Code : 13100441
Start Date : 3/21/2018
Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - Motorcycles - UTurns

Start Time	TAMPA STREET Southbound						PALM AVENUE Westbound						PALM AVENUE Eastbound						Int. Total
	Left	Thru To Franklin Street	Thru To Tampa Street	Right	RTO R	App. Total	Left To Franklin Street	Left To Tampa Street	Thru	Right	RTO R	App. Total	Left	Thru	Right To Franklin Street	Right	RTO R	App. Total	
07:00 AM	24	8	176	10	0	218	1	17	39	0	0	57	0	32	0	4	5	41	316
07:15 AM	19	7	167	8	0	201	1	44	62	0	0	107	0	43	1	19	6	69	377
07:30 AM	42	8	226	7	0	283	0	39	35	0	0	74	0	31	4	16	10	61	418
07:45 AM	41	16	257	6	0	320	2	47	46	0	0	95	0	37	4	13	5	59	474
Total	126	39	826	31	0	1022	4	147	182	0	0	333	0	143	9	52	26	230	1585
08:00 AM	33	5	255	5	0	298	0	42	52	0	0	94	0	30	4	5	3	42	434
08:15 AM	35	16	244	12	3	310	1	26	37	0	0	64	0	22	2	3	2	29	403
08:30 AM	36	7	207	5	0	255	0	45	45	0	0	90	0	34	1	7	4	46	391
08:45 AM	31	12	182	4	0	229	1	40	30	0	0	71	0	19	1	6	7	33	333
Total	135	40	888	26	3	1092	2	153	164	0	0	319	0	105	8	21	16	150	1561
*** BREAK ***																			
11:00 AM	16	4	95	7	0	122	2	48	30	0	0	80	0	28	1	16	4	49	251
11:15 AM	16	5	87	7	1	116	0	31	33	0	0	64	0	31	1	15	4	51	231
11:30 AM	18	4	88	6	1	117	2	28	29	0	0	59	0	28	2	19	5	54	230
11:45 AM	21	3	81	5	4	114	1	39	39	0	0	79	0	34	0	12	2	48	241
Total	71	16	351	25	6	469	5	146	131	0	0	282	0	121	4	62	15	202	953
12:00 PM	18	6	74	4	1	103	1	33	26	0	0	60	0	40	2	7	9	58	221
12:15 PM	12	1	80	7	1	101	0	47	29	0	0	76	0	29	2	16	4	51	228
12:30 PM	15	3	95	7	1	121	3	41	33	0	0	77	0	36	0	10	11	57	255
12:45 PM	25	1	111	5	4	146	0	49	32	0	0	81	0	34	4	15	7	60	287
Total	70	11	360	23	7	471	4	170	120	0	0	294	0	139	8	48	31	226	991
*** BREAK ***																			
02:00 PM	24	3	100	3	2	132	0	33	32	0	0	65	0	50	5	34	20	109	306
02:15 PM	20	3	99	3	1	126	2	48	50	0	0	100	0	61	6	30	15	112	338
02:30 PM	36	10	131	5	1	183	0	39	30	0	0	69	0	51	1	20	14	86	338
02:45 PM	36	9	127	4	6	182	2	29	27	0	0	58	0	67	4	16	7	94	334
Total	116	25	457	15	10	623	4	149	139	0	0	292	0	229	16	100	56	401	1316
03:00 PM	37	6	125	5	2	175	0	36	29	0	0	65	0	64	9	31	13	117	357
03:15 PM	31	6	87	10	0	134	1	32	35	0	0	68	0	81	7	20	10	118	320
03:30 PM	32	3	102	5	4	146	0	36	23	0	0	59	0	63	11	23	12	109	314
03:45 PM	38	7	128	4	2	179	1	41	34	0	0	76	0	61	4	22	9	96	351
Total	138	22	442	24	8	634	2	145	121	0	0	268	0	269	31	96	44	440	1342
04:00 PM	45	12	103	8	1	169	0	39	34	0	0	73	0	79	5	13	8	105	347
04:15 PM	38	11	100	6	3	158	0	41	41	0	0	82	0	77	6	8	13	104	344
04:30 PM	37	8	113	4	0	162	0	40	44	0	0	84	0	85	13	5	10	113	359
04:45 PM	38	11	111	4	1	165	2	27	35	0	0	64	0	76	6	10	9	101	330
Total	158	42	427	22	5	654	2	147	154	0	0	303	0	317	30	36	40	423	1380
05:00 PM	37	7	124	4	1	173	1	39	48	0	0	88	0	90	12	10	15	127	388
05:15 PM	44	7	147	4	1	203	0	41	53	0	0	94	0	79	16	11	4	110	407
05:30 PM	45	6	128	7	0	186	1	33	56	0	0	90	0	89	16	16	15	136	412
05:45 PM	32	9	135	6	3	185	2	26	66	0	0	94	0	102	9	9	10	130	409
Total	158	29	534	21	5	747	4	139	223	0	0	366	0	360	53	46	44	503	1616
Grand Total	972	224	4285	187	44	5712	27	1196	1234	0	0	2457	0	1683	159	461	272	2575	10744
Apprch %	17	3.9	75	3.3	0.8		1.1	48.7	50.2	0	0		0	65.4	6.2	17.9	10.6		
Total %	9	2.1	39.9	1.7	0.4	53.2	0.3	11.1	11.5	0	0	22.9	0	15.7	1.5	4.3	2.5	24	
Passenger Vehicles %	950	224	4147	177	43	5541	27	1124	1204	0	0	2355	0	1630	159	440	263	2492	10388
Passenger Vehicles	97.7	100	96.8	94.7	97.7	97	100	94	97.6	0	0	95.8	0	96.9	100	95.4	96.7	96.8	96.7
Heavy Vehicles	19	0	127	10	1	157	0	44	27	0	0	71	0	50	0	21	9	80	308
% Heavy Vehicles	2	0	3	5.3	2.3	2.7	0	3.7	2.2	0	0	2.9	0	3	0	4.6	3.3	3.1	2.9

Intersection Turning Movement Count

City/County: Tampa/Hillsborough

Weather: Clear

Comments:

File Name : Tampa&Jackson

Site Code : 13100402

Start Date : 10/26/2017

Page No : 1

Groups Printed- Passenger Vehicles - Heavy Vehicles - UTurns

	TAMPA STREET Southbound				JACKSON STREET Eastbound					
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	RTOR	App. Total	Int. Total
07:00 AM	50	238	0	288	0	74	37	2	113	401
07:15 AM	89	267	0	356	0	78	35	7	120	476
07:30 AM	84	282	0	366	0	121	59	5	185	551
07:45 AM	87	358	0	445	0	87	63	3	153	598
Total	310	1145	0	1455	0	360	194	17	571	2026
08:00 AM	72	317	0	389	0	116	79	9	204	593
08:15 AM	72	367	0	439	0	94	68	6	168	607
08:30 AM	68	385	0	453	0	102	119	7	228	681
08:45 AM	72	358	0	430	0	108	106	3	217	647
Total	284	1427	0	1711	0	420	372	25	817	2528

*** BREAK ***

11:00 AM	59	175	0	234	0	71	34	0	105	339
11:15 AM	73	221	0	294	0	94	42	2	138	432
11:30 AM	66	193	0	259	0	89	46	3	138	397
11:45 AM	90	216	0	306	0	85	39	3	127	433
Total	288	805	0	1093	0	339	161	8	508	1601
12:00 PM	53	200	0	253	0	107	39	4	150	403
12:15 PM	57	233	0	290	0	88	39	2	129	419
12:30 PM	72	188	0	260	0	91	30	2	123	383
12:45 PM	65	218	0	283	0	93	46	2	141	424
Total	247	839	0	1086	0	379	154	10	543	1629

*** BREAK ***

[illegible]

City of Tampa (FL)
306 East Jackson Street
PO Box 2000
Tampa, Florida, United States 33602
(813) 274-8105

Count Name: florida & jackson_day2
Site Code:
Start Date: 06/09/2016
Page No: 1

Turning Movement Data

Start Time	n florida ave Southbound		e jackson st Westbound		n florida ave Northbound				e jackson st Eastbound				Int. Total
	Peds	App. Total	Peds	App. Total	Right	Thru	Peds	App. Total	Thru	Left	Peds	App. Total	
7:00 AM	10	0	3	0	10	194	5	204	124	10	4	134	338
7:15 AM	15	0	11	0	20	262	12	282	116	20	8	136	418
7:30 AM	26	0	10	0	28	322	15	350	144	18	12	162	512
7:45 AM	14	0	6	0	18	375	11	393	168	28	10	196	589
Hourly Total	65	0	30	0	76	1153	43	1229	552	76	34	628	1857
8:00 AM	15	0	7	0	26	340	8	366	124	15	9	139	505
8:15 AM	18	0	6	0	21	337	17	358	123	19	11	142	500
8:30 AM	19	0	15	0	25	409	19	434	130	26	9	156	590
8:45 AM	12	0	8	0	18	267	20	285	130	27	13	157	442
Hourly Total	64	0	36	0	90	1353	64	1443	507	87	42	594	2037
9:00 AM	15	0	14	0	27	285	19	312	111	35	9	146	458
9:15 AM	16	0	6	0	13	221	16	234	98	16	5	114	348
9:30 AM	10	0	8	0	11	224	18	235	99	23	4	122	357
9:45 AM	8	0	4	0	13	183	14	196	120	21	7	141	337
Hourly Total	49	0	32	0	64	913	67	977	428	95	25	523	1500
10:00 AM	10	0	11	0	12	182	14	194	83	22	8	105	299
10:15 AM	4	0	18	0	15	173	18	188	118	20	2	138	326
10:30 AM	13	0	16	0	7	179	17	186	90	27	10	117	303
10:45 AM	5	0	11	0	7	183	21	190	102	20	10	122	312
Hourly Total	32	0	56	0	41	717	70	758	393	89	30	482	1240
11:00 AM	15	0	13	0	11	220	23	231	93	26	8	119	350
11:15 AM	14	0	17	0	10	181	27	191	100	25	14	125	316
11:30 AM	24	0	35	0	15	249	67	264	95	31	12	126	390
11:45 AM	44	0	24	0	20	213	62	233	110	34	18	144	377
Hourly Total	97	0	89	0	56	863	179	919	398	116	52	514	1433
12:00 PM	30	0	37	0	18	236	73	254	105	30	26	135	389
12:15 PM	38	0	26	0	15	275	52	290	124	33	15	157	447
12:30 PM	48	0	25	0	27	272	62	299	103	31	29	134	433
12:45 PM	42	0	22	0	17	234	59	251	133	24	21	157	408
Hourly Total	158	0	110	0	77	1017	246	1094	465	118	91	583	1677
1:00 PM	15	0	14	0	18	294	33	312	122	36	16	158	470
1:15 PM	22	0	17	0	15	270	47	285	133	28	14	161	446
1:30 PM	15	0	17	0	15	268	36	283	138	32	10	170	453
1:45 PM	31	0	14	0	18	269	10	287	128	28	7	156	443
Hourly Total	83	0	62	0	66	1101	126	1167	521	124	47	645	1812
2:00 PM	11	0	4	0	20	248	19	268	107	28	14	135	403
2:15 PM	8	0	11	0	13	254	11	267	124	19	5	143	410
2:30 PM	10	0	8	0	16	311	22	327	119	29	8	148	475
2:45 PM	16	0	5	0	19	265	18	284	120	24	13	144	428
Hourly Total	45	0	28	0	68	1078	70	1146	470	100	40	570	1716
3:00 PM	12	0	6	0	15	355	21	370	114	40	11	154	524

3:15 PM	12	0	5	0	19	338	10	357	133	17	13	150	507
3:30 PM	14	0	5	0	24	413	14	437	123	21	18	144	581
3:45 PM	18	0	11	0	23	341	10	364	138	26	6	164	528
Hourly Total	56	0	27	0	81	1447	55	1528	508	104	48	612	2140
4:00 PM	7	0	3	0	25	419	6	444	168	23	8	191	635
4:15 PM	13	0	5	0	31	355	16	386	167	34	14	201	587
4:30 PM	29	0	14	0	34	437	17	471	146	25	15	171	642
4:45 PM	13	0	17	0	34	442	17	476	210	26	10	236	712
Hourly Total	62	0	39	0	124	1653	56	1777	691	108	47	799	2576
5:00 PM	29	0	10	0	53	484	26	537	294	37	18	331	868
5:15 PM	6	0	3	0	50	501	15	551	164	29	18	193	744
5:30 PM	5	0	6	0	32	401	17	433	253	47	8	300	733
5:45 PM	9	0	2	0	41	430	5	471	204	28	10	232	703
Hourly Total	49	0	21	0	176	1816	63	1992	915	141	54	1056	3048
6:00 PM	5	0	3	0	19	316	8	335	184	29	5	213	548
6:15 PM	2	0	1	0	26	309	5	335	160	23	1	183	518
6:30 PM	4	0	5	0	27	294	0	321	155	27	6	182	503
6:45 PM	1	0	0	0	15	220	0	235	125	15	2	140	375
Hourly Total	12	0	9	0	87	1139	13	1226	624	94	14	718	1944
7:00 PM	3	0	3	0	13	214	2	227	119	8	3	127	354
Grand Total	775	0	542	0	1019	14464	1054	15483	6591	1260	527	7851	23334
Approach %	-	-	-	-	6.6	93.4	-	-	84.0	16.0	-	-	-
Total %	-	0.0	-	0.0	4.4	62.0	-	66.4	28.2	5.4	-	33.6	-
All Vehicles (no classification)	-	0	-	0	1018	14452	-	15470	6584	1259	-	7843	23313
% All Vehicles (no classification)	-	-	-	-	99.9	99.9	-	99.9	99.9	99.9	-	99.9	99.9
Bicycles on Road	-	0	-	0	1	12	-	13	7	1	-	8	21
% Bicycles on Road	-	-	-	-	0.1	0.1	-	0.1	0.1	0.1	-	0.1	0.1
Bicycles on Crosswalk	3	-	10	-	-	-	7	-	-	-	5	-	-
% Bicycles on Crosswalk	0.4	-	1.8	-	-	-	0.7	-	-	-	0.9	-	-
Pedestrians	772	-	532	-	-	-	1047	-	-	-	522	-	-
% Pedestrians	99.6	-	98.2	-	-	-	99.3	-	-	-	99.1	-	-

City of Tampa (FL)
306 East Jackson Street
PO Box 2000
Tampa, Florida, United States 33602
(813) 274-8105

Count Name: E Fortune St
Site Code:
Start Date: 07/16/2019
Page No: 1

Turning Movement Data

Start Time	Southbound Approach					Westbound Approach					Northbound Approach					Eastbound Approach					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
7:00 AM	0	0	0	2	0	0	0	0	0	0	1	363	1	0	365	0	2	1	1	3	368
7:15 AM	0	0	0	5	0	0	0	0	0	0	2	405	6	0	413	0	4	1	0	5	418
7:30 AM	0	0	0	3	0	0	0	0	2	0	0	455	4	2	459	0	1	1	1	2	461
7:45 AM	0	0	0	4	0	0	0	0	1	0	3	404	11	1	418	0	1	3	1	4	422
Hourly Total	0	0	0	14	0	0	0	0	3	0	6	1627	22	3	1655	0	8	6	3	14	1669
8:00 AM	0	0	0	0	0	0	1	0	1	1	2	449	6	2	457	0	4	9	1	13	471
8:15 AM	0	0	0	6	0	0	0	0	3	0	1	412	3	6	416	0	1	3	2	4	420
8:30 AM	0	0	0	2	0	0	1	0	2	1	1	422	5	3	428	0	3	5	1	8	437
8:45 AM	0	0	0	10	0	0	0	0	1	0	3	360	12	1	375	0	0	3	0	3	378
Hourly Total	0	0	0	18	0	0	2	0	7	2	7	1643	26	12	1676	0	8	20	4	28	1706
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	1	0	0	0	0	2	0	2	572	3	0	577	0	5	10	0	15	592
4:15 PM	0	0	0	0	0	0	0	0	1	0	2	574	3	1	579	0	0	7	1	7	586
4:30 PM	0	0	0	2	0	0	0	0	2	0	0	552	2	0	554	0	3	8	0	11	565
4:45 PM	0	0	0	2	0	0	0	0	1	0	1	607	6	1	614	0	3	7	0	10	624
Hourly Total	0	0	0	5	0	0	0	0	6	0	5	2305	14	2	2324	0	11	32	1	43	2367
5:00 PM	0	0	0	5	0	0	1	0	1	1	1	592	5	4	598	0	7	13	3	20	619
5:15 PM	0	0	0	2	0	0	0	0	3	0	2	646	3	4	651	0	4	9	3	13	664
5:30 PM	0	0	0	2	0	0	0	0	3	0	2	557	6	1	565	0	5	7	3	12	577
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	499	5	0	506	0	3	3	1	6	512
Hourly Total	0	0	0	9	0	0	1	0	7	1	7	2294	19	9	2320	0	19	32	10	51	2372
Grand Total	0	0	0	46	0	0	3	0	23	3	25	7869	81	26	7975	0	46	90	18	136	8114
Approach %	0.0	0.0	0.0	-	-	0.0	100.0	0.0	-	-	0.3	98.7	1.0	-	-	0.0	33.8	66.2	-	-	-
Total %	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	-	0.0	0.3	97.0	1.0	-	98.3	0.0	0.6	1.1	-	1.7	-
All Vehicles (no classification)	0	0	0	-	0	0	3	0	-	3	25	7869	81	-	7975	0	46	90	-	136	8114
% All Vehicles (no classification)	-	-	-	-	-	-	100.0	-	-	100.0	100.0	100.0	100.0	-	100.0	-	100.0	100.0	-	100.0	100.0
Bicycles on Crosswalk	-	-	-	1	-	-	-	-	3	-	-	-	-	1	-	-	-	-	2	-	-
% Bicycles on Crosswalk	-	-	-	2.2	-	-	-	-	13.0	-	-	-	-	3.8	-	-	-	-	11.1	-	-
Pedestrians	-	-	-	45	-	-	-	-	20	-	-	-	-	25	-	-	-	-	16	-	-
% Pedestrians	-	-	-	97.8	-	-	-	-	87.0	-	-	-	-	96.2	-	-	-	-	88.9	-	-

City of Tampa (FL)
306 East Jackson Street
PO Box 2000
Tampa, Florida, United States 33602
(813) 274-8105

Count Name: Harrison-Florida Ave
Site Code:
Start Date: 07/16/2019
Page No: 1

Turning Movement Data

Start Time	Southbound Approach Southbound				E Harrison St Westbound				N Florida Ave Northbound					E Harrison St Eastbound				Int. Total
	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Thru	Left	Peds	App. Total	
7:00 AM	0	0	0	0	13	3	3	16	2	380	2	2	384	0	0	1	0	400
7:15 AM	0	0	2	0	10	0	2	10	3	387	5	1	395	0	1	0	1	406
7:30 AM	0	0	1	0	19	4	1	23	2	448	0	0	450	0	0	0	0	473
7:45 AM	0	0	3	0	16	2	1	18	4	449	5	1	458	2	0	3	2	478
Hourly Total	0	0	6	0	58	9	7	67	11	1664	12	4	1687	2	1	4	3	1757
8:00 AM	0	0	3	0	22	2	4	24	2	412	3	0	417	0	0	2	0	441
8:15 AM	0	0	1	0	14	3	6	17	4	493	3	2	500	0	1	2	1	518
8:30 AM	0	0	1	0	14	1	5	15	4	411	5	2	420	1	0	0	1	436
8:45 AM	0	0	1	0	21	3	6	24	3	389	1	2	393	3	0	2	3	420
Hourly Total	0	0	6	0	71	9	21	80	13	1705	12	6	1730	4	1	6	5	1815
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	0	16	1	7	17	2	540	2	1	544	3	1	1	4	565
4:15 PM	0	0	0	0	15	3	10	18	9	562	1	5	572	1	0	1	1	591
4:30 PM	0	0	1	0	12	3	4	15	3	534	2	1	539	4	1	3	5	559
4:45 PM	0	0	0	0	23	4	3	27	4	534	3	0	541	1	0	0	1	569
Hourly Total	0	0	1	0	66	11	24	77	18	2170	8	7	2196	9	2	5	11	2284
5:00 PM	0	0	2	0	16	3	5	19	5	628	3	1	636	5	0	3	5	660
5:15 PM	0	0	3	0	19	3	4	22	2	605	2	1	609	0	2	3	2	633
5:30 PM	0	0	0	0	8	2	3	10	7	554	2	1	563	0	0	4	0	573
5:45 PM	0	0	2	0	12	5	3	17	6	509	1	4	516	3	1	0	4	537
Hourly Total	0	0	7	0	55	13	15	68	20	2296	8	7	2324	8	3	10	11	2403
Grand Total	0	0	20	0	250	42	67	292	62	7835	40	24	7937	23	7	25	30	8259
Approach %	0.0	0.0	-	-	85.6	14.4	-	-	0.8	98.7	0.5	-	-	76.7	23.3	-	-	-
Total %	0.0	0.0	-	0.0	3.0	0.5	-	3.5	0.8	94.9	0.5	-	96.1	0.3	0.1	-	0.4	-
All Vehicles (no classification)	0	0	-	0	250	42	-	292	62	7835	40	-	7937	23	7	-	30	8259
% All Vehicles (no classification)	-	-	-	-	100.0	100.0	-	100.0	100.0	100.0	100.0	-	100.0	100.0	100.0	-	100.0	100.0
Bicycles on Crosswalk	-	-	3	-	-	-	5	-	-	-	-	8	-	-	-	3	-	-
% Bicycles on Crosswalk	-	-	15.0	-	-	-	7.5	-	-	-	-	33.3	-	-	-	12.0	-	-
Pedestrians	-	-	17	-	-	-	62	-	-	-	-	16	-	-	-	22	-	-
% Pedestrians	-	-	85.0	-	-	-	92.5	-	-	-	-	66.7	-	-	-	88.0	-	-

City of Tampa (FL)
306 East Jackson Street
PO Box 2000
Tampa, Florida, United States 33602
(813) 274-8105

Count Name: Henderson-Florida
Site Code:
Start Date: 07/16/2019
Page No: 1

Turning Movement Data

Start Time	Southbound Approach					Westbound Approach					Northbound Approach					Eastbound Approach					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
7:00 AM	0	0	0	0	0	8	1	0	2	9	0	90	3	0	93	0	1	3	1	4	106
7:15 AM	0	0	0	0	0	9	1	0	0	10	1	85	4	2	90	0	4	1	1	5	105
7:30 AM	0	0	0	1	0	6	7	0	3	13	1	120	5	1	126	0	2	1	0	3	142
7:45 AM	0	0	0	0	0	4	3	0	0	7	4	104	3	0	111	0	1	0	0	1	119
Hourly Total	0	0	0	1	0	27	12	0	5	39	6	399	15	3	420	0	8	5	2	13	472
8:00 AM	0	0	0	2	0	5	7	0	1	12	2	102	5	1	109	0	4	4	4	8	129
8:15 AM	0	0	0	0	0	8	3	0	7	11	1	113	7	4	121	0	5	1	0	6	138
8:30 AM	0	0	0	0	0	6	1	0	2	7	0	137	14	1	151	0	6	3	2	9	167
8:45 AM	0	0	0	3	0	6	6	0	10	12	1	118	13	3	132	0	5	7	4	12	156
Hourly Total	0	0	0	5	0	25	17	0	20	42	4	470	39	9	513	0	20	15	10	35	590
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	0	0	1	0	10	5	0	0	15	3	215	8	1	226	0	6	5	2	11	252
4:15 PM	0	0	0	0	0	8	7	0	1	15	0	234	8	2	242	0	6	11	0	17	274
4:30 PM	0	0	0	1	0	14	6	0	4	20	1	264	6	5	271	0	8	17	1	25	316
4:45 PM	0	0	0	0	0	11	7	0	0	18	2	358	10	0	370	0	13	16	1	29	417
Hourly Total	0	0	0	2	0	43	25	0	5	68	6	1071	32	8	1109	0	33	49	4	82	1259
5:00 PM	0	0	0	0	0	17	8	0	7	25	4	356	7	3	367	0	8	20	1	28	420
5:15 PM	0	0	0	2	0	25	17	0	5	42	4	418	9	5	431	0	9	20	3	29	502
5:30 PM	0	0	0	5	0	10	9	0	3	19	4	331	6	5	341	0	5	16	9	21	381
5:45 PM	0	0	0	8	0	16	2	0	0	18	0	317	13	0	330	0	11	16	4	27	375
Hourly Total	0	0	0	15	0	68	36	0	15	104	12	1422	35	13	1469	0	33	72	17	105	1678
Grand Total	0	0	0	23	0	163	90	0	45	253	28	3362	121	33	3511	0	94	141	33	235	3999
Approach %	0.0	0.0	0.0	-	-	64.4	35.6	0.0	-	-	0.8	95.8	3.4	-	-	0.0	40.0	60.0	-	-	-
Total %	0.0	0.0	0.0	-	0.0	4.1	2.3	0.0	-	6.3	0.7	84.1	3.0	-	87.8	0.0	2.4	3.5	-	5.9	-
All Vehicles (no classification)	0	0	0	-	0	163	90	0	-	253	28	3362	121	-	3511	0	94	141	-	235	3999
% All Vehicles (no classification)	-	-	-	-	-	100.0	100.0	-	-	100.0	100.0	100.0	100.0	-	100.0	-	100.0	100.0	-	100.0	100.0
Bicycles on Crosswalk	-	-	-	0	-	-	-	-	3	-	-	-	-	0	-	-	-	-	1	-	-
% Bicycles on Crosswalk	-	-	-	0.0	-	-	-	-	6.7	-	-	-	-	0.0	-	-	-	-	3.0	-	-
Pedestrians	-	-	-	23	-	-	-	-	42	-	-	-	-	33	-	-	-	-	32	-	-
% Pedestrians	-	-	-	100.0	-	-	-	-	93.3	-	-	-	-	100.0	-	-	-	-	97.0	-	-

Count Name: Laurel-Tampa Blvd
Site Code:
Start Date: 07/16/2019
Page No: 1

[illegible]

**Generalized Annual Average Daily Volumes for Florida's
Urbanized Areas**

TABLE 1

12/18/12

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Class I (40 mph or higher posted speed limit)						Core Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	16,800	17,700	**	4	47,400	64,000	77,900	84,600	
4	Divided	*	37,900	39,800	**	6	69,900	95,200	116,600	130,600	
6	Divided	*	58,400	59,900	**	8	92,500	126,400	154,300	176,600	
8	Divided	*	78,800	80,100	**	10	115,100	159,700	194,500	222,700	
						12	162,400	216,700	256,600	268,900	
Class II (35 mph or slower posted speed limit)						Urbanized					
Lanes	Median	B	C	D	E	Lanes	B	C	D	E	
2	Undivided	*	7,300	14,800	15,600	4	45,800	61,500	74,400	79,900	
4	Divided	*	14,500	32,400	33,800	6	68,100	93,000	111,800	123,300	
6	Divided	*	23,300	50,000	50,900	8	91,500	123,500	148,700	166,800	
8	Divided	*	32,000	67,300	68,100	10	114,800	156,000	187,100	210,300	
Non-State Signalized Roadway Adjustments						Freeway Adjustments					
(Alter corresponding state volumes by the indicated percent.)						Auxiliary Lanes					
Non-State Signalized Roadways						Present in Both Directions					
- 10%						+ 20,000					
Ramp Metering						+ 5%					
Median & Turn Lane Adjustments						UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		Lanes	Median	B	C	D	E
2	Divided	Yes	No	+5%		2	Undivided	8,600	17,000	24,200	33,300
2	Undivided	No	No	-20%		4	Divided	36,700	51,800	65,600	72,600
Multi	Undivided	Yes	No	-5%		6	Divided	55,000	77,700	98,300	108,800
Multi	Undivided	No	No	-25%							
-	-	-	Yes	+ 5%							
One-Way Facility Adjustment						Uninterrupted Flow Highway Adjustments					
Multiply the corresponding two-directional volumes in this table by 0.6						Lanes	Median	Exclusive left lanes	Adjustment factors		
						2	Divided	Yes	+5%		
						Multi	Undivided	Yes	-5%		
						Multi	Undivided	No	-25%		
BICYCLE MODE ²						¹ Values shown are presented as two-way annual average daily volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual. ² Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility. ³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow. * Cannot be achieved using table input value defaults. ** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.					
(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Paved Shoulder/Bicycle											
Lane Coverage	B	C	D	E							
0-49%	*	2,900	7,600	19,700							
50-84%	2,100	6,700	19,700	>19,700							
85-100%	9,300	19,700	>19,700	**							
PEDESTRIAN MODE ²						Source: Florida Department of Transportation Systems Planning Office www.dot.state.fl.us/planning/systems/sm/los/default.shtm					
(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Sidewalk Coverage											
B	C	D	E								
0-49%	*	*	2,800	9,500							
50-84%	*	1,600	8,700	15,800							
85-100%	3,800	10,700	17,400	>19,700							
BUS MODE (Scheduled Fixed Route) ³											
(Buses in peak hour in peak direction)											
Sidewalk Coverage	B	C	D	E							
0-84%	> 5	≥ 4	≥ 3	≥ 2							
85-100%	> 4	≥ 3	≥ 2	≥ 1							

Generalized **Peak Hour Two-Way** Volumes for Florida's
Urbanized Areas¹

TABLE 4

12/18/12

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,510	1,600	**
4	Divided	*	3,420	3,580	**
6	Divided	*	5,250	5,390	**
8	Divided	*	7,090	7,210	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	660	1,330	1,410
4	Divided	*	1,310	2,920	3,040
6	Divided	*	2,090	4,500	4,590
8	Divided	*	2,880	6,060	6,130

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
-	-	-	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE²

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle

Lane Coverage	B	C	D	E
0-49%	*	260	680	1,770
50-84%	190	600	1,770	>1,770
85-100%	830	1,770	>1,770	**

PEDESTRIAN MODE²

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage

	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,420
85-100%	340	960	1,560	>1,770

BUS MODE (Scheduled Fixed Route)³

(Buses in peak hour in peak direction)

Sidewalk Coverage

	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	4,120	5,540	6,700	7,190
6	6,130	8,370	10,060	11,100
8	8,230	11,100	13,390	15,010
10	10,330	14,040	16,840	18,930
12	14,450	18,880	22,030	22,860

Freeway Adjustments

Auxiliary Lanes Present in Both Directions + 1,800

Ramp Metering + 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	770	1,530	2,170	2,990
4	Divided	3,300	4,660	5,900	6,530
6	Divided	4,950	6,990	8,840	9,790

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

¹Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

² Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:

Florida Department of Transportation

Systems Planning Office

www.dot.state.fl.us/planning/systems/sm/los/default.shtm

Existing 2018 AM Peak-Hour Volume Development

Inter No.	Intersection	Road	2018 AADT	K	D	Peak-Hour Volume		EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				
								EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
1	Tampa St & Palm St	Tampa St	12500	0.09	0.999	1124	RAW DATA INPUT				119	70		155	168							194	972	33
		Palm St	6900	0.09	0.597	371	CALCULATED COUNT				158	93		178	193							182	912	31
2	Tampa St & Kay St	Tampa St	12500	0.09	0.999	1124	RAW DATA INPUT							7	1055								1037	444
		Kay St	16000	0.09	0.999	1439	CALCULATED COUNT							10	1430								787	337
3	Tampa St & Scott St	Tampa St	7500	0.09	0.999	675	RAW DATA INPUT				699	90										204	863	
		Scott St	7900	0.09	0.999	711	CALCULATED COUNT				630	82											129	546
4	Tampa St & Tyler St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT				9	23		21	57							22	1984	71
		Tyler St	4500	0.09	0.597	242	CALCULATED COUNT				46	118		66	177							18	1615	58
5	Tampa St & Cass St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT				153	62		33	177							67	1968	19
		Cass St	6200	0.09	0.597	334	CALCULATED COUNT				238	97		36	190							56	1620	16
6	Tampa St & Polk St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT				13	6		9	69							49	1958	11
		Polk St	2900	0.09	0.597	156	CALCULATED COUNT				72	34		18	138							42	1641	10
7	Tampa St & Zack St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT				60	35		13	38							81	1871	6
		Zack St	4500	0.09	0.597	242	CALCULATED COUNT				153	90		42	122							70	1616	6
8	Tampa St & Twiggs St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT				27	12		41	186							35	1367	23
		Twiggs St	8000	0.09	0.597	430	CALCULATED COUNT				201	90		78	353							42	1622	28
9	Tampa St & Madison St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT				44	74		39	7							58	1862	14
		Madison St	3500	0.09	0.597	189	CALCULATED COUNT				71	118		108	20							51	1628	13
10	Tampa St & Kennedy Blvd	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT							235	1381								1196	222
		Kennedy Blvd	17500	0.09	0.999	1574	CALCULATED COUNT							229	1345								1426	265
11	Tampa St & Jackson St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT				439	415										297	1492	
		Jackson St	9500	0.09	0.999	855	CALCULATED COUNT				440	416										281	1410	
12	Tampa St & Whiting St	Tampa St	1500	0.09	0.999	135	RAW DATA INPUT				110	59		78	74							450	770	2
		Whiting St	5000	0.09	0.597	269	CALCULATED COUNT				175	94		94	89							50	85	
13	Florida & Palm Ave	Florida Ave	11500	0.09	0.999	1034	RAW DATA INPUT				23	243			337	150		34	463	112				
		Palm St	6900	0.09	0.597	371	CALCULATED COUNT				22	229			257	115		58	787	191				
14	Florida & Henderson Ave	Florida Ave	11500	0.09	0.999	1034	RAW DATA INPUT				16	21			18	27		42	503	4				
		Henderson Ave	3225	0.09	0.597	174	CALCULATED COUNT				51	67			70	104		80	948	8				
15	Florida Ave & Scott St	Florida Ave	24000	0.09	0.999	2158	RAW DATA INPUT				215	504							1476	560				
		Scott St	14000	0.09	0.999	1259	CALCULATED COUNT				377	883							1565	594				
16	Florida & Fortune St	Florida Ave	24000	0.09	0.999	2158	RAW DATA INPUT				17	7						26	1840	6				
		Fortune St	841	0.09	0.999	76	CALCULATED COUNT				54	23							30	2121	7			
17	Florida & Harrison St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT				1	2			12	76		12	1928	13				
		Harrison St	1315	0.09	0.597	71	CALCULATED COUNT				16	32			10	62		14	2219	15				
18	Florida & Tyler St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT				13	14			30	8		26	2156	7				
		Tyler St	4500	0.09	0.597	242	CALCULATED COUNT				79	85			191	51		27	2214	8				
19	Florida & Cass St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT				46	151			103	28		44	2010	37				
		Cass St	6200	0.09	0.597	334	CALCULATED COUNT				78	256			177	49		48	2161	40				
20	Florida & Polk St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT				15	45			22	20		34	2039	18				
		Polk St	2900	0.09	0.597	156	CALCULATED COUNT				39	117			56	51		37	2192	20				
21	Florida Ave & Zack St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT				14	50			51	74		81	2136	45				
		Zack St	4500	0.09	0.597	242	CALCULATED COUNT				36	128			99	144		81	2123	45				
22	Florida Ave & Twiggs St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT				8	128			309	545		42	1696	96				
		Twiggs St	8000	0.09	0.597	430	CALCULATED COUNT				18	274			156	275		52	2079	118				
23	Florida Ave & Madison St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT				45	56			22	42		49	1830	35				
		Madison St	3500	0.09	0.597	189	CALCULATED COUNT				84	105			44	84		58	2150	42				
24	Florida & Kennedy Blvd	Florida Ave	9900	0.09	0.999	891	RAW DATA INPUT								1582	511		180	1338					
		Kennedy Blvd	19000	0.09	0.999	1709	CALCULATED COUNT								1292	418		106	785					
25	Florida & Jackson St	Florida Ave	9900	0.09	0.999	891	RAW DATA INPUT				97	596							1596	99				
		Jackson St	9500	0.09	0.999	855	CALCULATED COUNT				120	735							839	52				
26	Florida Ave & Whiting Street	Florida Ave	1650	0.09	0.999	149	RAW DATA INPUT				94	132			200	63		59	1707	49				
		Whiting St	5000	0.09	0.597	269	CALCULATED COUNT				76	106			205	65		5	140	5				
27	Florida & Brorain St	Florida Ave	1650	0.09	0.999	149	RAW DATA INPUT								1593	378		95	1524					
		Brorain St	11000	0.09	0.999	990	CALCULATED COUNT								800	190		9	140					
28	Tampa St & Laurel Rd	Tampa St	7500	0.09	0.999	675	RAW DATA INPUT					165										835	62	
		Laurel Rd	2354	0.09	0.999	212	CALCULATED COUNT					212										628	47	

Existing 2018 PM Peak-Hour Volume Development

Inter No.	Intersection	Road	2018 AADT	K	D	Peak-Hour Volume		EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND			
								EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
1	Tampa St & Palm St	Tampa St	12500	0.09	0.999	1124	RAW DATA INPUT			356	142		142	221							156	557	26
		Palm St	6900	0.09	0.597	371	CALCULATED COUNT			266	106		98	153							238	545	381
2	Tampa St & Kay St	Tampa St	12500	0.09	0.999	1124	RAW DATA INPUT						21	947							584	409	
		Kay St	16000	0.09	0.999	1439	CALCULATED COUNT						32	1408							661	463	
3	Tampa St & Scott St	Tampa St	7500	0.09	0.999	675	RAW DATA INPUT			519	36										137	528	
		Scott St	7900	0.09	0.999	711	CALCULATED COUNT			665	47										139	536	
4	Tampa St & Tyler St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT			37	33		38	81							19	1342	68
		Tyler St	4500	0.09	0.597	242	CALCULATED COUNT			87	77		78	165							23	1588	81
5	Tampa St & Cass St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT			319	63		43	115							87	1382	24
		Cass St	6200	0.09	0.597	334	CALCULATED COUNT			279	55		62	164							99	1565	28
6	Tampa St & Polk St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT			60	35		38	68							78	1306	21
		Polk St	2900	0.09	0.597	156	CALCULATED COUNT			67	39		56	100							94	1572	26
7	Tampa St & Zack St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT			49	33		25	68							47	1396	36
		Zack St	4500	0.09	0.597	242	CALCULATED COUNT			98	66		65	177							54	1596	42
8	Tampa St & Twiggs St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT			150	47		78	115							206	1227	17
		Twiggs St	8000	0.09	0.597	430	CALCULATED COUNT			328	103		118	173							241	1431	20
9	Tampa St & Madison St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT			60	81		44	32							45	1289	25
		Madison St	3500	0.09	0.597	189	CALCULATED COUNT			81	109		74	54							56	1604	32
10	Tampa St & Kennedy Blvd	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT						188	964							1086	149	
		Kennedy Blvd	17500	0.09	0.999	1574	CALCULATED COUNT						257	1317							1487	204	
11	Tampa St & Jackson St	Tampa St	18800	0.09	0.999	1691	RAW DATA INPUT			800	213										362	1108	
		Jackson St	9500	0.09	0.999	855	CALCULATED COUNT			675	180										417	1275	
12	Tampa St & Whiting St	Tampa St	1500	0.09	0.999	135	RAW DATA INPUT			152	42		110	119							139	1141	
		Whiting St	5000	0.09	0.597	269	CALCULATED COUNT			143	40		130	140							15	121	
13	Florida & Palm Ave	Florida Ave	11500	0.09	0.999	1034	RAW DATA INPUT		67	417			318	153		24	1308	88					
		Palm St	6900	0.09	0.597	371	CALCULATED COUNT		52	320			169	82		18	953	65					
14	Florida & Henderson Ave	Florida Ave	11500	0.09	0.999	1034	RAW DATA INPUT		77	37			44	67		34	1565	15					
		Henderson Ave	3225	0.09	0.597	174	CALCULATED COUNT		118	57			47	71		22	1003	10					
15	Florida Ave & Scott St	Florida Ave	24000	0.09	0.999	2158	RAW DATA INPUT		195	420							2121	613					
		Scott St	14000	0.09	0.999	1259	CALCULATED COUNT		400	860							1675	484					
16	Florida & Fortune St	Florida Ave	24000	0.09	0.999	2158	RAW DATA INPUT		39	20						21	2570	6					
		Fortune St	841	0.09	0.999	76	CALCULATED COUNT		50	26							18	2136	5				
17	Florida & Harrison St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT		6	2			13	71		11	2483	19					
		Harrison St	1315	0.09	0.597	71	CALCULATED COUNT		36	12				11	60		10	2221	17				
18	Florida & Tyler St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT		32	19			70	36		64	2564	8					
		Tyler St	4500	0.09	0.597	242	CALCULATED COUNT		103	61			160	83		55	2187	7					
19	Florida & Cass St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT		97	267			103	34		34	2236	54					
		Cass St	6200	0.09	0.597	334	CALCULATED COUNT		89	245			170	56		33	2163	53					
20	Florida & Polk St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT		37	85			38	51		63	2277	15					
		Polk St	2900	0.09	0.597	156	CALCULATED COUNT		48	109			45	61		61	2174	15					
21	Florida Ave & Zack St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT		65	41			41	61		40	2578	19					
		Zack St	4500	0.09	0.597	242	CALCULATED COUNT		149	94			66	98		35	2198	17					
22	Florida Ave & Twiggs St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT		88	305			96	167		24	2375	62					
		Twiggs St	8000	0.09	0.597	430	CALCULATED COUNT		97	334			106	185		22	2170	57					
23	Florida Ave & Madison St	Florida Ave	25000	0.09	0.999	2248	RAW DATA INPUT		47	82			59	102		25	2301	19					
		Madison St	3500	0.09	0.597	189	CALCULATED COUNT		47	81			69	120		24	2206	19					
24	Florida & Kennedy Blvd	Florida Ave	9900	0.09	0.999	891	RAW DATA INPUT						1160	379		256	1809						
		Kennedy Blvd	19000	0.09	0.999	1709	CALCULATED COUNT						1288	421		111	780						
25	Florida & Jackson St	Florida Ave	9900	0.09	0.999	891	RAW DATA INPUT		152	1006							1997	185					
		Jackson St	9500	0.09	0.999	855	CALCULATED COUNT		113	743							815	76					
26	Florida Ave & Whiting Street	Florida Ave	1650	0.09	0.999	149	RAW DATA INPUT		237	240			89	103		44	1622	85					
		Whiting St	5000	0.09	0.597	269	CALCULATED COUNT		134	136			85	98		4	138	8					
27	Florida & Brorain St	Florida Ave	1650	0.09	0.999	149	RAW DATA INPUT						1117	97		110	1511						
		Brorain St	11000	0.09	0.999	990	CALCULATED COUNT						910	80		11	139						
28	Tampa St & Laurel Rd	Tampa St	7500	0.09	0.999	675	RAW DATA INPUT				106										535	65	
		Laurel Rd	2354	0.09	0.999	212	CALCULATED COUNT				212										602	74	

								EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND			
Inter No.	Intersection	Road	2024 AADT	K	D	Peak-Hour Volume		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
1	Tampa St & Palm St	Tampa St	14496	0.09	0.999	1304	RAW DATA INPUT			119	70		155	168							194	972	33
		Palm St	8002	0.09	0.597	430	CALCULATED COUNT			183	108		207	224							211	1057	36
2	Tampa St & Kay St	Tampa St	14496	0.09	0.999	1304	RAW DATA INPUT						7	1055								1037	444
		Kay St	18555	0.09	0.999	1669	CALCULATED COUNT						11	1658								913	391
3	Tampa St & Scott St	Tampa St	8698	0.09	0.999	783	RAW DATA INPUT			699	90										204	863	
		Scott St	9162	0.09	0.999	824	CALCULATED COUNT			730	94										150	633	
4	Tampa St & Tyler St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			9	23		21	57							22	1984	71
		Tyler St	5219	0.09	0.597	281	CALCULATED COUNT			54	137		76	205							21	1873	68
5	Tampa St & Cass St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			153	62		33	177							67	1968	19
		Cass St	7190	0.09	0.597	387	CALCULATED COUNT			275	112		41	220							64	1879	19
6	Tampa St & Polk St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			13	6		9	69							49	1958	11
		Polk St	3363	0.09	0.597	181	CALCULATED COUNT			84	39		21	160							48	1902	11
7	Tampa St & Zack St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			60	35		13	38							81	1871	6
		Zack St	5219	0.09	0.597	281	CALCULATED COUNT			178	104		49	142							82	1874	7
8	Tampa St & Twiggs St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			27	12		41	186							35	1367	23
		Twiggs St	9278	0.09	0.597	499	CALCULATED COUNT			233	104		91	409							49	1881	32
9	Tampa St & Madison St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			44	74		39	7							58	1862	14
		Madison St	4059	0.09	0.597	219	CALCULATED COUNT			82	137		125	23							59	1888	15
10	Tampa St & Kennedy Blvd	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT						235	1381							1196	222	
		Kennedy Blvd	20295	0.09	0.999	1825	CALCULATED COUNT						266	1560								1654	307
11	Tampa St & Jackson St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			439	415										297	1492	
		Jackson St	11017	0.09	0.999	991	CALCULATED COUNT			510	482										326	1635	
12	Tampa St & Whiting St	Tampa St	1740	0.09	0.999	157	RAW DATA INPUT			110	59		78	74							450	770	2
		Whiting St	5798	0.09	0.597	312	CALCULATED COUNT			203	109		108	103								58	99
13	Florida & Palm Ave	Florida Ave	13336	0.09	0.999	1200	RAW DATA INPUT			23	243			337	150		34						

								EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND			
Inter No.	Intersection	Road	2024 AADT	K	D	Peak-Hour Volume		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
1	Tampa St & Palm St	Tampa St	14496	0.09	0.999	1304	RAW DATA INPUT			119	70		155	168							194	972	33
		Palm St	8002	0.09	0.597	430	CALCULATED COUNT			183	108		207	224							211	1057	36
2	Tampa St & Kay St	Tampa St	14496	0.09	0.999	1304	RAW DATA INPUT						7	1055								1037	444
		Kay St	18555	0.09	0.999	1669	CALCULATED COUNT						11	1658								913	391
3	Tampa St & Scott St	Tampa St	8698	0.09	0.999	783	RAW DATA INPUT			699	90										204	863	
		Scott St	9162	0.09	0.999	824	CALCULATED COUNT			730	94										150	633	
4	Tampa St & Tyler St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			9	23		21	57							22	1984	71
		Tyler St	5219	0.09	0.597	281	CALCULATED COUNT			54	137		76	205							21	1873	68
5	Tampa St & Cass St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			153	62		33	177							67	1968	19
		Cass St	7190	0.09	0.597	387	CALCULATED COUNT			275	112		41	220							64	1879	19
6	Tampa St & Polk St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			13	6		9	69							49	1958	11
		Polk St	3363	0.09	0.597	181	CALCULATED COUNT			84	39		21	160							48	1902	11
7	Tampa St & Zack St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			60	35		13	38							81	1871	6
		Zack St	5219	0.09	0.597	281	CALCULATED COUNT			178	104		49	142							82	1874	7
8	Tampa St & Twiggs St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			27	12		41	186							35	1367	23
		Twiggs St	9278	0.09	0.597	499	CALCULATED COUNT			233	104		91	409							49	1881	32
9	Tampa St & Madison St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			44	74		39	7							58	1862	14
		Madison St	4059	0.09	0.597	219	CALCULATED COUNT			82	137		125	23							59	1888	15
10	Tampa St & Kennedy Blvd	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT						235	1381							1196	222	
		Kennedy Blvd	20295	0.09	0.999	1825	CALCULATED COUNT						266	1560								1654	307
11	Tampa St & Jackson St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			439	415										297	1492	
		Jackson St	11017	0.09	0.999	991	CALCULATED COUNT			510	482										326	1635	
12	Tampa St & Whiting St	Tampa St	1740	0.09	0.999	157	RAW DATA INPUT			110	59		78	74							450	770	2
		Whiting St	5798	0.09	0.597	312	CALCULATED COUNT			203	109		108	103								58	99
13	Florida & Palm Ave	Florida Ave	13336	0.09	0.999	1200	RAW DATA INPUT			23	243			337	150		34	463	112				
		Palm St	8002	0.09	0.597	430	CALCULATED COUNT			26	266			298	133		67	912	221				
14	Florida & Henderson Ave	Florida Ave	13336	0.09	0.999	1200	RAW DATA INPUT			16	21			18	27		42	503	4				
		Henderson Ave	3740	0.09	0.597	201	CALCULATED COUNT			59	77			81	121		92	1099	9				
15	Florida Ave & Scott St	Florida Ave	27833	0.09	0.999	2503	RAW DATA INPUT			215	504								1476	560			
		Scott St	16236	0.09	0.999	1460	CALCULATED COUNT			437	1024								1815	689			
16	Florida & Fortune St	Florida Ave	27833	0.09	0.999	2503	RAW DATA INPUT			17	7						26	1840	6				
		Fortune St	975	0.09	0.999	88	CALCULATED COUNT			63	26							35	2460	9			
17	Florida & Harrison St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT			1	2			12	76		12	1928	13				
		Harrison St	1525	0.09	0.597	82	CALCULATED COUNT			19	37			12	71		17	2574	18				
18	Florida & Tyler St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT			13	14			30	8		26	2156	7				
		Tyler St	5219	0.09	0.597	281	CALCULATED COUNT			92	99			222	60		31	2568	9				
19	Florida & Cass St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT			46	151			103	28		44	2010	37				
		Cass St	7190	0.09	0.597	387	CALCULATED COUNT			91	297			206	56		55	2506	47				
20	Florida & Polk St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT			15	45			22	20		34	2039	18				
		Polk St	3363	0.09	0.597	181	CALCULATED COUNT			46	136			64	59		43	2542	23				
21	Florida Ave & Zack St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT			14	50			51	74		81	2136	45				
		Zack St	5219	0.09	0.597	281	CALCULATED COUNT			42	148			115	167		94	2462	52				
22	Florida Ave & Twiggs St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT			8	128			309	545		42	1696	96				
		Twiggs St	9278	0.09	0.597	499	CALCULATED COUNT			20	317			181	319		60	2411	137				
23	Florida Ave & Madison St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT			45	56			22	42		49	1830	35				
		Madison St	4059	0.09	0.597	219	CALCULATED COUNT			98	121			51	97		67	2493	48				
24	Florida & Kennedy Blvd	Florida Ave	11481	0.09	0.999	1033	RAW DATA INPUT							1582	511		180	1338					
		Kennedy Blvd	22034	0.09	0.999	1982	CALCULATED COUNT							1498	484		123	910					
25	Florida & Jackson St	Florida Ave	11481	0.09	0.999	1033	RAW DATA INPUT			97	596							1596	99				
		Jackson St	11017	0.09	0.999	991	CALCULATED COUNT			139	852							972	61				
26	Florida Ave & Whiting Street	Florida Ave	1913	0.09	0.999	172	RAW DATA INPUT			94	132			200	63		59	1707	49				
		Whiting St	5798	0.09	0.597	312	CALCULATED COUNT			88	123			237	75		6	162	5				
27	Florida & Brorein St	Florida Ave	1913	0.09	0.999	172	RAW DATA INPUT							1593	378		95	1524					
		Brorein St	12757	0.09	0.999	1147	CALCULATED COUNT							928	220		11	162					
28	Tampa St & Laurel Rd	Tampa St	8698	0.09	0.999	783	RAW DATA INPUT				165										835	62	
		Laurel Rd	2730	0.09	0.999	246	CALCULATED COUNT				246											728	55

Future 2024 PM Peak-Hour Volume Development

								EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND				
Inter No.	Intersection	Road	2024 AADT	K	D	Peak-Hour Volume		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR	
1	Tampa St & Palm St	Tampa St	14496	0.09	0.999	1304	RAW DATA INPUT			356	142		142	221							156	557	26	
		Palm St	8002	0.09	0.597	430	CALCULATED COUNT			308	123			114	177							276	983	46
2	Tampa St & Kay St	Tampa St	14496	0.09	0.999	1304	RAW DATA INPUT							21	947							584	409	
		Kay St	18555	0.09	0.999	1669	CALCULATED COUNT							37	1633							767	537	
3	Tampa St & Scott St	Tampa St	8698	0.09	0.999	783	RAW DATA INPUT			519	36											137	528	
		Scott St	9162	0.09	0.999	824	CALCULATED COUNT			771	54											162	621	
4	Tampa St & Tyler St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			37	33		38	81								19	1342	68
		Tyler St	5219	0.09	0.597	281	CALCULATED COUNT			101	90		90	191								27	1841	94
5	Tampa St & Cass St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			319	63		43	115								87	1382	24
		Cass St	7190	0.09	0.597	387	CALCULATED COUNT			323	64		71	190								115	1815	32
6	Tampa St & Polk St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			60	35		38	68								78	1306	21
		Polk St	3363	0.09	0.597	181	CALCULATED COUNT			78	45		65	116								109	1823	30
7	Tampa St & Zack St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			49	33		25	68								47	1396	36
		Zack St	5219	0.09	0.597	281	CALCULATED COUNT			114	77		76	206								63	1851	48
8	Tampa St & Twiggs St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			150	47		78	115								206	1227	17
		Twiggs St	9278	0.09	0.597	499	CALCULATED COUNT			380	119		137	201								279	1659	23
9	Tampa St & Madison St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			60	81		44	32								45	1289	25
		Madison St	4059	0.09	0.597	219	CALCULATED COUNT			93	126		86	62								65	1860	37
10	Tampa St & Kennedy Blvd	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT						188	964								1086	149	
		Kennedy Blvd	20295	0.09	0.999	1825	CALCULATED COUNT						298	1527									1724	237
11	Tampa St & Jackson St	Tampa St	21802	0.09	0.999	1961	RAW DATA INPUT			800	213											362	1108	
		Jackson St	11017	0.09	0.999	991	CALCULATED COUNT			783	209											483	1478	
12	Tampa St & Whiting St	Tampa St	1740	0.09	0.999	157	RAW DATA INPUT			152	42		110	119								139	1141	
		Whiting St	5798	0.09	0.597	312	CALCULATED COUNT			165	46		150	162								17	140	
13	Florida & Palm Ave	Florida Ave	13336	0.09	0.999	1200	RAW DATA INPUT		67	417			318	153			24	1308	88					
		Palm St	8002	0.09	0.597	430	CALCULATED COUNT		60	371			196	95			21	1105	75					
14	Florida & Henderson Ave	Florida Ave	13336	0.09	0.999	1200	RAW DATA INPUT		77	37			44	67			34	1565	15					
		Henderson Ave	3740	0.09	0.597	201	CALCULATED COUNT		136	66			54	82			26	1163	12					
15	Florida Ave & Scott St	Florida Ave	27833	0.09	0.999	2503	RAW DATA INPUT		195	420								2121	613					
		Scott St	16236	0.09	0.999	1460	CALCULATED COUNT		463	997								1942	562					
16	Florida & Fortune St	Florida Ave	27833	0.09	0.999	2503	RAW DATA INPUT		39	20							21	2570	6					
		Fortune St	975	0.09	0.999	88	CALCULATED COUNT		58	30							21	2477	6					
17	Florida & Harrison St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT		6	2			13	71			11	2483	19					
		Harrison St	1525	0.09	0.597	82	CALCULATED COUNT		42	14				13	70			12	2576	20				
18	Florida & Tyler St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT		32	19			70	36			64	2564	8					
		Tyler St	5219	0.09	0.597	281	CALCULATED COUNT		119	71			186	96			64	2536	8					
19	Florida & Cass St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT		97	267			103	34			34	2236	54					
		Cass St	7190	0.09	0.597	387	CALCULATED COUNT		103	284			197	65			39	2508	61					
20	Florida & Polk St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT		37	85			38	51			63	2277	15					
		Polk St	3363	0.09	0.597	181	CALCULATED COUNT		55	126			53	70			70	2521	17					
21	Florida Ave & Zack St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT		65	41			41	61			40	2578	19					
		Zack St	5219	0.09	0.597	281	CALCULATED COUNT		172	109			77	114			40	2549	19					
22	Florida Ave & Twiggs St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT		88	305			96	167			24	2375	62					
		Twiggs St	9278	0.09	0.597	499	CALCULATED COUNT		112	387				123	214			26	2516	66				
23	Florida Ave & Madison St	Florida Ave	28992	0.09	0.999	2607	RAW DATA INPUT		47	82			59	102			25	2301	19					
		Madison St	4059	0.09	0.597	219	CALCULATED COUNT		54	94				80	139			28	2558	22				
24	Florida & Kennedy Blvd	Florida Ave	11481	0.09	0.999	1033	RAW DATA INPUT						1160	379			256	1809						
		Kennedy Blvd	22034	0.09	0.999	1982	CALCULATED COUNT						1494	488			128	905						
25	Florida & Jackson St	Florida Ave	11481	0.09	0.999	1033	RAW DATA INPUT		152	1006								1997	185					
		Jackson St	11017	0.09	0.999	991	CALCULATED COUNT			131	861							945	88					
26	Florida Ave & Whiting Street	Florida Ave	1913	0.09	0.999	172	RAW DATA INPUT		237	240			89	103			44	1622	85					
		Whiting St	5798	0.09	0.597	312	CALCULATED COUNT		155	157				98	113			5	160	9				
27	Florida & Brorein St	Florida Ave	1913	0.09	0.999	172	RAW DATA INPUT						1117	97			110	1511						
		Brorein St	12757	0.09	0.999	1147	CALCULATED COUNT							1056	92			12	161					
28	Tampa St & Laurel Rd	Tampa St	8698	0.09	0.999	783	RAW DATA INPUT				106											535	65	
		Laurel Rd	2730	0.09	0.999	246	CALCULATED COUNT				246											698	85	

Future 2040 AM Peak-Hour Volume Development

								EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND			
Inter No.	Intersection	Road	2040 AADT	K	D	Peak-Hour Volume		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
1	Tampa St & Palm St	Tampa St	21520	0.09	0.999	1935	RAW DATA INPUT			119	70		155	168							194	972	33
		Palm St	11879	0.09	0.597	639	CALCULATED COUNT			272	160		307	332							314	1569	54
2	Tampa St & Kay St	Tampa St	21520	0.09	0.999	1935	RAW DATA INPUT						7	1055								1037	444
		Kay St	27545	0.09	0.999	2477	CALCULATED COUNT						17	2461								1355	581
3	Tampa St & Scott St	Tampa St	12912	0.09	0.999	1161	RAW DATA INPUT			699	90										204	863	
		Scott St	13600	0.09	0.999	1223	CALCULATED COUNT			1084	140										222	939	
4	Tampa St & Tyler St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			9	23		21	57							22	1984	71
		Tyler St	7747	0.09	0.597	417	CALCULATED COUNT			80	202		113	305							31	2780	100
5	Tampa St & Cass St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			153	62		33	177							67	1968	19
		Cass St	10674	0.09	0.597	574	CALCULATED COUNT			409	166		61	327							95	2789	27
6	Tampa St & Polk St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			13	6		9	69							49	1958	11
		Polk St	4993	0.09	0.597	269	CALCULATED COUNT			124	58		31	238							71	2824	16
7	Tampa St & Zack St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			60	35		13	38							81	1871	6
		Zack St	7747	0.09	0.597	417	CALCULATED COUNT			263	154		72	210							121	2781	9
8	Tampa St & Twiggs St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			27	12		41	186							35	1367	23
		Twiggs St	13773	0.09	0.597	741	CALCULATED COUNT			346	154		134	607							72	2792	47
9	Tampa St & Madison St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			44	74		39	7							58	1862	14
		Madison St	6025	0.09	0.597	324	CALCULATED COUNT			121	204		186	34							88	2802	22
10	Tampa St & Kennedy Blvd	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT						235	1381								1196	222
		Kennedy Blvd	30127	0.09	0.999	2709	CALCULATED COUNT						394	2315								2455	456
11	Tampa St & Jackson St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			439	415										297	1492	
		Jackson St	16355	0.09	0.999	1471	CALCULATED COUNT			756	715										484	2427	
12	Tampa St & Whiting St	Tampa St	2582	0.09	0.999	233	RAW DATA INPUT			110	59		78	74							450	770	2
		Whiting St	8608	0.09	0.597	463	CALCULATED COUNT			302	162		161	152							86	147	
13	Florida & Palm Ave	Florida Ave	19798	0.09	0.999	1781	RAW DATA INPUT		23	243				337	150		34	463	112				
		Palm St	11879	0.09	0.597	639	CALCULATED COUNT		38	394				442	197		100	1354	328				
14	Florida & Henderson Ave	Florida Ave	19798	0.09	0.999	1781	RAW DATA INPUT		16	21			18	27			42	503	4				
		Henderson Ave	5552	0.09	0.597	299	CALCULATED COUNT		88	115			120	179			137	1631	13				
15	Florida Ave & Scott St	Florida Ave	41318	0.09	0.999	3715	RAW DATA INPUT		215	504								1476	560				
		Scott St	24102	0.09	0.999	2168	CALCULATED COUNT		648	1520								2694	1022				
16	Florida & Fortune St	Florida Ave	41318	0.09	0.999	3715	RAW DATA INPUT		17	7							26	1840	6				
		Fortune St	1448	0.09	0.999	131	CALCULATED COUNT		93	38							52	3652	12				
17	Florida & Harrison St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT		1	2			12	76			12	1928	13				
		Harrison St	2264	0.09	0.597	122	CALCULATED COUNT		28	55			17	106			24	3821	26				
18	Florida & Tyler St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT		13	14			30	8			26	2156	7				
		Tyler St	7747	0.09	0.597	417	CALCULATED COUNT		136	146			329	88			46	3812	13				
19	Florida & Cass St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT		46	151			103	28			44	2010	37				
		Cass St	10674	0.09	0.597	574	CALCULATED COUNT		134	440			305	83			82	3720	69				
20	Florida & Polk St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT		15	45			22	20			34	2039	18				
		Polk St	4993	0.09	0.597	269	CALCULATED COUNT		68	202			269	95	87			63	3774	34			
21	Florida Ave & Zack St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT		14	50			51	74			81	2136	45				
		Zack St	7747	0.09	0.597	417	CALCULATED COUNT		62	220			170	247			139	3655	77				
22	Florida Ave & Twiggs St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT		8	128			309	545			42	1696	96				
		Twiggs St	13773	0.09	0.597	741	CALCULATED COUNT		30	471			268	473			89	3579	203				
23	Florida Ave & Madison St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT		45	56			22	42			49	1830	35				
		Madison St	6025	0.09	0.597	324	CALCULATED COUNT		145	180			76	144			100	3700	71				
24	Florida & Kennedy Blvd	Florida Ave	17044	0.09	0.999	1533	RAW DATA INPUT						1582	511			180	1338					
		Kennedy Blvd	32710	0.09	0.999	2941	CALCULATED COUNT						2223	719			182	1351					
25	Florida & Jackson St	Florida Ave	17044	0.09	0.999	1533	RAW DATA INPUT		97	596								1596	99				
		Jackson St	16355	0.09	0.999	1471	CALCULATED COUNT		206	1265								1443	90				
26	Florida Ave & Whiting Street	Florida Ave	2841	0.09	0.999	256	RAW DATA INPUT		94	132			200	63			59	1707	49				
		Whiting St	8608	0.09	0.597	463	CALCULATED COUNT		130	183			352	111			9	241	7				
27	Florida & Brorain St	Florida Ave	2841	0.09	0.999	256	RAW DATA INPUT						1593	378			95	1524					
		Brorain St	18937	0.09	0.999	1703	CALCULATED COUNT						1377	327			15	241					
28	Tampa St & Laurel Rd	Tampa St	12912	0.09	0.999	1161	RAW DATA INPUT				165											835	62
		Laurel Rd	4053	0.09	0.999	365	CALCULATED COUNT				365											1081	

								EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND			
Inter No.	Intersection	Road	2040 AADT	K	D	Peak-Hour Volume		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
1	Tampa St & Palm St	Tampa St	21520	0.09	0.999	1935	RAW DATA INPUT			356	142		142	221							156	557	26
		Palm St	11879	0.09	0.597	639	CALCULATED COUNT			457	182		169	263							409	545	381
2	Tampa St & Kay St	Tampa St	21520	0.09	0.999	1935	RAW DATA INPUT						21	947								584	409
		Kay St	27545	0.09	0.999	2477	CALCULATED COUNT						54	2423								1138	797
3	Tampa St & Scott St	Tampa St	12912	0.09	0.999	1161	RAW DATA INPUT			519	36										137	528	
		Scott St	13600	0.09	0.999	1223	CALCULATED COUNT			1144	80										240	922	
4	Tampa St & Tyler St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			37	33		38	81							19	1342	68
		Tyler St	7747	0.09	0.597	417	CALCULATED COUNT			149	133		133	284							39	2733	139
5	Tampa St & Cass St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			319	63		43	115							87	1382	24
		Cass St	10674	0.09	0.597	574	CALCULATED COUNT			479	95		106	282							170	2694	47
6	Tampa St & Polk St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			60	35		38	68							78	1306	21
		Polk St	4993	0.09	0.597	269	CALCULATED COUNT			115	67		97	173							162	2705	44
7	Tampa St & Zack St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			49	33		25	68							47	1396	36
		Zack St	7747	0.09	0.597	417	CALCULATED COUNT			168	114		112	305							93	2747	71
8	Tampa St & Twiggs St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			150	47		78	115							206	1227	17
		Twiggs St	13773	0.09	0.597	741	CALCULATED COUNT			564	177		202	298							414	2463	35
9	Tampa St & Madison St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			60	81		44	32							45	1289	25
		Madison St	6025	0.09	0.597	324	CALCULATED COUNT			138	186		127	93							97	2761	54
10	Tampa St & Kennedy Blvd	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT						188	964							1086	149	
		Kennedy Blvd	30127	0.09	0.999	2709	CALCULATED COUNT						443	2267								2559	352
11	Tampa St & Jackson St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			800	213										362	1108	
		Jackson St	16355	0.09	0.999	1471	CALCULATED COUNT			1162	310										717	2194	
12	Tampa St & Whiting St	Tampa St	2582	0.09	0.999	233	RAW DATA INPUT			152	42		110	119							139	1141	
		Whiting St	8608	0.09	0.597	463	CALCULATED COUNT			245	68		223	241							26	207	
13	Florida & Palm Ave	Florida Ave	19798	0.09	0.999	1781	RAW DATA INPUT			67	417			3									

								EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND			
Inter No.	Intersection	Road	2040 AADT	K	D	Peak-Hour Volume		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
1	Tampa St & Palm St	Tampa St	21520	0.09	0.999	1935	RAW DATA INPUT			356	142		142	221							156	557	26
		Palm St	11879	0.09	0.597	639	CALCULATED COUNT			457	182		169	263							409	545	381
2	Tampa St & Kay St	Tampa St	21520	0.09	0.999	1935	RAW DATA INPUT						21	947								584	409
		Kay St	27545	0.09	0.999	2477	CALCULATED COUNT						54	2423								1138	797
3	Tampa St & Scott St	Tampa St	12912	0.09	0.999	1161	RAW DATA INPUT			519	36										137	528	
		Scott St	13600	0.09	0.999	1223	CALCULATED COUNT			1144	80										240	922	
4	Tampa St & Tyler St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			37	33		38	81							19	1342	68
		Tyler St	7747	0.09	0.597	417	CALCULATED COUNT			149	133		133	284							39	2733	139
5	Tampa St & Cass St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			319	63		43	115							87	1382	24
		Cass St	10674	0.09	0.597	574	CALCULATED COUNT			479	95		106	282							170	2694	47
6	Tampa St & Polk St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			60	35		38	68							78	1306	21
		Polk St	4993	0.09	0.597	269	CALCULATED COUNT			115	67		97	173							162	2705	44
7	Tampa St & Zack St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			49	33		25	68							47	1396	36
		Zack St	7747	0.09	0.597	417	CALCULATED COUNT			168	114		112	305							93	2747	71
8	Tampa St & Twiggs St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			150	47		78	115							206	1227	17
		Twiggs St	13773	0.09	0.597	741	CALCULATED COUNT			564	177		202	298							414	2463	35
9	Tampa St & Madison St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			60	81		44	32							45	1289	25
		Madison St	6025	0.09	0.597	324	CALCULATED COUNT			138	186		127	93							97	2761	54
10	Tampa St & Kennedy Blvd	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT						188	964							1086	149	
		Kennedy Blvd	30127	0.09	0.999	2709	CALCULATED COUNT						443	2267								2559	352
11	Tampa St & Jackson St	Tampa St	32366	0.09	0.999	2911	RAW DATA INPUT			800	213										362	1108	
		Jackson St	16355	0.09	0.999	1471	CALCULATED COUNT			1162	310										717	2194	
12	Tampa St & Whiting St	Tampa St	2582	0.09	0.999	233	RAW DATA INPUT			152	42		110	119							139	1141	
		Whiting St	8608	0.09	0.597	463	CALCULATED COUNT			245	68		223	241							26	207	
13	Florida & Palm Ave	Florida Ave	19798	0.09	0.999	1781	RAW DATA INPUT			67	417			318	153		24	1308	88				
		Palm St	11879	0.09	0.597	639	CALCULATED COUNT			89	550			291	140		31	1640	111				
14	Florida & Henderson Ave	Florida Ave	19798	0.09	0.999	1781	RAW DATA INPUT			77	37			44	67		34	1565	15				
		Henderson Ave	5552	0.09	0.597	299	CALCULATED COUNT			202	97			80	122		38	1726	17				
15	Florida Ave & Scott St	Florida Ave	41318	0.09	0.999	3715	RAW DATA INPUT			195	420							2121	613				
		Scott St	24102	0.09	0.999	2168	CALCULATED COUNT			688	1480							2882	833				
16	Florida & Fortune St	Florida Ave	41318	0.09	0.999	3715	RAW DATA INPUT			39	20						21	2570	6				
		Fortune St	1448	0.09	0.999	131	CALCULATED COUNT			87	45							31	3677	9			
17	Florida & Harrison St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT			6	2			13	71		11	2483	19				
		Harrison St	2264	0.09	0.597	122	CALCULATED COUNT			62	21			19	103		17	3824	30				
18	Florida & Tyler St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT			32	19			70	36		64	2564	8				
		Tyler St	7747	0.09	0.597	417	CALCULATED COUNT			177	105			275	142		94	3764	12				
19	Florida & Cass St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT			97	267			103	34		34	2236	54				
		Cass St	10674	0.09	0.597	574	CALCULATED COUNT			153	421			292	97		57	3724	90				
20	Florida & Polk St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT			37	85			38	51		63	2277	15				
		Polk St	4993	0.09	0.597	269	CALCULATED COUNT			82	187			78	104		104	3742	25				
21	Florida Ave & Zack St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT			65	41			41	61		40	2578	19				
		Zack St	7747	0.09	0.597	417	CALCULATED COUNT			256	162			113	169		59	3784	28				
22	Florida Ave & Twiggs St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT			88	305			96	167		24	2375	62				
		Twiggs St	13773	0.09	0.597	741	CALCULATED COUNT			166	575			183	318		38	3735	98				
23	Florida Ave & Madison St	Florida Ave	43039	0.09	0.999	3870	RAW DATA INPUT			47	82			59	102		25	2301	19				
		Madison St	6025	0.09	0.597	324	CALCULATED COUNT			80	139			119	206		42	3798	32				
24	Florida & Kennedy Blvd	Florida Ave	17044	0.09	0.999	1533	RAW DATA INPUT							1160	379		256	1809					
		Kennedy Blvd	32710	0.09	0.999	2941	CALCULATED COUNT							2217	725		190	1343					
25	Florida & Jackson St	Florida Ave	17044	0.09	0.999	1533	RAW DATA INPUT			152	1006							1997	185				
		Jackson St	16355	0.09	0.999	1471	CALCULATED COUNT			194	1278							1403	130				
26	Florida Ave & Whiting Street	Florida Ave	2841	0.09	0.999	256	RAW DATA INPUT			237	240			89	103		44	1622	85				
		Whiting St	8608	0.09	0.597	463	CALCULATED COUNT			230	233			145	168		7	237	13				
27	Florida & Brorein St	Florida Ave	2841	0.09	0.999	256	RAW DATA INPUT							1117	97		110	1511					
		Brorein St	18937	0.09	0.999	1703	CALCULATED COUNT							1567	137		18	239					
28	Tampa St & Laurel Rd	Tampa St	12912	0.09	0.999	1161	RAW DATA INPUT				106										535	65	
		Laurel Rd	4053	0.09	0.999	365	CALCULATED COUNT				365											1036	126

Appendix D

Existing 2018 AM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑↑↑	
Traffic Volume (vph)	0	158	93	178	193	0	0	0	0	182	912	31
Future Volume (vph)	0	158	93	178	193	0	0	0	0	182	912	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			311	
Travel Time (s)		14.9			10.4			37.4			6.1	
Confl. Peds. (#/hr)			3	3						2		2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	174	102	196	212	0	0	0	0	0	1236	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		25.3	25.3	27.0	27.0					31.4	31.4	
Total Split (s)		55.0	55.0	55.0	55.0					85.0	85.0	
Total Split (%)		39.3%	39.3%	39.3%	39.3%					60.7%	60.7%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		0.5	0.5	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0						0.0	
Total Lost Time (s)		4.3	4.3	6.0	6.0						6.4	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.26	0.16	0.52	0.33						0.44	
Control Delay		32.7	6.1	23.8	19.4						18.4	
Queue Delay		0.0	0.0	0.0	0.0						0.0	
Total Delay		32.7	6.1	23.8	19.4						18.4	
Queue Length 50th (ft)		111	1	64	67						230	
Queue Length 95th (ft)		172	40	92	96						266	
Internal Link Dist (ft)		576			379			1841			231	
Turn Bay Length (ft)				150								
Base Capacity (vph)		674	627	375	652						2818	
Starvation Cap Reductn		0	0	0	0						0	
Spillback Cap Reductn		0	0	0	0						0	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.26	0.16	0.52	0.33						0.44	

Intersection Summary

Area Type: Other

Cycle Length: 140

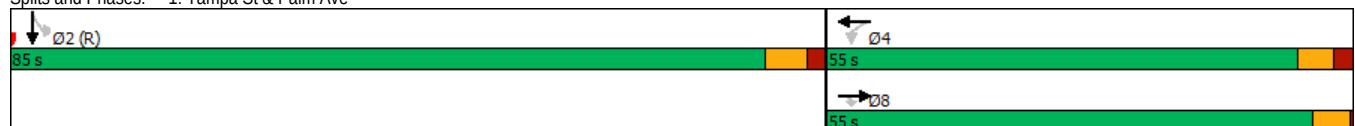
Actuated Cycle Length: 140

Offset: 130 (93%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	158	93	178	193	0	0	0	0	182	912	31
Future Volume (vph)	0	158	93	178	193	0	0	0	0	182	912	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.3	4.3	6.0	6.0						6.4	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						1.00	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1555	1762	1863						5016	
Flt Permitted		1.00	1.00	0.58	1.00						0.99	
Satd. Flow (perm)		1863	1555	1072	1863						5016	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	174	102	196	212	0	0	0	0	200	1002	34
RTOR Reduction (vph)	0	0	64	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	174	38	196	212	0	0	0	0	0	1234	0
Confl. Peds. (#/hr)			3	3						2		2
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		50.7	50.7	49.0	49.0						78.6	
Effective Green, g (s)		50.7	50.7	49.0	49.0						78.6	
Actuated g/C Ratio		0.36	0.36	0.35	0.35						0.56	
Clearance Time (s)		4.3	4.3	6.0	6.0						6.4	
Lane Grp Cap (vph)		674	563	375	652						2816	
v/s Ratio Prot		0.09			0.11							
v/s Ratio Perm			0.02	0.18							0.25	
v/c Ratio		0.26	0.07	0.52	0.33						0.44	
Uniform Delay, d1		31.4	29.2	36.2	33.4						17.9	
Progression Factor		1.00	1.00	0.51	0.54						1.00	
Incremental Delay, d2		0.9	0.2	4.6	1.2						0.5	
Delay (s)		32.3	29.4	23.3	19.1						18.4	
Level of Service		C	C	C	B						B	
Approach Delay (s)		31.3			21.1			0.0			18.4	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			20.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.47									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				12.4		
Intersection Capacity Utilization			64.0%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	1430	0	0	0	0	0	787	337
Future Volume (vph)	0	0	0	10	1430	0	0	0	0	0	787	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		360			350			247			1921	
Travel Time (s)		8.2			8.0			4.8			37.4	
Confl. Peds. (#/hr)				1								1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	10	1506	0	0	0	0	0	828	355
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Minimum Split (s)				26.7	26.7						31.0	31.0
Total Split (s)				76.0	76.0						64.0	64.0
Total Split (%)				54.3%	54.3%						45.7%	45.7%
Yellow Time (s)				3.7	3.7						4.0	4.0
All-Red Time (s)				2.0	2.0						2.0	2.0
Lost Time Adjust (s)				0.0	0.0						0.0	0.0
Total Lost Time (s)				5.7	5.7						6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.01	0.88						0.39	0.54
Control Delay				2.3	37.8						20.6	23.9
Queue Delay				0.0	0.0						0.3	0.0
Total Delay				2.3	37.8						20.9	23.9
Queue Length 50th (ft)				0	648						209	247
Queue Length 95th (ft)				4	767						245	354
Internal Link Dist (ft)		280			270			167			1841	
Turn Bay Length (ft)												475
Base Capacity (vph)				819	1713						2106	659
Starvation Cap Reductn				0	0						0	0
Spillback Cap Reductn				2	0						594	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				0.01	0.88						0.55	0.54
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green												
Natural Cycle: 70												
Control Type: Pretimed												
Splits and Phases: 2: Tampa St & Kay St												
 Ø2 (R)						 Ø4						
64 s						76 s						

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	10	1430	0	0	0	0	0	787	337
Future Volume (vph)	0	0	0	10	1430	0	0	0	0	0	787	337
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.7	5.7						6.0	6.0
Lane Util. Factor				0.91	0.91						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1610	3390						5085	1562
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1610	3390						5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	11	1505	0	0	0	0	0	828	355
RTOR Reduction (vph)	0	0	0	5	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	5	1495	0	0	0	0	0	828	343
Confl. Peds. (#/hr)				1								1
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Actuated Green, G (s)				70.3	70.3						58.0	58.0
Effective Green, g (s)				70.3	70.3						58.0	58.0
Actuated g/C Ratio				0.50	0.50						0.41	0.41
Clearance Time (s)				5.7	5.7						6.0	6.0
Lane Grp Cap (vph)				808	1702						2106	647
v/s Ratio Prot				0.00	c0.44						0.16	
v/s Ratio Perm												c0.22
v/c Ratio				0.01	0.88						0.39	0.53
Uniform Delay, d1				17.4	31.0						28.7	30.8
Progression Factor				1.00	1.00						0.70	0.71
Incremental Delay, d2				0.0	6.8						0.5	2.8
Delay (s)				17.4	37.8						20.5	24.8
Level of Service				B	D						C	C
Approach Delay (s)		0.0			37.7			0.0			21.8	
Approach LOS		A			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			30.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			11.7			
Intersection Capacity Utilization			61.7%			ICU Level of Service			B			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

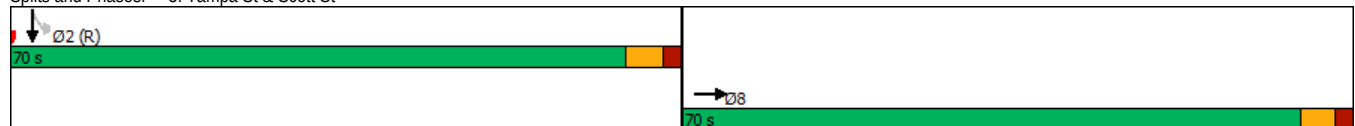
Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	630	82	0	0	0	0	0	0	129	546	0
Future Volume (vph)	0	630	82	0	0	0	0	0	0	129	546	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		386			62			346			247	
Travel Time (s)		8.8			1.4			6.7			5.6	
Confl. Peds. (#/hr)										3		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	765	0	0	0	0	0	0	0	0	726	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		0.0									0.0	
Total Lost Time (s)		5.7									6.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.48									0.31	
Control Delay		26.9									14.0	
Queue Delay		1.0									0.7	
Total Delay		27.9									14.7	
Queue Length 50th (ft)		245									208	
Queue Length 95th (ft)		302									254	
Internal Link Dist (ft)		306			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1604									2328	
Starvation Cap Reductn		0									1180	
Spillback Cap Reductn		544									2	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.72									0.63	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 62 (44%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	630	82	0	0	0	0	0	0	129	546	0
Future Volume (vph)	0	630	82	0	0	0	0	0	0	129	546	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7									6.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3478									5028	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3478									5028	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	677	88	0	0	0	0	0	0	139	587	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	758	0	0	0	0	0	0	0	0	698	0
Confl. Peds. (#/hr)											3	
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		64.3									64.0	
Actuated g/C Ratio		0.46									0.46	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1597									2298	
v/s Ratio Prot		c0.22										
v/s Ratio Perm											0.14	
v/c Ratio		0.47									0.30	
Uniform Delay, d1		26.2									24.0	
Progression Factor		1.00									0.61	
Incremental Delay, d2		1.0									0.3	
Delay (s)		27.2									15.0	
Level of Service		C									B	
Approach Delay (s)		27.2			0.0			0.0			15.0	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay		21.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.39										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.7				
Intersection Capacity Utilization		42.9%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

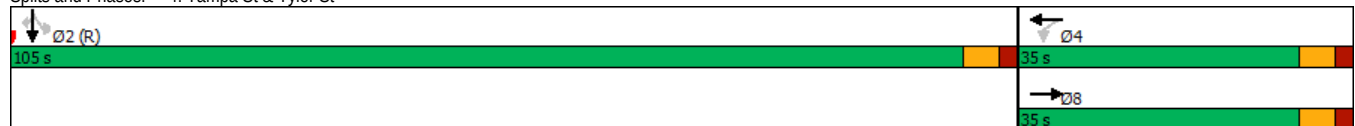
Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	46	118	66	177	0	0	0	0	18	1615	58
Future Volume (vph)	0	46	118	66	177	0	0	0	0	18	1615	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			6.8			2.5	
Confl. Peds. (#/hr)			9	9						73		35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	181	0	73	195	0	0	0	0	0	1795	64
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Minimum Split (s)		25.8		25.8	25.8					102.8	102.8	102.8
Total Split (s)		35.0		35.0	35.0					105.0	105.0	105.0
Total Split (%)		25.0%		25.0%	25.0%					75.0%	75.0%	75.0%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	3.7
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	2.1
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	0.0
Total Lost Time (s)		5.8		5.8	5.8						5.8	5.8
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.49		0.38	0.50						0.50	0.06
Control Delay		45.1		42.9	43.0						6.9	0.6
Queue Delay		0.0		0.0	0.0						0.0	0.0
Total Delay		45.1		42.9	43.0						6.9	0.6
Queue Length 50th (ft)		120		67	185						168	0
Queue Length 95th (ft)		200		123	268						184	6
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		368		191	388						3589	990
Starvation Cap Reductn		0		0	0						0	0
Spillback Cap Reductn		0		0	0						126	0
Storage Cap Reductn		0		0	0						0	0
Reduced v/c Ratio		0.49		0.38	0.50						0.52	0.06

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 130
Control Type: Pretimed

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	46	118	66	177	0	0	0	0	18	1615	58
Future Volume (vph)	0	46	118	66	177	0	0	0	0	18	1615	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8		5.8	5.8						5.8	5.8
Lane Util. Factor		1.00		1.00	1.00						0.91	1.00
Flpb, ped/bikes		0.98		1.00	1.00						1.00	0.87
Flpb, ped/bikes		1.00		0.99	1.00						1.00	1.00
Frt		0.90		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1645		1748	1863						5069	1371
Flt Permitted		1.00		0.50	1.00						1.00	1.00
Satd. Flow (perm)		1645		916	1863						5069	1371
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	51	130	73	195	0	0	0	0	20	1775	64
RTOR Reduction (vph)	0	25	0	0	0	0	0	0	0	0	0	19
Lane Group Flow (vph)	0	156	0	73	195	0	0	0	0	0	1795	45
Confl. Peds. (#/hr)			9	9						73		35
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		29.2		29.2	29.2						99.2	99.2
Effective Green, g (s)		29.2		29.2	29.2						99.2	99.2
Actuated g/C Ratio		0.21		0.21	0.21						0.71	0.71
Clearance Time (s)		5.8		5.8	5.8						5.8	5.8
Lane Grp Cap (vph)		343		191	388						3591	971
v/s Ratio Prot		0.09			0.10							
v/s Ratio Perm				0.08							0.35	0.03
v/c Ratio		0.45		0.38	0.50						0.50	0.05
Uniform Delay, d1		48.4		47.6	49.0						9.2	6.1
Progression Factor		1.00		0.77	0.78						0.69	0.37
Incremental Delay, d2		4.3		5.3	4.3						0.5	0.1
Delay (s)		52.7		42.0	42.5						6.8	2.4
Level of Service		D		D	D						A	A
Approach Delay (s)		52.7			42.3			0.0			6.7	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			14.4			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.50									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.6		
Intersection Capacity Utilization			82.6%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	238	97	36	190	0	0	0	0	56	1620	16
Future Volume (vph)	0	238	97	36	190	0	0	0	0	56	1620	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			553			286			301	
Travel Time (s)		7.3			12.6			6.5			6.8	
Confl. Peds. (#/hr)			12	12						87		29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	364	0	39	207	0	0	0	0	0	1839	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		5.7		5.7	5.7						5.7	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.76		0.32	0.42						0.56	
Control Delay		56.6		24.8	21.3						8.8	
Queue Delay		57.5		7.2	0.0						0.0	
Total Delay		114.1		32.1	21.3						8.8	
Queue Length 50th (ft)		295		11	60						119	
Queue Length 95th (ft)		418		23	84						158	
Internal Link Dist (ft)		242			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		481		123	496						3267	
Starvation Cap Reductn		0		0	0						177	
Spillback Cap Reductn		205		53	0						27	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		1.32		0.56	0.42						0.60	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	31 (22%), Referenced to phase 2:SBTL, Start of Green											
Natural Cycle:	60											
Control Type:	Pretimed											

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	238	97	36	190	0	0	0	0	56	1620	16
Future Volume (vph)	0	238	97	36	190	0	0	0	0	56	1620	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		5.7	5.7						5.7	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1771		1770	1863						5010	
Flt Permitted		1.00		0.25	1.00						1.00	
Satd. Flow (perm)		1771		461	1863						5010	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	259	105	39	207	0	0	0	0	61	1761	17
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	354	0	39	207	0	0	0	0	0	1838	0
Confl. Peds. (#/hr)			12	12						87		29
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3		37.3	37.3						91.3	
Effective Green, g (s)		37.3		37.3	37.3						91.3	
Actuated g/C Ratio		0.27		0.27	0.27						0.65	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		471		122	496						3267	
v/s Ratio Prot		c0.20			0.11							
v/s Ratio Perm				0.08							0.37	
v/c Ratio		0.75		0.32	0.42						0.56	
Uniform Delay, d1		47.1		41.2	42.4						13.4	
Progression Factor		1.00		0.43	0.44						0.61	
Incremental Delay, d2		10.5		6.5	2.5						0.6	
Delay (s)		57.6		24.0	21.1						8.7	
Level of Service		E		C	C						A	
Approach Delay (s)		57.6			21.6			0.0			8.7	
Approach LOS		E			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			17.3			HCM 2000 Level of Service					B	
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.4		
Intersection Capacity Utilization			72.2%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	72	34	18	138	0	0	0	0	42	1641	10
Future Volume (vph)	0	72	34	18	138	0	0	0	0	42	1641	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			6.9			6.5	
Confl. Peds. (#/hr)			39	39						185		66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	112	0	0	164	0	0	0	0	0	1782	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		5.8			5.8						5.9	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.22			0.32						0.57	
Control Delay		33.4			41.5						13.6	
Queue Delay		0.0			0.0						0.6	
Total Delay		33.4			41.5						14.2	
Queue Length 50th (ft)		65			102						266	
Queue Length 95th (ft)		118			180						254	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		508			509						3148	
Starvation Cap Reductn		0			0						861	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.22			0.32						0.78	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 6: Tampa St & Polk St



Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	72	34	18	138	0	0	0	0	42	1641	10
Future Volume (vph)	0	72	34	18	138	0	0	0	0	42	1641	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8			5.8						5.9	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.97			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.96			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1729			1837						5002	
Flt Permitted		1.00			0.96						1.00	
Satd. Flow (perm)		1729			1776						5002	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	76	36	19	145	0	0	0	0	44	1727	11
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	100	0	0	164	0	0	0	0	0	1782	0
Confl. Peds. (#/hr)			39	39						185		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		40.2			40.2						88.1	
Actuated g/C Ratio		0.29			0.29						0.63	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		496			509						3147	
v/s Ratio Prot		0.06										
v/s Ratio Perm					0.09						0.36	
v/c Ratio		0.20			0.32						0.57	
Uniform Delay, d1		37.8			39.2						14.9	
Progression Factor		1.00			1.00						0.86	
Incremental Delay, d2		0.9			1.7						0.6	
Delay (s)		38.7			41.0						13.5	
Level of Service		D			D						B	
Approach Delay (s)		38.7			41.0			0.0			13.5	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			17.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.7		
Intersection Capacity Utilization			59.2%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	153	90	42	122	0	0	0	0	70	1616	6
Future Volume (vph)	0	153	90	42	122	0	0	0	0	70	1616	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		344			539			272			302	
Travel Time (s)		7.8			12.3			6.2			6.9	
Confl. Peds. (#/hr)			8	8						38		24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	259	0	0	175	0	0	0	0	0	1799	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		5.7			5.7						5.7	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.54			0.50						0.55	
Control Delay		45.1			44.5						1.6	
Queue Delay		0.0			0.0						0.0	
Total Delay		45.1			44.5						1.6	
Queue Length 50th (ft)		187			98						20	
Queue Length 95th (ft)		279			176						22	
Internal Link Dist (ft)		264			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		481			353						3287	
Starvation Cap Reductn		0			0						137	
Spillback Cap Reductn		0			0						80	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.54			0.50						0.57	
Intersection Summary												
Area Type: Other												
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 7: Tampa St & Zack St												
												

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	153	90	42	122	0	0	0	0	70	1616	6
Future Volume (vph)	0	153	90	42	122	0	0	0	0	70	1616	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7						5.7	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.99			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1751			1835						5043	
Flt Permitted		1.00			0.71						1.00	
Satd. Flow (perm)		1751			1326						5043	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	163	96	45	130	0	0	0	0	74	1719	6
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	244	0	0	175	0	0	0	0	0	1799	0
Confl. Peds. (#/hr)			8	8						38		24
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						91.3	
Effective Green, g (s)		37.3			37.3						91.3	
Actuated g/C Ratio		0.27			0.27						0.65	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		466			353						3288	
v/s Ratio Prot		c0.14										
v/s Ratio Perm					0.13						0.36	
v/c Ratio		0.52			0.50						0.55	
Uniform Delay, d1		43.8			43.4						13.2	
Progression Factor		1.00			0.91						0.08	
Incremental Delay, d2		4.2			4.1						0.6	
Delay (s)		47.9			43.7						1.6	
Level of Service		D			D						A	
Approach Delay (s)		47.9			43.7			0.0			1.6	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.4		
Intersection Capacity Utilization			72.4%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	201	90	78	353	0	0	0	0	42	1622	28
Future Volume (vph)	0	201	90	78	353	0	0	0	0	42	1622	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		258			543			313			272	
Travel Time (s)		5.9			12.3			7.1			6.2	
Confl. Peds. (#/hr)			30	30						30		54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	82	372	0	0	0	0	0	1780	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		5.7		5.7	5.7						5.9	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.60		0.43	0.69						0.56	
Control Delay		46.2		41.1	44.3						4.4	
Queue Delay		0.0		0.0	0.9						0.1	
Total Delay		46.2		41.1	45.2						4.5	
Queue Length 50th (ft)		229		60	312						56	
Queue Length 95th (ft)		332		m116	427						61	
Internal Link Dist (ft)		178			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		513		189	536						3180	
Starvation Cap Reductn		0		0	39						227	
Spillback Cap Reductn		0		0	0						84	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.60		0.43	0.75						0.60	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 9 (6%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Tampa St & Twiggs St



Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	201	90	78	353	0	0	0	0	42	1622	28
Future Volume (vph)	0	201	90	78	353	0	0	0	0	42	1622	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		5.7	5.7						5.9	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.97	1.00						1.00	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1744		1724	1863						5049	
Flt Permitted		1.00		0.36	1.00						1.00	
Satd. Flow (perm)		1744		658	1863						5049	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	212	95	82	372	0	0	0	0	44	1707	29
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	296	0	82	372	0	0	0	0	0	1779	0
Confl. Peds. (#/hr)			30	30						30		54
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.3		40.3	40.3						88.1	
Effective Green, g (s)		40.3		40.3	40.3						88.1	
Actuated g/C Ratio		0.29		0.29	0.29						0.63	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		502		189	536						3177	
v/s Ratio Prot		0.17			0.20							
v/s Ratio Perm				0.12							0.35	
v/c Ratio		0.59		0.43	0.69						0.56	
Uniform Delay, d1		42.7		40.6	44.4						14.9	
Progression Factor		1.00		0.81	0.82						0.25	
Incremental Delay, d2		5.0		7.1	7.2						0.6	
Delay (s)		47.7		39.8	43.7						4.4	
Level of Service		D		D	D						A	
Approach Delay (s)		47.7			43.0			0.0			4.4	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			16.5			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.6		
Intersection Capacity Utilization			72.5%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	71	118	108	20	0	0	0	0	51	1628	13
Future Volume (vph)	0	71	118	108	20	0	0	0	0	51	1628	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		311			548			309			313	
Travel Time (s)		7.1			12.5			7.0			7.1	
Confl. Peds. (#/hr)			53	53						29		66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	197	0	113	21	0	0	0	0	0	1763	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		5.9		5.9	5.9						5.8	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.42		0.43	0.04						0.55	
Control Delay		39.3		46.8	36.3						5.2	
Queue Delay		0.0		0.0	0.0						0.1	
Total Delay		39.3		46.8	36.3						5.2	
Queue Length 50th (ft)		130		96	12						61	
Queue Length 95th (ft)		207		163	m26						66	
Internal Link Dist (ft)		231			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		466		264	533						3179	
Starvation Cap Reductn		0		0	0						248	
Spillback Cap Reductn		1		0	0						264	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.42		0.43	0.04						0.60	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	71	118	108	20	0	0	0	0	51	1628	13
Future Volume (vph)	0	71	118	108	20	0	0	0	0	51	1628	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9		5.9	5.9						5.8	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.92		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.93	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1577		1644	1863						5047	
Flt Permitted		1.00		0.53	1.00						1.00	
Satd. Flow (perm)		1577		922	1863						5047	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	74	123	112	21	0	0	0	0	53	1696	14
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	182	0	113	21	0	0	0	0	0	1762	0
Confl. Peds. (#/hr)			53	53						29		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.1		40.1	40.1						88.2	
Effective Green, g (s)		40.1		40.1	40.1						88.2	
Actuated g/C Ratio		0.29		0.29	0.29						0.63	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		451		264	533						3179	
v/s Ratio Prot		0.12			0.01							
v/s Ratio Perm				0.12							0.35	
v/c Ratio		0.40		0.43	0.04						0.55	
Uniform Delay, d1		40.3		40.6	36.0						14.7	
Progression Factor		1.00		1.01	0.99						0.31	
Incremental Delay, d2		2.7		4.7	0.1						0.6	
Delay (s)		43.0		45.7	36.0						5.1	
Level of Service		D		D	D						A	
Approach Delay (s)		43.0			44.2			0.0			5.1	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.2			HCM 2000 Level of Service					B	
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.7		
Intersection Capacity Utilization			74.3%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

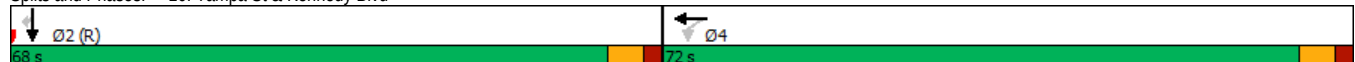
Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↩	↩↩↩						↩↩↩	↩
Traffic Volume (vph)	0	0	0	229	1345	0	0	0	0	0	1426	265
Future Volume (vph)	0	0	0	229	1345	0	0	0	0	0	1426	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		314			546			274			309	
Travel Time (s)		7.1			12.4			6.2			7.0	
Confl. Peds. (#/hr)				26								42
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	221	1471	0	0	0	0	0	1533	285
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Minimum Split (s)				25.8	25.8						26.8	26.8
Total Split (s)				72.0	72.0						68.0	68.0
Total Split (%)				51.4%	51.4%						48.6%	48.6%
Yellow Time (s)				3.7	3.7						3.7	3.7
All-Red Time (s)				2.1	2.1						2.1	2.1
Lost Time Adjust (s)				0.0	0.0						0.0	0.0
Total Lost Time (s)				5.8	5.8						5.8	5.8
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.32	0.65						0.68	0.44
Control Delay				7.0	14.8						20.1	14.6
Queue Delay				0.4	0.6						0.7	1.3
Total Delay				7.4	15.4						20.8	15.8
Queue Length 50th (ft)				58	423						364	65
Queue Length 95th (ft)				102	484						364	82
Internal Link Dist (ft)		234			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				692	2279						2259	649
Starvation Cap Reductn				0	387						372	190
Spillback Cap Reductn				182	202						0	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				0.43	0.78						0.81	0.62

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 23 (16%), Referenced to phase 2:SBT, Start of Green
Natural Cycle: 55
Control Type: Pretimed

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	229	1345	0	0	0	0	0	1426	265
Future Volume (vph)	0	0	0	229	1345	0	0	0	0	0	1426	265
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.8	5.8						5.8	5.8
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.91
Flpb, ped/bikes				0.95	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1439	4797						5085	1434
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1439	4797						5085	1434
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	246	1446	0	0	0	0	0	1533	285
RTOR Reduction (vph)	0	0	0	12	12	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	209	1459	0	0	0	0	0	1533	273
Confl. Peds. (#/hr)				26							42	
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Actuated Green, G (s)				66.2	66.2						62.2	62.2
Effective Green, g (s)				66.2	66.2						62.2	62.2
Actuated g/C Ratio				0.47	0.47						0.44	0.44
Clearance Time (s)				5.8	5.8						5.8	5.8
Lane Grp Cap (vph)				680	2268						2259	637
v/s Ratio Prot											c0.30	
v/s Ratio Perm				0.15	0.30							0.19
v/c Ratio				0.31	0.64						0.68	0.43
Uniform Delay, d1				22.8	28.0						30.9	26.7
Progression Factor				0.28	0.49						0.60	0.51
Incremental Delay, d2				1.0	1.2						1.4	1.8
Delay (s)				7.5	14.9						20.0	15.4
Level of Service				A	B						B	B
Approach Delay (s)		0.0			13.9			0.0			19.3	
Approach LOS		A			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			16.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			11.6			
Intersection Capacity Utilization			60.2%			ICU Level of Service			B			
Analysis Period (min)			15									

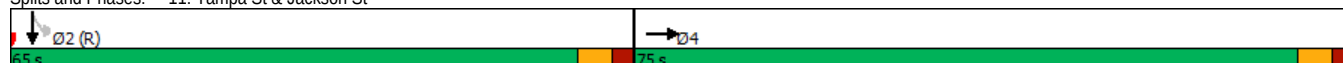
c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	440	416	0	0	0	0	0	0	281	1410	0
Future Volume (vph)	0	440	416	0	0	0	0	0	0	281	1410	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		275			260			589			274	
Travel Time (s)		6.3			5.9			13.4			6.2	
Confl. Peds. (#/hr)			71							39		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	920	0	0	0	0	0	0	0	272	1546	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		75.0								65.0	65.0	
Total Split (%)		53.6%								46.4%	46.4%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		0.0								0.0	0.0	
Total Lost Time (s)		6.0								6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.43								0.42	0.76	
Control Delay		23.3								11.1	21.7	
Queue Delay		0.0								1.4	4.1	
Total Delay		23.3								12.5	25.8	
Queue Length 50th (ft)		190								34	174	
Queue Length 95th (ft)		228								104	254	
Internal Link Dist (ft)		195			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2156								652	2033	
Starvation Cap Reductn		0								215	401	
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.43								0.62	0.95	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	440	416	0	0	0	0	0	0	281	1410	0
Future Volume (vph)	0	440	416	0	0	0	0	0	0	281	1410	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0								6.0	6.0	
Lane Util. Factor		0.91								0.86	0.86	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								0.92	1.00	
Frt		0.93								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4368								1403	4794	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4368								1403	4794	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	473	447	0	0	0	0	0	0	302	1516	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	61	13	0
Lane Group Flow (vph)	0	916	0	0	0	0	0	0	0	211	1533	0
Confl. Peds. (#/hr)			71							39		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		69.0								59.0	59.0	
Effective Green, g (s)		69.0								59.0	59.0	
Actuated g/C Ratio		0.49								0.42	0.42	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2152								591	2020	
v/s Ratio Prot		c0.21										
v/s Ratio Perm										0.15	0.32	
v/c Ratio		0.43								0.36	0.76	
Uniform Delay, d1		22.8								27.6	34.4	
Progression Factor		1.00								0.56	0.57	
Incremental Delay, d2		0.6								1.3	2.2	
Delay (s)		23.4								16.9	21.8	
Level of Service		C								B	C	
Approach Delay (s)		23.4			0.0			0.0			21.1	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay		21.9									C	
HCM 2000 Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		140.0								12.0		
Intersection Capacity Utilization		60.2%								B		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕						↕↕↕	
Traffic Volume (vph)	0	175	94	94	89	0	0	0	0	50	85	0
Future Volume (vph)	0	175	94	94	89	0	0	0	0	50	85	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		404			553			171			589	
Travel Time (s)		9.2			12.6			3.9			13.4	
Confl. Peds. (#/hr)			94	94						30		43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	277	0	97	92	0	0	0	0	0	140	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		5.8		5.8	5.8						5.7	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.23		0.29	0.14						0.05	
Control Delay		22.1		14.4	11.9						19.9	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		22.1		14.4	11.9						19.9	
Queue Length 50th (ft)		63		16	16						23	
Queue Length 95th (ft)		98		25	24						m29	
Internal Link Dist (ft)		324			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1199		337	681						2757	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.23		0.29	0.14						0.05	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 120 (86%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Tampa St & Whiting St



Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	175	94	94	89	0	0	0	0	50	85	0
Future Volume (vph)	0	175	94	94	89	0	0	0	0	50	85	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8		5.8	5.8						5.7	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.89	1.00						1.00	
Frt		0.95		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.98	
Satd. Flow (prot)		3142		1572	1863						4993	
Flt Permitted		1.00		0.56	1.00						0.98	
Satd. Flow (perm)		3142		924	1863						4993	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	180	97	97	92	0	0	0	0	52	88	0
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	226	0	97	92	0	0	0	0	0	140	0
Confl. Peds. (#/hr)			94	94						30		43
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		51.2		51.2	51.2						77.3	
Actuated g/C Ratio		0.37		0.37	0.37						0.55	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1149		337	681						2756	
v/s Ratio Prot		0.07			0.05						c0.03	
v/s Ratio Perm				c0.10								
v/c Ratio		0.20		0.29	0.14						0.05	
Uniform Delay, d1		30.3		31.5	29.6						14.4	
Progression Factor		1.00		0.38	0.38						1.37	
Incremental Delay, d2		0.4		2.1	0.4						0.0	
Delay (s)		30.7		14.1	11.7						19.8	
Level of Service		C		B	B						B	
Approach Delay (s)		30.7			13.0			0.0			19.8	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			22.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.14									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.5		
Intersection Capacity Utilization			59.4%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	229	0	0	257	115	58	787	191	0	0	0
Future Volume (vph)	22	229	0	0	257	115	58	787	191	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	16					16	6		5			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	23	241	0	0	392	0	0	1090	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.0	22.0			22.1		30.1	30.1				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	0.5	0.5			2.1		2.1	2.1				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	4.5	4.5			6.1			6.1				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.10	0.35			0.60			0.40				
Control Delay	29.9	31.7			39.3			12.1				
Queue Delay	0.0	0.0			0.0			0.0				
Total Delay	29.9	31.7			39.3			12.1				
Queue Length 50th (ft)	12	132			277			197				
Queue Length 95th (ft)	m29	186			389			209				
Internal Link Dist (ft)		379			809			935			162	
Turn Bay Length (ft)	100											
Base Capacity (vph)	238	698			649			2713				
Starvation Cap Reductn	0	0			0			0				
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.10	0.35			0.60			0.40				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 129 (92%), Referenced to phase 6:NBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations									  			
Traffic Volume (vph)	22	229	0	0	257	115	58	787	191	0	0	0
Future Volume (vph)	22	229	0	0	257	115	58	787	191	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5			6.1			6.1				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.98			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1756			4895				
Flt Permitted	0.34	1.00			1.00			1.00				
Satd. Flow (perm)	636	1863			1756			4895				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	23	241	0	0	271	121	61	828	201	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	26	0	0	0	0
Lane Group Flow (vph)	23	241	0	0	381	0	0	1064	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		5			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	52.5	52.5			50.9			76.9				
Effective Green, g (s)	52.5	52.5			50.9			76.9				
Actuated g/C Ratio	0.38	0.38			0.36			0.55				
Clearance Time (s)	4.5	4.5			6.1			6.1				
Lane Grp Cap (vph)	238	698			638			2688				
v/s Ratio Prot		0.13			0.22							
v/s Ratio Perm	0.04							0.22				
v/c Ratio	0.10	0.35			0.60			0.40				
Uniform Delay, d1	28.4	31.4			36.2			18.2				
Progression Factor	1.00	0.95			1.00			0.68				
Incremental Delay, d2	0.8	1.3			4.1			0.4				
Delay (s)	29.1	31.3			40.3			12.8				
Level of Service	C	C			D			B				
Approach Delay (s)		31.1			40.3			12.8			0.0	
Approach LOS		C			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			21.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			12.2			
Intersection Capacity Utilization			64.0%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	67	0	0	70	104	80	948	8	0	0	0
Future Volume (vph)	51	67	0	0	70	104	80	948	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		183			376			1146			1015	
Travel Time (s)		5.0			10.3			22.3			19.8	
Confl. Peds. (#/hr)	3					3	4		11			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	73	0	0	189	0	0	1126	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.4	22.4			22.4		24.0	24.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0				
Total Lost Time (s)	6.4	6.4			6.4		6.0	6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.17	0.15			0.37		0.40					
Control Delay	21.6	20.7			13.7		9.0					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	21.6	20.7			13.7		9.0					
Queue Length 50th (ft)	18	24			34		121					
Queue Length 95th (ft)	45	54			84		m161					
Internal Link Dist (ft)		103			296		1066			935		
Turn Bay Length (ft)	50											
Base Capacity (vph)	315	495			516		2817					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.17	0.15			0.37		0.40					

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 17 (24%), Referenced to phase 2: and 6:NBTL, Start of Green

Natural Cycle: 50

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	51	67	0	0	70	104	80	948	8	0	0	0
Future Volume (vph)	51	67	0	0	70	104	80	948	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4			6.4			6.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1764	1863			1696			5055				
Flt Permitted	0.64	1.00			1.00			1.00				
Satd. Flow (perm)	1186	1863			1696			5055				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	55	73	0	0	76	113	87	1030	9	0	0	0
RTOR Reduction (vph)	0	0	0	0	65	0	0	1	0	0	0	0
Lane Group Flow (vph)	55	73	0	0	124	0	0	1125	0	0	0	0
Confl. Peds. (#/hr)	3					3	4		11			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	18.6	18.6			18.6			39.0				
Actuated g/C Ratio	0.27	0.27			0.27			0.56				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	315	495			450			2816				
v/s Ratio Prot		0.04			c0.07							
v/s Ratio Perm	0.05							0.22				
v/c Ratio	0.17	0.15			0.27			0.40				
Uniform Delay, d1	19.8	19.6			20.4			8.8				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	1.2	0.6			1.5			0.2				
Delay (s)	21.0	20.3			21.9			9.0				
Level of Service	C	C			C			A				
Approach Delay (s)		20.6			21.9			9.0			0.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.7			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.36										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			12.4				
Intersection Capacity Utilization		57.5%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↑↑						↑↑↑				
Traffic Volume (vph)	377	883	0	0	0	0	0	1565	594	0	0	0
Future Volume (vph)	377	883	0	0	0	0	0	1565	594	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			377			701			1146	
Travel Time (s)		8.4			8.6			13.7			22.3	
Confl. Peds. (#/hr)	4								8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1299	0	0	0	0	0	2225	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	60.0	60.0						80.0				
Total Split (%)	42.9%	42.9%						57.1%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		0.0						0.0				
Total Lost Time (s)		5.7						6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.95						0.86				
Control Delay		48.0						7.8				
Queue Delay		0.7						0.1				
Total Delay		48.7						7.9				
Queue Length 50th (ft)		603						133				
Queue Length 95th (ft)		#750						139				
Internal Link Dist (ft)		291			297			621			1066	
Turn Bay Length (ft)												
Base Capacity (vph)		1361						2574				
Starvation Cap Reductn		10						23				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.96						0.87				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 64 (46%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	377	883	0	0	0	0	0	1565	594	0	0	0
Future Volume (vph)	377	883	0	0	0	0	0	1565	594	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7						6.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.96				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3475						4828				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3475						4828				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	389	910	0	0	0	0	0	1613	612	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	22	0	0	0	0
Lane Group Flow (vph)	0	1285	0	0	0	0	0	2203	0	0	0	0
Confl. Peds. (#/hr)	4								8			
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		54.3						74.0				
Effective Green, g (s)		54.3						74.0				
Actuated g/C Ratio		0.39						0.53				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1347						2551				
v/s Ratio Prot								0.46				
v/s Ratio Perm		0.37										
v/c Ratio		0.95						0.86				
Uniform Delay, d1		41.6						28.6				
Progression Factor		0.78						0.17				
Incremental Delay, d2		15.4						3.0				
Delay (s)		48.1						7.9				
Level of Service		D						A				
Approach Delay (s)		48.1			0.0			7.9			0.0	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		22.7										
HCM 2000 Volume to Capacity ratio		0.90										
Actuated Cycle Length (s)		140.0										
Intersection Capacity Utilization		88.9%										
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	54	23	0	0	0	0	30	2121	7	0	0	0
Future Volume (vph)	54	23	0	0	0	0	30	2121	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		258			273			465			701	
Travel Time (s)		5.9			6.2			10.6			15.9	
Confl. Peds. (#/hr)	13					13	5		7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	84	0	0	0	0	0	2346	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Minimum Split (s)	24.4	24.4					24.0	24.0				
Total Split (s)	43.0	43.0					97.0	97.0				
Total Split (%)	30.7%	30.7%					69.3%	69.3%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		0.0						0.0				
Total Lost Time (s)		5.4						6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.18						0.71				
Control Delay		40.6						1.8				
Queue Delay		0.0						0.1				
Total Delay		40.6						1.9				
Queue Length 50th (ft)		59						24				
Queue Length 95th (ft)		105						26				
Internal Link Dist (ft)		178			193			385			621	
Turn Bay Length (ft)												
Base Capacity (vph)		470						3297				
Starvation Cap Reductn		0						143				
Spillback Cap Reductn		0						36				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.18						0.74				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 41 (29%), Referenced to phase 2:NBTL and 6:, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
Splits and Phases: 16: Florida Ave & Fortune St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	23	0	0	0	0	30	2121	7	0	0	0
Future Volume (vph)	54	23	0	0	0	0	30	2121	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4						6.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.97						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1754						5076				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1754						5076				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	59	25	0	0	0	0	33	2305	8	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	84	0	0	0	0	0	2346	0	0	0	0
Confl. Peds. (#/hr)	13					13	5		7			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.6						91.0				
Effective Green, g (s)		37.6						91.0				
Actuated g/C Ratio		0.27						0.65				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		471						3299				
v/s Ratio Prot												
v/s Ratio Perm		0.05						0.46				
v/c Ratio		0.18						0.71				
Uniform Delay, d1		39.3						15.9				
Progression Factor		1.00						0.06				
Incremental Delay, d2		0.8						0.9				
Delay (s)		40.2						1.8				
Level of Service		D						A				
Approach Delay (s)		40.2			0.0			1.8			0.0	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		3.2										
HCM 2000 Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		140.0										
Intersection Capacity Utilization		62.1%										
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
17: Florida Ave & Harrison St

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↔			↔			↔↔↔				
Traffic Volume (vph)	16	32	0	0	10	62	14	2219	15	0	0	0
Future Volume (vph)	16	32	0	0	10	62	14	2219	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		320			287			301			465	
Travel Time (s)		7.3			6.5			6.8			9.1	
Confl. Peds. (#/hr)	8					8	7		12			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	78	0	0	2443	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		5.8			5.8			6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.12			0.18			0.74				
Control Delay		39.9			37.9			25.5				
Queue Delay		0.0			0.0			47.3				
Total Delay		39.9			37.9			72.9				
Queue Length 50th (ft)		36			51			830				
Queue Length 95th (ft)		72			96			877				
Internal Link Dist (ft)		240			207			221			385	
Turn Bay Length (ft)												
Base Capacity (vph)		448			431			3300				
Starvation Cap Reductn		0			0			1296				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.12			0.18			1.22				

Intersection Summary

Area Type: Other

Cycle Length: 140

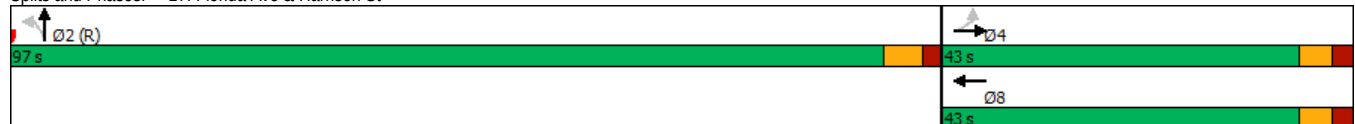
Actuated Cycle Length: 140

Offset: 36 (26%), Referenced to phase 2:NBT and 6:, Start of Green

Natural Cycle: 65

Control Type: Pretimed

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	32	0	0	10	62	14	2219	15	0	0	0
Future Volume (vph)	16	32	0	0	10	62	14	2219	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8			5.8			6.0				
Lane Util. Factor		1.00			1.00			0.91				
Flpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.88			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1824			1608			5075				
Flt Permitted		0.91			1.00			1.00				
Satd. Flow (perm)		1689			1608			5075				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	35	0	0	11	67	15	2412	16	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	52	0	0	74	0	0	2443	0	0	0	0
Confl. Peds. (#/hr)	8					8	7		12			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.2			37.2			91.0				
Effective Green, g (s)		37.2			37.2			91.0				
Actuated g/C Ratio		0.27			0.27			0.65				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		448			427			3298				
v/s Ratio Prot					c0.05							
v/s Ratio Perm		0.03						0.48				
v/c Ratio		0.12			0.17			0.74				
Uniform Delay, d1		38.9			39.6			16.5				
Progression Factor		1.00			1.00			1.46				
Incremental Delay, d2		0.5			0.9			1.1				
Delay (s)		39.5			40.4			25.2				
Level of Service		D			D			C				
Approach Delay (s)		39.5			40.4			25.2			0.0	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		26.0			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.8				
Intersection Capacity Utilization		70.8%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

Existing 2018
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	85	0	0	191	51	27	2214	8	0	0	0
Future Volume (vph)	79	85	0	0	191	51	27	2214	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			288			286			301	
Travel Time (s)		13.0			6.5			5.6			5.9	
Confl. Peds. (#/hr)	11					11	4		21			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	84	90	0	0	257	0	29	2364	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0				
Total Lost Time (s)	5.8	5.8			5.8		6.0	6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.41	0.18			0.53		0.03	0.72				
Control Delay	57.5	48.2			47.5		11.1	13.5				
Queue Delay	0.0	0.0			0.0		0.0	47.6				
Total Delay	57.5	48.2			47.5		11.1	61.2				
Queue Length 50th (ft)	67	69			196		8	257				
Queue Length 95th (ft)	124	120			288		m14	342				
Internal Link Dist (ft)		490			208			206			221	
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	204	495			482		1134	3301				
Starvation Cap Reductn	0	0			0		0	920				
Spillback Cap Reductn	0	0			2		0	1474				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.41	0.18			0.54		0.03	1.29				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 128 (91%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	85	0	0	191	51	27	2214	8	0	0	0
Future Volume (vph)	79	85	0	0	191	51	27	2214	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	0.99	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1749	1863			1797		1745	5081				
Flt Permitted	0.42	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	769	1863			1797		1745	5081				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	84	90	0	0	203	54	29	2355	9	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	84	90	0	0	252	0	29	2364	0	0	0	0
Confl. Peds. (#/hr)	11					11	4		21			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.2	37.2			37.2		91.0	91.0				
Effective Green, g (s)	37.2	37.2			37.2		91.0	91.0				
Actuated g/C Ratio	0.27	0.27			0.27		0.65	0.65				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	204	495			477		1134	3302				
v/s Ratio Prot		0.05			c0.14			c0.47				
v/s Ratio Perm	0.11						0.02					
v/c Ratio	0.41	0.18			0.53		0.03	0.72				
Uniform Delay, d1	42.4	39.7			43.9		8.7	16.0				
Progression Factor	1.18	1.18			1.00		1.26	0.77				
Incremental Delay, d2	6.0	0.8			4.1		0.0	0.9				
Delay (s)	55.9	47.6			48.0		11.0	13.4				
Level of Service	E	D			D		B	B				
Approach Delay (s)		51.6			48.0			13.3			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		18.9			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.8				
Intersection Capacity Utilization		82.6%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	78	256	0	0	177	49	48	2161	40	0	0	0
Future Volume (vph)	78	256	0	0	177	49	48	2161	40	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			311			283			286	
Travel Time (s)		12.6			7.1			5.5			5.6	
Confl. Peds. (#/hr)	4					4	5		74			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	344	0	0	233	0	49	2269	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		6.0			6.0		6.0	6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.95			0.45		0.04	0.72				
Control Delay		67.6			43.2		1.6	2.8				
Queue Delay		50.5			10.1		0.0	0.2				
Total Delay		118.1			53.4		1.6	3.0				
Queue Length 50th (ft)		158			170		2	32				
Queue Length 95th (ft)		#485			253		m2	33				
Internal Link Dist (ft)		473			231			203			206	
Turn Bay Length (ft)							60					
Base Capacity (vph)		363			518		1091	3172				
Starvation Cap Reductn		0			0		0	248				
Spillback Cap Reductn		176			249		0	264				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		1.84			0.87		0.04	0.78				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 26 (19%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 65

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	78	256	0	0	177	49	48	2161	40	0	0	0
Future Volume (vph)	78	256	0	0	177	49	48	2161	40	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			1.00		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.98	1.00				
Frt		1.00			0.97		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1839			1800		1737	5045				
Flt Permitted		0.68			1.00		0.95	1.00				
Satd. Flow (perm)		1274			1800		1737	5045				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	80	264	0	0	182	51	49	2228	41	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	344	0	0	229	0	49	2268	0	0	0	0
Confl. Peds. (#/hr)	4					4	5		74			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.0			40.0		88.0	88.0				
Effective Green, g (s)		40.0			40.0		88.0	88.0				
Actuated g/C Ratio		0.29			0.29		0.63	0.63				
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		364			514		1091	3171				
v/s Ratio Prot					0.13			c0.45				
v/s Ratio Perm		c0.27					0.03					
v/c Ratio		0.95			0.44		0.04	0.72				
Uniform Delay, d1		48.9			40.9		9.9	17.5				
Progression Factor		0.76			1.00		0.15	0.11				
Incremental Delay, d2		28.9			2.8		0.1	0.9				
Delay (s)		65.9			43.7		1.5	2.8				
Level of Service		E			D		A	A				
Approach Delay (s)		65.9			43.7			2.8			0.0	
Approach LOS		E			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		13.6			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.79										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		93.9%			ICU Level of Service			F				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	39	117	0	0	56	51	37	2192	20	0	0	0
Future Volume (vph)	39	117	0	0	56	51	37	2192	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			394			300			283	
Travel Time (s)		12.2			9.0			5.8			5.5	
Confl. Peds. (#/hr)	33					33	6		68			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	172	0	0	118	0	41	2431	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		5.8			5.8		6.0	6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.36			0.24		0.04	0.76				
Control Delay		37.6			38.6		2.9	11.7				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		37.6			38.6		2.9	11.7				
Queue Length 50th (ft)		138			80		3	753				
Queue Length 95th (ft)		212			135		m6	824				
Internal Link Dist (ft)		457			314			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		472			484		1091	3187				
Starvation Cap Reductn		0			0		0	0				
Spillback Cap Reductn		0			0		0	6				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.36			0.24		0.04	0.76				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 60

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	39	117	0	0	56	51	37	2192	20	0	0	0
Future Volume (vph)	39	117	0	0	56	51	37	2192	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8			5.8		6.0	6.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.96		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.98	1.00				
Frt		1.00			0.94		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1814			1677		1736	5068				
Flt Permitted		0.90			1.00		0.95	1.00				
Satd. Flow (perm)		1647			1677		1736	5068				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	43	129	0	0	62	56	41	2409	22	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	172	0	0	115	0	41	2430	0	0	0	0
Confl. Peds. (#/hr)	33					33	6		68			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.2			40.2		88.0	88.0				
Effective Green, g (s)		40.2			40.2		88.0	88.0				
Actuated g/C Ratio		0.29			0.29		0.63	0.63				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		472			481		1091	3185				
v/s Ratio Prot					0.07			c0.48				
v/s Ratio Perm		c0.10					0.02					
v/c Ratio		0.36			0.24		0.04	0.76				
Uniform Delay, d1		39.7			38.2		9.9	18.6				
Progression Factor		0.88			1.00		0.28	0.54				
Incremental Delay, d2		2.1			1.2		0.1	1.5				
Delay (s)		37.1			39.4		2.9	11.5				
Level of Service		D			D		A	B				
Approach Delay (s)		37.1			39.4			11.4			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		14.2			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.8				
Intersection Capacity Utilization		69.3%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	128	0	0	99	144	81	2123	45	0	0	0
Future Volume (vph)	36	128	0	0	99	144	81	2123	45	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			418			283			300	
Travel Time (s)		12.3			9.5			5.5			5.8	
Confl. Peds. (#/hr)	24					24	10		15			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	173	0	0	256	0	0	2367	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		5.9			5.9			5.7				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.40			0.53			0.59				
Control Delay		21.9			45.6			4.4				
Queue Delay		0.0			0.0			0.3				
Total Delay		21.9			45.6			4.7				
Queue Length 50th (ft)		60			191			53				
Queue Length 95th (ft)		85			283			64				
Internal Link Dist (ft)		459			338			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		429			479			4011				
Starvation Cap Reductn		0			0			859				
Spillback Cap Reductn		0			0			234				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.40			0.53			0.75				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
Splits and Phases: 21: Florida Ave & Zack St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	128	0	0	99	144	81	2123	45	0	0	0
Future Volume (vph)	36	128	0	0	99	144	81	2123	45	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9			5.9			5.7				
Lane Util. Factor		1.00			1.00			0.86				
Frbp, ped/bikes		1.00			0.96			1.00				
Flpb, ped/bikes		0.99			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		1832			1653			6359				
Flt Permitted		0.81			1.00			1.00				
Satd. Flow (perm)		1501			1653			6359				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	135	0	0	104	152	85	2235	47	0	0	0
RTOR Reduction (vph)	0	0	0	0	6	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	173	0	0	250	0	0	2365	0	0	0	0
Confl. Peds. (#/hr)	24					24	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.1			40.1			88.3				
Effective Green, g (s)		40.1			40.1			88.3				
Actuated g/C Ratio		0.29			0.29			0.63				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		429			473			4010				
v/s Ratio Prot					c0.15							
v/s Ratio Perm		0.12						0.37				
v/c Ratio		0.40			0.53			0.59				
Uniform Delay, d1		40.3			42.0			15.2				
Progression Factor		0.48			1.00			0.26				
Incremental Delay, d2		2.4			4.2			0.5				
Delay (s)		21.5			46.2			4.4				
Level of Service		C			D			A				
Approach Delay (s)		21.5			46.2			4.4			0.0	
Approach LOS		C			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		9.3			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.57										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.6				
Intersection Capacity Utilization		73.6%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
22: Florida Ave & Twiggs St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	18	274	0	0	156	275	52	2079	118	0	0	0
Future Volume (vph)	18	274	0	0	156	275	52	2079	118	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			396			298			283	
Travel Time (s)		12.3			9.0			5.8			5.5	
Confl. Peds. (#/hr)	16					16	6		13			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	307	0	0	164	289	0	2367	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	60.0	60.0			60.0	60.0	80.0	80.0				
Total Split (%)	42.9%	42.9%			42.9%	42.9%	57.1%	57.1%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		0.0			0.0	0.0		0.0				
Total Lost Time (s)		5.9			5.9	5.9		6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.24			0.23	0.48		0.71				
Control Delay		15.2			30.0	32.9		15.4				
Queue Delay		0.0			0.0	0.0		0.1				
Total Delay		15.2			30.0	32.9		15.5				
Queue Length 50th (ft)		45			100	181		104				
Queue Length 95th (ft)		61			156	271		105				
Internal Link Dist (ft)		463			316			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		1270			719	600		3353				
Starvation Cap Reductn		0			0	0		219				
Spillback Cap Reductn		0			23	0		100				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.24			0.24	0.48		0.76				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
Splits and Phases: 22: Florida Ave & Twiggs St												
												

Tampa Streetcar Feasibility Study
22: Florida Ave & Twigg St

Existing 2018
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	18	274	0	0	156	275	52	2079	118	0	0	0
Future Volume (vph)	18	274	0	0	156	275	52	2079	118	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9			5.9	5.9		6.0				
Lane Util. Factor		0.95			1.00	1.00		0.86				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		0.99				
Flt Protected		1.00			1.00	1.00		1.00				
Satd. Flow (prot)		3523			1863	1517		6333				
Flt Permitted		0.93			1.00	1.00		1.00				
Satd. Flow (perm)		3288			1863	1517		6333				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	19	288	0	0	164	289	55	2188	124	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	14	0	6	0	0	0	0
Lane Group Flow (vph)	0	307	0	0	164	275	0	2361	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		13			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		54.1			54.1	54.1		74.0				
Effective Green, g (s)		54.1			54.1	54.1		74.0				
Actuated g/C Ratio		0.39			0.39	0.39		0.53				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		1270			719	586		3347				
v/s Ratio Prot					0.09							
v/s Ratio Perm		0.09				0.18		0.37				
v/c Ratio		0.24			0.23	0.47		0.71				
Uniform Delay, d1		29.1			28.9	32.2		24.8				
Progression Factor		0.51			1.00	1.00		0.58				
Incremental Delay, d2		0.4			0.7	2.7		1.0				
Delay (s)		15.1			29.6	34.9		15.4				
Level of Service		B			C	C		B				
Approach Delay (s)		15.1			33.0			15.4			0.0	
Approach LOS		B			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		17.9				HCM 2000 Level of Service		B				
HCM 2000 Volume to Capacity ratio		0.61										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		11.9				
Intersection Capacity Utilization		74.7%				ICU Level of Service		D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
23: Florida Ave & Madison St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	105	0	0	44	84	58	2150	42	0	0	0
Future Volume (vph)	84	105	0	0	44	84	58	2150	42	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			408			314			298	
Travel Time (s)		12.5			9.3			6.1			5.8	
Confl. Peds. (#/hr)	21					21	8		15			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	113	0	0	137	0	0	2419	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.9	5.9			5.9			6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.28	0.21			0.29			0.60				
Control Delay	36.8	34.8			39.1			16.2				
Queue Delay	0.0	0.0			0.0			0.9				
Total Delay	36.8	34.8			39.1			17.1				
Queue Length 50th (ft)	52	63			93			456				
Queue Length 95th (ft)	98	115			154			499				
Internal Link Dist (ft)		468			328			234			218	
Turn Bay Length (ft)	75											
Base Capacity (vph)	325	533			474			4005				
Starvation Cap Reductn	0	0			0			1167				
Spillback Cap Reductn	0	0			0			72				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.28	0.21			0.29			0.85				
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	3 (2%), Referenced to phase 2:NBT, Start of Green											
Natural Cycle:	60											
Control Type:	Pretimed											

Splits and Phases: 23: Florida Ave & Madison St

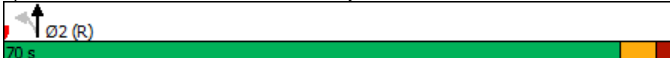


												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	84	105	0	0	44	84	58	2150	42	0	0	0
Future Volume (vph)	84	105	0	0	44	84	58	2150	42	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9			6.0				
Lane Util. Factor	1.00	1.00			1.00			0.86				
Frbp, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.97	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1714	1863			1640			6369				
Flt Permitted	0.63	1.00			1.00			1.00				
Satd. Flow (perm)	1138	1863			1640			6369				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	90	113	0	0	47	90	62	2312	45	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	2	0	0	0	0
Lane Group Flow (vph)	90	113	0	0	133	0	0	2417	0	0	0	0
Confl. Peds. (#/hr)	21					21	8		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.1	40.1			40.1			88.0				
Effective Green, g (s)	40.1	40.1			40.1			88.0				
Actuated g/C Ratio	0.29	0.29			0.29			0.63				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	325	533			469			4003				
v/s Ratio Prot		0.06			c0.08							
v/s Ratio Perm	0.08							0.38				
v/c Ratio	0.28	0.21			0.28			0.60				
Uniform Delay, d1	38.7	37.9			38.8			15.6				
Progression Factor	0.88	0.88			1.00			1.00				
Incremental Delay, d2	2.0	0.9			1.5			0.7				
Delay (s)	36.1	34.4			40.3			16.2				
Level of Service	D	C			D			B				
Approach Delay (s)		35.1			40.3			16.2			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		18.8			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.50										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.9				
Intersection Capacity Utilization		74.3%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
24: Florida Ave & Kennedy Blvd

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1292	418	106	785	0	0	0	0
Future Volume (vph)	0	0	0	0	1292	418	106	785	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			427			259			314	
Travel Time (s)		12.4			9.7			5.0			6.1	
Confl. Peds. (#/hr)						33	10					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1763	0	109	809	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					70.0		70.0	70.0				
Total Split (%)					50.0%		50.0%	50.0%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					0.0		0.0	0.0				
Total Lost Time (s)					5.7		5.8	5.8				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.62		0.14	0.35				
Control Delay					28.5		5.6	11.7				
Queue Delay					0.0		0.7	0.3				
Total Delay					28.5		6.3	12.0				
Queue Length 50th (ft)					333		10	49				
Queue Length 95th (ft)					373		19	73				
Internal Link Dist (ft)		466			347			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					2824		806	2331				
Starvation Cap Reductn					0		478	869				
Spillback Cap Reductn					82		0	495				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.64		0.33	0.55				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 24: Florida Ave & Kennedy Blvd												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1292	418	106	785	0	0	0	0
Future Volume (vph)	0	0	0	0	1292	418	106	785	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.7		5.8	5.8				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.98	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6062		1734	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6062		1734	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	1332	431	109	809	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	42	0	11	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1721	0	98	809	0	0	0	0
Confl. Peds. (#/hr)					33		10					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					64.3		64.2	64.2				
Effective Green, g (s)					64.3		64.2	64.2				
Actuated g/C Ratio					0.46		0.46	0.46				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2784		795	2331				
v/s Ratio Prot					c0.28			c0.16				
v/s Ratio Perm							0.06					
v/c Ratio					0.62		0.12	0.35				
Uniform Delay, d1					28.6		21.7	24.4				
Progression Factor					1.00		0.30	0.46				
Incremental Delay, d2					1.0		0.3	0.4				
Delay (s)					29.6		6.7	11.6				
Level of Service					C		A	B				
Approach Delay (s)		0.0			29.6			11.0			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			23.3		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.48									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)						11.5	
Intersection Capacity Utilization			60.2%		ICU Level of Service						B	
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
25: Florida Ave & Jackson St

Existing 2018
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	120	735	0	0	0	0	0	839	52	0	0	0
Future Volume (vph)	120	735	0	0	0	0	0	839	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		283			447			595			259	
Travel Time (s)		6.4			10.2			11.6			5.0	
Confl. Peds. (#/hr)	66								34			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	919	0	0	0	0	0	958	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	27.9	27.9						26.9				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						3.7				
All-Red Time (s)	2.2	2.2						2.2				
Lost Time Adjust (s)		0.0						0.0				
Total Lost Time (s)		5.9						5.9				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.49						0.35				
Control Delay		22.4						22.5				
Queue Delay		0.0						0.0				
Total Delay		22.4						22.5				
Queue Length 50th (ft)		152						219				
Queue Length 95th (ft)		202						257				
Internal Link Dist (ft)		203			367			515			179	
Turn Bay Length (ft)												
Base Capacity (vph)		1861						2731				
Starvation Cap Reductn		0						0				
Spillback Cap Reductn		0						58				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.49						0.36				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 133 (95%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 25: Florida Ave & Jackson St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	120	735	0	0	0	0	0	839	52	0	0	0
Future Volume (vph)	120	735	0	0	0	0	0	839	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9						5.9				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4961						5018				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4961						5018				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	129	790	0	0	0	0	0	902	56	0	0	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	903	0	0	0	0	0	953	0	0	0	0
Confl. Peds. (#/hr)	66								34			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		52.1						76.1				
Actuated g/C Ratio		0.37						0.54				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1846						2727				
v/s Ratio Prot								c0.19				
v/s Ratio Perm		0.18										
v/c Ratio		0.49						0.35				
Uniform Delay, d1		33.7						18.0				
Progression Factor		0.65						1.24				
Incremental Delay, d2		0.9						0.4				
Delay (s)		22.9						22.7				
Level of Service		C						C				
Approach Delay (s)		22.9			0.0			22.7			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		22.8										C
HCM 2000 Volume to Capacity ratio		0.41										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)	11.8			
Intersection Capacity Utilization		51.2%						ICU Level of Service	A			
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↔↔			↔↔			↔↔↔	↔			
Traffic Volume (vph)	76	106	0	0	205	65	5	140	5	0	0	0
Future Volume (vph)	76	106	0	0	205	65	5	140	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			299			397			595	
Travel Time (s)		12.6			6.8			7.7			11.6	
Confl. Peds. (#/hr)	130					130	45		103			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	196	0	0	290	0	0	156	5	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Minimum Split (s)	29.0	29.0			29.0		24.7	24.7	24.7			
Total Split (s)	60.0	60.0			60.0		80.0	80.0	80.0			
Total Split (%)	42.9%	42.9%			42.9%		57.1%	57.1%	57.1%			
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7	3.7			
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0	2.0			
Lost Time Adjust (s)		0.0			0.0			0.0	0.0			
Total Lost Time (s)		6.0			6.0			5.7	5.7			
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.22			0.23			0.06	0.01			
Control Delay		20.0			25.9			27.5	6.6			
Queue Delay		0.0			0.0			0.0	0.0			
Total Delay		20.0			25.9			27.5	6.6			
Queue Length 50th (ft)		37			81			31	1			
Queue Length 95th (ft)		50			116			46	m2			
Internal Link Dist (ft)		473			219			317			515	
Turn Bay Length (ft)									50			
Base Capacity (vph)		905			1259			2679	653			
Starvation Cap Reductn		0			0			0	0			
Spillback Cap Reductn		0			0			0	0			
Storage Cap Reductn		0			0			0	0			
Reduced v/c Ratio		0.22			0.23			0.06	0.01			

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 121 (86%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 55
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	76	106	0	0	205	65	5	140	5	0	0	0
Future Volume (vph)	76	106	0	0	205	65	5	140	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			5.7	5.7			
Lane Util. Factor		0.95			0.95			0.91	1.00			
Frpb, ped/bikes		1.00			0.94			1.00	0.76			
Flpb, ped/bikes		0.94			1.00			0.99	1.00			
Frt		1.00			0.96			1.00	0.85			
Flt Protected		0.98			1.00			1.00	1.00			
Satd. Flow (prot)		3246			3210			5050	1211			
Flt Permitted		0.71			1.00			1.00	1.00			
Satd. Flow (perm)		2346			3210			5050	1211			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	82	114	0	0	220	70	5	151	5	0	0	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	196	0	0	269	0	0	156	3	0	0	0
Confl. Peds. (#/hr)	130					130	45		103			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		54.0			54.0			74.3	74.3			
Effective Green, g (s)		54.0			54.0			74.3	74.3			
Actuated g/C Ratio		0.39			0.39			0.53	0.53			
Clearance Time (s)		6.0			6.0			5.7	5.7			
Lane Grp Cap (vph)		904			1238			2680	642			
v/s Ratio Prot					c0.08							
v/s Ratio Perm		0.08						0.03	0.00			
v/c Ratio		0.22			0.22			0.06	0.00			
Uniform Delay, d1		28.8			28.8			15.9	15.4			
Progression Factor		0.67			1.00			1.72	1.00			
Incremental Delay, d2		0.5			0.4			0.0	0.0			
Delay (s)		19.8			29.2			27.4	15.5			
Level of Service		B			C			C	B			
Approach Delay (s)		19.8			29.2			27.1			0.0	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM 2000 Control Delay		25.8			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.12										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.7				
Intersection Capacity Utilization		58.1%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	800	190	9	140	0	0	0	0
Future Volume (vph)	0	0	0	0	800	190	9	140	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		266			442			510			230	
Travel Time (s)		5.2			8.6			9.9			4.5	
Confl. Peds. (#/hr)						29	22					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1021	0	9	144	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Minimum Split (s)					29.8		36.1	36.1				
Total Split (s)					60.0		80.0	80.0				
Total Split (%)					42.9%		57.1%	57.1%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.1		2.4	2.4				
Lost Time Adjust (s)					0.0		0.0	0.0				
Total Lost Time (s)					5.8		6.1	6.1				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.42		0.01	0.05				
Control Delay					30.4		2.0	16.1				
Queue Delay					0.0		0.0	0.0				
Total Delay					30.4		2.0	16.1				
Queue Length 50th (ft)					186		0	22				
Queue Length 95th (ft)					219		4	35				
Internal Link Dist (ft)		186			362			430			150	
Turn Bay Length (ft)												
Base Capacity (vph)					2410		915	2684				
Starvation Cap Reductn					0		0	0				
Spillback Cap Reductn					0		0	0				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.42		0.01	0.05				
Intersection Summary												
Area Type: Other												
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 46 (33%), Referenced to phase 2:WBT, Start of Green												
Natural Cycle: 70												
Control Type: Pretimed												
Splits and Phases: 27: Florida Ave & Brorein St												
 Ø2 (R)  Ø4												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	800	190	9	140	0	0	0	0
Future Volume (vph)	0	0	0	0	800	190	9	140	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.8		6.1	6.1				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		0.97	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6150		1715	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6150		1715	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	825	196	9	144	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	31	0	4	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	990	0	5	144	0	0	0	0
Confl. Peds. (#/hr)					29		22					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					54.2		73.9	73.9				
Actuated g/C Ratio					0.39		0.53	0.53				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2380		905	2684				
v/s Ratio Prot					c0.16			c0.03				
v/s Ratio Perm							0.00					
v/c Ratio					0.42		0.01	0.05				
Uniform Delay, d1					31.3		15.6	16.1				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.5		0.0	0.0				
Delay (s)					31.9		15.7	16.1				
Level of Service					C		B	B				
Approach Delay (s)		0.0			31.9			16.1			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			29.8		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.21									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					11.9		
Intersection Capacity Utilization			38.3%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	212	0	0	628	47
Future Volume (vph)	0	212	0	0	628	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.92	0.92	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	236	0	0	698	52
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	909	0	0	782	0
Future Volume (vph)	0	909	0	0	782	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	988	0	0	850	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					



Lane Group	WBL	WBR	SBL2	SBL	NWR
Lane Configurations					
Traffic Volume (vph)	0	0	416	900	0
Future Volume (vph)	0	0	416	900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30
Link Distance (ft)	309			171	344
Travel Time (s)	7.0			3.9	7.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)					
Lane Group Flow (vph)	0	0	452	978	0
Sign Control	Stop			Free	Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Existing 2018 PM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Existing 2018
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑↑↑	
Traffic Volume (vph)	0	266	106	98	153	0	0	0	0	238	545	381
Future Volume (vph)	0	266	106	98	153	0	0	0	0	238	545	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			246	
Travel Time (s)		14.9			10.4			37.4			4.8	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	271	108	100	156	0	0	0	0	0	1188	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	
Total Split (s)		60.0	60.0	60.0	60.0					80.0	80.0	
Total Split (%)		42.9%	42.9%	42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		0.0	0.0	0.0	0.0						0.0	
Total Lost Time (s)		6.0	6.0	6.0	6.0						6.4	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.38	0.16	0.28	0.22						0.46	
Control Delay		32.9	5.4	19.1	17.6						18.9	
Queue Delay		0.1	0.0	0.0	0.0						0.0	
Total Delay		32.9	5.4	19.1	17.6						18.9	
Queue Length 50th (ft)		176	0	30	46						213	
Queue Length 95th (ft)		254	40	50	69						252	
Internal Link Dist (ft)		576			379			1841			166	
Turn Bay Length (ft)				150								
Base Capacity (vph)		718	676	352	718						2559	
Starvation Cap Reductn		0	0	0	0						0	
Spillback Cap Reductn		40	0	0	0						0	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.40	0.16	0.28	0.22						0.46	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 100 (71%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	266	106	98	153	0	0	0	0	238	545	381
Future Volume (vph)	0	266	106	98	153	0	0	0	0	238	545	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						0.95	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1583	1770	1863						4748	
Flt Permitted		1.00	1.00	0.49	1.00						0.99	
Satd. Flow (perm)		1863	1583	915	1863						4748	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	271	108	100	156	0	0	0	0	243	556	389
RTOR Reduction (vph)	0	0	66	0	0	0	0	0	0	0	63	0
Lane Group Flow (vph)	0	271	42	100	156	0	0	0	0	0	1125	0
Confl. Peds. (#/hr)										1		1
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		54.0	54.0	54.0	54.0						73.6	
Effective Green, g (s)		54.0	54.0	54.0	54.0						73.6	
Actuated g/C Ratio		0.39	0.39	0.39	0.39						0.53	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		718	610	352	718						2496	
v/s Ratio Prot		c0.15			0.08							
v/s Ratio Perm			0.03	0.11							0.24	
v/c Ratio		0.38	0.07	0.28	0.22						0.45	
Uniform Delay, d1		30.9	27.1	29.7	28.8						20.6	
Progression Factor		1.00	1.00	0.56	0.58						1.00	
Incremental Delay, d2		1.5	0.2	1.9	0.7						0.6	
Delay (s)		32.4	27.3	18.7	17.4						21.2	
Level of Service		C	C	B	B						C	
Approach Delay (s)		31.0			17.9			0.0			21.2	
Approach LOS		C			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			22.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				12.4		
Intersection Capacity Utilization			61.6%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	32	1408	0	0	0	0	0	661	463
Future Volume (vph)	0	0	0	32	1408	0	0	0	0	0	661	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		391			229			247			1921	
Travel Time (s)		8.9			5.2			5.6			37.4	
Confl. Peds. (#/hr)												1
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	30	1470	0	0	0	0	0	689	482
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Minimum Split (s)				26.7	26.7						31.0	31.0
Total Split (s)				100.0	100.0						40.0	40.0
Total Split (%)				71.4%	71.4%						28.6%	28.6%
Yellow Time (s)				3.7	3.7						4.0	4.0
All-Red Time (s)				2.0	2.0						2.0	2.0
Lost Time Adjust (s)				0.0	0.0						0.0	0.0
Total Lost Time (s)				5.7	5.7						6.0	6.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.03	0.64						0.56	1.14
Control Delay				3.6	14.5						44.4	124.8
Queue Delay				0.0	0.0						53.0	0.0
Total Delay				3.6	14.5						97.4	124.8
Queue Length 50th (ft)				2	386						208	~471
Queue Length 95th (ft)				14	457						254	#695
Internal Link Dist (ft)		311			149			167			1841	
Turn Bay Length (ft)												475
Base Capacity (vph)				1091	2290						1234	424
Starvation Cap Reductn				0	0						0	0
Spillback Cap Reductn				2	0						647	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				0.03	0.64						1.17	1.14

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 65

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 2: Tampa St & Kay St



Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	32	1408	0	0	0	0	0	661	463
Future Volume (vph)	0	0	0	32	1408	0	0	0	0	0	661	463
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.7	5.7						6.0	6.0
Lane Util. Factor				0.91	0.91						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1610	3390						5085	1562
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1610	3390						5085	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	33	1467	0	0	0	0	0	689	482
RTOR Reduction (vph)	0	0	0	8	8	0	0	0	0	0	0	45
Lane Group Flow (vph)	0	0	0	22	1462	0	0	0	0	0	689	437
Confl. Peds. (#/hr)												1
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Actuated Green, G (s)				94.3	94.3						34.0	34.0
Effective Green, g (s)				94.3	94.3						34.0	34.0
Actuated g/C Ratio				0.67	0.67						0.24	0.24
Clearance Time (s)				5.7	5.7						6.0	6.0
Lane Grp Cap (vph)				1084	2283						1234	379
v/s Ratio Prot				0.01	c0.43						0.14	
v/s Ratio Perm												c0.28
v/c Ratio				0.02	0.64						0.56	1.15
Uniform Delay, d1				7.6	13.1						46.4	53.0
Progression Factor				1.00	1.00						0.91	0.91
Incremental Delay, d2				0.0	1.4						1.8	94.7
Delay (s)				7.6	14.5						44.2	143.2
Level of Service				A	B						D	F
Approach Delay (s)		0.0			14.4			0.0			85.0	
Approach LOS		A			B			A			F	
Intersection Summary												
HCM 2000 Control Delay			45.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.7		
Intersection Capacity Utilization			69.5%			ICU Level of Service				C		
Analysis Period (min)			15									

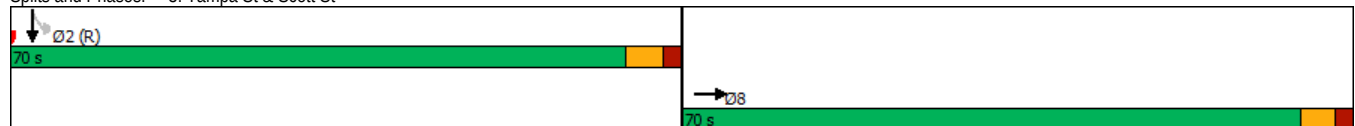
c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Existing 2018
Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕									↕↕↕	
Traffic Volume (vph)	0	665	47	0	0	0	0	0	0	139	536	0
Future Volume (vph)	0	665	47	0	0	0	0	0	0	139	536	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		385			62			346			247	
Travel Time (s)		8.8			1.4			7.9			5.6	
Confl. Peds. (#/hr)			2									
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	742	0	0	0	0	0	0	0	0	703	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		0.0									0.0	
Total Lost Time (s)		5.7									6.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.46									0.30	
Control Delay		26.8									16.8	
Queue Delay		1.5									53.1	
Total Delay		28.3									69.9	
Queue Length 50th (ft)		237									233	
Queue Length 95th (ft)		293									281	
Internal Link Dist (ft)		305			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1611									2334	
Starvation Cap Reductn		0									1721	
Spillback Cap Reductn		639									3	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.76									1.15	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 62 (44%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 50												
Control Type: Pretimed												

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	665	47	0	0	0	0	0	0	139	536	0
Future Volume (vph)	0	665	47	0	0	0	0	0	0	139	536	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7									6.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.99									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3500									5033	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3500									5033	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	693	49	0	0	0	0	0	0	145	558	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	33	0
Lane Group Flow (vph)	0	738	0	0	0	0	0	0	0	0	670	0
Confl. Peds. (#/hr)			2									
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		64.3									64.0	
Actuated g/C Ratio		0.46									0.46	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1607									2300	
v/s Ratio Prot		c0.21										
v/s Ratio Perm											0.13	
v/c Ratio		0.46									0.29	
Uniform Delay, d1		25.9									23.8	
Progression Factor		1.00									0.76	
Incremental Delay, d2		0.9									0.3	
Delay (s)		26.9									18.4	
Level of Service		C									B	
Approach Delay (s)		26.9			0.0			0.0			18.4	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			22.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.7		
Intersection Capacity Utilization			42.8%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Existing 2018
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	87	77	78	165	0	0	0	0	23	1588	81
Future Volume (vph)	0	87	77	78	165	0	0	0	0	23	1588	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			6.8			2.5	
Confl. Peds. (#/hr)			24	24						53		25
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	175	0	83	176	0	0	0	0	0	1713	86
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Minimum Split (s)		25.8		25.8	25.8					26.8	26.8	26.8
Total Split (s)		60.0		60.0	60.0					80.0	80.0	80.0
Total Split (%)		42.9%		42.9%	42.9%					57.1%	57.1%	57.1%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	3.7
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	2.1
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	0.0
Total Lost Time (s)		5.8		5.8	5.8						5.8	5.8
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.26		0.20	0.24						0.64	0.11
Control Delay		28.5		23.9	24.2						20.2	1.7
Queue Delay		0.1		0.1	0.0						51.8	0.0
Total Delay		28.6		23.9	24.2						72.0	1.7
Queue Length 50th (ft)		100		64	137						413	0
Queue Length 95th (ft)		159		116	211						463	14
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		663		421	721						2686	792
Starvation Cap Reductn		0		0	0						0	0
Spillback Cap Reductn		62		36	0						1969	0
Storage Cap Reductn		0		0	0						0	0
Reduced v/c Ratio		0.29		0.22	0.24						2.39	0.11

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 85.8 (61%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	87	77	78	165	0	0	0	0	23	1588	81
Future Volume (vph)	0	87	77	78	165	0	0	0	0	23	1588	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8		5.8	5.8						5.8	5.8
Lane Util. Factor		1.00		1.00	1.00						0.91	1.00
Frpb, ped/bikes		0.97		1.00	1.00						1.00	0.90
Flpb, ped/bikes		1.00		0.96	1.00						1.00	1.00
Frt		0.94		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1695		1706	1863						5069	1422
Flt Permitted		1.00		0.61	1.00						1.00	1.00
Satd. Flow (perm)		1695		1087	1863						5069	1422
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	93	82	83	176	0	0	0	0	24	1689	86
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	168	0	83	176	0	0	0	0	0	1713	47
Confl. Peds. (#/hr)			24	24						53		25
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		54.2		54.2	54.2						74.2	74.2
Effective Green, g (s)		54.2		54.2	54.2						74.2	74.2
Actuated g/C Ratio		0.39		0.39	0.39						0.53	0.53
Clearance Time (s)		5.8		5.8	5.8						5.8	5.8
Lane Grp Cap (vph)		656		420	721						2686	753
v/s Ratio Prot		c0.10			0.09							
v/s Ratio Perm				0.08							0.34	0.03
v/c Ratio		0.26		0.20	0.24						0.64	0.06
Uniform Delay, d1		29.2		28.5	29.0						23.4	16.0
Progression Factor		1.00		0.79	0.80						0.81	0.41
Incremental Delay, d2		0.9		1.0	0.8						1.2	0.2
Delay (s)		30.1		23.4	23.9						20.0	6.8
Level of Service		C		C	C						C	A
Approach Delay (s)		30.1			23.8			0.0			19.4	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay		20.7			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.48										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.6				
Intersection Capacity Utilization		82.1%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Existing 2018
Timing Plan: PM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖		↖	↖						↖↖↖	
Traffic Volume (vph)	0	279	55	62	164	0	0	0	0	99	1565	28
Future Volume (vph)	0	279	55	62	164	0	0	0	0	99	1565	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		302			553			286			301	
Travel Time (s)		6.9			12.6			6.5			6.8	
Confl. Peds. (#/hr)			31	31						63		43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	352	0	65	173	0	0	0	0	0	1780	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		60.0		60.0	60.0					80.0	80.0	
Total Split (%)		42.9%		42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		5.7		5.7	5.7						5.7	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.50		0.23	0.24						0.67	
Control Delay		34.8		18.2	16.7						57.9	
Queue Delay		0.0		0.0	0.0						50.2	
Total Delay		34.8		18.2	16.7						108.1	
Queue Length 50th (ft)		236		17	46						605	
Queue Length 95th (ft)		334		37	80						657	
Internal Link Dist (ft)		222			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		702		279	722						2642	
Starvation Cap Reductn		0		0	0						1703	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.50		0.23	0.24						1.90	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	20 (14%), Referenced to phase 2:SBTL, Start of Green											
Natural Cycle:	55											
Control Type:	Pretimed											

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	279	55	62	164	0	0	0	0	99	1565	28
Future Volume (vph)	0	279	55	62	164	0	0	0	0	99	1565	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		5.7	5.7						5.7	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.97	1.00						0.99	
Frt		0.98		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1798		1725	1863						4975	
Flt Permitted		1.00		0.40	1.00						1.00	
Satd. Flow (perm)		1798		721	1863						4975	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	294	58	65	173	0	0	0	0	104	1647	29
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	347	0	65	173	0	0	0	0	0	1779	0
Confl. Peds. (#/hr)			31	31						63		43
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		54.3		54.3	54.3						74.3	
Effective Green, g (s)		54.3		54.3	54.3						74.3	
Actuated g/C Ratio		0.39		0.39	0.39						0.53	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		697		279	722						2640	
v/s Ratio Prot		c0.19			0.09							
v/s Ratio Perm				0.09							0.36	
v/c Ratio		0.50		0.23	0.24						0.67	
Uniform Delay, d1		32.5		28.8	28.9						24.0	
Progression Factor		1.00		0.55	0.54						2.35	
Incremental Delay, d2		2.5		1.8	0.7						1.1	
Delay (s)		35.0		17.7	16.5						57.5	
Level of Service		D		B	B						E	
Approach Delay (s)		35.0			16.8			0.0			57.5	
Approach LOS		D			B			A			E	
Intersection Summary												
HCM 2000 Control Delay			50.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.4		
Intersection Capacity Utilization			74.0%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	67	39	56	100	0	0	0	0	94	1572	26
Future Volume (vph)	0	67	39	56	100	0	0	0	0	94	1572	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			6.9			6.5	
Confl. Peds. (#/hr)			53	53						168		62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	0	0	162	0	0	0	0	0	1763	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		5.8			5.8						5.9	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.22			0.37						0.57	
Control Delay		32.0			43.1						3.0	
Queue Delay		0.0			0.0						0.2	
Total Delay		32.0			43.1						3.2	
Queue Length 50th (ft)		62			110						45	
Queue Length 95th (ft)		114			188						46	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		500			439						3085	
Starvation Cap Reductn		0			0						464	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.22			0.37						0.67	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 6: Tampa St & Polk St



Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	67	39	56	100	0	0	0	0	94	1572	26
Future Volume (vph)	0	67	39	56	100	0	0	0	0	94	1572	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8			5.8						5.9	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.96			1.00						1.00	
Flpb, ped/bikes		1.00			0.97						0.97	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1691			1769						4901	
Flt Permitted		1.00			0.85						1.00	
Satd. Flow (perm)		1691			1533						4901	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	70	41	58	104	0	0	0	0	98	1638	27
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	96	0	0	162	0	0	0	0	0	1762	0
Confl. Peds. (#/hr)			53	53						168		62
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		40.2			40.2						88.1	
Actuated g/C Ratio		0.29			0.29						0.63	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		485			440						3084	
v/s Ratio Prot		0.06										
v/s Ratio Perm					0.11						0.36	
v/c Ratio		0.20			0.37						0.57	
Uniform Delay, d1		37.7			39.8						15.0	
Progression Factor		1.00			1.01						0.16	
Incremental Delay, d2		0.9			2.4						0.6	
Delay (s)		38.6			42.5						2.9	
Level of Service		D			D						A	
Approach Delay (s)		38.6			42.5			0.0			2.9	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			8.0			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.51									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.7		
Intersection Capacity Utilization			59.3%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	98	66	65	177	0	0	0	0	54	1596	42
Future Volume (vph)	0	98	66	65	177	0	0	0	0	54	1596	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		286			539			272			302	
Travel Time (s)		6.5			12.3			6.2			6.9	
Confl. Peds. (#/hr)			19	19						54		36
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	174	0	0	257	0	0	0	0	0	1800	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		0.0			0.0						0.0	
Total Lost Time (s)		5.7			5.7						5.7	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.36			0.67						0.55	
Control Delay		38.3			48.6						2.7	
Queue Delay		0.0			0.0						0.1	
Total Delay		38.3			48.6						2.8	
Queue Length 50th (ft)		111			167						40	
Queue Length 95th (ft)		182			250						44	
Internal Link Dist (ft)		206			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		477			383						3267	
Starvation Cap Reductn		0			0						246	
Spillback Cap Reductn		0			0						204	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.36			0.67						0.60	
Intersection Summary												
Area Type: Other												
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
Splits and Phases: 7: Tampa St & Zack St												
												

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	98	66	65	177	0	0	0	0	54	1596	42
Future Volume (vph)	0	98	66	65	177	0	0	0	0	54	1596	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7						5.7	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.98			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1725			1825						5010	
Flt Permitted		1.00			0.78						1.00	
Satd. Flow (perm)		1725			1441						5010	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	104	70	69	188	0	0	0	0	57	1698	45
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	156	0	0	257	0	0	0	0	0	1798	0
Confl. Peds. (#/hr)			19	19						54		36
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						91.3	
Effective Green, g (s)		37.3			37.3						91.3	
Actuated g/C Ratio		0.27			0.27						0.65	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		459			383						3267	
v/s Ratio Prot		0.09										
v/s Ratio Perm					0.18						0.36	
v/c Ratio		0.34			0.67						0.55	
Uniform Delay, d1		41.4			45.9						13.2	
Progression Factor		1.00			0.85						0.16	
Incremental Delay, d2		2.0			9.0						0.6	
Delay (s)		43.4			47.9						2.7	
Level of Service		D			D						A	
Approach Delay (s)		43.4			47.9			0.0			2.7	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.1			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.4				
Intersection Capacity Utilization		76.8%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Existing 2018
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	328	103	118	173	0	0	0	0	241	1431	20
Future Volume (vph)	0	328	103	118	173	0	0	0	0	241	1431	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		284			543			313			272	
Travel Time (s)		6.5			12.3			7.1			6.2	
Confl. Peds. (#/hr)			8	8						31		74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	459	0	126	184	0	0	0	0	0	1799	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		5.7		5.7	5.7						5.9	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.88		1.62	0.34						0.57	
Control Delay		65.2		358.4	33.5						5.8	
Queue Delay		0.0		0.0	0.0						0.5	
Total Delay		65.2		358.4	33.5						6.3	
Queue Length 50th (ft)		392		~166	141						112	
Queue Length 95th (ft)		#584		#306	214						124	
Internal Link Dist (ft)		204			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		523		78	536						3138	
Starvation Cap Reductn		0		0	0						778	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.88		1.62	0.34						0.76	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 34 (24%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 8: Tampa St & Twiggs St



Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	328	103	118	173	0	0	0	0	241	1431	20
Future Volume (vph)	0	328	103	118	173	0	0	0	0	241	1431	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7		5.7	5.7						5.9	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1790		1770	1863						4987	
Flt Permitted		1.00		0.15	1.00						0.99	
Satd. Flow (perm)		1790		274	1863						4987	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	349	110	126	184	0	0	0	0	256	1522	21
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	451	0	126	184	0	0	0	0	0	1798	0
Confl. Peds. (#/hr)			8	8						31		74
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.3		40.3	40.3						88.1	
Effective Green, g (s)		40.3		40.3	40.3						88.1	
Actuated g/C Ratio		0.29		0.29	0.29						0.63	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		515		78	536						3138	
v/s Ratio Prot		0.25			0.10							
v/s Ratio Perm				0.46							0.36	
v/c Ratio		0.88		1.62	0.34						0.57	
Uniform Delay, d1		47.5		49.9	39.4						15.0	
Progression Factor		1.00		0.85	0.80						0.34	
Incremental Delay, d2		18.5		327.9	1.7						0.6	
Delay (s)		66.0		370.3	33.1						5.7	
Level of Service		E		F	C						A	
Approach Delay (s)		66.0			170.1			0.0			5.7	
Approach LOS		E			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			36.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.6		
Intersection Capacity Utilization			79.5%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	81	109	74	54	0	0	0	0	56	1604	32
Future Volume (vph)	0	81	109	74	54	0	0	0	0	56	1604	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		397			548			309			313	
Travel Time (s)		9.0			12.5			7.0			7.1	
Confl. Peds. (#/hr)			43	43						36		75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	211	0	82	60	0	0	0	0	0	1880	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		5.9		5.9	5.9						5.8	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.44		0.32	0.11						0.59	
Control Delay		40.9		28.0	23.7						5.2	
Queue Delay		0.0		0.0	0.0						0.3	
Total Delay		40.9		28.0	23.7						5.5	
Queue Length 50th (ft)		145		32	23						109	
Queue Length 95th (ft)		225		m70	m43						m103	
Internal Link Dist (ft)		317			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		476		257	533						3160	
Starvation Cap Reductn		0		0	0						526	
Spillback Cap Reductn		0		0	0						158	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.44		0.32	0.11						0.71	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 9: Tampa St & Madison St												
												

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	81	109	74	54	0	0	0	0	56	1604	32
Future Volume (vph)	0	81	109	74	54	0	0	0	0	56	1604	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9		5.9	5.9						5.8	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						0.99	
Flpb, ped/bikes		1.00		0.95	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1619		1672	1863						5017	
Flt Permitted		1.00		0.51	1.00						1.00	
Satd. Flow (perm)		1619		899	1863						5017	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	90	121	82	60	0	0	0	0	62	1782	36
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	199	0	82	60	0	0	0	0	0	1879	0
Confl. Peds. (#/hr)			43	43						36		75
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.1		40.1	40.1						88.2	
Effective Green, g (s)		40.1		40.1	40.1						88.2	
Actuated g/C Ratio		0.29		0.29	0.29						0.63	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		463		257	533						3160	
v/s Ratio Prot		0.12			0.03							
v/s Ratio Perm				0.09							0.37	
v/c Ratio		0.43		0.32	0.11						0.59	
Uniform Delay, d1		40.6		39.2	36.8						15.3	
Progression Factor		1.00		0.62	0.63						0.30	
Incremental Delay, d2		2.9		3.1	0.4						0.7	
Delay (s)		43.5		27.4	23.5						5.2	
Level of Service		D		C	C						A	
Approach Delay (s)		43.5			25.7			0.0			5.2	
Approach LOS		D			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.1			HCM 2000 Level of Service					B	
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)					11.7	
Intersection Capacity Utilization			74.2%			ICU Level of Service					D	
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	257	1317	0	0	0	0	0	1487	204
Future Volume (vph)	0	0	0	257	1317	0	0	0	0	0	1487	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		358			546			274			309	
Travel Time (s)		8.1			12.4			6.2			7.0	
Confl. Peds. (#/hr)						46						79
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	246	1428	0	0	0	0	0	1582	217
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Minimum Split (s)				25.8	25.8						26.8	26.8
Total Split (s)				73.0	73.0						67.0	67.0
Total Split (%)				52.1%	52.1%						47.9%	47.9%
Yellow Time (s)				3.7	3.7						3.7	3.7
All-Red Time (s)				2.1	2.1						2.1	2.1
Lost Time Adjust (s)				0.0	0.0						0.0	0.0
Total Lost Time (s)				5.8	5.8						5.8	5.8
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.33	0.62						0.71	0.37
Control Delay				4.2	8.0						18.5	14.2
Queue Delay				5.4	1.0						1.2	1.2
Total Delay				9.6	9.0						19.7	15.4
Queue Length 50th (ft)				18	58						224	32
Queue Length 95th (ft)				m27	94						286	121
Internal Link Dist (ft)		278			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				742	2315						2222	588
Starvation Cap Reductn				0	566						383	199
Spillback Cap Reductn				427	449						0	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				0.78	0.82						0.86	0.56

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

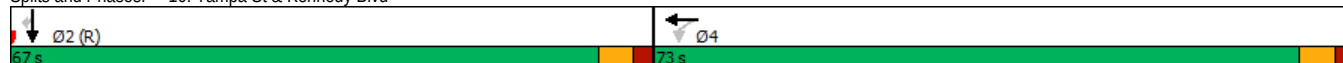
Offset: 28 (20%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 55

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	257	1317	0	0	0	0	0	1487	204
Future Volume (vph)	0	0	0	257	1317	0	0	0	0	0	1487	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.8	5.8						5.8	5.8
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1522	4801						5085	1319
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1522	4801						5085	1319
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	273	1401	0	0	0	0	0	1582	217
RTOR Reduction (vph)	0	0	0	11	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	235	1417	0	0	0	0	0	1582	205
Confl. Peds. (#/hr)					46							79
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Actuated Green, G (s)				67.2	67.2						61.2	61.2
Effective Green, g (s)				67.2	67.2						61.2	61.2
Actuated g/C Ratio				0.48	0.48						0.44	0.44
Clearance Time (s)				5.8	5.8						5.8	5.8
Lane Grp Cap (vph)				730	2304						2222	576
v/s Ratio Prot											c0.31	
v/s Ratio Perm				0.15	0.30							0.16
v/c Ratio				0.32	0.61						0.71	0.36
Uniform Delay, d1				22.4	26.9						32.2	26.3
Progression Factor				0.16	0.27						0.52	0.53
Incremental Delay, d2				0.9	0.9						1.6	1.4
Delay (s)				4.5	8.1						18.4	15.3
Level of Service				A	A						B	B
Approach Delay (s)		0.0			7.5			0.0			18.0	
Approach LOS		A			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.6		
Intersection Capacity Utilization			61.4%			ICU Level of Service				B		
Analysis Period (min)			15									

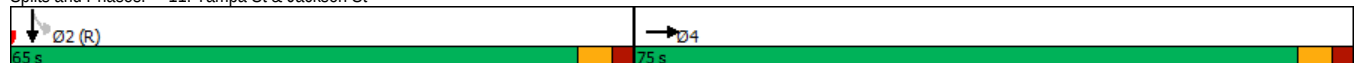
c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Existing 2018
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↓	↑↑↑	
Traffic Volume (vph)	0	675	180	0	0	0	0	0	0	417	1275	0
Future Volume (vph)	0	675	180	0	0	0	0	0	0	417	1275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		291			260			589			274	
Travel Time (s)		6.6			5.9			13.4			6.2	
Confl. Peds. (#/hr)			106							87		
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	994	0	0	0	0	0	0	0	436	1532	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		75.0								65.0	65.0	
Total Split (%)		53.6%								46.4%	46.4%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		0.0								0.0	0.0	
Total Lost Time (s)		6.0								6.0	6.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.43								0.72	0.76	
Control Delay		23.3								25.3	30.8	
Queue Delay		0.0								1.4	6.1	
Total Delay		23.3								26.7	36.9	
Queue Length 50th (ft)		206								147	263	
Queue Length 95th (ft)		230								181	265	
Internal Link Dist (ft)		211			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2318								606	2023	
Starvation Cap Reductn		0								58	440	
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.43								0.80	0.97	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 10 (7%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	675	180	0	0	0	0	0	0	417	1275	0
Future Volume (vph)	0	675	180	0	0	0	0	0	0	417	1275	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0								6.0	6.0	
Lane Util. Factor		0.91								0.86	0.86	
Frpb, ped/bikes		0.95								1.00	1.00	
Flpb, ped/bikes		1.00								0.83	0.99	
Frt		0.97								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4697								1257	4772	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4697								1257	4772	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	785	209	0	0	0	0	0	0	485	1483	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	77	13	0
Lane Group Flow (vph)	0	989	0	0	0	0	0	0	0	359	1519	0
Confl. Peds. (#/hr)			106							87		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		69.0								59.0	59.0	
Effective Green, g (s)		69.0								59.0	59.0	
Actuated g/C Ratio		0.49								0.42	0.42	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2314								529	2011	
v/s Ratio Prot		c0.21										
v/s Ratio Perm										0.29	0.32	
v/c Ratio		0.43								0.68	0.76	
Uniform Delay, d1		22.8								32.8	34.4	
Progression Factor		1.00								0.84	0.84	
Incremental Delay, d2		0.6								5.4	2.1	
Delay (s)		23.4								32.9	31.0	
Level of Service		C								C	C	
Approach Delay (s)		23.4			0.0			0.0			31.4	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay		28.7									C	
HCM 2000 Volume to Capacity ratio		0.58										
Actuated Cycle Length (s)		140.0								12.0		
Intersection Capacity Utilization		61.4%								B		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Existing 2018
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔						↔	
Traffic Volume (vph)	0	143	40	130	140	0	0	0	0	15	121	0
Future Volume (vph)	0	143	40	130	140	0	0	0	0	15	121	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		243			553			171			589	
Travel Time (s)		5.5			12.6			3.9			13.4	
Confl. Peds. (#/hr)			182	182						42		132
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	206	0	146	157	0	0	0	0	0	153	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		0.0		0.0	0.0						0.0	
Total Lost Time (s)		5.8		5.8	5.8						5.7	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.17		0.45	0.23						0.05	
Control Delay		26.1		35.5	28.7						20.8	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		26.1		35.5	28.7						20.8	
Queue Length 50th (ft)		56		87	87						24	
Queue Length 95th (ft)		86		169	126						m32	
Internal Link Dist (ft)		163			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1184		326	681						2791	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.17		0.45	0.23						0.05	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 120 (86%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Tampa St & Whiting St



Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	143	40	130	140	0	0	0	0	15	121	0
Future Volume (vph)	0	143	40	130	140	0	0	0	0	15	121	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8		5.8	5.8						5.7	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.93		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.77	1.00						1.00	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3190		1362	1863						5057	
Flt Permitted		1.00		0.62	1.00						0.99	
Satd. Flow (perm)		3190		893	1863						5057	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	161	45	146	157	0	0	0	0	17	136	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	188	0	146	157	0	0	0	0	0	153	0
Confl. Peds. (#/hr)			182	182						42		132
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2		2
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		51.2		51.2	51.2						77.3	
Actuated g/C Ratio		0.37		0.37	0.37						0.55	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1166		326	681						2792	
v/s Ratio Prot		0.06			0.08						c0.03	
v/s Ratio Perm				c0.16								
v/c Ratio		0.16		0.45	0.23						0.05	
Uniform Delay, d1		29.9		33.7	30.8						14.5	
Progression Factor		1.00		0.90	0.90						1.43	
Incremental Delay, d2		0.3		4.4	0.8						0.0	
Delay (s)		30.2		34.6	28.4						20.7	
Level of Service		C		C	C						C	
Approach Delay (s)		30.2			31.4			0.0			20.7	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay		28.5			HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio		0.21										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.5				
Intersection Capacity Utilization		59.4%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

Existing 2018
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	52	320	0	0	169	82	18	953	65	0	0	0
Future Volume (vph)	52	320	0	0	169	82	18	953	65	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	26					26	12		7			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	55	340	0	0	267	0	0	1102	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.1	22.1			22.1		30.3	30.3				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.3	2.3				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	6.1	6.1			6.1			6.3				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.17	0.50			0.42			0.40				
Control Delay	28.9	35.2			33.1			14.3				
Queue Delay	0.0	1.0			0.0			0.0				
Total Delay	28.9	36.2			33.1			14.3				
Queue Length 50th (ft)	25	283			167			152				
Queue Length 95th (ft)	52	385			249			234				
Internal Link Dist (ft)		379			809			935			162	
Turn Bay Length (ft)	100											
Base Capacity (vph)	317	677			643			2755				
Starvation Cap Reductn	0	144			0			0				
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.17	0.64			0.42			0.40				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 107 (76%), Referenced to phase 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed

Splits and Phases: 13: Florida Ave & Palm Ave



Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	52	320	0	0	169	82	18	953	65	0	0	0
Future Volume (vph)	52	320	0	0	169	82	18	953	65	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.1	6.1			6.1			6.3				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.97	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.99				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1711	1863			1735			5018				
Flt Permitted	0.48	1.00			1.00			1.00				
Satd. Flow (perm)	873	1863			1735			5018				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	55	340	0	0	180	87	19	1014	69	0	0	0
RTOR Reduction (vph)	0	0	0	0	13	0	0	5	0	0	0	0
Lane Group Flow (vph)	55	340	0	0	254	0	0	1097	0	0	0	0
Confl. Peds. (#/hr)	26					26	12		7			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	50.9	50.9			50.9			76.7				
Effective Green, g (s)	50.9	50.9			50.9			76.7				
Actuated g/C Ratio	0.36	0.36			0.36			0.55				
Clearance Time (s)	6.1	6.1			6.1			6.3				
Lane Grp Cap (vph)	317	677			630			2749				
v/s Ratio Prot		c0.18			0.15							
v/s Ratio Perm	0.06							0.22				
v/c Ratio	0.17	0.50			0.40			0.40				
Uniform Delay, d1	30.3	34.7			33.2			18.3				
Progression Factor	0.90	0.93			1.00			0.76				
Incremental Delay, d2	1.1	2.5			1.9			0.4				
Delay (s)	28.2	34.8			35.1			14.4				
Level of Service	C	C			D			B				
Approach Delay (s)		33.8			35.1			14.4			0.0	
Approach LOS		C			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		21.9			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.44										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			12.4				
Intersection Capacity Utilization		61.6%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

Existing 2018
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	57	0	0	47	71	22	1003	10	0	0	0
Future Volume (vph)	118	57	0	0	47	71	22	1003	10	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		183			365			1146			1015	
Travel Time (s)		4.2			8.3			22.3			19.8	
Confl. Peds. (#/hr)	7					7	14		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	62	0	0	128	0	0	1125	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0				
Total Lost Time (s)	6.4	6.4			6.4		6.0	6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.39	0.13			0.25		0.40					
Control Delay	25.2	20.4			11.3		8.9					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	25.2	20.4			11.3		8.9					
Queue Length 50th (ft)	45	20			17		125					
Queue Length 95th (ft)	91	48			56		m168					
Internal Link Dist (ft)		103			285		1066				935	
Turn Bay Length (ft)	50											
Base Capacity (vph)	331	495			504		2826					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.39	0.13			0.25		0.40					

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 17 (24%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 70

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	118	57	0	0	47	71	22	1003	10	0	0	0
Future Volume (vph)	118	57	0	0	47	71	22	1003	10	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.4	6.4			6.4			6.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	0.99	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1756	1863			1690			5067				
Flt Permitted	0.67	1.00			1.00			1.00				
Satd. Flow (perm)	1248	1863			1690			5067				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	128	62	0	0	51	77	24	1090	11	0	0	0
RTOR Reduction (vph)	0	0	0	0	55	0	0	1	0	0	0	0
Lane Group Flow (vph)	128	62	0	0	73	0	0	1124	0	0	0	0
Confl. Peds. (#/hr)	7					7	14		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	18.6	18.6			18.6			39.0				
Actuated g/C Ratio	0.27	0.27			0.27			0.56				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	331	495			449			2823				
v/s Ratio Prot		0.03			0.04							
v/s Ratio Perm	0.10							0.22				
v/c Ratio	0.39	0.13			0.16			0.40				
Uniform Delay, d1	21.0	19.5			19.7			8.8				
Progression Factor	1.00	1.00			1.00			0.99				
Incremental Delay, d2	3.4	0.5			0.8			0.2				
Delay (s)	24.4	20.0			20.5			8.9				
Level of Service	C	C			C			A				
Approach Delay (s)		23.0			20.5			8.9			0.0	
Approach LOS		C			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.8			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.39										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			12.4				
Intersection Capacity Utilization		43.7%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

Existing 2018
Timing Plan: PM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑↑				
Traffic Volume (vph)	400	860	0	0	0	0	0	1675	484	0	0	0
Future Volume (vph)	400	860	0	0	0	0	0	1675	484	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			481			701			1146	
Travel Time (s)		8.4			10.9			13.7			22.3	
Confl. Peds. (#/hr)									5			
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1341	0	0	0	0	0	2297	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases		8						6				
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		0.0						0.0				
Total Lost Time (s)		5.7						6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.02						0.86				
Control Delay		64.3						13.4				
Queue Delay		0.2						0.0				
Total Delay		64.5						13.4				
Queue Length 50th (ft)		~675						90				
Queue Length 95th (ft)		#816						169				
Internal Link Dist (ft)		291			401			621			1066	
Turn Bay Length (ft)												
Base Capacity (vph)		1315						2669				
Starvation Cap Reductn		1						6				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.02						0.86				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 65 (46%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 90
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	400	860	0	0	0	0	0	1675	484	0	0	0
Future Volume (vph)	400	860	0	0	0	0	0	1675	484	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7						6.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3484						4885				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3484						4885				
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	426	915	0	0	0	0	0	1782	515	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	18	0	0	0	0
Lane Group Flow (vph)	0	1327	0	0	0	0	0	2279	0	0	0	0
Confl. Peds. (#/hr)												
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		52.3						76.0				
Effective Green, g (s)		52.3						76.0				
Actuated g/C Ratio		0.37						0.54				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1301						2651				
v/s Ratio Prot								c0.47				
v/s Ratio Perm		0.38										
v/c Ratio		1.02						0.86				
Uniform Delay, d1		43.9						27.4				
Progression Factor		0.80						0.39				
Incremental Delay, d2		29.7						2.8				
Delay (s)		64.9						13.4				
Level of Service		E						B				
Approach Delay (s)		64.9			0.0			13.4			0.0	
Approach LOS		E			A			B			A	
Intersection Summary												
HCM 2000 Control Delay		32.4						HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio		0.92										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		11.7		
Intersection Capacity Utilization		88.4%						ICU Level of Service		E		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
16: Florida Ave & Fortune St

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	26	0	0	0	0	18	2136	5	0	0	0
Future Volume (vph)	50	26	0	0	0	0	18	2136	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		254			171			480			701	
Travel Time (s)		5.8			3.9			10.9			15.9	
Confl. Peds. (#/hr)	11					11	9		8			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	0	0	0	2347	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		8						6				
Permitted Phases	8						6					
Minimum Split (s)	23.4	23.4					24.0	24.0				
Total Split (s)	43.0	43.0					97.0	97.0				
Total Split (%)	30.7%	30.7%					69.3%	69.3%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		0.0						0.0				
Total Lost Time (s)		5.4						6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.17						0.71				
Control Delay		40.5						3.6				
Queue Delay		0.0						0.1				
Total Delay		40.5						3.7				
Queue Length 50th (ft)		58						57				
Queue Length 95th (ft)		103						60				
Internal Link Dist (ft)		174			91			400			621	
Turn Bay Length (ft)												
Base Capacity (vph)		474						3303				
Starvation Cap Reductn		0						163				
Spillback Cap Reductn		0						107				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.17						0.75				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 41 (29%), Referenced to phase 2: and 6:NBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	26	0	0	0	0	18	2136	5	0	0	0
Future Volume (vph)	50	26	0	0	0	0	18	2136	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.4						6.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1767						5079				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1767						5079				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	28	0	0	0	0	20	2322	5	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	82	0	0	0	0	0	2347	0	0	0	0
Confl. Peds. (#/hr)	11					11	9		8			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		8						6				
Permitted Phases	8						6					
Actuated Green, G (s)		37.6						91.0				
Effective Green, g (s)		37.6						91.0				
Actuated g/C Ratio		0.27						0.65				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		474						3301				
v/s Ratio Prot												
v/s Ratio Perm		0.05						0.46				
v/c Ratio		0.17						0.71				
Uniform Delay, d1		39.3						15.9				
Progression Factor		1.00						0.17				
Incremental Delay, d2		0.8						0.9				
Delay (s)		40.1						3.6				
Level of Service		D						A				
Approach Delay (s)		40.1			0.0			3.6			0.0	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		4.8										
HCM 2000 Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		140.0										
Intersection Capacity Utilization		62.1%										
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔↔↔				
Traffic Volume (vph)	36	12	0	0	11	60	10	2221	17	0	0	0
Future Volume (vph)	36	12	0	0	11	60	10	2221	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		335			300			286			480	
Travel Time (s)		7.6			6.8			6.5			9.4	
Confl. Peds. (#/hr)	5					5	10		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	77	0	0	2443	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		5.8			5.8			6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.14			0.18			0.74				
Control Delay		40.5			37.8			5.3				
Queue Delay		0.0			0.0			0.1				
Total Delay		40.5			37.8			5.4				
Queue Length 50th (ft)		36			50			68				
Queue Length 95th (ft)		73			94			71				
Internal Link Dist (ft)		255			220			206			400	
Turn Bay Length (ft)												
Base Capacity (vph)		381			434			3300				
Starvation Cap Reductn		0			0			123				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.14			0.18			0.77				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 36 (26%), Referenced to phase 2: and 6:NBTL, Start of Green

Natural Cycle: 65

Control Type: Pretimed

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	36	12	0	0	11	60	10	2221	17	0	0	0
Future Volume (vph)	36	12	0	0	11	60	10	2221	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8			5.8			6.0				
Lane Util. Factor		1.00			1.00			0.91				
Flpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		0.99			1.00			1.00				
Frt		1.00			0.89			1.00				
Flt Protected		0.96			1.00			1.00				
Satd. Flow (prot)		1783			1620			5074				
Flt Permitted		0.78			1.00			1.00				
Satd. Flow (perm)		1436			1620			5074				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	13	0	0	12	65	11	2414	18	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	52	0	0	73	0	0	2442	0	0	0	0
Confl. Peds. (#/hr)	5					5	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)		37.2			37.2			91.0				
Effective Green, g (s)		37.2			37.2			91.0				
Actuated g/C Ratio		0.27			0.27			0.65				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		381			430			3298				
v/s Ratio Prot					c0.04							
v/s Ratio Perm		0.04						0.48				
v/c Ratio		0.14			0.17			0.74				
Uniform Delay, d1		39.2			39.5			16.5				
Progression Factor		1.00			1.00			0.25				
Incremental Delay, d2		0.7			0.8			1.1				
Delay (s)		39.9			40.4			5.3				
Level of Service		D			D			A				
Approach Delay (s)		39.9			40.4			5.3			0.0	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		7.0			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.57										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.8				
Intersection Capacity Utilization		70.8%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

Existing 2018
Timing Plan: PM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	61	0	0	160	83	55	2187	7	0	0	0
Future Volume (vph)	103	61	0	0	160	83	55	2187	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			573			286			286	
Travel Time (s)		13.0			13.0			5.6			5.6	
Confl. Peds. (#/hr)	16					16	3		28			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	111	66	0	0	261	0	59	2360	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0				
Total Lost Time (s)	5.8	5.8			5.8		6.0	6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.56	0.13			0.56		0.05	0.71				
Control Delay	73.7	56.4			48.6		1.9	3.7				
Queue Delay	0.0	0.0			0.0		0.0	0.3				
Total Delay	73.7	56.4			48.6		1.9	4.0				
Queue Length 50th (ft)	100	54			201		3	53				
Queue Length 95th (ft)	m168	m99			295		m5	m55				
Internal Link Dist (ft)		490			493			206			206	
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	200	495			469		1138	3301				
Starvation Cap Reductn	0	0			0		0	351				
Spillback Cap Reductn	0	0			0		0	124				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.56	0.13			0.56		0.05	0.80				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 31 (22%), Referenced to phase 6:NBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

Existing 2018
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	61	0	0	160	83	55	2187	7	0	0	0
Future Volume (vph)	103	61	0	0	160	83	55	2187	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.98		1.00	1.00				
Flpb, ped/bikes	0.98	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.95		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1740	1863			1750		1751	5081				
Flt Permitted	0.41	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	753	1863			1750		1751	5081				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	111	66	0	0	172	89	59	2352	8	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	0	0	0	0	0
Lane Group Flow (vph)	111	66	0	0	257	0	59	2360	0	0	0	0
Confl. Peds. (#/hr)	16					16	3		28			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.2	37.2			37.2		91.0	91.0				
Effective Green, g (s)	37.2	37.2			37.2		91.0	91.0				
Actuated g/C Ratio	0.27	0.27			0.27		0.65	0.65				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	200	495			465		1138	3302				
v/s Ratio Prot		0.04			0.15			0.46				
v/s Ratio Perm	0.15						0.03					
v/c Ratio	0.56	0.13			0.55		0.05	0.71				
Uniform Delay, d1	44.3	39.1			44.2		8.9	16.0				
Progression Factor	1.38	1.41			1.00		0.20	0.17				
Incremental Delay, d2	10.5	0.6			4.7		0.1	0.8				
Delay (s)	71.6	55.8			48.9		1.9	3.6				
Level of Service	E	E			D		A	A				
Approach Delay (s)		65.7			48.9			3.6			0.0	
Approach LOS		E			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.6			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.67										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.8				
Intersection Capacity Utilization		82.1%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	89	245	0	0	170	56	33	2163	53	0	0	0
Future Volume (vph)	89	245	0	0	170	56	33	2163	53	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			550			283			286	
Travel Time (s)		12.6			12.5			5.5			5.6	
Confl. Peds. (#/hr)	5					5	3		100			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	367	0	0	249	0	36	2435	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		6.0			6.0		6.0	6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.12			0.48		0.03	0.77				
Control Delay		115.8			44.6		1.8	3.7				
Queue Delay		0.0			0.0		0.0	0.2				
Total Delay		115.8			44.6		1.8	3.9				
Queue Length 50th (ft)		~386			185		0	39				
Queue Length 95th (ft)		#593			274		m0	42				
Internal Link Dist (ft)		473			470			203			206	
Turn Bay Length (ft)							60					
Base Capacity (vph)		328			514		1100	3156				
Starvation Cap Reductn		0			0		0	171				
Spillback Cap Reductn		0			0		0	79				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		1.12			0.48		0.03	0.82				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 26 (19%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 65												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 19: Florida Ave & Cass St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	89	245	0	0	170	56	33	2163	53	0	0	0
Future Volume (vph)	89	245	0	0	170	56	33	2163	53	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0		6.0	6.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.99		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.99	1.00				
Frt		1.00			0.97		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1836			1791		1750	5021				
Flt Permitted		0.62			1.00		0.95	1.00				
Satd. Flow (perm)		1151			1791		1750	5021				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	98	269	0	0	187	62	36	2377	58	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	367	0	0	246	0	36	2433	0	0	0	0
Confl. Peds. (#/hr)	5					5	3		100			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.0			40.0		88.0	88.0				
Effective Green, g (s)		40.0			40.0		88.0	88.0				
Actuated g/C Ratio		0.29			0.29		0.63	0.63				
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		328			511		1100	3156				
v/s Ratio Prot					0.14			c0.48				
v/s Ratio Perm		c0.32					0.02					
v/c Ratio		1.12			0.48		0.03	0.77				
Uniform Delay, d1		50.0			41.4		9.9	18.7				
Progression Factor		0.69			1.00		0.17	0.13				
Incremental Delay, d2		82.0			3.2		0.0	1.2				
Delay (s)		116.3			44.6		1.7	3.7				
Level of Service		F			D		A	A				
Approach Delay (s)		116.3			44.6			3.6			0.0	
Approach LOS		F			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		20.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.88										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			12.0				
Intersection Capacity Utilization		94.3%			ICU Level of Service			F				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	48	109	0	0	45	61	61	2174	15	0	0	0
Future Volume (vph)	48	109	0	0	45	61	61	2174	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			559			300			283	
Travel Time (s)		12.2			12.7			5.8			5.5	
Confl. Peds. (#/hr)	34					34	26		55			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	180	0	0	122	0	70	2516	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0		0.0	0.0				
Total Lost Time (s)		5.8			5.8		6.0	6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.40			0.26		0.07	0.79				
Control Delay		42.2			39.3		3.2	13.3				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		42.2			39.3		3.2	13.3				
Queue Length 50th (ft)		153			84		7	766				
Queue Length 95th (ft)		223			134		m12	786				
Internal Link Dist (ft)		457			479			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		455			472		1020	3189				
Starvation Cap Reductn		0			0		0	0				
Spillback Cap Reductn		0			0		0	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.40			0.26		0.07	0.79				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	48	109	0	0	45	61	61	2174	15	0	0	0
Future Volume (vph)	48	109	0	0	45	61	61	2174	15	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8			5.8		6.0	6.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Flpb, ped/bikes		1.00			0.95		1.00	1.00				
Flpb, ped/bikes		0.98			1.00		0.92	1.00				
Frt		1.00			0.92		1.00	1.00				
Flt Protected		0.98			1.00		0.95	1.00				
Satd. Flow (prot)		1802			1638		1623	5074				
Flt Permitted		0.87			1.00		0.95	1.00				
Satd. Flow (perm)		1588			1638		1623	5074				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	55	125	0	0	52	70	70	2499	17	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	180	0	0	120	0	70	2516	0	0	0	0
Confl. Peds. (#/hr)	34					34	26		55			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.2			40.2		88.0	88.0				
Effective Green, g (s)		40.2			40.2		88.0	88.0				
Actuated g/C Ratio		0.29			0.29		0.63	0.63				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		455			470		1020	3189				
v/s Ratio Prot					0.07			c0.50				
v/s Ratio Perm		c0.11					0.04					
v/c Ratio		0.40			0.26		0.07	0.79				
Uniform Delay, d1		40.1			38.4		10.1	19.2				
Progression Factor		0.98			1.00		0.31	0.60				
Incremental Delay, d2		2.4			1.3		0.1	1.7				
Delay (s)		41.6			39.7		3.2	13.1				
Level of Service		D			D		A	B				
Approach Delay (s)		41.6			39.7			12.8			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		15.8			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.67										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.8				
Intersection Capacity Utilization		68.9%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	94	0	0	66	98	35	2198	17	0	0	0
Future Volume (vph)	149	94	0	0	66	98	35	2198	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			576			283			300	
Travel Time (s)		12.3			13.1			5.5			5.8	
Confl. Peds. (#/hr)	36					36	9		22			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	256	0	0	172	0	0	2369	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		0.0			0.0			0.0				
Total Lost Time (s)		5.9			5.9			5.7				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.79			0.37			0.59				
Control Delay		53.3			41.1			6.6				
Queue Delay		0.0			0.0			0.1				
Total Delay		53.3			41.1			6.7				
Queue Length 50th (ft)		224			121			73				
Queue Length 95th (ft)		#356			190			79				
Internal Link Dist (ft)		459			496			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		326			470			4029				
Starvation Cap Reductn		0			0			366				
Spillback Cap Reductn		0			0			279				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.79			0.37			0.65				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
Splits and Phases: 21: Florida Ave & Zack St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	94	0	0	66	98	35	2198	17	0	0	0
Future Volume (vph)	149	94	0	0	66	98	35	2198	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9			5.9			5.7				
Lane Util. Factor		1.00			1.00			0.86				
Frpb, ped/bikes		1.00			0.95			1.00				
Flpb, ped/bikes		0.97			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1751			1628			6387				
Flt Permitted		0.63			1.00			1.00				
Satd. Flow (perm)		1141			1628			6387				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	157	99	0	0	69	103	37	2314	18	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	256	0	0	168	0	0	2368	0	0	0	0
Confl. Peds. (#/hr)	36					36	9		22			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.1			40.1			88.3				
Effective Green, g (s)		40.1			40.1			88.3				
Actuated g/C Ratio		0.29			0.29			0.63				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		326			466			4028				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.22						0.37				
v/c Ratio		0.79			0.36			0.59				
Uniform Delay, d1		46.0			39.7			15.2				
Progression Factor		0.77			1.00			0.40				
Incremental Delay, d2		16.8			2.2			0.5				
Delay (s)		52.2			41.9			6.6				
Level of Service		D			D			A				
Approach Delay (s)		52.2			41.9			6.6			0.0	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		12.9			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.6				
Intersection Capacity Utilization		78.0%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
22: Florida Ave & Twiggs St

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	97	334	0	0	106	185	22	2170	57	0	0	0
Future Volume (vph)	97	334	0	0	106	185	22	2170	57	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			597			298			283	
Travel Time (s)		12.3			13.6			5.8			5.5	
Confl. Peds. (#/hr)	15					15	9		30			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	454	0	0	112	195	0	2367	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	46.0	46.0			46.0	46.0	94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%	32.9%	67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		0.0			0.0	0.0		0.0				
Total Lost Time (s)		5.9			5.9	5.9		6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.54			0.21	0.43		0.59				
Control Delay		65.3			39.3	39.2		6.0				
Queue Delay		0.0			0.0	0.0		0.1				
Total Delay		65.3			39.3	39.2		6.1				
Queue Length 50th (ft)		208			78	128		45				
Queue Length 95th (ft)		m253			130	204		47				
Internal Link Dist (ft)		463			517			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		841			533	451		4005				
Starvation Cap Reductn		0			0	0		367				
Spillback Cap Reductn		0			0	0		178				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.54			0.21	0.43		0.65				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  			  	  		  				
Traffic Volume (vph)	97	334	0	0	106	185	22	2170	57	0	0	0
Future Volume (vph)	97	334	0	0	106	185	22	2170	57	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9			5.9	5.9		6.0				
Lane Util. Factor		0.95			1.00	1.00		0.86				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		0.99			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		1.00				
Flt Protected		0.99			1.00	1.00		1.00				
Satd. Flow (prot)		3481			1863	1520		6366				
Flt Permitted		0.84			1.00	1.00		1.00				
Satd. Flow (perm)		2941			1863	1520		6366				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	102	352	0	0	112	195	23	2284	60	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	3	0	0	0	0
Lane Group Flow (vph)	0	454	0	0	112	179	0	2364	0	0	0	0
Confl. Peds. (#/hr)	15					15	9		30			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		40.1			40.1	40.1		88.0				
Effective Green, g (s)		40.1			40.1	40.1		88.0				
Actuated g/C Ratio		0.29			0.29	0.29		0.63				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		842			533	435		4001				
v/s Ratio Prot					0.06							
v/s Ratio Perm		0.15				0.12		0.37				
v/c Ratio		0.54			0.21	0.41		0.59				
Uniform Delay, d1		42.2			37.9	40.4		15.4				
Progression Factor		1.50			1.00	1.00		0.36				
Incremental Delay, d2		1.6			0.9	2.9		0.5				
Delay (s)		64.7			38.8	43.2		6.0				
Level of Service		E			D	D		A				
Approach Delay (s)		64.7			41.6			6.0			0.0	
Approach LOS		E			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		18.0				HCM 2000 Level of Service		B				
HCM 2000 Volume to Capacity ratio		0.57										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		11.9				
Intersection Capacity Utilization		78.0%				ICU Level of Service		D				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	81	0	0	69	120	24	2206	19	0	0	0
Future Volume (vph)	47	81	0	0	69	120	24	2206	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			607			314			298	
Travel Time (s)		12.5			13.8			6.1			5.8	
Confl. Peds. (#/hr)	45					45	21		9			
Peak Hour Factor	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	51	87	0	0	203	0	0	2418	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	0.0	0.0			0.0			0.0				
Total Lost Time (s)	5.9	5.9			5.9			6.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.19	0.16			0.44			0.60				
Control Delay	30.0	28.2			43.2			19.5				
Queue Delay	0.0	0.0			0.0			1.1				
Total Delay	30.0	28.2			43.2			20.6				
Queue Length 50th (ft)	24	41			147			489				
Queue Length 95th (ft)	m54	m84			226			530				
Internal Link Dist (ft)		468			527			234			218	
Turn Bay Length (ft)	75											
Base Capacity (vph)	264	533			461			4015				
Starvation Cap Reductn	0	0			0			1239				
Spillback Cap Reductn	0	0			0			209				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.19	0.16			0.44			0.87				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 3 (2%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	47	81	0	0	69	120	24	2206	19	0	0	0
Future Volume (vph)	47	81	0	0	69	120	24	2206	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9			5.9			6.0				
Lane Util. Factor	1.00	1.00			1.00			0.86				
Frbp, ped/bikes	1.00	1.00			0.94			1.00				
Flpb, ped/bikes	0.95	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1673	1863			1599			6389				
Flt Permitted	0.52	1.00			1.00			1.00				
Satd. Flow (perm)	922	1863			1599			6389				
Peak-hour factor, PHF	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	51	87	0	0	74	129	26	2372	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	1	0	0	0	0
Lane Group Flow (vph)	51	87	0	0	199	0	0	2417	0	0	0	0
Confl. Peds. (#/hr)	45					45	21		9			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.1	40.1			40.1			88.0				
Effective Green, g (s)	40.1	40.1			40.1			88.0				
Actuated g/C Ratio	0.29	0.29			0.29			0.63				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	264	533			457			4015				
v/s Ratio Prot		0.05			0.12							
v/s Ratio Perm	0.06							0.38				
v/c Ratio	0.19	0.16			0.43			0.60				
Uniform Delay, d1	37.7	37.4			40.7			15.5				
Progression Factor	0.74	0.73			1.00			1.20				
Incremental Delay, d2	1.4	0.6			3.0			0.7				
Delay (s)	29.4	27.9			43.7			19.4				
Level of Service	C	C			D			B				
Approach Delay (s)		28.5			43.7			19.4			0.0	
Approach LOS		C			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		21.6			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.55										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.9				
Intersection Capacity Utilization		74.2%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
24: Florida Ave & Kennedy Blvd

Existing 2018
Timing Plan: PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1288	421	111	780	0	0	0	0
Future Volume (vph)	0	0	0	0	1288	421	111	780	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			580			259			314	
Travel Time (s)		12.4			13.2			5.0			6.1	
Confl. Peds. (#/hr)						42	22					
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1799	0	117	821	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					58.0		82.0	82.0				
Total Split (%)					41.4%		58.6%	58.6%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					0.0		0.0	0.0				
Total Lost Time (s)					5.7		5.8	5.8				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.78		0.13	0.30				
Control Delay					40.3		3.4	6.5				
Queue Delay					0.0		0.6	0.2				
Total Delay					40.3		4.0	6.7				
Queue Length 50th (ft)					406		7	36				
Queue Length 95th (ft)					453		14	42				
Internal Link Dist (ft)		466			500			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					2295		930	2767				
Starvation Cap Reductn					0		562	1080				
Spillback Cap Reductn					16		0	612				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.79		0.32	0.49				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 139 (99%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 24: Florida Ave & Kennedy Blvd												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1288	421	111	780	0	0	0	0
Future Volume (vph)	0	0	0	0	1288	421	111	780	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.7		5.8	5.8				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6034		1692	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6034		1692	5085				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	1356	443	117	821	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	42	0	10	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1757	0	107	821	0	0	0	0
Confl. Peds. (#/hr)					42		22					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					52.3		76.2	76.2				
Effective Green, g (s)					52.3		76.2	76.2				
Actuated g/C Ratio					0.37		0.54	0.54				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2254		920	2767				
v/s Ratio Prot					c0.29			c0.16				
v/s Ratio Perm							0.06					
v/c Ratio					0.78		0.12	0.30				
Uniform Delay, d1					38.8		15.5	17.3				
Progression Factor					1.00		0.24	0.36				
Incremental Delay, d2					2.7		0.2	0.3				
Delay (s)					41.5		4.0	6.5				
Level of Service					D		A	A				
Approach Delay (s)		0.0			41.5			6.1			0.0	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		29.4			HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio		0.49										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)					11.5		
Intersection Capacity Utilization		61.4%			ICU Level of Service					B		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	113	743	0	0	0	0	0	815	76	0	0	0
Future Volume (vph)	113	743	0	0	0	0	0	815	76	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		283			526			595			259	
Travel Time (s)		6.4			12.0			11.6			5.0	
Confl. Peds. (#/hr)	53								36			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	972	0	0	0	0	0	1012	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	27.9	27.9						26.9				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						3.7				
All-Red Time (s)	2.2	2.2						2.2				
Lost Time Adjust (s)		0.0						0.0				
Total Lost Time (s)		5.9						5.9				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.52						0.37				
Control Delay		21.8						24.0				
Queue Delay		0.0						0.0				
Total Delay		21.8						24.0				
Queue Length 50th (ft)		160						234				
Queue Length 95th (ft)		183						270				
Internal Link Dist (ft)		203			446			515			179	
Turn Bay Length (ft)												
Base Capacity (vph)		1868						2716				
Starvation Cap Reductn		0						0				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.52						0.37				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 133 (95%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 25: Florida Ave & Jackson St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	113	743	0	0	0	0	0	815	76	0	0	0
Future Volume (vph)	113	743	0	0	0	0	0	815	76	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9						5.9				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		0.99						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4985						4985				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4985						4985				
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	128	844	0	0	0	0	0	926	86	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	958	0	0	0	0	0	1004	0	0	0	0
Confl. Peds. (#/hr)	53								36			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		52.1						76.1				
Actuated g/C Ratio		0.37						0.54				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1855						2709				
v/s Ratio Prot								0.20				
v/s Ratio Perm		0.19										
v/c Ratio		0.52						0.37				
Uniform Delay, d1		34.2						18.3				
Progression Factor		0.62						1.31				
Incremental Delay, d2		0.9						0.4				
Delay (s)		22.2						24.3				
Level of Service		C						C				
Approach Delay (s)		22.2			0.0			24.3			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		23.3										
HCM 2000 Volume to Capacity ratio		0.43										
Actuated Cycle Length (s)		140.0										
Intersection Capacity Utilization		51.2%										
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↔↔			↔↔			↔↔↔	↔			
Traffic Volume (vph)	134	136	0	0	85	98	4	138	8	0	0	0
Future Volume (vph)	134	136	0	0	85	98	4	138	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			557			397			595	
Travel Time (s)		12.6			12.7			7.7			11.6	
Confl. Peds. (#/hr)	106					106	71		94			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	290	0	0	196	0	0	152	9	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Minimum Split (s)	29.0	29.0			29.0		26.7	26.7	26.7			
Total Split (s)	57.0	57.0			57.0		83.0	83.0	83.0			
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%	59.3%			
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7	3.7			
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0	2.0			
Lost Time Adjust (s)		0.0			0.0			0.0	0.0			
Total Lost Time (s)		5.8			5.8			5.7	5.7			
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.34			0.17			0.05	0.01			
Control Delay		21.8			14.1			17.3	3.6			
Queue Delay		0.0			0.0			0.0	0.0			
Total Delay		21.8			14.1			17.3	3.6			
Queue Length 50th (ft)		58			28			19	0			
Queue Length 95th (ft)		77			56			29	m3			
Internal Link Dist (ft)		473			477			317			515	
Turn Bay Length (ft)									50			
Base Capacity (vph)		864			1128			2787	712			
Starvation Cap Reductn		0			0			0	0			
Spillback Cap Reductn		0			0			0	0			
Storage Cap Reductn		0			0			0	0			
Reduced v/c Ratio		0.34			0.17			0.05	0.01			

Intersection Summary

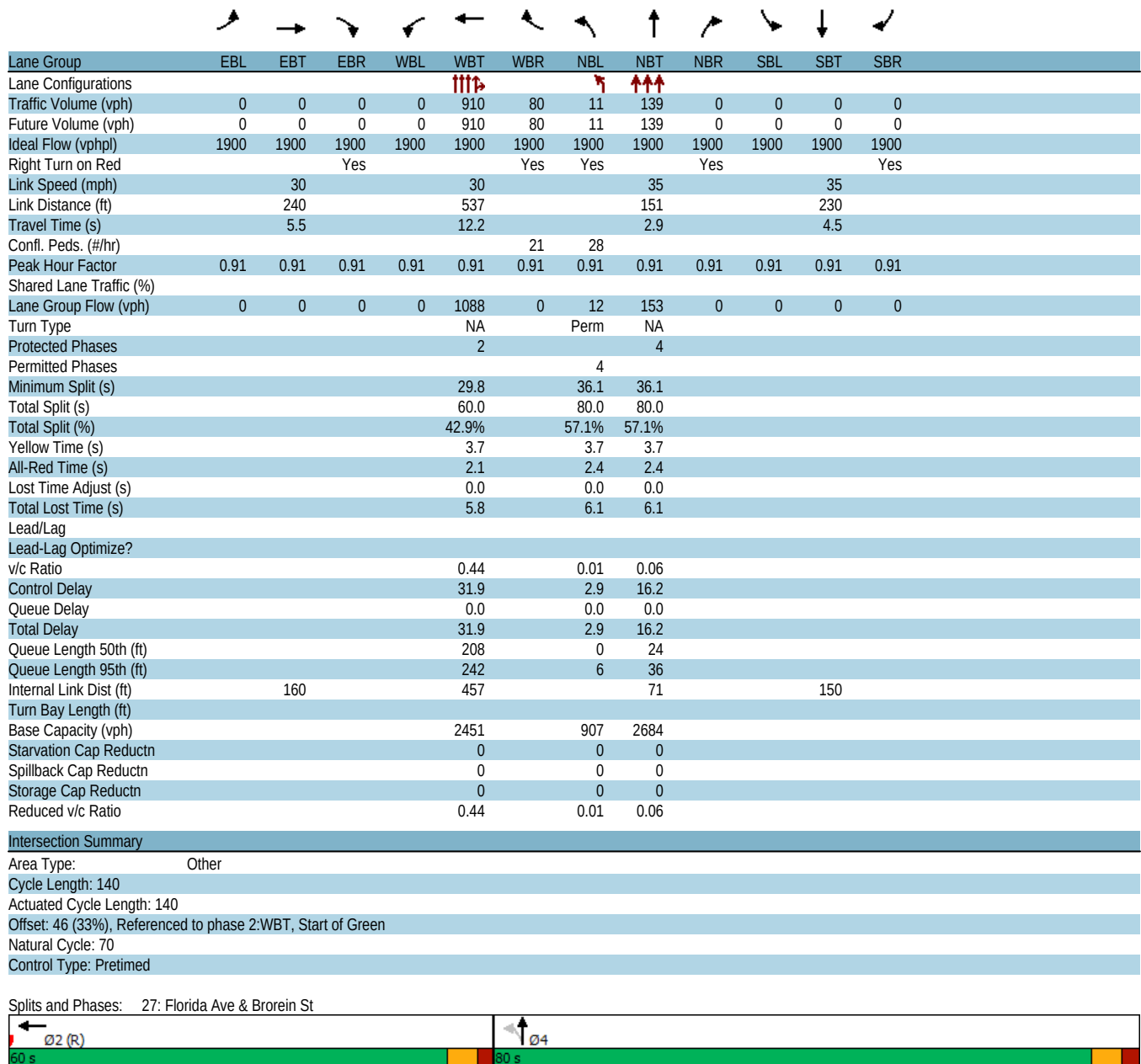
Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 120 (86%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	134	136	0	0	85	98	4	138	8	0	0	0
Future Volume (vph)	134	136	0	0	85	98	4	138	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.8			5.8			5.7	5.7			
Lane Util. Factor		0.95			0.95			0.91	1.00			
Frpb, ped/bikes		1.00			0.89			1.00	0.80			
Flpb, ped/bikes		0.93			1.00			0.99	1.00			
Frt		1.00			0.92			1.00	0.85			
Flt Protected		0.98			1.00			1.00	1.00			
Satd. Flow (prot)		3201			2903			5047	1273			
Flt Permitted		0.72			1.00			1.00	1.00			
Satd. Flow (perm)		2365			2903			5047	1273			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	144	146	0	0	91	105	4	148	9	0	0	0
RTOR Reduction (vph)	0	0	0	0	67	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	290	0	0	129	0	0	152	5	0	0	0
Confl. Peds. (#/hr)	106					106	71		94			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		51.2			51.2			77.3	77.3			
Effective Green, g (s)		51.2			51.2			77.3	77.3			
Actuated g/C Ratio		0.37			0.37			0.55	0.55			
Clearance Time (s)		5.8			5.8			5.7	5.7			
Lane Grp Cap (vph)		864			1061			2786	702			
v/s Ratio Prot					0.04							
v/s Ratio Perm		0.12						0.03	0.00			
v/c Ratio		0.34			0.12			0.05	0.01			
Uniform Delay, d1		32.1			29.5			14.5	14.1			
Progression Factor		0.64			1.00			1.19	2.05			
Incremental Delay, d2		1.0			0.2			0.0	0.0			
Delay (s)		21.6			29.7			17.3	29.0			
Level of Service		C			C			B	C			
Approach Delay (s)		21.6			29.7			17.9			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		23.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.17										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.5				
Intersection Capacity Utilization		59.4%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	910	80	11	139	0	0	0	0
Future Volume (vph)	0	0	0	0	910	80	11	139	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.8		6.1	6.1				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6306		1700	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6306		1700	5085				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	0	0	0	0	1000	88	12	153	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	6	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1078	0	6	153	0	0	0	0
Confl. Peds. (#/hr)					21		28					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					54.2		73.9	73.9				
Actuated g/C Ratio					0.39		0.53	0.53				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2441		897	2684				
v/s Ratio Prot					c0.17			c0.03				
v/s Ratio Perm							0.00					
v/c Ratio					0.44		0.01	0.06				
Uniform Delay, d1					31.7		15.7	16.1				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.6		0.0	0.0				
Delay (s)					32.3		15.7	16.1				
Level of Service					C		B	B				
Approach Delay (s)		0.0			32.3			16.1			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			30.2		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.22									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					11.9		
Intersection Capacity Utilization			38.3%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	212	0	0	602	74
Future Volume (vph)	0	212	0	0	602	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	230	0	0	654	80
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	963	0	0	729	0
Future Volume (vph)	0	963	0	0	729	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1047	0	0	792	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	900	0
Future Volume (vph)	0	0	0	0	900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	182		263			171
Travel Time (s)	4.1		6.0			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	978	0
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  			
Traffic Volume (vph)	0	333	1081	0	0	0
Future Volume (vph)	0	333	1081	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	531		103			170
Travel Time (s)	12.1		2.3			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	362	1175	0	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

No Build 2024 AM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

No Build 2024
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑↑↑	
Traffic Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Future Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			311	
Travel Time (s)		14.9			10.4			37.4			6.1	
Confl. Peds. (#/hr)			3	3						2		2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	201	119	227	246	0	0	0	0	0	1434	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		25.3	25.3	27.0	27.0					31.4	31.4	
Total Split (s)		55.0	55.0	55.0	55.0					85.0	85.0	
Total Split (%)		39.3%	39.3%	39.3%	39.3%					60.7%	60.7%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		0.5	0.5	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		-0.3	-0.3	-2.0	-2.0						-2.4	
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.30	0.19	0.62	0.36						0.49	
Control Delay		33.2	13.4	25.7	18.9						18.1	
Queue Delay		0.0	0.0	0.0	0.0						0.0	
Total Delay		33.2	13.4	25.7	18.9						18.1	
Queue Length 50th (ft)		130	27	73	77						269	
Queue Length 95th (ft)		196	72	123	107						308	
Internal Link Dist (ft)		576			379			1841			231	
Turn Bay Length (ft)				150								
Base Capacity (vph)		678	613	367	678						2904	
Starvation Cap Reductn		0	0	0	0						0	
Spillback Cap Reductn		0	0	0	0						0	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.30	0.19	0.62	0.36						0.49	

Intersection Summary

Area Type: Other

Cycle Length: 140

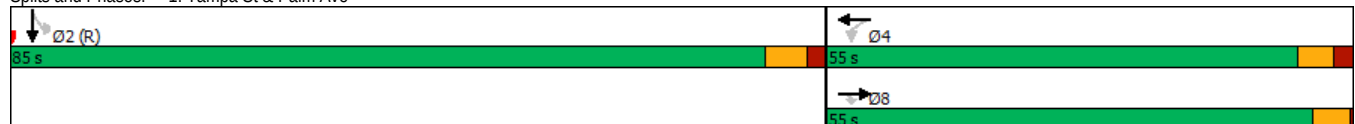
Actuated Cycle Length: 140

Offset: 130 (93%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Future Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Frpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						1.00	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1555	1763	1863						5015	
Flt Permitted		1.00	1.00	0.54	1.00						0.99	
Satd. Flow (perm)		1863	1555	1007	1863						5015	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	201	119	227	246	0	0	0	0	232	1162	40
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	201	72	227	246	0	0	0	0	0	1432	0
Confl. Peds. (#/hr)			3	3						2		2
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		50.7	50.7	49.0	49.0						78.6	
Effective Green, g (s)		51.0	51.0	51.0	51.0						81.0	
Actuated g/C Ratio		0.36	0.36	0.36	0.36						0.58	
Clearance Time (s)		4.3	4.3	6.0	6.0						6.4	
Lane Grp Cap (vph)		678	566	366	678						2901	
v/s Ratio Prot		0.11			0.13							
v/s Ratio Perm			0.05	0.23							0.29	
v/c Ratio		0.30	0.13	0.62	0.36						0.49	
Uniform Delay, d1		31.7	29.7	36.5	32.6						17.4	
Progression Factor		1.00	1.00	0.51	0.53						1.00	
Incremental Delay, d2		1.1	0.5	6.7	1.3						0.6	
Delay (s)		32.8	30.1	25.2	18.7						18.0	
Level of Service		C	C	C	B						B	
Approach Delay (s)		31.8			21.8			0.0			18.0	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			20.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			66.6%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

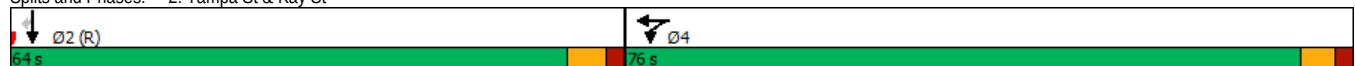
No Build 2024
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↩	↩↩						↩↩↩	↩
Traffic Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Future Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		360			350			247			1921	
Travel Time (s)		8.2			8.0			4.8			37.4	
Confl. Peds. (#/hr)						1						1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)				11%								
Lane Group Flow (vph)	0	0	0	11	1746	0	0	0	0	0	961	412
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Minimum Split (s)				26.7	26.7						31.0	31.0
Total Split (s)				76.0	76.0						64.0	64.0
Total Split (%)				54.3%	54.3%						45.7%	45.7%
Yellow Time (s)				3.7	3.7						4.0	4.0
All-Red Time (s)				2.0	2.0						2.0	2.0
Lost Time Adjust (s)				-1.7	-1.7						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.01	1.00						0.44	0.60
Control Delay				2.5	53.8						21.2	26.0
Queue Delay				0.0	0.0						0.3	0.0
Total Delay				2.5	53.8						21.5	26.0
Queue Length 50th (ft)				0	839						248	299
Queue Length 95th (ft)				5	#1043						275	203
Internal Link Dist (ft)		280			270			167			1841	
Turn Bay Length (ft)												475
Base Capacity (vph)				839	1754						2179	681
Starvation Cap Reductn				0	0						0	0
Spillback Cap Reductn				2	0						596	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				0.01	1.00						0.61	0.60

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green
Natural Cycle: 80
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Tampa St & Kay St



Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Future Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.91	0.91						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1610	3390						5085	1562
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1610	3390						5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	12	1745	0	0	0	0	0	961	412
RTOR Reduction (vph)	0	0	0	5	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	6	1735	0	0	0	0	0	961	400
Confl. Peds. (#/hr)						1						1
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Actuated Green, G (s)				70.3	70.3						58.0	58.0
Effective Green, g (s)				72.0	72.0						60.0	60.0
Actuated g/C Ratio				0.51	0.51						0.43	0.43
Clearance Time (s)				5.7	5.7						6.0	6.0
Lane Grp Cap (vph)				828	1743						2179	669
v/s Ratio Prot				0.00	c0.51						0.19	
v/s Ratio Perm												c0.26
v/c Ratio				0.01	1.00						0.44	0.60
Uniform Delay, d1				16.6	33.8						28.2	30.7
Progression Factor				1.00	1.00						0.73	0.76
Incremental Delay, d2				0.0	20.5						0.6	3.5
Delay (s)				16.6	54.3						21.1	26.7
Level of Service				B	D						C	C
Approach Delay (s)		0.0			54.1			0.0			22.8	
Approach LOS		A			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			40.3			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			66.2%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

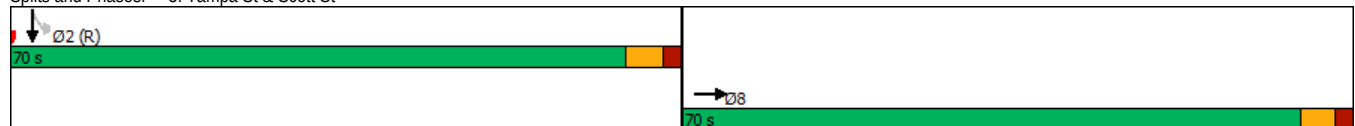
No Build 2024
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑↑	
Traffic Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Future Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		386			62			346			247	
Travel Time (s)		8.8			1.4			6.7			5.6	
Confl. Peds. (#/hr)										3		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	886	0	0	0	0	0	0	0	0	842	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		-1.7									-2.0	
Total Lost Time (s)		4.0									4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.54									0.35	
Control Delay		27.3									14.0	
Queue Delay		2.7									0.7	
Total Delay		30.0									14.7	
Queue Length 50th (ft)		291									245	
Queue Length 95th (ft)		354									293	
Internal Link Dist (ft)		306			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1646									2399	
Starvation Cap Reductn		0									1114	
Spillback Cap Reductn		615									3	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.86									0.66	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 62 (44%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Future Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3479									5028	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3479									5028	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	785	101	0	0	0	0	0	0	161	681	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	879	0	0	0	0	0	0	0	0	814	0
Confl. Peds. (#/hr)											3	
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		66.0									66.0	
Actuated g/C Ratio		0.47									0.47	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1640									2370	
v/s Ratio Prot		c0.25										
v/s Ratio Perm											0.16	
v/c Ratio		0.54									0.34	
Uniform Delay, d1		26.2									23.3	
Progression Factor		1.00									0.62	
Incremental Delay, d2		1.3									0.4	
Delay (s)		27.4									14.9	
Level of Service		C									B	
Approach Delay (s)		27.4			0.0			0.0			14.9	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay		21.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.44										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		45.1%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

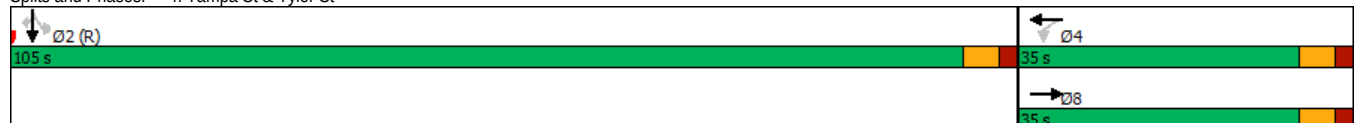
No Build 2024
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Future Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			6.8			2.5	
Confl. Peds. (#/hr)			9	9						73		35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	210	0	84	225	0	0	0	0	0	2081	75
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Minimum Split (s)		25.8		25.8	25.8					102.8	102.8	102.8
Total Split (s)		35.0		35.0	35.0					105.0	105.0	105.0
Total Split (%)		25.0%		25.0%	25.0%					75.0%	75.0%	75.0%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	3.7
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	2.1
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8	-1.8
Total Lost Time (s)		4.0		4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.55		0.50	0.55						0.57	0.07
Control Delay		49.9		46.8	42.2						6.7	0.5
Queue Delay		0.0		0.0	0.0						0.0	0.0
Total Delay		49.9		46.8	42.2						6.7	0.5
Queue Length 50th (ft)		155		80	214						190	0
Queue Length 95th (ft)		242		m135	303						206	5
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		379		169	412						3655	1009
Starvation Cap Reductn		0		0	0						0	0
Spillback Cap Reductn		0		0	0						214	0
Storage Cap Reductn		0		0	0						0	0
Reduced v/c Ratio		0.55		0.50	0.55						0.60	0.07

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 130
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Future Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						0.91	1.00
Flpb, ped/bikes		0.98		1.00	1.00						1.00	0.87
Flpb, ped/bikes		1.00		0.99	1.00						1.00	1.00
Frt		0.90		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1645		1751	1863						5069	1371
Flt Permitted		1.00		0.42	1.00						1.00	1.00
Satd. Flow (perm)		1645		767	1863						5069	1371
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	59	151	84	225	0	0	0	0	23	2058	75
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	0	21
Lane Group Flow (vph)	0	194	0	84	225	0	0	0	0	0	2081	54
Confl. Peds. (#/hr)			9	9						73		35
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		29.2		29.2	29.2						99.2	99.2
Effective Green, g (s)		31.0		31.0	31.0						101.0	101.0
Actuated g/C Ratio		0.22		0.22	0.22						0.72	0.72
Clearance Time (s)		5.8		5.8	5.8						5.8	5.8
Lane Grp Cap (vph)		364		169	412						3656	989
v/s Ratio Prot		0.12			0.12							
v/s Ratio Perm				0.11							0.41	0.04
v/c Ratio		0.53		0.50	0.55						0.57	0.05
Uniform Delay, d1		48.1		47.7	48.3						9.2	5.7
Progression Factor		1.00		0.76	0.77						0.65	0.33
Incremental Delay, d2		5.5		9.1	4.6						0.6	0.1
Delay (s)		53.6		45.6	41.7						6.6	2.0
Level of Service		D		D	D						A	A
Approach Delay (s)		53.6			42.8			0.0			6.4	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			14.3			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			84.8%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

No Build 2024
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Future Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			553			286			301	
Travel Time (s)		7.3			12.6			6.5			6.8	
Confl. Peds. (#/hr)			12	12						87		29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	421	0	45	239	0	0	0	0	0	2133	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.84		0.54	0.46						0.64	
Control Delay		61.6		42.6	20.0						9.9	
Queue Delay		58.4		103.0	0.0						0.1	
Total Delay		120.0		145.6	20.0						10.0	
Queue Length 50th (ft)		351		12	66						151	
Queue Length 95th (ft)		#523		m#93	91						383	
Internal Link Dist (ft)		242			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		503		83	518						3329	
Starvation Cap Reductn		0		0	0						184	
Spillback Cap Reductn		276		46	0						169	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		1.85		1.22	0.46						0.68	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Future Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1770		1770	1863						5010	
Flt Permitted		1.00		0.16	1.00						1.00	
Satd. Flow (perm)		1770		300	1863						5010	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	299	122	45	239	0	0	0	0	70	2042	21
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	411	0	45	239	0	0	0	0	0	2132	0
Confl. Peds. (#/hr)			12	12						87		29
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3		37.3	37.3						91.3	
Effective Green, g (s)		39.0		39.0	39.0						93.0	
Actuated g/C Ratio		0.28		0.28	0.28						0.66	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		493		83	518						3328	
v/s Ratio Prot		c0.23			0.13							
v/s Ratio Perm				0.15							0.43	
v/c Ratio		0.83		0.54	0.46						0.64	
Uniform Delay, d1		47.4		42.9	41.8						13.7	
Progression Factor		1.00		0.42	0.41						0.66	
Incremental Delay, d2		15.2		21.9	2.8						0.8	
Delay (s)		62.6		40.1	19.7						9.8	
Level of Service		E		D	B						A	
Approach Delay (s)		62.6			23.0			0.0			9.8	
Approach LOS		E			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			19.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			78.0%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

No Build 2024
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations												
Traffic Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Future Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			6.9			6.5	
Confl. Peds. (#/hr)			39	39						185		66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	190	0	0	0	0	0	2065	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		-1.8			-1.8						-1.9	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.25			0.36						0.64	
Control Delay		35.3			38.5						13.7	
Queue Delay		0.0			0.0						1.3	
Total Delay		35.3			38.5						15.0	
Queue Length 50th (ft)		81			113						308	
Queue Length 95th (ft)		138			196						288	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		526			531						3217	
Starvation Cap Reductn		0			0						859	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.25			0.36						0.88	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 6: Tampa St & Polk St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Future Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.97			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.96			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1731			1839						5003	
Flt Permitted		1.00			0.96						1.00	
Satd. Flow (perm)		1731			1773						5003	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	88	41	22	168	0	0	0	0	51	2002	12
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	121	0	0	190	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			39	39						185		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		42.0			42.0						90.0	
Actuated g/C Ratio		0.30			0.30						0.64	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		519			531						3216	
v/s Ratio Prot		0.07										
v/s Ratio Perm					0.11						0.41	
v/c Ratio		0.23			0.36						0.64	
Uniform Delay, d1		36.9			38.4						15.2	
Progression Factor		1.00			0.94						0.84	
Incremental Delay, d2		1.1			1.9						0.8	
Delay (s)		37.9			38.1						13.6	
Level of Service		D			D						B	
Approach Delay (s)		37.9			38.1			0.0			13.6	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			16.9			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			70.7%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

No Build 2024
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Future Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		344			539			272			302	
Travel Time (s)		7.8			12.3			6.2			6.9	
Confl. Peds. (#/hr)			8	8						38		24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	0	203	0	0	0	0	0	2088	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7			-1.7						-1.7	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.60			0.63						0.62	
Control Delay		47.2			47.9						1.8	
Queue Delay		0.0			0.0						0.0	
Total Delay		47.2			47.9						1.8	
Queue Length 50th (ft)		225			118						23	
Queue Length 95th (ft)		328			204						25	
Internal Link Dist (ft)		264			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		499			323						3348	
Starvation Cap Reductn		0			0						127	
Spillback Cap Reductn		0			0						118	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.60			0.63						0.65	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
Splits and Phases: 7: Tampa St & Zack St												
												

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

No Build 2024
Timing Plan: AM Peak

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Future Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.99			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1751			1836						5042	
Flt Permitted		1.00			0.62						1.00	
Satd. Flow (perm)		1751			1162						5042	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	189	111	52	151	0	0	0	0	87	1994	7
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	288	0	0	203	0	0	0	0	0	2088	0
Confl. Peds. (#/hr)			8	8						38		24
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						91.3	
Effective Green, g (s)		39.0			39.0						93.0	
Actuated g/C Ratio		0.28			0.28						0.66	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		487			323						3349	
v/s Ratio Prot		0.16										
v/s Ratio Perm					0.17						0.41	
v/c Ratio		0.59			0.63						0.62	
Uniform Delay, d1		43.6			44.2						13.5	
Progression Factor		1.00			0.90						0.08	
Incremental Delay, d2		5.2			7.0						0.7	
Delay (s)		48.9			47.0						1.8	
Level of Service		D			D						A	
Approach Delay (s)		48.9			47.0			0.0			1.8	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			74.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

No Build 2024
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Future Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		258			543			313			272	
Travel Time (s)		5.9			12.3			7.1			6.2	
Confl. Peds. (#/hr)			30	30						30		54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	354	0	96	431	0	0	0	0	0	2066	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.67		0.61	0.77						0.64	
Control Delay		48.3		52.7	47.4						4.7	
Queue Delay		0.0		0.0	1.9						0.1	
Total Delay		48.3		52.7	49.3						4.8	
Queue Length 50th (ft)		273		78	368						66	
Queue Length 95th (ft)		387		m142	m498						71	
Internal Link Dist (ft)		178			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		532		157	558						3249	
Starvation Cap Reductn		0		0	44						234	
Spillback Cap Reductn		0		0	0						116	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.67		0.61	0.84						0.69	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 9 (6%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Tampa St & Twiggs St



Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Future Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.98	1.00						1.00	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1745		1736	1863						5049	
Flt Permitted		1.00		0.29	1.00						1.00	
Satd. Flow (perm)		1745		526	1863						5049	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	245	109	96	431	0	0	0	0	52	1980	34
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	345	0	96	431	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			30	30						30		54
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.3		40.3	40.3						88.1	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		523		157	558						3245	
v/s Ratio Prot		0.20			0.23							
v/s Ratio Perm				0.18							0.41	
v/c Ratio		0.66		0.61	0.77						0.64	
Uniform Delay, d1		42.8		42.0	44.6						15.1	
Progression Factor		1.00		0.82	0.83						0.26	
Incremental Delay, d2		6.4		16.4	9.9						0.8	
Delay (s)		49.2		50.8	46.7						4.7	
Level of Service		D		D	D						A	
Approach Delay (s)		49.2			47.5			0.0			4.7	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			17.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			75.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

No Build 2024
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Future Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		311			548			309			313	
Travel Time (s)		7.1			12.5			7.0			7.1	
Confl. Peds. (#/hr)			53	53						29		66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	228	0	130	24	0	0	0	0	0	2044	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.47		0.53	0.04						0.63	
Control Delay		41.7		49.6	34.1						5.3	
Queue Delay		0.0		0.0	0.0						0.1	
Total Delay		41.7		49.6	34.1						5.5	
Queue Length 50th (ft)		161		113	13						71	
Queue Length 95th (ft)		245		m181	m26						76	
Internal Link Dist (ft)		231			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		480		244	558						3247	
Starvation Cap Reductn		0		0	0						261	
Spillback Cap Reductn		0		0	0						327	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.47		0.53	0.04						0.70	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m	Volume for 95th percentile queue is metered by upstream signal.											
Splits and Phases: 9: Tampa St & Madison St												
 02 (R)										 04		
94 s										46 s		

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Future Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.92		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.94	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1576		1663	1863						5048	
Flt Permitted		1.00		0.47	1.00						1.00	
Satd. Flow (perm)		1576		816	1863						5048	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	85	143	130	24	0	0	0	0	61	1967	16
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	220	0	130	24	0	0	0	0	0	2043	0
Confl. Peds. (#/hr)			53	53						29		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.1		40.1	40.1						88.2	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		472		244	558						3245	
v/s Ratio Prot		0.14			0.01							
v/s Ratio Perm				0.16							0.40	
v/c Ratio		0.47		0.53	0.04						0.63	
Uniform Delay, d1		39.9		40.8	34.7						15.0	
Progression Factor		1.00		1.00	0.97						0.31	
Incremental Delay, d2		3.3		7.4	0.1						0.7	
Delay (s)		43.1		48.3	33.8						5.3	
Level of Service		D		D	C						A	
Approach Delay (s)		43.1			46.0			0.0			5.3	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.4			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			74.6%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

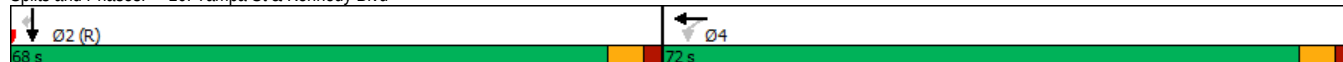
No Build 2024
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations				↰	↰↰↰						↰↰↰	↰
Traffic Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Future Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		314			546			274			309	
Travel Time (s)		7.1			12.4			6.2			7.0	
Confl. Peds. (#/hr)				26								42
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	257	1706	0	0	0	0	0	1778	330
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Minimum Split (s)				25.8	25.8						26.8	26.8
Total Split (s)				72.0	72.0						68.0	68.0
Total Split (%)				51.4%	51.4%						48.6%	48.6%
Yellow Time (s)				3.7	3.7						3.7	3.7
All-Red Time (s)				2.1	2.1						2.1	2.1
Lost Time Adjust (s)				-1.8	-1.8						-1.8	-1.8
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.36	0.73						0.77	0.49
Control Delay				6.9	15.6						21.2	15.0
Queue Delay				64.8	5.0						2.2	1.9
Total Delay				71.8	20.6						23.3	16.9
Queue Length 50th (ft)				63	513						455	69
Queue Length 95th (ft)				110	582						438	94
Internal Link Dist (ft)		234			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				710	2341						2324	667
Starvation Cap Reductn				0	382						388	199
Spillback Cap Reductn				508	564						123	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				1.27	0.96						0.92	0.71

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 23 (16%), Referenced to phase 2:SBT, Start of Green
Natural Cycle: 55
Control Type: Pretimed

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Future Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.91
Flpb, ped/bikes				0.95	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1439	4797						5085	1434
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1439	4797						5085	1434
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	286	1677	0	0	0	0	0	1778	330
RTOR Reduction (vph)	0	0	0	11	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	246	1695	0	0	0	0	0	1778	318
Confl. Peds. (#/hr)				26							42	
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Actuated Green, G (s)				66.2	66.2						62.2	62.2
Effective Green, g (s)				68.0	68.0						64.0	64.0
Actuated g/C Ratio				0.49	0.49						0.46	0.46
Clearance Time (s)				5.8	5.8						5.8	5.8
Lane Grp Cap (vph)				698	2329						2324	655
v/s Ratio Prot											c0.35	
v/s Ratio Perm				0.17	0.35							0.22
v/c Ratio				0.35	0.73						0.77	0.49
Uniform Delay, d1				22.3	28.6						31.7	26.5
Progression Factor				0.28	0.49						0.60	0.51
Incremental Delay, d2				1.2	1.7						2.0	2.0
Delay (s)				7.3	15.7						21.0	15.6
Level of Service				A	B						C	B
Approach Delay (s)		0.0			14.6			0.0			20.2	
Approach LOS		A			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			17.5			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			65.3%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

No Build 2024
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Future Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		275			260			589			274	
Travel Time (s)		6.3			5.9			13.4			6.2	
Confl. Peds. (#/hr)			71							39		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	1066	0	0	0	0	0	0	0	316	1793	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		75.0								65.0	65.0	
Total Split (%)		53.6%								46.4%	46.4%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		-2.0								-2.0	-2.0	
Total Lost Time (s)		4.0								4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.48								0.47	0.85	
Control Delay		23.3								15.3	26.7	
Queue Delay		0.0								2.0	25.8	
Total Delay		23.3								17.4	52.5	
Queue Length 50th (ft)		224								66	244	
Queue Length 95th (ft)		265								m143	327	
Internal Link Dist (ft)		195			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2217								672	2101	
Starvation Cap Reductn		0								220	391	
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.48								0.70	1.05	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 11: Tampa St & Jackson St												
 Ø2 (R) 65 s  Ø4 75 s												

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

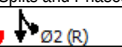
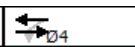
No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Future Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.86	0.86	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								0.92	1.00	
Frt		0.93								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4368								1403	4794	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4368								1403	4794	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	548	518	0	0	0	0	0	0	351	1758	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	62	13	0
Lane Group Flow (vph)	0	1064	0	0	0	0	0	0	0	254	1780	0
Confl. Peds. (#/hr)			71							39		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		69.0								59.0	59.0	
Effective Green, g (s)		71.0								61.0	61.0	
Actuated g/C Ratio		0.51								0.44	0.44	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2215								611	2088	
v/s Ratio Prot		c0.24										
v/s Ratio Perm										0.18	0.37	
v/c Ratio		0.48								0.42	0.85	
Uniform Delay, d1		22.5								27.2	35.5	
Progression Factor		1.00								0.76	0.66	
Incremental Delay, d2		0.7								1.5	3.3	
Delay (s)		23.2								22.2	26.7	
Level of Service		C								C	C	
Approach Delay (s)		23.2			0.0			0.0			26.1	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay		25.1									C	
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0								8.0		
Intersection Capacity Utilization		65.3%								C		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

No Build 2024
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Future Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		404			553			171			589	
Travel Time (s)		9.2			12.6			3.9			13.4	
Confl. Peds. (#/hr)			94	94						30		43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	321	0	111	106	0	0	0	0	0	162	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.26		0.35	0.15						0.06	
Control Delay		22.6		15.2	11.5						17.8	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		22.6		15.2	11.5						17.8	
Queue Length 50th (ft)		76		19	17						24	
Queue Length 95th (ft)		115		34	26						m29	
Internal Link Dist (ft)		324			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1240		321	705						2818	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.26		0.35	0.15						0.06	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 120 (86%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 12: Tampa St & Whiting St												
												
83 s									57 s			

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

No Build 2024
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									 	
Traffic Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Future Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.90	1.00						1.00	
Frt		0.95		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.98	
Satd. Flow (prot)		3143		1596	1863						4993	
Flt Permitted		1.00		0.50	1.00						0.98	
Satd. Flow (perm)		3143		848	1863						4993	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	209	112	111	106	0	0	0	0	60	102	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	271	0	111	106	0	0	0	0	0	162	0
Confl. Peds. (#/hr)			94	94						30		43
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		53.0		53.0	53.0						79.0	
Actuated g/C Ratio		0.38		0.38	0.38						0.56	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1189		321	705						2817	
v/s Ratio Prot		0.09			0.06						c0.03	
v/s Ratio Perm				c0.13								
v/c Ratio		0.23		0.35	0.15						0.06	
Uniform Delay, d1		29.6		31.1	28.7						13.7	
Progression Factor		1.00		0.38	0.38						1.29	
Incremental Delay, d2		0.4		2.9	0.4						0.0	
Delay (s)		30.0		14.8	11.4						17.7	
Level of Service		C		B	B						B	
Approach Delay (s)		30.0			13.1			0.0			17.7	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			21.9			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.17									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			55.0%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Future Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	16					16	6		5			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	280	0	0	454	0	0	1264	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.0	22.0			22.1		30.1	30.1				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	0.5	0.5			2.1		2.1	2.1				
Lost Time Adjust (s)	-0.5	-0.5			-2.1		-2.1	-2.1				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.15	0.40			0.67		0.45					
Control Delay	30.0	31.4			40.7		11.8					
Queue Delay	0.0	0.8			0.0		0.0					
Total Delay	30.0	32.2			40.7		11.8					
Queue Length 50th (ft)	14	152			330		210					
Queue Length 95th (ft)	m31	211			458		243					
Internal Link Dist (ft)		379			809		935			162		
Turn Bay Length (ft)	100											
Base Capacity (vph)	183	705			675		2786					
Starvation Cap Reductn	0	199			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.15	0.55			0.67		0.45					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 129 (92%), Referenced to phase 6:NBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Future Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frpb, ped/bikes	1.00	1.00			0.98			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1756			4895				
Flt Permitted	0.26	1.00			1.00			1.00				
Satd. Flow (perm)	487	1863			1756			4895				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	280	0	0	314	140	71	960	233	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	26	0	0	0	0
Lane Group Flow (vph)	27	280	0	0	443	0	0	1238	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		5			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	52.5	52.5			50.9			76.9				
Effective Green, g (s)	53.0	53.0			53.0			79.0				
Actuated g/C Ratio	0.38	0.38			0.38			0.56				
Clearance Time (s)	4.5	4.5			6.1			6.1				
Lane Grp Cap (vph)	184	705			664			2762				
v/s Ratio Prot		0.15			0.25							
v/s Ratio Perm	0.06							0.25				
v/c Ratio	0.15	0.40			0.67			0.45				
Uniform Delay, d1	28.6	31.8			36.2			17.8				
Progression Factor	0.95	0.93			1.00			0.67				
Incremental Delay, d2	1.6	1.6			5.2			0.5				
Delay (s)	28.9	31.0			41.4			12.4				
Level of Service	C	C			D			B				
Approach Delay (s)		30.8			41.4			12.4			0.0	
Approach LOS		C			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			21.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			66.6%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Future Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		183			376			1146			1015	
Travel Time (s)		5.0			10.3			22.3			19.8	
Confl. Peds. (#/hr)	3					3	4		11			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	84	0	0	220	0	0	1305	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.4	22.4			22.4		24.0	24.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	-2.4	-2.4			-2.4		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.21	0.15			0.40		0.44					
Control Delay	20.7	18.9			15.7		8.5					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	20.7	18.9			15.7		8.5					
Queue Length 50th (ft)	20	26			50		163					
Queue Length 95th (ft)	50	57			105		m168					
Internal Link Dist (ft)		103			296		1066			935		
Turn Bay Length (ft)	50											
Base Capacity (vph)	299	558			556		2962					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.21	0.15			0.40		0.44					

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 17 (24%), Referenced to phase 2: and 6:NBTL, Start of Green

Natural Cycle: 50

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Future Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1765	1863			1696			5055				
Flt Permitted	0.54	1.00			1.00			1.00				
Satd. Flow (perm)	998	1863			1696			5055				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	84	0	0	88	132	100	1195	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	48	0	0	1	0	0	0	0
Lane Group Flow (vph)	64	84	0	0	172	0	0	1304	0	0	0	0
Confl. Peds. (#/hr)	3					3	4		11			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	21.0	21.0			21.0			41.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.59				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	299	558			508			2960				
v/s Ratio Prot		0.05			c0.10							
v/s Ratio Perm	0.06							0.26				
v/c Ratio	0.21	0.15			0.34			0.44				
Uniform Delay, d1	18.3	18.0			19.1			8.1				
Progression Factor	1.00	1.00			1.00			1.04				
Incremental Delay, d2	1.6	0.6			1.8			0.1				
Delay (s)	20.0	18.5			20.9			8.5				
Level of Service	B	B			C			A				
Approach Delay (s)		19.1			20.9			8.5			0.0	
Approach LOS		B			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.1			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.41										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		55.0%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑↑				
Traffic Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Future Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			377			701			1146	
Travel Time (s)		8.4			8.6			13.7			22.3	
Confl. Peds. (#/hr)	4								8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1507	0	0	0	0	0	2581	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	60.0	60.0						80.0				
Total Split (%)	42.9%	42.9%						57.1%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		-1.7						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.07						0.98				
Control Delay		78.5						18.0				
Queue Delay		0.0						1.3				
Total Delay		78.5						19.4				
Queue Length 50th (ft)		~798						21				
Queue Length 95th (ft)		#941						#141				
Internal Link Dist (ft)		291			297			621			1066	
Turn Bay Length (ft)												
Base Capacity (vph)		1403						2635				
Starvation Cap Reductn		0						23				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.07						0.99				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 64 (46%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Future Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.96				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3475						4828				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3475						4828				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	451	1056	0	0	0	0	0	1871	710	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	0	1493	0	0	0	0	0	2567	0	0	0	0
Confl. Peds. (#/hr)	4								8			
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		54.3						74.0				
Effective Green, g (s)		56.0						76.0				
Actuated g/C Ratio		0.40						0.54				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1390						2620				
v/s Ratio Prot								0.53				
v/s Ratio Perm		0.43										
v/c Ratio		1.07						0.98				
Uniform Delay, d1		42.0						31.2				
Progression Factor		0.79						0.24				
Incremental Delay, d2		46.4						9.5				
Delay (s)		79.5						16.9				
Level of Service		E						B				
Approach Delay (s)		79.5			0.0			16.9			0.0	
Approach LOS		E			A			B			A	
Intersection Summary												
HCM 2000 Control Delay		40.0						HCM 2000 Level of Service		D		
HCM 2000 Volume to Capacity ratio		1.02										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		98.4%						ICU Level of Service		F		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Future Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		258			273			465			701	
Travel Time (s)		5.9			6.2			10.6			15.9	
Confl. Peds. (#/hr)	13					13	5		7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Minimum Split (s)	24.4	24.4					24.0	24.0				
Total Split (s)	43.0	43.0					97.0	97.0				
Total Split (%)	30.7%	30.7%					69.3%	69.3%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		-1.4						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.20						0.81				
Control Delay		39.9						2.2				
Queue Delay		0.0						0.2				
Total Delay		39.9						2.4				
Queue Length 50th (ft)		67						28				
Queue Length 95th (ft)		116						32				
Internal Link Dist (ft)		178			193			385			621	
Turn Bay Length (ft)												
Base Capacity (vph)		488						3369				
Starvation Cap Reductn		0						147				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.20						0.84				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 41 (29%), Referenced to phase 2:NBT and 6:, Start of Green												
Natural Cycle: 65												
Control Type: Pretimed												
Splits and Phases: 16: Florida Ave & Fortune St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Future Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.97						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1753						5076				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1753						5076				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	28	0	0	0	0	38	2674	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Confl. Peds. (#/hr)	13					13	5		7			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.6						91.0				
Effective Green, g (s)		39.0						93.0				
Actuated g/C Ratio		0.28						0.66				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		488						3371				
v/s Ratio Prot												
v/s Ratio Perm		0.05						0.54				
v/c Ratio		0.20						0.81				
Uniform Delay, d1		38.5						17.0				
Progression Factor		1.00						0.06				
Incremental Delay, d2		0.9						1.2				
Delay (s)		39.4						2.2				
Level of Service		D						A				
Approach Delay (s)		39.4			0.0			2.2			0.0	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		3.4										A
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		66.6%						ICU Level of Service		C		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Future Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		320			287			301			465	
Travel Time (s)		7.3			6.5			6.8			9.1	
Confl. Peds. (#/hr)	8					8	7		12			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	90	0	0	2836	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-2.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.13			0.20			0.84				
Control Delay		38.9			38.7			31.6				
Queue Delay		0.0			0.0			46.8				
Total Delay		38.9			38.7			78.4				
Queue Length 50th (ft)		42			61			991				
Queue Length 95th (ft)		80			108			1022				
Internal Link Dist (ft)		240			207			221			385	
Turn Bay Length (ft)												
Base Capacity (vph)		465			450			3373				
Starvation Cap Reductn		0			0			1285				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.13			0.20			1.36				

Intersection Summary

Area Type: Other

Cycle Length: 140

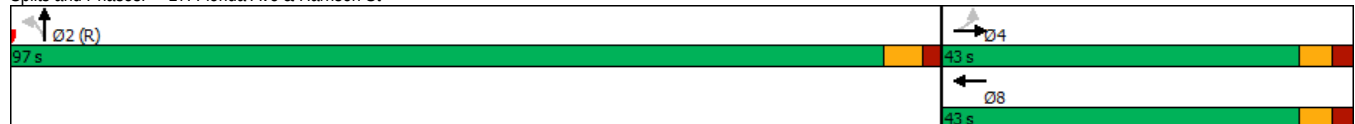
Actuated Cycle Length: 140

Offset: 36 (26%), Referenced to phase 2:NBT and 6:, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Future Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Flpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.88			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1823			1609			5075				
Flt Permitted		0.90			1.00			1.00				
Satd. Flow (perm)		1671			1609			5075				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	40	0	0	13	77	18	2798	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	61	0	0	88	0	0	2835	0	0	0	0
Confl. Peds. (#/hr)	8					8	7		12			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.2			37.2			91.0				
Effective Green, g (s)		39.0			39.0			93.0				
Actuated g/C Ratio		0.28			0.28			0.66				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		465			448			3371				
v/s Ratio Prot					c0.05							
v/s Ratio Perm		0.04						0.56				
v/c Ratio		0.13			0.20			0.84				
Uniform Delay, d1		37.8			38.5			17.9				
Progression Factor		1.00			1.00			1.65				
Incremental Delay, d2		0.6			1.0			1.6				
Delay (s)		38.4			39.5			31.0				
Level of Service		D			D			C				
Approach Delay (s)		38.4			39.5			31.0			0.0	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		31.4			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		74.7%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

No Build 2024
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Future Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			288			286			301	
Travel Time (s)		13.0			6.5			5.6			5.9	
Confl. Peds. (#/hr)	11					11	4		21			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	105	0	0	300	0	33	2742	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.57	0.20			0.60		0.03	0.81				
Control Delay	66.3	47.9			49.1		11.3	16.8				
Queue Delay	0.0	0.0			0.0		0.0	47.2				
Total Delay	66.3	47.9			49.1		11.3	64.0				
Queue Length 50th (ft)	81	81			235		11	367				
Queue Length 95th (ft)	147	135			337		m16	m450				
Internal Link Dist (ft)		490			208		206			221		
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	173	518			502		1159	3374				
Starvation Cap Reductn	0	0			0		0	911				
Spillback Cap Reductn	0	0			0		0	1475				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.57	0.20			0.60		0.03	1.44				

Intersection Summary

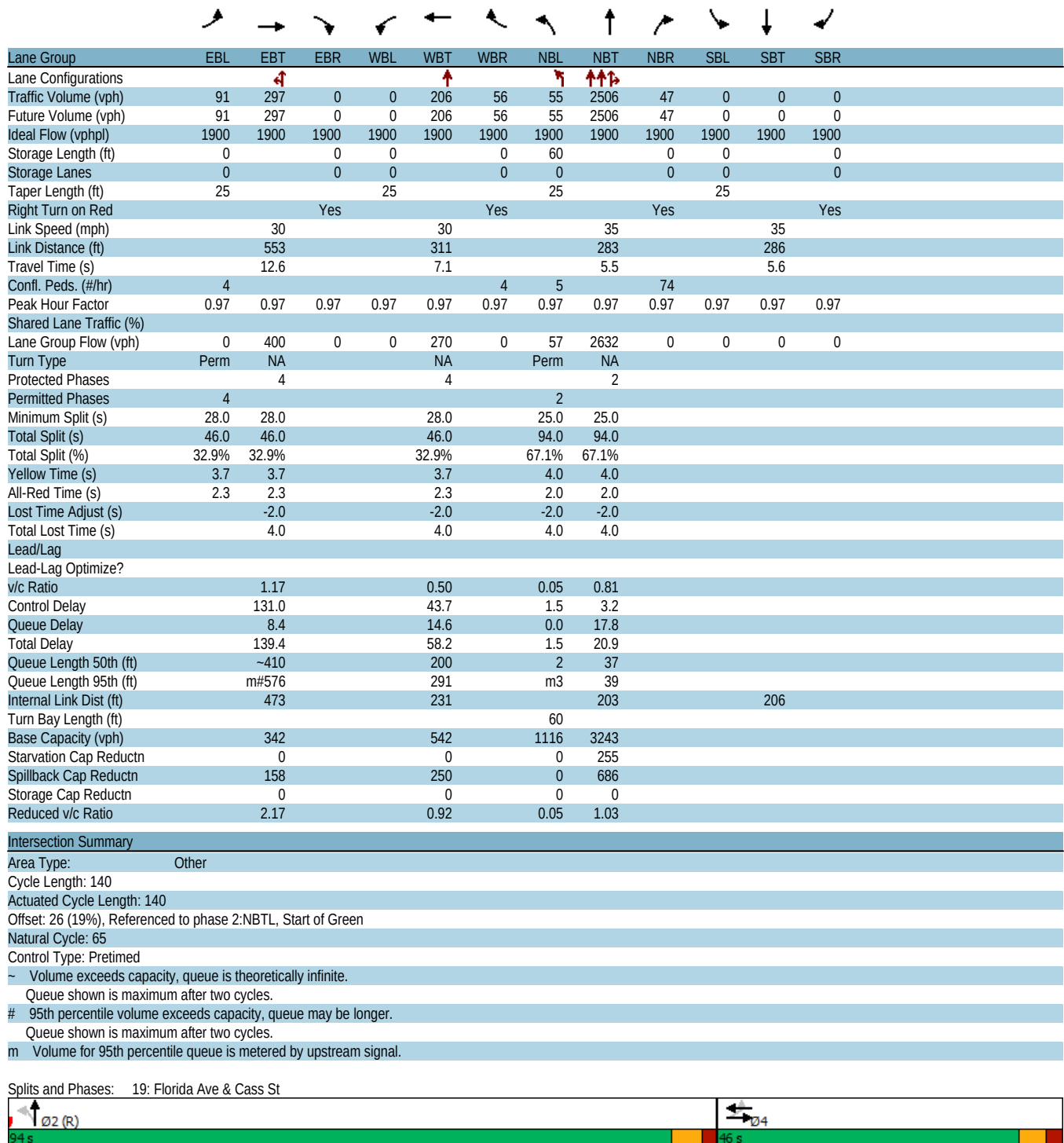
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 128 (91%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 65
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Future Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	0.99	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1754	1863			1796		1745	5081				
Flt Permitted	0.34	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	623	1863			1796		1745	5081				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	98	105	0	0	236	64	33	2732	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	98	105	0	0	298	0	33	2742	0	0	0	0
Confl. Peds. (#/hr)	11					11	4		21			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.2	37.2			37.2		91.0	91.0				
Effective Green, g (s)	39.0	39.0			39.0		93.0	93.0				
Actuated g/C Ratio	0.28	0.28			0.28		0.66	0.66				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	173	518			500		1159	3375				
v/s Ratio Prot		0.06			c0.17			c0.54				
v/s Ratio Perm	0.16						0.02					
v/c Ratio	0.57	0.20			0.60		0.03	0.81				
Uniform Delay, d1	43.3	38.6			43.7		8.0	17.1				
Progression Factor	1.19	1.20			1.00		1.39	0.89				
Incremental Delay, d2	12.6	0.9			5.2		0.0	1.3				
Delay (s)	64.0	47.3			48.8		11.2	16.5				
Level of Service	E	D			D		B	B				
Approach Delay (s)		55.4			48.8			16.4			0.0	
Approach LOS		E			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		21.8			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.75										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		84.8%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0
Future Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			1.00		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.98	1.00				
Frt		1.00			0.97		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1840			1801		1737	5045				
Flt Permitted		0.61			1.00		0.95	1.00				
Satd. Flow (perm)		1142			1801		1737	5045				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	94	306	0	0	212	58	57	2584	48	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	400	0	0	268	0	57	2631	0	0	0	0
Confl. Peds. (#/hr)	4					4	5		74			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.0			40.0		88.0	88.0				
Effective Green, g (s)		42.0			42.0		90.0	90.0				
Actuated g/C Ratio		0.30			0.30		0.64	0.64				
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		342			540		1116	3243				
v/s Ratio Prot					0.15			c0.52				
v/s Ratio Perm		c0.35					0.03					
v/c Ratio		1.17			0.50		0.05	0.81				
Uniform Delay, d1		49.0			40.3		9.2	18.7				
Progression Factor		0.78			1.00		0.15	0.10				
Incremental Delay, d2		95.4			3.2		0.0	1.2				
Delay (s)		133.6			43.5		1.5	3.1				
Level of Service		F			D		A	A				
Approach Delay (s)		133.6			43.5			3.1			0.0	
Approach LOS		F			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		21.9			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.92										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		98.6%			ICU Level of Service			F				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Future Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			394			300			283	
Travel Time (s)		12.2			9.0			5.8			5.5	
Confl. Peds. (#/hr)	33					33	6		68			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	135	0	47	2818	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.41			0.27		0.04	0.86				
Control Delay		36.0			38.5		2.7	14.1				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		36.0			38.5		2.7	14.1				
Queue Length 50th (ft)		161			92		4	916				
Queue Length 95th (ft)		241			151		m6	986				
Internal Link Dist (ft)		457			314			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		491			503		1116	3260				
Starvation Cap Reductn		0			0		0	0				
Spillback Cap Reductn		0			0		0	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.41			0.27		0.04	0.86				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 75

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Future Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.96		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.98	1.00				
Frt		1.00			0.94		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1815			1675		1736	5068				
Flt Permitted		0.89			1.00		0.95	1.00				
Satd. Flow (perm)		1637			1675		1736	5068				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	51	149	0	0	70	65	47	2793	25	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	200	0	0	134	0	47	2817	0	0	0	0
Confl. Peds. (#/hr)	33					33	6		68			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.2			40.2		88.0	88.0				
Effective Green, g (s)		42.0			42.0		90.0	90.0				
Actuated g/C Ratio		0.30			0.30		0.64	0.64				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		491			502		1116	3258				
v/s Ratio Prot					0.08			c0.56				
v/s Ratio Perm		c0.12					0.03					
v/c Ratio		0.41			0.27		0.04	0.86				
Uniform Delay, d1		39.1			37.3		9.2	20.1				
Progression Factor		0.85			1.00		0.29	0.56				
Incremental Delay, d2		2.4			1.3		0.1	2.6				
Delay (s)		35.5			38.6		2.7	13.9				
Level of Service		D			D		A	B				
Approach Delay (s)		35.5			38.6			13.7			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		16.1			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		86.0%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

No Build 2024
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Future Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			418			283			300	
Travel Time (s)		12.3			9.5			5.5			5.8	
Confl. Peds. (#/hr)	24					24	10		15			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	297	0	0	2746	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.50			0.60			0.67				
Control Delay		22.3			47.0			4.5				
Queue Delay		0.0			0.0			0.6				
Total Delay		22.3			47.0			5.1				
Queue Length 50th (ft)		66			228			61				
Queue Length 95th (ft)		106			330			72				
Internal Link Dist (ft)		459			338			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		401			499			4089				
Starvation Cap Reductn		0			0			835				
Spillback Cap Reductn		0			0			259				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.50			0.60			0.84				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Future Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.86				
Frpb, ped/bikes		1.00			0.97			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		1834			1654			6359				
Flt Permitted		0.72			1.00			1.00				
Satd. Flow (perm)		1340			1654			6359				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	156	0	0	121	176	99	2592	55	0	0	0
RTOR Reduction (vph)	0	0	0	0	3	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	200	0	0	294	0	0	2744	0	0	0	0
Confl. Peds. (#/hr)	24					24	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.1			40.1			88.3				
Effective Green, g (s)		42.0			42.0			90.0				
Actuated g/C Ratio		0.30			0.30			0.64				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		402			496			4087				
v/s Ratio Prot					c0.18							
v/s Ratio Perm		0.15						0.43				
v/c Ratio		0.50			0.59			0.67				
Uniform Delay, d1		40.3			41.7			15.7				
Progression Factor		0.46			1.00			0.25				
Incremental Delay, d2		3.5			5.1			0.6				
Delay (s)		21.9			46.9			4.5				
Level of Service		C			D			A				
Approach Delay (s)		21.9			46.9			4.5			0.0	
Approach LOS		C			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		9.4			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		75.7%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Future Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			396			298			283	
Travel Time (s)		12.3			9.0			5.8			5.5	
Confl. Peds. (#/hr)	16					16	6		13			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	355	0	0	191	336	0	2745	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	60.0	60.0			60.0	60.0	80.0	80.0				
Total Split (%)	42.9%	42.9%			42.9%	42.9%	57.1%	57.1%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.27			0.26	0.54		0.80				
Control Delay		15.4			29.3	33.7		16.0				
Queue Delay		0.0			0.1	0.0		0.4				
Total Delay		15.4			29.4	33.7		16.4				
Queue Length 50th (ft)		50			115	217		116				
Queue Length 95th (ft)		77			175	317		117				
Internal Link Dist (ft)		463			316			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		1315			745	620		3443				
Starvation Cap Reductn		0			0	0		227				
Spillback Cap Reductn		0			90	0		135				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.27			0.29	0.54		0.85				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
Splits and Phases: 22: Florida Ave & Twiggs St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Future Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.86				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		0.99				
Flt Protected		1.00			1.00	1.00		1.00				
Satd. Flow (prot)		3525			1863	1517		6334				
Flt Permitted		0.93			1.00	1.00		1.00				
Satd. Flow (perm)		3286			1863	1517		6334				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	21	334	0	0	191	336	63	2538	144	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	14	0	5	0	0	0	0
Lane Group Flow (vph)	0	355	0	0	191	322	0	2740	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		13			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		54.1			54.1	54.1		74.0				
Effective Green, g (s)		56.0			56.0	56.0		76.0				
Actuated g/C Ratio		0.40			0.40	0.40		0.54				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		1314			745	606		3438				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.11				0.21		0.43				
v/c Ratio		0.27			0.26	0.53		0.80				
Uniform Delay, d1		28.3			28.1	32.0		25.8				
Progression Factor		0.53			1.00	1.00		0.56				
Incremental Delay, d2		0.4			0.8	3.3		1.5				
Delay (s)		15.3			28.9	35.3		16.0				
Level of Service		B			C	D		B				
Approach Delay (s)		15.3			33.0			16.0			0.0	
Approach LOS		B			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		18.4			HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio		0.68										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)				8.0			
Intersection Capacity Utilization		78.9%			ICU Level of Service				D			
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Future Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			408			314			298	
Travel Time (s)		12.5			9.3			6.1			5.8	
Confl. Peds. (#/hr)	21					21	8		15			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	130	0	0	159	0	0	2805	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	-1.9	-1.9			-1.9		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.34	0.23			0.32		0.68					
Control Delay	37.4	34.2			39.5		17.6					
Queue Delay	0.0	0.0			0.0		1.0					
Total Delay	37.4	34.2			39.5		18.5					
Queue Length 50th (ft)	59	71			110		553					
Queue Length 95th (ft)	m111	129			176		598					
Internal Link Dist (ft)		468			328		234			218		
Turn Bay Length (ft)	75											
Base Capacity (vph)	309	558			494		4096					
Starvation Cap Reductn	0	0			0		924					
Spillback Cap Reductn	0	0			0		208					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.34	0.23			0.32		0.88					

Intersection Summary

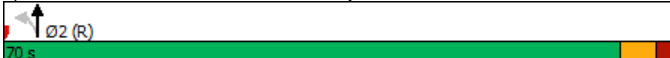
Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 3 (2%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



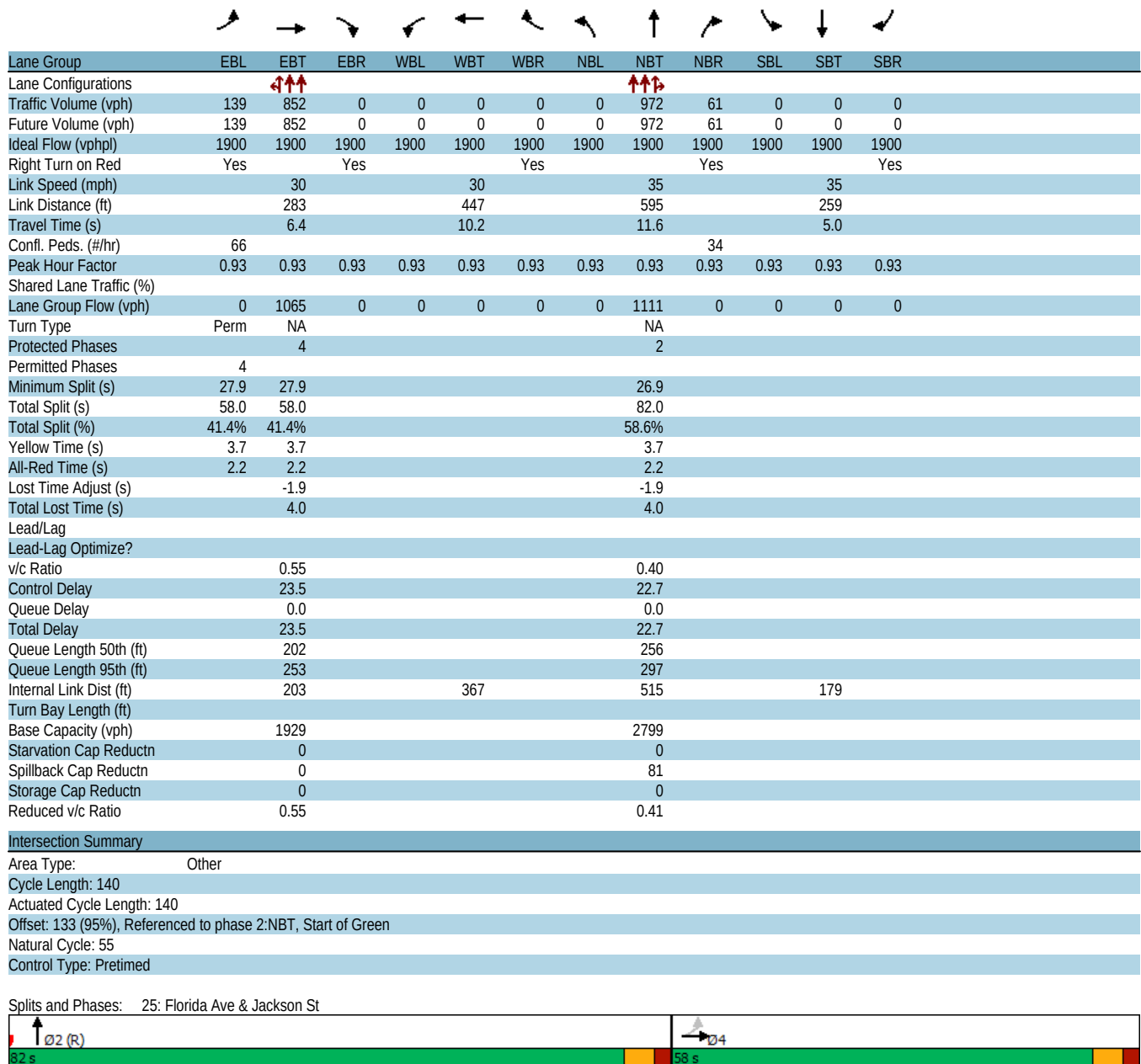
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Future Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.86				
Frbp, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.97	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1720	1863			1641			6369				
Flt Permitted	0.57	1.00			1.00			1.00				
Satd. Flow (perm)	1033	1863			1641			6369				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	105	130	0	0	55	104	72	2681	52	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	2	0	0	0	0
Lane Group Flow (vph)	105	130	0	0	157	0	0	2803	0	0	0	0
Confl. Peds. (#/hr)	21					21	8		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.1	40.1			40.1			88.0				
Effective Green, g (s)	42.0	42.0			42.0			90.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.64				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	309	558			492			4094				
v/s Ratio Prot		0.07			0.10							
v/s Ratio Perm	0.10							0.44				
v/c Ratio	0.34	0.23			0.32			0.68				
Uniform Delay, d1	38.2	36.9			37.9			15.9				
Progression Factor	0.88	0.89			1.00			1.04				
Incremental Delay, d2	2.8	0.9			1.7			0.9				
Delay (s)	36.6	33.8			39.6			17.4				
Level of Service	D	C			D			B				
Approach Delay (s)		35.0			39.6			17.4			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		19.8			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.57										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		74.6%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Future Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			427			259			314	
Travel Time (s)		12.4			9.7			5.0			6.1	
Confl. Peds. (#/hr)						33	10					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2043	0	127	938	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					70.0		70.0	70.0				
Total Split (%)					50.0%		50.0%	50.0%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					-1.7		-1.8	-1.8				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.71		0.15	0.39				
Control Delay					29.7		5.9	11.6				
Queue Delay					0.2		0.7	0.3				
Total Delay					29.9		6.7	11.9				
Queue Length 50th (ft)					406		12	75				
Queue Length 95th (ft)					449		23	100				
Internal Link Dist (ft)		466			347			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					2897		828	2397				
Starvation Cap Reductn					0		476	776				
Spillback Cap Reductn					221		0	573				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.76		0.36	0.58				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 24: Florida Ave & Kennedy Blvd												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Future Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.98	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6062		1734	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6062		1734	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	1544	499	127	938	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	41	0	11	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2002	0	116	938	0	0	0	0
Confl. Peds. (#/hr)					33		10					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					64.3		64.2	64.2				
Effective Green, g (s)					66.0		66.0	66.0				
Actuated g/C Ratio					0.47		0.47	0.47				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2857		817	2397				
v/s Ratio Prot					c0.33			c0.18				
v/s Ratio Perm							0.07					
v/c Ratio					0.70		0.14	0.39				
Uniform Delay, d1					29.2		21.0	24.0				
Progression Factor					1.00		0.32	0.46				
Incremental Delay, d2					1.5		0.3	0.4				
Delay (s)					30.7		7.0	11.6				
Level of Service					C		A	B				
Approach Delay (s)		0.0			30.7			11.0			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			23.9			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			65.3%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	139	852	0	0	0	0	0	972	61	0	0	0
Future Volume (vph)	139	852	0	0	0	0	0	972	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4961						5016				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4961						5016				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	149	916	0	0	0	0	0	1045	66	0	0	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1049	0	0	0	0	0	1106	0	0	0	0
Confl. Peds. (#/hr)	66								34			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1913						2794				
v/s Ratio Prot								0.22				
v/s Ratio Perm		0.21										
v/c Ratio		0.55						0.40				
Uniform Delay, d1		33.5						17.6				
Progression Factor		0.68						1.27				
Incremental Delay, d2		1.1						0.4				
Delay (s)		23.9						22.8				
Level of Service		C						C				
Approach Delay (s)		23.9			0.0			22.8			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		23.3							C			
HCM 2000 Volume to Capacity ratio		0.46										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)	8.0			
Intersection Capacity Utilization		54.8%						ICU Level of Service	A			
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
26: Florida Ave & Whiting St

No Build 2024
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↕↕			↕↕			↕↕↕	↕			
Traffic Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Future Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			299			397			595	
Travel Time (s)		12.6			6.8			7.7			11.6	
Confl. Peds. (#/hr)	130					130	45		103			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	227	0	0	336	0	0	180	5	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Minimum Split (s)	29.0	29.0			29.0		24.7	24.7	24.7			
Total Split (s)	60.0	60.0			60.0		80.0	80.0	80.0			
Total Split (%)	42.9%	42.9%			42.9%		57.1%	57.1%	57.1%			
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7	3.7			
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0	2.0			
Lost Time Adjust (s)		-2.0			-2.0		-1.7	-1.7				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.25			0.26		0.07	0.01				
Control Delay		18.8			25.5		26.9	5.8				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		18.8			25.5		26.9	5.8				
Queue Length 50th (ft)		41			94		35	1				
Queue Length 95th (ft)		54			132		56	m2				
Internal Link Dist (ft)		473			219		317			515		
Turn Bay Length (ft)								50				
Base Capacity (vph)		912			1306		2739	667				
Starvation Cap Reductn		0			0		0	0				
Spillback Cap Reductn		0			0		0	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.25			0.26		0.07	0.01				

Intersection Summary

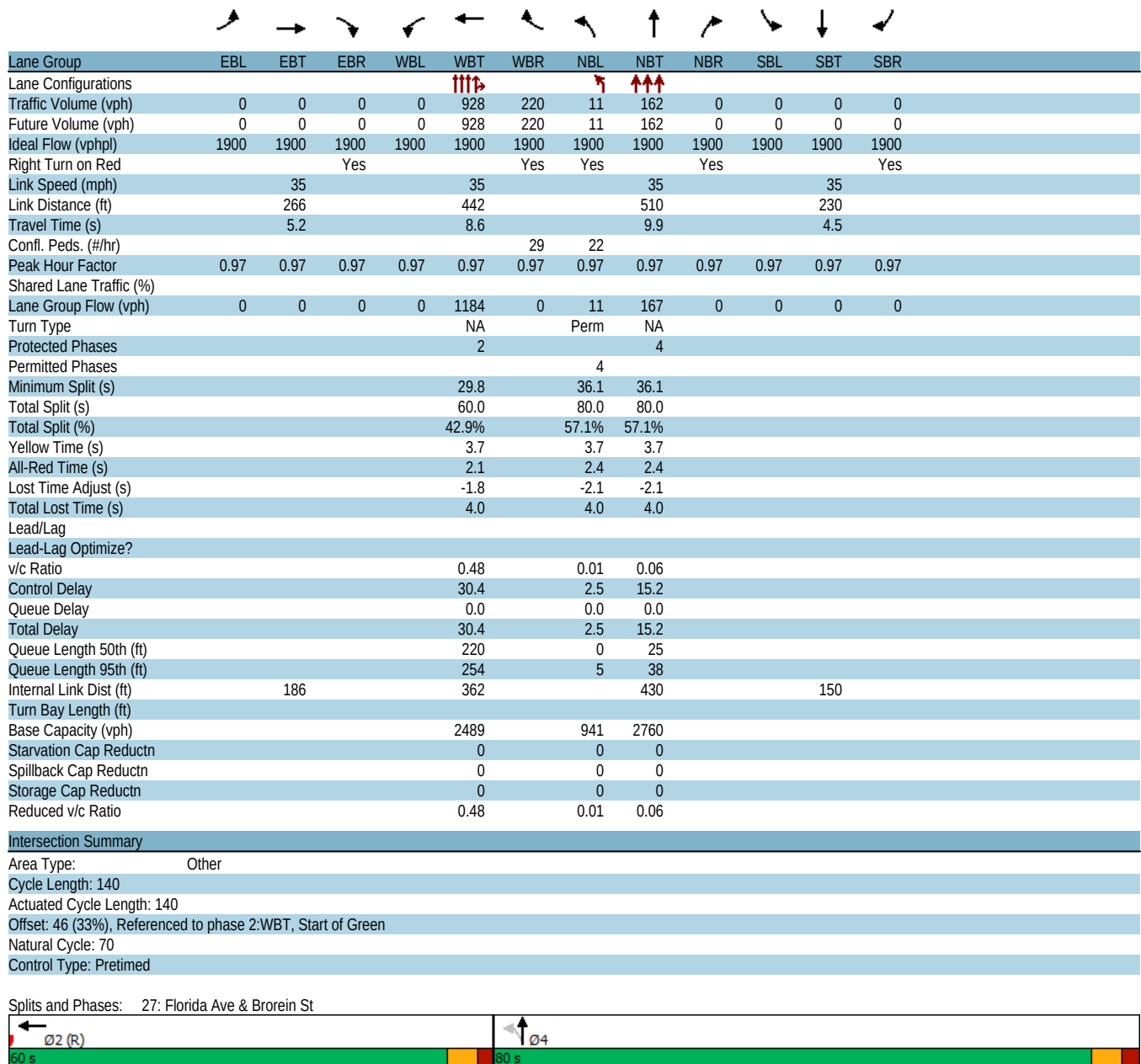
Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 121 (86%), Referenced to phase 2:NBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Future Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.95			0.95			0.91	1.00			
Frpb, ped/bikes		1.00			0.94			1.00	0.76			
Flpb, ped/bikes		0.94			1.00			0.99	1.00			
Frt		1.00			0.96			1.00	0.85			
Flt Protected		0.98			1.00			1.00	1.00			
Satd. Flow (prot)		3275			3210			5049	1211			
Flt Permitted		0.68			1.00			1.00	1.00			
Satd. Flow (perm)		2279			3210			5049	1211			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	95	132	0	0	255	81	6	174	5	0	0	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	2	0	0	0
Lane Group Flow (vph)	0	227	0	0	314	0	0	180	3	0	0	0
Confl. Peds. (#/hr)	130					130	45		103			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		54.0			54.0			74.3	74.3			
Effective Green, g (s)		56.0			56.0			76.0	76.0			
Actuated g/C Ratio		0.40			0.40			0.54	0.54			
Clearance Time (s)		6.0			6.0			5.7	5.7			
Lane Grp Cap (vph)		911			1284			2740	657			
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.10						0.04	0.00			
v/c Ratio		0.25			0.24			0.07	0.00			
Uniform Delay, d1		28.0			27.9			15.2	14.7			
Progression Factor		0.64			1.00			1.77	1.00			
Incremental Delay, d2		0.6			0.5			0.0	0.0			
Delay (s)		18.6			28.4			26.9	14.7			
Level of Service		B			C			C	B			
Approach Delay (s)		18.6			28.4			26.5			0.0	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM 2000 Control Delay		25.0			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.14										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		53.3%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	928	220	11	162	0	0	0	0
Future Volume (vph)	0	0	0	0	928	220	11	162	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		0.97	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6150		1715	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6150		1715	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	957	227	11	167	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	31	0	5	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1153	0	6	167	0	0	0	0
Confl. Peds. (#/hr)					29		22					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					56.0		76.0	76.0				
Actuated g/C Ratio					0.40		0.54	0.54				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2460		931	2760				
v/s Ratio Prot					c0.19			c0.03				
v/s Ratio Perm							0.00					
v/c Ratio					0.47		0.01	0.06				
Uniform Delay, d1					31.0		14.7	15.1				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.6		0.0	0.0				
Delay (s)					31.7		14.7	15.2				
Level of Service					C		B	B				
Approach Delay (s)		0.0			31.7			15.1			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			29.5		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.23									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			35.0%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	246	0	0	728	55
Future Volume (vph)	0	246	0	0	728	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.92	0.92	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	273	0	0	809	61
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	988	0	0	974	0
Future Volume (vph)	0	988	0	0	974	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1074	0	0	1059	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				  		
Traffic Volume (vph)	0	0	416	900	0	0
Future Volume (vph)	0	0	416	900	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	337			171	309	
Travel Time (s)	7.7			3.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	452	978	0	0
Sign Control	Stop			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

No Build 2024 PM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑↑↑	
Traffic Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Future Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			246	
Travel Time (s)		14.9			10.4			37.4			4.8	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	314	126	116	181	0	0	0	0	0	1332	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	
Total Split (s)		60.0	60.0	60.0	60.0					80.0	80.0	
Total Split (%)		42.9%	42.9%	42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0						-2.4	
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.42	0.18	0.36	0.24						0.49	
Control Delay		32.5	9.3	19.6	16.9						20.6	
Queue Delay		0.1	0.0	0.0	0.0						0.0	
Total Delay		32.6	9.3	19.6	16.9						20.6	
Queue Length 50th (ft)		205	18	34	52						266	
Queue Length 95th (ft)		290	61	55	77						306	
Internal Link Dist (ft)		576			379			1841			166	
Turn Bay Length (ft)				150								
Base Capacity (vph)		745	689	320	745						2718	
Starvation Cap Reductn		0	0	0	0						0	
Spillback Cap Reductn		58	0	0	0						0	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.46	0.18	0.36	0.24						0.49	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 100 (71%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Movement												
Lane Configurations		↑	↑	↑	↑						↑↑↑	
Traffic Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Future Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Frpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						0.99	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1583	1770	1863						4998	
Flt Permitted		1.00	1.00	0.43	1.00						0.99	
Satd. Flow (perm)		1863	1583	801	1863						4998	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	314	126	116	181	0	0	0	0	282	1003	47
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	314	70	116	181	0	0	0	0	0	1329	0
Confl. Peds. (#/hr)										1		1
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		54.0	54.0	54.0	54.0						73.6	
Effective Green, g (s)		56.0	56.0	56.0	56.0						76.0	
Actuated g/C Ratio		0.40	0.40	0.40	0.40						0.54	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		745	633	320	745						2713	
v/s Ratio Prot		c0.17			0.10							
v/s Ratio Perm			0.04	0.14							0.27	
v/c Ratio		0.42	0.11	0.36	0.24						0.49	
Uniform Delay, d1		30.3	26.4	29.5	27.9						19.9	
Progression Factor		1.00	1.00	0.55	0.57						1.00	
Incremental Delay, d2		1.7	0.4	3.0	0.7						0.6	
Delay (s)		32.1	26.7	19.1	16.7						20.6	
Level of Service		C	C	B	B						C	
Approach Delay (s)		30.5			17.7			0.0			20.6	
Approach LOS		C			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			22.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			60.2%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↩	↩↩						↩↩↩	↩
Traffic Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Future Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		391			229			247			1921	
Travel Time (s)		8.9			5.2			4.8			37.4	
Confl. Peds. (#/hr)												1
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)				11%								
Lane Group Flow (vph)	0	0	0	35	1705	0	0	0	0	0	799	559
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Minimum Split (s)				26.7	26.7						31.0	31.0
Total Split (s)				100.0	100.0						40.0	40.0
Total Split (%)				71.4%	71.4%						28.6%	28.6%
Yellow Time (s)				3.7	3.7						4.0	4.0
All-Red Time (s)				2.0	2.0						2.0	2.0
Lost Time Adjust (s)				-1.7	-1.7						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.03	0.73						0.61	1.30
Control Delay				3.6	16.0						38.7	183.3
Queue Delay				0.0	0.0						52.4	0.0
Total Delay				3.6	16.0						91.2	183.3
Queue Length 50th (ft)				3	490						243	~630
Queue Length 95th (ft)				15	578						293	#863
Internal Link Dist (ft)		311			149			167			1841	
Turn Bay Length (ft)												475
Base Capacity (vph)				1111	2331						1307	430
Starvation Cap Reductn				0	0						0	0
Spillback Cap Reductn				3	0						683	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				0.03	0.73						1.28	1.30

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green
Natural Cycle: 80
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 2: Tampa St & Kay Street



Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Future Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.91	0.91						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1610	3390						5085	1562
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1610	3390						5085	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	39	1701	0	0	0	0	0	799	559
RTOR Reduction (vph)	0	0	0	7	7	0	0	0	0	0	0	29
Lane Group Flow (vph)	0	0	0	28	1698	0	0	0	0	0	799	530
Confl. Peds. (#/hr)												1
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Actuated Green, G (s)				94.3	94.3						34.0	34.0
Effective Green, g (s)				96.0	96.0						36.0	36.0
Actuated g/C Ratio				0.69	0.69						0.26	0.26
Clearance Time (s)				5.7	5.7						6.0	6.0
Lane Grp Cap (vph)				1104	2324						1307	401
v/s Ratio Prot				0.02	c0.50						0.16	
v/s Ratio Perm												c0.34
v/c Ratio				0.03	0.73						0.61	1.32
Uniform Delay, d1				7.0	13.9						45.8	52.0
Progression Factor				1.00	1.00						0.80	0.81
Incremental Delay, d2				0.0	2.1						2.0	160.3
Delay (s)				7.1	15.9						38.6	202.1
Level of Service				A	B						D	F
Approach Delay (s)		0.0			15.7			0.0			105.9	
Approach LOS		A			B			A			F	
Intersection Summary												
HCM 2000 Control Delay			55.3			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			75.3%			ICU Level of Service				D		
Analysis Period (min)			15									

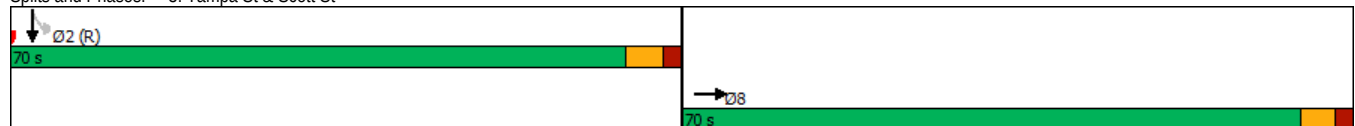
c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

No Build 2024
Timing Plan: PM PEAK

	↖	→	↘	↙	←	↖	↙	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕									↕↕↕	
Traffic Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Future Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		385			62			346			247	
Travel Time (s)		8.8			1.4			6.7			4.8	
Confl. Peds. (#/hr)			2									
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	859	0	0	0	0	0	0	0	0	816	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		-1.7									-2.0	
Total Lost Time (s)		4.0									4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.52									0.34	
Control Delay		27.1									17.7	
Queue Delay		4.6									52.6	
Total Delay		31.7									70.2	
Queue Length 50th (ft)		280									275	
Queue Length 95th (ft)		342									321	
Internal Link Dist (ft)		305			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1653									2406	
Starvation Cap Reductn		0									1744	
Spillback Cap Reductn		706									4	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.91									1.23	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	62 (44%), Referenced to phase 2:SBTL, Start of Green											
Natural Cycle:	50											
Control Type:	Pretimed											

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									 	
Traffic Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Future Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.99									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3501									5033	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3501									5033	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	803	56	0	0	0	0	0	0	169	647	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	33	0
Lane Group Flow (vph)	0	855	0	0	0	0	0	0	0	0	783	0
Confl. Peds. (#/hr)			2									
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		66.0									66.0	
Actuated g/C Ratio		0.47									0.47	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1650									2372	
v/s Ratio Prot		c0.24										
v/s Ratio Perm											0.16	
v/c Ratio		0.52									0.33	
Uniform Delay, d1		25.9									23.2	
Progression Factor		1.00									0.81	
Incremental Delay, d2		1.2									0.3	
Delay (s)		27.0									19.1	
Level of Service		C									B	
Approach Delay (s)		27.0			0.0			0.0			19.1	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			23.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			45.0%			ICU Level of Service				A		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

No Build 2024
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Future Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			5.9			2.5	
Confl. Peds. (#/hr)			24	24						53		25
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	96	203	0	0	0	0	0	1988	100
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Minimum Split (s)		25.8		25.8	25.8					26.8	26.8	26.8
Total Split (s)		60.0		60.0	60.0					80.0	80.0	80.0
Total Split (%)		42.9%		42.9%	42.9%					57.1%	57.1%	57.1%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	3.7
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	2.1
Lost Time Adjust (s)		-1.8		-1.8	-1.8					-1.8	-1.8	-1.8
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.30		0.24	0.27						0.72	0.12
Control Delay		29.1		24.2	24.1						21.4	2.0
Queue Delay		0.1		0.1	0.0						50.9	0.0
Total Delay		29.2		24.4	24.1						72.3	2.0
Queue Length 50th (ft)		120		75	160						571	0
Queue Length 95th (ft)		185		m131	242						627	18
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		681		400	745						2750	810
Starvation Cap Reductn		0		0	0						0	0
Spillback Cap Reductn		70		40	0						1941	0
Storage Cap Reductn		0		0	0						0	0
Reduced v/c Ratio		0.33		0.27	0.27						2.46	0.12

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 85.8 (61%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Future Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						0.91	1.00
Frpb, ped/bikes		0.97		1.00	1.00						1.00	0.90
Flpb, ped/bikes		1.00		0.97	1.00						1.00	1.00
Frt		0.94		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1693		1714	1863						5068	1422
Flt Permitted		1.00		0.56	1.00						1.00	1.00
Satd. Flow (perm)		1693		1002	1863						5068	1422
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	107	96	96	203	0	0	0	0	29	1959	100
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	199	0	96	203	0	0	0	0	0	1988	61
Confl. Peds. (#/hr)			24	24						53		25
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		54.2		54.2	54.2						74.2	74.2
Effective Green, g (s)		56.0		56.0	56.0						76.0	76.0
Actuated g/C Ratio		0.40		0.40	0.40						0.54	0.54
Clearance Time (s)		5.8		5.8	5.8						5.8	5.8
Lane Grp Cap (vph)		677		400	745						2751	771
v/s Ratio Prot		c0.12			0.11							
v/s Ratio Perm				0.10							0.39	0.04
v/c Ratio		0.29		0.24	0.27						0.72	0.08
Uniform Delay, d1		28.6		27.9	28.3						24.1	15.3
Progression Factor		1.00		0.80	0.81						0.81	0.41
Incremental Delay, d2		1.1		1.3	0.8						1.7	0.2
Delay (s)		29.7		23.7	23.8						21.2	6.4
Level of Service		C		C	C						C	A
Approach Delay (s)		29.7			23.8			0.0			20.5	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			21.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			84.2%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

No Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Future Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		302			553			286			301	
Travel Time (s)		6.9			12.6			5.6			5.9	
Confl. Peds. (#/hr)			31	31						63		43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	407	0	75	200	0	0	0	0	0	2066	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		60.0		60.0	60.0					80.0	80.0	
Total Split (%)		42.9%		42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.56		0.30	0.27						0.76	
Control Delay		35.6		19.5	16.7						55.5	
Queue Delay		0.0		0.0	0.0						49.4	
Total Delay		35.6		19.5	16.7						104.9	
Queue Length 50th (ft)		280		19	51						675	
Queue Length 95th (ft)		389		45	95						728	
Internal Link Dist (ft)		222			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		723		246	745						2703	
Starvation Cap Reductn		0		0	0						1635	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.56		0.30	0.27						1.93	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 20 (14%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Future Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.98		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1798		1770	1863						4975	
Flt Permitted		1.00		0.33	1.00						1.00	
Satd. Flow (perm)		1798		617	1863						4975	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	340	67	75	200	0	0	0	0	121	1911	34
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	403	0	75	200	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			31	31						63		43
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		54.3		54.3	54.3						74.3	
Effective Green, g (s)		56.0		56.0	56.0						76.0	
Actuated g/C Ratio		0.40		0.40	0.40						0.54	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		719		246	745						2700	
v/s Ratio Prot		c0.22			0.11							
v/s Ratio Perm				0.12							0.42	
v/c Ratio		0.56		0.30	0.27						0.76	
Uniform Delay, d1		32.5		28.7	28.2						25.0	
Progression Factor		1.00		0.56	0.56						2.14	
Incremental Delay, d2		3.1		2.9	0.8						1.5	
Delay (s)		35.6		18.9	16.5						55.1	
Level of Service		D		B	B						E	
Approach Delay (s)		35.6			17.2			0.0			55.1	
Approach LOS		D			B			A			E	
Intersection Summary												
HCM 2000 Control Delay			48.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			86.6%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Future Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			5.9			5.6	
Confl. Peds. (#/hr)			53	53						168		62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	189	0	0	0	0	0	2044	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		-1.8			-1.8						-1.9	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.25			0.41						0.65	
Control Delay		34.1			40.9						4.7	
Queue Delay		0.0			0.0						0.3	
Total Delay		34.1			40.9						4.9	
Queue Length 50th (ft)		77			123						78	
Queue Length 95th (ft)		133			208						79	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		517			458						3151	
Starvation Cap Reductn		0			0						435	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.25			0.41						0.75	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Future Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.96			1.00						1.00	
Flpb, ped/bikes		1.00			0.97						0.97	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1692			1774						4901	
Flt Permitted		1.00			0.85						1.00	
Satd. Flow (perm)		1692			1527						4901	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	81	47	68	121	0	0	0	0	114	1899	31
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	118	0	0	189	0	0	0	0	0	2043	0
Confl. Peds. (#/hr)			53	53						168		62
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		42.0			42.0						90.0	
Actuated g/C Ratio		0.30			0.30						0.64	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		507			458						3150	
v/s Ratio Prot		0.07										
v/s Ratio Perm					0.12						0.42	
v/c Ratio		0.23			0.41						0.65	
Uniform Delay, d1		36.9			39.1						15.3	
Progression Factor		1.00			0.96						0.26	
Incremental Delay, d2		1.1			2.7						0.7	
Delay (s)		37.9			40.3						4.6	
Level of Service		D			D						A	
Approach Delay (s)		37.9			40.3			0.0			4.6	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.3		HCM 2000 Level of Service					A		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			74.5%		ICU Level of Service					D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Future Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		286			539			272			302	
Travel Time (s)		6.5			12.3			5.3			5.9	
Confl. Peds. (#/hr)			19	19						54		36
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	300	0	0	0	0	0	2087	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7			-1.7						-1.7	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.41			0.82						0.63	
Control Delay		40.8			58.6						3.1	
Queue Delay		0.0			0.0						0.2	
Total Delay		40.8			58.6						3.3	
Queue Length 50th (ft)		139			199						47	
Queue Length 95th (ft)		216			#399						51	
Internal Link Dist (ft)		206			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		491			366						3327	
Starvation Cap Reductn		0			0						272	
Spillback Cap Reductn		1			0						366	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.41			0.82						0.70	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

No Build 2024
Timing Plan: PM PEAK

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Future Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.98			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1725			1826						5010	
Flt Permitted		1.00			0.71						1.00	
Satd. Flow (perm)		1725			1315						5010	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	121	82	81	219	0	0	0	0	67	1969	51
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	191	0	0	300	0	0	0	0	0	2085	0
Confl. Peds. (#/hr)			19	19						54		36
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						91.3	
Effective Green, g (s)		39.0			39.0						93.0	
Actuated g/C Ratio		0.28			0.28						0.66	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		480			366						3328	
v/s Ratio Prot		0.11										
v/s Ratio Perm					0.23						0.42	
v/c Ratio		0.40			0.82						0.63	
Uniform Delay, d1		41.0			47.2						13.5	
Progression Factor		1.00			0.84						0.18	
Incremental Delay, d2		2.5			18.1						0.7	
Delay (s)		43.5			57.6						3.1	
Level of Service		D			E						A	
Approach Delay (s)		43.5			57.6			0.0			3.1	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			12.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			79.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

No Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Future Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		284			543			313			272	
Travel Time (s)		6.5			12.3			6.1			5.3	
Confl. Peds. (#/hr)			8	8						31		74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	531	0	146	214	0	0	0	0	0	2086	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.97		2.75	0.38						0.65	
Control Delay		79.9		859.0	33.3						9.4	
Queue Delay		0.0		0.0	0.0						1.1	
Total Delay		79.9		859.0	33.3						10.6	
Queue Length 50th (ft)		471		~230	164						325	
Queue Length 95th (ft)		#709		m#337	243						316	
Internal Link Dist (ft)		204			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		545		53	558						3206	
Starvation Cap Reductn		0		0	0						800	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.97		2.75	0.38						0.87	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 34 (24%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 8: Tampa St & Twiggs St												
 02 (R)										 04		
84 s										46 s		

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Future Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1790		1770	1863						4987	
Flt Permitted		1.00		0.10	1.00						0.99	
Satd. Flow (perm)		1790		177	1863						4987	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	404	127	146	214	0	0	0	0	297	1765	24
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	523	0	146	214	0	0	0	0	0	2085	0
Confl. Peds. (#/hr)			8	8						31		74
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.3		40.3	40.3						88.1	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		537		53	558						3205	
v/s Ratio Prot		0.29			0.11							
v/s Ratio Perm				0.82							0.42	
v/c Ratio		0.97		2.75	0.38						0.65	
Uniform Delay, d1		48.4		49.0	38.8						15.3	
Progression Factor		1.00		0.85	0.80						0.56	
Incremental Delay, d2		32.8		839.6	2.0						0.8	
Delay (s)		81.2		881.4	32.9						9.4	
Level of Service		F		F	C						A	
Approach Delay (s)		81.2			377.0			0.0			9.4	
Approach LOS		F			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			66.6			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.32									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			84.1%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

No Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Future Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		397			548			309			313	
Travel Time (s)		9.0			12.5			6.0			6.1	
Confl. Peds. (#/hr)			43	43						36		75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	243	0	96	69	0	0	0	0	0	2180	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.49		0.41	0.12						0.68	
Control Delay		42.8		29.5	22.4						4.5	
Queue Delay		0.0		0.0	0.0						0.4	
Total Delay		42.8		29.5	22.4						4.9	
Queue Length 50th (ft)		176		40	25						112	
Queue Length 95th (ft)		263		m93	m46						m108	
Internal Link Dist (ft)		317			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		491		236	558						3225	
Starvation Cap Reductn		0		0	0						491	
Spillback Cap Reductn		0		0	0						495	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.49		0.41	0.12						0.80	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m	Volume for 95th percentile queue is metered by upstream signal.											
Splits and Phases: 9: Tampa St & Madison St												
												

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Future Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.95	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1618		1688	1863						5017	
Flt Permitted		1.00		0.44	1.00						1.00	
Satd. Flow (perm)		1618		790	1863						5017	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	103	140	96	69	0	0	0	0	72	2067	41
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	237	0	96	69	0	0	0	0	0	2179	0
Confl. Peds. (#/hr)			43	43						36		75
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.1		40.1	40.1						88.2	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		485		237	558						3225	
v/s Ratio Prot		c0.15			0.04							
v/s Ratio Perm				0.12							0.43	
v/c Ratio		0.49		0.41	0.12						0.68	
Uniform Delay, d1		40.2		39.0	35.6						15.8	
Progression Factor		1.00		0.61	0.61						0.24	
Incremental Delay, d2		3.5		4.8	0.4						0.7	
Delay (s)		43.7		28.6	22.1						4.5	
Level of Service		D		C	C						A	
Approach Delay (s)		43.7			25.9			0.0			4.5	
Approach LOS		D			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.5			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			74.5%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↰↰↰						↰↰↰	↰
Traffic Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Future Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		358			546			274			309	
Travel Time (s)		8.1			12.4			5.3			6.0	
Confl. Peds. (#/hr)				46								79
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	285	1656	0	0	0	0	0	1834	252
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Minimum Split (s)				25.8	25.8						26.8	26.8
Total Split (s)				73.0	73.0						67.0	67.0
Total Split (%)				52.1%	52.1%						47.9%	47.9%
Yellow Time (s)				3.7	3.7						3.7	3.7
All-Red Time (s)				2.1	2.1						2.1	2.1
Lost Time Adjust (s)				-1.8	-1.8						-1.8	-1.8
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.41	0.70						0.80	0.42
Control Delay				4.7	8.3						22.0	16.7
Queue Delay				63.2	2.4						5.7	1.7
Total Delay				67.9	10.8						27.6	18.4
Queue Length 50th (ft)				22	109						275	82
Queue Length 95th (ft)				m29	140						402	96
Internal Link Dist (ft)		278			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				688	2372						2288	605
Starvation Cap Reductn				0	561						402	208
Spillback Cap Reductn				465	540						37	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				1.28	0.91						0.97	0.63

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

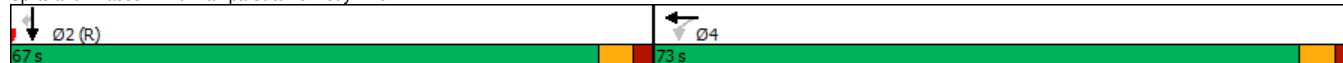
Offset: 28 (20%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 55

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Future Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1375	4792						5085	1319
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1375	4792						5085	1319
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	317	1624	0	0	0	0	0	1834	252
RTOR Reduction (vph)	0	0	0	11	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	274	1645	0	0	0	0	0	1834	240
Confl. Peds. (#/hr)				46							79	
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Actuated Green, G (s)				67.2	67.2						61.2	61.2
Effective Green, g (s)				69.0	69.0						63.0	63.0
Actuated g/C Ratio				0.49	0.49						0.45	0.45
Clearance Time (s)				5.8	5.8						5.8	5.8
Lane Grp Cap (vph)				677	2361						2288	593
v/s Ratio Prot											c0.36	
v/s Ratio Perm				0.20	0.34							0.18
v/c Ratio				0.40	0.70						0.80	0.40
Uniform Delay, d1				22.5	27.4						33.1	25.9
Progression Factor				0.16	0.26						0.59	0.63
Incremental Delay, d2				1.2	1.2						2.3	1.5
Delay (s)				4.9	8.4						21.8	17.8
Level of Service				A	A						C	B
Approach Delay (s)		0.0			7.9			0.0			21.3	
Approach LOS		A			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			14.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			66.6%			ICU Level of Service			C			
Analysis Period (min)			15									

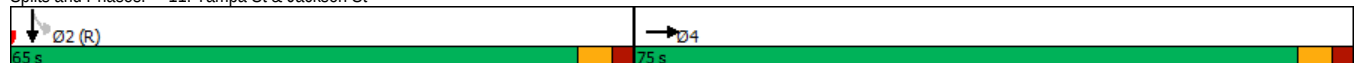
c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↓	↑↑↑	
Traffic Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Future Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		291			260			589			274	
Travel Time (s)		6.6			5.9			11.5			5.3	
Confl. Peds. (#/hr)			106							87		
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	1153	0	0	0	0	0	0	0	506	1775	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		75.0								65.0	65.0	
Total Split (%)		53.6%								46.4%	46.4%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		-2.0								-2.0	-2.0	
Total Lost Time (s)		4.0								4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.48								0.84	0.85	
Control Delay		23.3								31.1	30.3	
Queue Delay		0.0								3.8	29.5	
Total Delay		23.3								34.9	59.8	
Queue Length 50th (ft)		243								184	286	
Queue Length 95th (ft)		267								245	311	
Internal Link Dist (ft)		211			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2383								604	2091	
Starvation Cap Reductn		0								48	413	
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.48								0.91	1.06	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	10 (7%), Referenced to phase 2:SBTL, Start of Green											
Natural Cycle:	60											
Control Type:	Pretimed											

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Future Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.86	0.86	
Frpb, ped/bikes		0.95								1.00	1.00	
Flpb, ped/bikes		1.00								0.83	0.99	
Frt		0.97								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4696								1257	4772	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4696								1257	4772	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	910	243	0	0	0	0	0	0	562	1719	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	57	13	0
Lane Group Flow (vph)	0	1151	0	0	0	0	0	0	0	449	1762	0
Confl. Peds. (#/hr)			106							87		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		69.0								59.0	59.0	
Effective Green, g (s)		71.0								61.0	61.0	
Actuated g/C Ratio		0.51								0.44	0.44	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2381								547	2079	
v/s Ratio Prot		c0.24										
v/s Ratio Perm										0.36	0.37	
v/c Ratio		0.48								0.82	0.85	
Uniform Delay, d1		22.5								34.7	35.3	
Progression Factor		1.00								0.75	0.77	
Incremental Delay, d2		0.7								9.4	3.2	
Delay (s)		23.2								35.3	30.3	
Level of Service		C								D	C	
Approach Delay (s)		23.2			0.0			0.0			31.4	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay		28.7								C		
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0								8.0		
Intersection Capacity Utilization		66.6%								C		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

No Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Future Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		243			553			171			589	
Travel Time (s)		5.5			12.6			3.3			11.5	
Confl. Peds. (#/hr)			182	182						42		132
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	237	0	169	182	0	0	0	0	0	176	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.19		0.53	0.26						0.06	
Control Delay		25.9		37.7	28.1						18.6	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		25.9		37.7	28.1						18.6	
Queue Length 50th (ft)		65		102	100						26	
Queue Length 95th (ft)		96		198	142						m31	
Internal Link Dist (ft)		163			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1224		321	705						2855	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.19		0.53	0.26						0.06	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 120 (86%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 12: Tampa St & Whiting St												
 02 (R)								 04				
83 s								57 s				

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Future Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.93		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.79	1.00						1.00	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3188		1400	1863						5058	
Flt Permitted		1.00		0.58	1.00						0.99	
Satd. Flow (perm)		3188		849	1863						5058	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	185	52	169	182	0	0	0	0	19	157	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	219	0	169	182	0	0	0	0	0	176	0
Confl. Peds. (#/hr)			182	182						42		132
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2		2
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		53.0		53.0	53.0						79.0	
Actuated g/C Ratio		0.38		0.38	0.38						0.56	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1206		321	705						2854	
v/s Ratio Prot		0.07			0.10						c0.03	
v/s Ratio Perm				c0.20								
v/c Ratio		0.18		0.53	0.26						0.06	
Uniform Delay, d1		29.0		33.8	30.0						13.8	
Progression Factor		1.00		0.90	0.90						1.34	
Incremental Delay, d2		0.3		6.1	0.9						0.0	
Delay (s)		29.4		36.6	27.8						18.5	
Level of Service		C		D	C						B	
Approach Delay (s)		29.4			32.0			0.0			18.5	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay		28.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.25										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		55.0%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Future Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	26					26	12		7			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	395	0	0	310	0	0	1278	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.1	22.1			22.1		30.3	30.3				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.3	2.3				
Lost Time Adjust (s)	-2.1	-2.1			-2.1			-2.3				
Total Lost Time (s)	4.0	4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.22	0.56			0.46			0.45				
Control Delay	30.6	37.6			33.3			14.3				
Queue Delay	0.0	1.2			0.0			0.0				
Total Delay	30.6	38.8			33.3			14.3				
Queue Length 50th (ft)	30	337			198			188				
Queue Length 95th (ft)	68	446			287			261				
Internal Link Dist (ft)		379			809			935			162	
Turn Bay Length (ft)	100											
Base Capacity (vph)	288	705			669			2837				
Starvation Cap Reductn	0	142			0			0				
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.22	0.70			0.46			0.45				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 107 (76%), Referenced to phase 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Future Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frpb, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.98	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.99				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1726	1863			1735			5018				
Flt Permitted	0.42	1.00			1.00			1.00				
Satd. Flow (perm)	762	1863			1735			5018				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	64	395	0	0	209	101	22	1176	80	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	5	0	0	0	0
Lane Group Flow (vph)	64	395	0	0	298	0	0	1273	0	0	0	0
Confl. Peds. (#/hr)	26					26	12		7			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	50.9	50.9			50.9			76.7				
Effective Green, g (s)	53.0	53.0			53.0			79.0				
Actuated g/C Ratio	0.38	0.38			0.38			0.56				
Clearance Time (s)	6.1	6.1			6.1			6.3				
Lane Grp Cap (vph)	288	705			656			2831				
v/s Ratio Prot		c0.21			0.17							
v/s Ratio Perm	0.08							0.25				
v/c Ratio	0.22	0.56			0.45			0.45				
Uniform Delay, d1	29.5	34.3			32.6			17.8				
Progression Factor	0.95	0.99			1.00			0.78				
Incremental Delay, d2	1.6	2.9			2.3			0.5				
Delay (s)	29.8	37.0			34.9			14.3				
Level of Service	C	D			C			B				
Approach Delay (s)		36.0			34.9			14.3			0.0	
Approach LOS		D			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.49										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		60.2%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

No Build 2024
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Future Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		183			365			1146			1015	
Travel Time (s)		4.2			8.3			22.3			19.8	
Confl. Peds. (#/hr)	7					7	14		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	72	0	0	148	0	0	1305	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	-2.4	-2.4			-2.4		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.41	0.13			0.27		0.44					
Control Delay	23.8	18.7			13.5		8.4					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	23.8	18.7			13.5		8.4					
Queue Length 50th (ft)	50	22			29		171					
Queue Length 95th (ft)	100	51			71		m174					
Internal Link Dist (ft)		103			285		1066			935		
Turn Bay Length (ft)	50											
Base Capacity (vph)	361	558			546		2970					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.41	0.13			0.27		0.44					

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 17 (24%), Referenced to phase 6:NBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Future Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	0.99	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1757	1863			1690			5067				
Flt Permitted	0.65	1.00			1.00			1.00				
Satd. Flow (perm)	1203	1863			1690			5067				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	72	0	0	59	89	28	1264	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	39	0	0	1	0	0	0	0
Lane Group Flow (vph)	148	72	0	0	109	0	0	1304	0	0	0	0
Confl. Peds. (#/hr)	7					7	14		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	21.0	21.0			21.0			41.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.59				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	360	558			507			2967				
v/s Ratio Prot		0.04			0.06							
v/s Ratio Perm	0.12							0.26				
v/c Ratio	0.41	0.13			0.21			0.44				
Uniform Delay, d1	19.6	17.8			18.3			8.1				
Progression Factor	1.00	1.00			1.00			1.04				
Incremental Delay, d2	3.4	0.5			1.0			0.0				
Delay (s)	23.0	18.3			19.3			8.4				
Level of Service	C	B			B			A				
Approach Delay (s)		21.5			19.3			8.4			0.0	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.1			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.43										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		54.9%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

No Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑↑				
Traffic Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Future Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			481			701			1146	
Travel Time (s)		8.4			10.9			13.7			22.3	
Confl. Peds. (#/hr)									5			
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1554	0	0	0	0	0	2664	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases		8										
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		-1.7						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.15						0.98				
Control Delay		106.8						21.3				
Queue Delay		0.0						0.2				
Total Delay		106.8						21.5				
Queue Length 50th (ft)		~868						429				
Queue Length 95th (ft)		#1012						#81				
Internal Link Dist (ft)		291			401			621		1066		
Turn Bay Length (ft)												
Base Capacity (vph)		1357						2732				
Starvation Cap Reductn		0						4				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.15						0.98				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 65 (46%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						 				
Traffic Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Future Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3484						4885				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3484						4885				
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	493	1061	0	0	0	0	0	2066	598	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	1540	0	0	0	0	0	2652	0	0	0	0
Confl. Peds. (#/hr)												
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		52.3						76.0				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1343						2721				
v/s Ratio Prot								c0.54				
v/s Ratio Perm		0.44										
v/c Ratio		1.15						0.97				
Uniform Delay, d1		43.0						30.0				
Progression Factor		0.80						0.40				
Incremental Delay, d2		74.9						8.5				
Delay (s)		109.5						20.5				
Level of Service		F						C				
Approach Delay (s)		109.5			0.0			20.5			0.0	
Approach LOS		F			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		53.3										
HCM 2000 Volume to Capacity ratio		1.04										
Actuated Cycle Length (s)		140.0										
Intersection Capacity Utilization		97.9%										
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Future Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		213			171			476			701	
Travel Time (s)		4.8			3.9			10.8			15.9	
Confl. Peds. (#/hr)	11					11	9		8			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		8						6				
Permitted Phases	8						6					
Minimum Split (s)	23.4	23.4					24.0	24.0				
Total Split (s)	43.0	43.0					97.0	97.0				
Total Split (%)	30.7%	30.7%					69.3%	69.3%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		-1.4						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.20						0.81				
Control Delay		39.9						4.1				
Queue Delay		0.0						0.5				
Total Delay		39.9						4.5				
Queue Length 50th (ft)		67						67				
Queue Length 95th (ft)		116						86				
Internal Link Dist (ft)		133			91			396			621	
Turn Bay Length (ft)												
Base Capacity (vph)		492						3376				
Starvation Cap Reductn		0						178				
Spillback Cap Reductn		0						242				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.20						0.87				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 41 (29%), Referenced to phase 2: and 6:NBTL, Start of Green												
Natural Cycle: 65												
Control Type: Pretimed												

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Future Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Flpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1767						5078				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1767						5078				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	33	0	0	0	0	23	2692	7	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Confl. Peds. (#/hr)	11					11	9		8			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		8						6				
Permitted Phases	8						6					
Actuated Green, G (s)		37.6						91.0				
Effective Green, g (s)		39.0						93.0				
Actuated g/C Ratio		0.28						0.66				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		492						3373				
v/s Ratio Prot												
v/s Ratio Perm		0.05						0.54				
v/c Ratio		0.20						0.81				
Uniform Delay, d1		38.5						17.0				
Progression Factor		1.00						0.17				
Incremental Delay, d2		0.9						1.2				
Delay (s)		39.4						4.1				
Level of Service		D						A				
Approach Delay (s)		39.4			0.0			4.1			0.0	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		5.3										
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		140.0										
Intersection Capacity Utilization		66.5%										
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↔			↔			↔↔↔				
Traffic Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Future Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		293			280			292			476	
Travel Time (s)		6.7			6.4			6.6			9.3	
Confl. Peds. (#/hr)	5					5	10		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	90	0	0	2835	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-2.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.15			0.20			0.84				
Control Delay		39.5			38.7			6.0				
Queue Delay		0.0			0.0			0.3				
Total Delay		39.5			38.7			6.3				
Queue Length 50th (ft)		42			61			78				
Queue Length 95th (ft)		81			108			82				
Internal Link Dist (ft)		213			200			212			396	
Turn Bay Length (ft)												
Base Capacity (vph)		396			453			3372				
Starvation Cap Reductn		0			0			121				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.15			0.20			0.87				

Intersection Summary

Area Type: Other

Cycle Length: 140

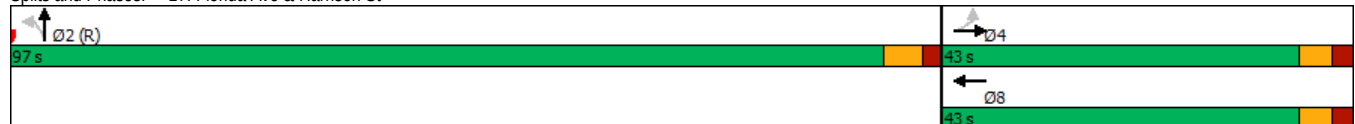
Actuated Cycle Length: 140

Offset: 36 (26%), Referenced to phase 2:NBT and 6:, Start of Green

Natural Cycle: 75

Control Type: Pretimed

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Future Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		0.99			1.00			1.00				
Frt		1.00			0.89			1.00				
Flt Protected		0.96			1.00			1.00				
Satd. Flow (prot)		1783			1620			5074				
Flt Permitted		0.77			1.00			1.00				
Satd. Flow (perm)		1424			1620			5074				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	15	0	0	14	76	13	2800	22	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	61	0	0	88	0	0	2834	0	0	0	0
Confl. Peds. (#/hr)	5					5	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.2			37.2			91.0				
Effective Green, g (s)		39.0			39.0			93.0				
Actuated g/C Ratio		0.28			0.28			0.66				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		396			451			3370				
v/s Ratio Prot					c0.05							
v/s Ratio Perm		0.04						0.56				
v/c Ratio		0.15			0.19			0.84				
Uniform Delay, d1		38.1			38.5			17.9				
Progression Factor		1.00			1.00			0.25				
Incremental Delay, d2		0.8			1.0			1.6				
Delay (s)		38.9			39.5			6.0				
Level of Service		D			D			A				
Approach Delay (s)		38.9			39.5			6.0			0.0	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		7.7		HCM 2000 Level of Service					A			
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0		Sum of lost time (s)					8.0			
Intersection Capacity Utilization		74.6%		ICU Level of Service					D			
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

No Build 2024
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Future Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			573			286			292	
Travel Time (s)		13.0			13.0			5.6			5.7	
Confl. Peds. (#/hr)	16					16	3		28			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	76	0	0	303	0	69	2736	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.75	0.15			0.62		0.06	0.81				
Control Delay	90.6	55.5			50.1		2.0	4.3				
Queue Delay	0.0	0.0			0.0		0.0	1.0				
Total Delay	90.6	55.5			50.1		2.0	5.3				
Queue Length 50th (ft)	118	62			239		4	61				
Queue Length 95th (ft)	m#215	m106			343		m5	63				
Internal Link Dist (ft)		490			493		206			212		
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	170	518			489		1163	3376				
Starvation Cap Reductn	0	0			0		0	360				
Spillback Cap Reductn	0	0			0		0	153				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.75	0.15			0.62		0.06	0.91				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 31 (22%), Referenced to phase 6:NBTL, Start of Green

Natural Cycle: 65

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

No Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Future Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.98		1.00	1.00				
Flpb, ped/bikes	0.99	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.95		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1747	1863			1750		1751	5081				
Flt Permitted	0.33	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	612	1863			1750		1751	5081				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	128	76	0	0	200	103	69	2727	9	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	76	0	0	301	0	69	2736	0	0	0	0
Confl. Peds. (#/hr)	16					16	3		28			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.2	37.2			37.2		91.0	91.0				
Effective Green, g (s)	39.0	39.0			39.0		93.0	93.0				
Actuated g/C Ratio	0.28	0.28			0.28		0.66	0.66				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	170	518			487		1163	3375				
v/s Ratio Prot		0.04			0.17			c0.54				
v/s Ratio Perm	c0.21						0.04					
v/c Ratio	0.75	0.15			0.62		0.06	0.81				
Uniform Delay, d1	46.1	38.0			44.0		8.2	17.1				
Progression Factor	1.38	1.43			1.00		0.24	0.18				
Incremental Delay, d2	25.7	0.6			5.8		0.0	1.1				
Delay (s)	89.5	55.0			49.8		2.0	4.3				
Level of Service	F	D			D		A	A				
Approach Delay (s)		76.6			49.8			4.2			0.0	
Approach LOS		E			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		12.8			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.79										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		84.2%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Future Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			550			283			286	
Travel Time (s)		12.6			12.5			5.5			5.6	
Confl. Peds. (#/hr)	5					5	3		100			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	312	0	0	287	0	43	2823	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.53	0.56			0.53		0.04	0.87				
Control Delay	32.6	28.1			44.9		1.8	4.5				
Queue Delay	0.0	0.0			0.0		0.0	0.9				
Total Delay	32.6	28.1			44.9		1.8	5.4				
Queue Length 50th (ft)	77	226			217		0	45				
Queue Length 95th (ft)	m139	m288			312		m2	53				
Internal Link Dist (ft)		473			470			203			206	
Turn Bay Length (ft)	70						60					
Base Capacity (vph)	212	558			539		1125	3228				
Starvation Cap Reductn	0	0			0		0	175				
Spillback Cap Reductn	0	0			0		0	104				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.53	0.56			0.53		0.04	0.92				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 26 (19%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 75
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Future Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1762	1863			1791		1750	5021				
Flt Permitted	0.38	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	707	1863			1791		1750	5021				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	113	312	0	0	216	71	43	2756	67	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	2	0	0	0	0
Lane Group Flow (vph)	113	312	0	0	286	0	43	2821	0	0	0	0
Confl. Peds. (#/hr)	5					5	3		100			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.0	40.0			40.0		88.0	88.0				
Effective Green, g (s)	42.0	42.0			42.0		90.0	90.0				
Actuated g/C Ratio	0.30	0.30			0.30		0.64	0.64				
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)	212	558			537		1125	3227				
v/s Ratio Prot		c0.17			0.16			c0.56				
v/s Ratio Perm	0.16						0.02					
v/c Ratio	0.53	0.56			0.53		0.04	0.87				
Uniform Delay, d1	40.8	41.2			40.8		9.2	20.4				
Progression Factor	0.59	0.60			1.00		0.19	0.13				
Incremental Delay, d2	7.4	3.2			3.7		0.0	1.8				
Delay (s)	31.6	27.7			44.6		1.7	4.5				
Level of Service	C	C			D		A	A				
Approach Delay (s)		28.8			44.6			4.4			0.0	
Approach LOS		C			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		10.5			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.77										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		86.6%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Future Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			559			300			283	
Travel Time (s)		12.2			12.7			5.8			5.5	
Confl. Peds. (#/hr)	34					34	26		55			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	208	0	0	141	0	80	2918	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.44			0.29		0.08	0.89				
Control Delay		40.9			39.2		3.0	16.7				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		40.9			39.2		3.0	16.7				
Queue Length 50th (ft)		175			98		0	937				
Queue Length 95th (ft)		249			152		m12	947				
Internal Link Dist (ft)		457			479			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		475			492		1043	3262				
Starvation Cap Reductn		0			0		0	0				
Spillback Cap Reductn		0			0		0	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.44			0.29		0.08	0.89				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 75

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Future Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.95		1.00	1.00				
Flpb, ped/bikes		0.98			1.00		0.92	1.00				
Frt		1.00			0.92		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1806			1640		1623	5073				
Flt Permitted		0.86			1.00		0.95	1.00				
Satd. Flow (perm)		1585			1640		1623	5073				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	145	0	0	61	80	80	2898	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	208	0	0	140	0	80	2918	0	0	0	0
Confl. Peds. (#/hr)	34					34	26		55			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.2			40.2		88.0	88.0				
Effective Green, g (s)		42.0			42.0		90.0	90.0				
Actuated g/C Ratio		0.30			0.30		0.64	0.64				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		475			492		1043	3261				
v/s Ratio Prot					0.09			c0.58				
v/s Ratio Perm		c0.13					0.05					
v/c Ratio		0.44			0.29		0.08	0.89				
Uniform Delay, d1		39.5			37.5		9.4	21.0				
Progression Factor		0.95			1.00		0.31	0.63				
Incremental Delay, d2		2.7			1.5		0.1	3.2				
Delay (s)		40.3			39.0		3.0	16.4				
Level of Service		D			D		A	B				
Approach Delay (s)		40.3			39.0			16.1			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		18.5			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.75										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		85.5%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

No Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Future Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			576			283			300	
Travel Time (s)		12.3			13.1			5.5			5.8	
Confl. Peds. (#/hr)	36					36	9		22			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	296	0	0	201	0	0	2745	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.97			0.41			0.67				
Control Delay		82.2			41.6			7.0				
Queue Delay		0.0			0.0			0.1				
Total Delay		82.2			41.6			7.1				
Queue Length 50th (ft)		274			144			109				
Queue Length 95th (ft)		#468			220			126				
Internal Link Dist (ft)		459			496			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		305			490			4106				
Starvation Cap Reductn		0			0			374				
Spillback Cap Reductn		0			0			313				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.97			0.41			0.74				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 60
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Future Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.86				
Frpb, ped/bikes		1.00			0.95			1.00				
Flpb, ped/bikes		0.97			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1759			1628			6388				
Flt Permitted		0.56			1.00			1.00				
Satd. Flow (perm)		1018			1628			6388				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	181	115	0	0	81	120	42	2683	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	296	0	0	199	0	0	2744	0	0	0	0
Confl. Peds. (#/hr)	36					36	9		22			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.1			40.1			88.3				
Effective Green, g (s)		42.0			42.0			90.0				
Actuated g/C Ratio		0.30			0.30			0.64				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		305			488			4106				
v/s Ratio Prot					0.12							
v/s Ratio Perm		0.29						0.43				
v/c Ratio		0.97			0.41			0.67				
Uniform Delay, d1		48.4			39.1			15.7				
Progression Factor		0.77			1.00			0.40				
Incremental Delay, d2		43.7			2.5			0.7				
Delay (s)		80.9			41.6			7.0				
Level of Service		F			D			A				
Approach Delay (s)		80.9			41.6			7.0			0.0	
Approach LOS		F			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		15.9			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.76										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		80.6%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Future Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			597			298			283	
Travel Time (s)		12.3			13.6			5.8			5.5	
Confl. Peds. (#/hr)	15					15	9		30			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	525	0	0	129	225	0	2744	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	46.0	46.0			46.0	46.0	94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%	32.9%	67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.62			0.23	0.48		0.67				
Control Delay		62.7			38.2	39.7		6.4				
Queue Delay		0.0			0.0	0.0		0.1				
Total Delay		62.7			38.2	39.7		6.5				
Queue Length 50th (ft)		238			89	150		116				
Queue Length 95th (ft)		m267			145	234		55				
Internal Link Dist (ft)		463			517			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		847			558	472		4096				
Starvation Cap Reductn		0			0	0		375				
Spillback Cap Reductn		0			0	0		225				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.62			0.23	0.48		0.74				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 60

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Future Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.86				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		1.00				
Flt Protected		0.99			1.00	1.00		1.00				
Satd. Flow (prot)		3483			1863	1520		6366				
Flt Permitted		0.80			1.00	1.00		1.00				
Satd. Flow (perm)		2823			1863	1520		6366				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	118	407	0	0	129	225	27	2648	69	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	3	0	0	0	0
Lane Group Flow (vph)	0	525	0	0	129	209	0	2742	0	0	0	0
Confl. Peds. (#/hr)	15					15	9		30			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		40.1			40.1	40.1		88.0				
Effective Green, g (s)		42.0			42.0	42.0		90.0				
Actuated g/C Ratio		0.30			0.30	0.30		0.64				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		846			558	456		4092				
v/s Ratio Prot					0.07							
v/s Ratio Perm		0.19				0.14		0.43				
v/c Ratio		0.62			0.23	0.46		0.67				
Uniform Delay, d1		42.1			36.9	39.8		15.7				
Progression Factor		1.43			1.00	1.00		0.36				
Incremental Delay, d2		1.8			1.0	3.3		0.7				
Delay (s)		62.1			37.8	43.1		6.3				
Level of Service		E			D	D		A				
Approach Delay (s)		62.1			41.2			6.3			0.0	
Approach LOS		E			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		17.8			HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)				8.0			
Intersection Capacity Utilization		80.3%			ICU Level of Service				D			
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Future Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			607			314			298	
Travel Time (s)		12.5			13.8			6.1			5.8	
Confl. Peds. (#/hr)	45					45	21		9			
Peak Hour Factor	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	101	0	0	235	0	0	2805	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	-1.9	-1.9			-1.9		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.24	0.18			0.49		0.68					
Control Delay	30.1	27.4			43.8		20.2					
Queue Delay	0.0	0.0			0.0		1.2					
Total Delay	30.1	27.4			43.8		21.5					
Queue Length 50th (ft)	26	44			174		586					
Queue Length 95th (ft)	m56	m86			260		628					
Internal Link Dist (ft)		468			527		234				218	
Turn Bay Length (ft)	75											
Base Capacity (vph)	243	558			481		4106					
Starvation Cap Reductn	0	0			0		990					
Spillback Cap Reductn	0	0			0		154					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.24	0.18			0.49		0.90					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 3 (2%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Future Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.86				
Frbp, ped/bikes	1.00	1.00			0.94			1.00				
Flpb, ped/bikes	0.95	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1687	1863			1599			6388				
Flt Permitted	0.46	1.00			1.00			1.00				
Satd. Flow (perm)	810	1863			1599			6388				
Peak-hour factor, PHF	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	58	101	0	0	86	149	30	2751	24	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	58	101	0	0	233	0	0	2804	0	0	0	0
Confl. Peds. (#/hr)	45					45	21		9			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.1	40.1			40.1			88.0				
Effective Green, g (s)	42.0	42.0			42.0			90.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.64				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	243	558			479			4106				
v/s Ratio Prot		0.05			0.15							
v/s Ratio Perm	0.07							0.44				
v/c Ratio	0.24	0.18			0.49			0.68				
Uniform Delay, d1	36.9	36.3			40.2			15.9				
Progression Factor	0.74	0.73			1.00			1.20				
Incremental Delay, d2	1.9	0.6			3.5			0.9				
Delay (s)	29.3	27.2			43.7			20.1				
Level of Service	C	C			D			C				
Approach Delay (s)		27.9			43.7			20.1			0.0	
Approach LOS		C			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		22.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		74.5%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  		  					
Traffic Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Future Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			580			259			314	
Travel Time (s)		12.4			13.2			5.0			6.1	
Confl. Peds. (#/hr)						42	22					
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2087	0	135	953	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					58.0		82.0	82.0				
Total Split (%)					41.4%		58.6%	58.6%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					-1.7		-1.8	-1.8				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.88		0.14	0.34				
Control Delay					44.0		3.5	6.4				
Queue Delay					0.3		0.6	0.2				
Total Delay					44.3		4.1	6.6				
Queue Length 50th (ft)					497		9	42				
Queue Length 95th (ft)					549		16	48				
Internal Link Dist (ft)		466			500			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					2369		951	2833				
Starvation Cap Reductn					0		555	954				
Spillback Cap Reductn					42		0	661				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.90		0.34	0.51				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 139 (99%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 24: Florida Ave & Kennedy Blvd												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↘	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Future Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Frpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6033		1692	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6033		1692	5085				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	1573	514	135	953	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	42	0	9	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2045	0	126	953	0	0	0	0
Confl. Peds. (#/hr)					42		22					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					52.3		76.2	76.2				
Effective Green, g (s)					54.0		78.0	78.0				
Actuated g/C Ratio					0.39		0.56	0.56				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2327		942	2833				
v/s Ratio Prot					0.34			0.19				
v/s Ratio Perm							0.07					
v/c Ratio					0.88		0.13	0.34				
Uniform Delay, d1					40.0		14.8	16.9				
Progression Factor					1.00		0.26	0.36				
Incremental Delay, d2					5.1		0.3	0.3				
Delay (s)					45.1		4.1	6.4				
Level of Service					D		A	A				
Approach Delay (s)		0.0			45.1			6.1			0.0	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			31.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			66.6%				ICU Level of Service			C		
Analysis Period (min)			15									

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	131	861	0	0	0	0	0	945	88	0	0	0
Future Volume (vph)	131	861	0	0	0	0	0	945	88	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		283			526			595			259	
Travel Time (s)		6.4			12.0			11.6			5.0	
Confl. Peds. (#/hr)	53								36			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1127	0	0	0	0	0	1174	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	27.9	27.9						26.9				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						3.7				
All-Red Time (s)	2.2	2.2						2.2				
Lost Time Adjust (s)		-1.9						-1.9				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.58						0.42				
Control Delay		22.3						24.3				
Queue Delay		0.2						0.0				
Total Delay		22.5						24.3				
Queue Length 50th (ft)		191						275				
Queue Length 95th (ft)		213						312				
Internal Link Dist (ft)		203			446			515			179	
Turn Bay Length (ft)												
Base Capacity (vph)		1936						2784				
Starvation Cap Reductn		231						0				
Spillback Cap Reductn		0						5				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.66						0.42				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 133 (95%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 25: Florida Ave & Jackson St												
												

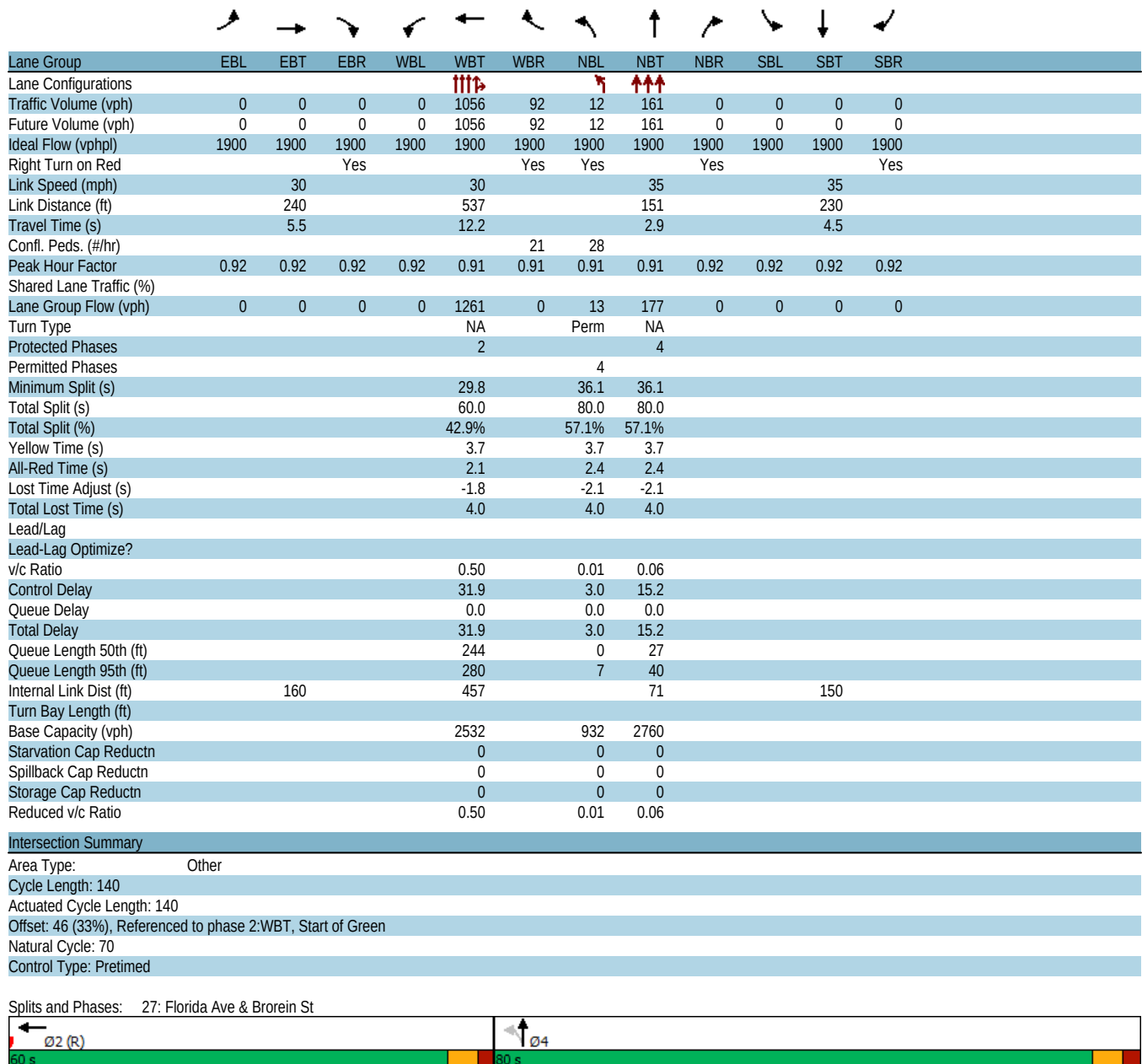
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	131	861	0	0	0	0	0	945	88	0	0	0
Future Volume (vph)	131	861	0	0	0	0	0	945	88	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		0.99						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4984						4985				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4984						4985				
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	149	978	0	0	0	0	0	1074	100	0	0	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	1112	0	0	0	0	0	1166	0	0	0	0
Confl. Peds. (#/hr)	53								36			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1922						2777				
v/s Ratio Prot								0.23				
v/s Ratio Perm		0.22										
v/c Ratio		0.58						0.42				
Uniform Delay, d1		34.0						17.9				
Progression Factor		0.64						1.34				
Incremental Delay, d2		1.0						0.5				
Delay (s)		22.6						24.5				
Level of Service		C						C				
Approach Delay (s)		22.6			0.0			24.5			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		23.6						HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio		0.48										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		54.8%						ICU Level of Service		A		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Future Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			557			397			595	
Travel Time (s)		12.6			12.7			7.7			11.6	
Confl. Peds. (#/hr)	106					106	71		94			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	336	0	0	227	0	0	177	10	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Minimum Split (s)	29.0	29.0			29.0		26.7	26.7	26.7			
Total Split (s)	57.0	57.0			57.0		83.0	83.0	83.0			
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%	59.3%			
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7	3.7			
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0	2.0			
Lost Time Adjust (s)		-1.8			-1.8		-1.7	-1.7				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.39			0.19			0.06	0.01			
Control Delay		21.3			13.6			16.7	3.6			
Queue Delay		0.0			0.0			0.0	0.0			
Total Delay		21.3			13.6			16.7	3.6			
Queue Length 50th (ft)		66			32			22	0			
Queue Length 95th (ft)		86			62			33	m3			
Internal Link Dist (ft)		473			477			317		515		
Turn Bay Length (ft)									50			
Base Capacity (vph)		868			1173			2847	727			
Starvation Cap Reductn		0			0			0	0			
Spillback Cap Reductn		0			0			0	0			
Storage Cap Reductn		0			0			0	0			
Reduced v/c Ratio		0.39			0.19			0.06	0.01			
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 120 (86%), Referenced to phase 2:NBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 26: Florida Ave & Whiting St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Future Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.95			0.95			0.91	1.00			
Frpb, ped/bikes		1.00			0.89			1.00	0.80			
Flpb, ped/bikes		0.93			1.00			0.99	1.00			
Frt		1.00			0.92			1.00	0.85			
Flt Protected		0.98			1.00			1.00	1.00			
Satd. Flow (prot)		3223			2901			5044	1273			
Flt Permitted		0.70			1.00			1.00	1.00			
Satd. Flow (perm)		2296			2901			5044	1273			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	167	169	0	0	105	122	5	172	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	76	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	336	0	0	151	0	0	177	6	0	0	0
Confl. Peds. (#/hr)	106					106	71		94			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		51.2			51.2			77.3	77.3			
Effective Green, g (s)		53.0			53.0			79.0	79.0			
Actuated g/C Ratio		0.38			0.38			0.56	0.56			
Clearance Time (s)		5.8			5.8			5.7	5.7			
Lane Grp Cap (vph)		869			1098			2846	718			
v/s Ratio Prot					0.05							
v/s Ratio Perm		0.15						0.04	0.00			
v/c Ratio		0.39			0.14			0.06	0.01			
Uniform Delay, d1		31.7			28.5			13.8	13.3			
Progression Factor		0.63			1.00			1.21	1.81			
Incremental Delay, d2		1.3			0.3			0.0	0.0			
Delay (s)		21.1			28.8			16.7	24.2			
Level of Service		C			C			B	C			
Approach Delay (s)		21.1			28.8			17.1			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.4			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.19										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		55.5%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0
Future Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6307		1700	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6307		1700	5085				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1160	101	13	177	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	6	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1251	0	7	177	0	0	0	0
Confl. Peds. (#/hr)					21		28					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					56.0		76.0	76.0				
Actuated g/C Ratio					0.40		0.54	0.54				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2522		922	2760				
v/s Ratio Prot					c0.20			c0.03				
v/s Ratio Perm							0.00					
v/c Ratio					0.50		0.01	0.06				
Uniform Delay, d1					31.4		14.7	15.2				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.7		0.0	0.0				
Delay (s)					32.1		14.7	15.2				
Level of Service					C		B	B				
Approach Delay (s)		0.0			32.1			15.2			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			29.9		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			35.0%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	246	0	0	698	85
Future Volume (vph)	0	246	0	0	698	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	267	0	0	759	92
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1018	0	0	944	0
Future Volume (vph)	0	1018	0	0	944	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1107	0	0	1026	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	900	0
Future Volume (vph)	0	0	0	0	900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	147		294			171
Travel Time (s)	3.3		6.7			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	978	0
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  			
Traffic Volume (vph)	0	333	1081	0	0	0
Future Volume (vph)	0	333	1081	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	531		103			170
Travel Time (s)	12.1		2.3			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	362	1175	0	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Build 2024 AM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2024
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑					↑↑↑	↑↑↑	
Traffic Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Future Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			311	
Travel Time (s)		14.9			10.4			37.4			6.1	
Confl. Peds. (#/hr)			3	3						2		2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	201	119	227	246	0	0	0	0	0	1434	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		25.3	25.3	27.0	27.0					31.4	31.4	
Total Split (s)		55.0	55.0	55.0	55.0					85.0	85.0	
Total Split (%)		39.3%	39.3%	39.3%	39.3%					60.7%	60.7%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		0.5	0.5	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		-0.3	-0.3	-2.0	-2.0						-2.4	
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.30	0.19	0.62	0.36						0.49	
Control Delay		33.2	13.4	25.7	18.9						18.1	
Queue Delay		0.0	0.0	0.0	0.0						0.0	
Total Delay		33.2	13.4	25.7	18.9						18.1	
Queue Length 50th (ft)		130	27	73	77						269	
Queue Length 95th (ft)		196	72	123	107						308	
Internal Link Dist (ft)		576			379			1841			231	
Turn Bay Length (ft)				150								
Base Capacity (vph)		678	613	367	678						2904	
Starvation Cap Reductn		0	0	0	0						0	
Spillback Cap Reductn		0	0	0	0						0	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.30	0.19	0.62	0.36						0.49	

Intersection Summary

Area Type: Other

Cycle Length: 140

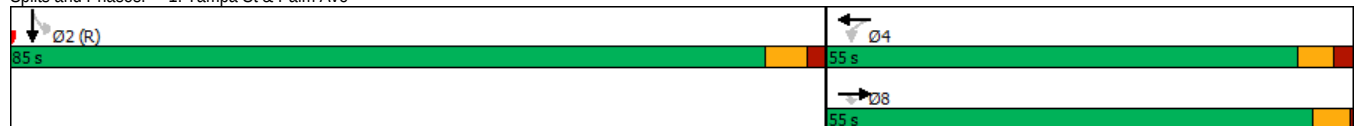
Actuated Cycle Length: 140

Offset: 130 (93%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Future Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Frpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						1.00	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1555	1763	1863						5015	
Flt Permitted		1.00	1.00	0.54	1.00						0.99	
Satd. Flow (perm)		1863	1555	1007	1863						5015	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	201	119	227	246	0	0	0	0	232	1162	40
RTOR Reduction (vph)	0	0	47	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	201	72	227	246	0	0	0	0	0	1432	0
Confl. Peds. (#/hr)			3	3						2		2
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		50.7	50.7	49.0	49.0						78.6	
Effective Green, g (s)		51.0	51.0	51.0	51.0						81.0	
Actuated g/C Ratio		0.36	0.36	0.36	0.36						0.58	
Clearance Time (s)		4.3	4.3	6.0	6.0						6.4	
Lane Grp Cap (vph)		678	566	366	678						2901	
v/s Ratio Prot		0.11			0.13							
v/s Ratio Perm			0.05	0.23							0.29	
v/c Ratio		0.30	0.13	0.62	0.36						0.49	
Uniform Delay, d1		31.7	29.7	36.5	32.6						17.4	
Progression Factor		1.00	1.00	0.51	0.53						1.00	
Incremental Delay, d2		1.1	0.5	6.7	1.3						0.6	
Delay (s)		32.8	30.1	25.2	18.7						18.0	
Level of Service		C	C	C	B						B	
Approach Delay (s)		31.8			21.8			0.0			18.0	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			20.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			66.6%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

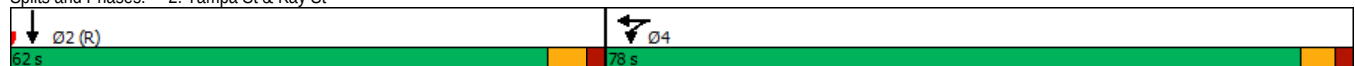
Build 2024
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Future Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		360			350			247			1921	
Travel Time (s)		8.2			8.0			4.8			37.4	
Confl. Peds. (#/hr)				1								1
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)				11%								
Lane Group Flow (vph)	0	0	0	11	1746	0	0	0	0	0	1373	0
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Minimum Split (s)				26.7	26.7						31.0	
Total Split (s)				78.0	78.0						62.0	
Total Split (%)				55.7%	55.7%						44.3%	
Yellow Time (s)				3.7	3.7						4.0	
All-Red Time (s)				2.0	2.0						2.0	
Lost Time Adjust (s)				-1.7	-1.7						-2.0	
Total Lost Time (s)				4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.01	0.97						0.68	
Control Delay				2.4	46.7						27.7	
Queue Delay				0.0	0.0						0.9	
Total Delay				2.4	46.7						28.6	
Queue Length 50th (ft)				0	812						395	
Queue Length 95th (ft)				5	#1017						453	
Internal Link Dist (ft)		280			270			167			1841	
Turn Bay Length (ft)												
Base Capacity (vph)				861	1802						2010	
Starvation Cap Reductn				0	0						0	
Spillback Cap Reductn				1	0						345	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.01	0.97						0.82	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Tampa St & Kay St



Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Future Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						0.91	
Frbp, ped/bikes				1.00	1.00						1.00	
Flpb, ped/bikes				1.00	1.00						1.00	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1610	3390						4837	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1610	3390						4837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	12	1745	0	0	0	0	0	961	412
RTOR Reduction (vph)	0	0	0	5	11	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	0	0	6	1735	0	0	0	0	0	1366	0
Confl. Peds. (#/hr)				1								1
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Actuated Green, G (s)				72.3	72.3						56.0	
Effective Green, g (s)				74.0	74.0						58.0	
Actuated g/C Ratio				0.53	0.53						0.41	
Clearance Time (s)				5.7	5.7						6.0	
Lane Grp Cap (vph)				851	1791						2003	
v/s Ratio Prot				0.00	c0.51						c0.28	
v/s Ratio Perm												
v/c Ratio				0.01	0.97						0.68	
Uniform Delay, d1				15.6	31.9						33.5	
Progression Factor				1.00	1.00						0.78	
Incremental Delay, d2				0.0	15.1						1.7	
Delay (s)				15.6	46.9						27.7	
Level of Service				B	D						C	
Approach Delay (s)		0.0			46.8			0.0			27.7	
Approach LOS		A			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			38.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			68.3%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

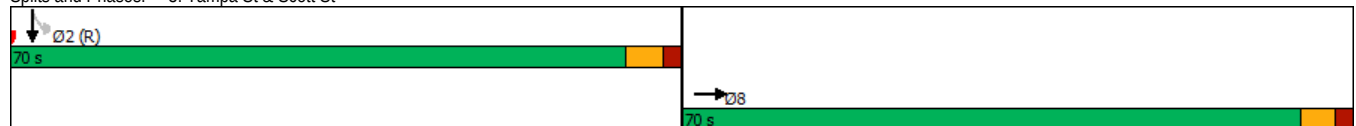
Build 2024
Timing Plan: AM PEAK

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕									↕↕↕	
Traffic Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Future Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		386			62			346			247	
Travel Time (s)		8.8			1.4			6.7			4.8	
Confl. Peds. (#/hr)										3		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	886	0	0	0	0	0	0	0	0	842	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		-1.7									-2.0	
Total Lost Time (s)		4.0									4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.54									0.35	
Control Delay		27.3									10.3	
Queue Delay		2.7									2.0	
Total Delay		30.0									12.4	
Queue Length 50th (ft)		291									232	
Queue Length 95th (ft)		354									223	
Internal Link Dist (ft)		306			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1646									2399	
Starvation Cap Reductn		0									1360	
Spillback Cap Reductn		615									3	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.86									0.81	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 62 (44%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 50
Control Type: Pretimed

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Future Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3479									5028	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3479									5028	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	785	101	0	0	0	0	0	0	161	681	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	879	0	0	0	0	0	0	0	0	814	0
Confl. Peds. (#/hr)											3	
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		66.0									66.0	
Actuated g/C Ratio		0.47									0.47	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1640									2370	
v/s Ratio Prot		c0.25										
v/s Ratio Perm											0.16	
v/c Ratio		0.54									0.34	
Uniform Delay, d1		26.2									23.3	
Progression Factor		1.00									0.46	
Incremental Delay, d2		1.3									0.3	
Delay (s)		27.4									11.0	
Level of Service		C									B	
Approach Delay (s)		27.4			0.0			0.0			11.0	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay		19.4				HCM 2000 Level of Service		B				
HCM 2000 Volume to Capacity ratio		0.44										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		45.1%				ICU Level of Service		A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

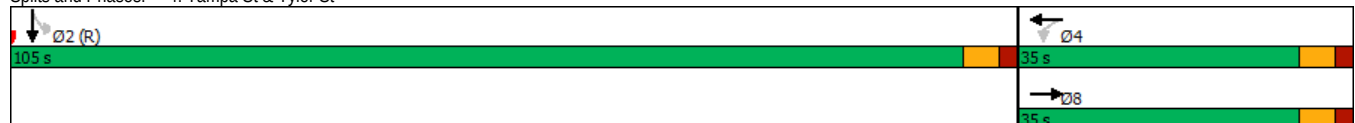
Build 2024
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Future Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			5.9			2.5	
Confl. Peds. (#/hr)			9	9						73		35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	210	0	84	225	0	0	0	0	0	2156	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					102.8	102.8	
Total Split (s)		35.0		35.0	35.0					105.0	105.0	
Total Split (%)		25.0%		25.0%	25.0%					75.0%	75.0%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.55		0.50	0.55						0.60	
Control Delay		49.9		47.8	43.1						6.7	
Queue Delay		0.0		0.0	0.0						0.1	
Total Delay		49.9		47.8	43.1						6.8	
Queue Length 50th (ft)		155		80	213						194	
Queue Length 95th (ft)		242		m134	301						209	
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		379		169	412						3622	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						242	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.55		0.50	0.55						0.64	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 130
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Future Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.99	1.00						1.00	
Frt		0.90		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1645		1751	1863						5019	
Flt Permitted		1.00		0.42	1.00						1.00	
Satd. Flow (perm)		1645		767	1863						5019	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	59	151	84	225	0	0	0	0	23	2058	75
RTOR Reduction (vph)	0	16	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	194	0	84	225	0	0	0	0	0	2153	0
Confl. Peds. (#/hr)			9	9						73		35
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		29.2		29.2	29.2						99.2	
Effective Green, g (s)		31.0		31.0	31.0						101.0	
Actuated g/C Ratio		0.22		0.22	0.22						0.72	
Clearance Time (s)		5.8		5.8	5.8						5.8	
Lane Grp Cap (vph)		364		169	412						3620	
v/s Ratio Prot		0.12			0.12							
v/s Ratio Perm				0.11							0.43	
v/c Ratio		0.53		0.50	0.55						0.59	
Uniform Delay, d1		48.1		47.7	48.3						9.5	
Progression Factor		1.00		0.79	0.79						0.62	
Incremental Delay, d2		5.5		9.1	4.6						0.7	
Delay (s)		53.6		46.6	42.6						6.7	
Level of Service		D		D	D						A	
Approach Delay (s)		53.6			43.7			0.0			6.7	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			14.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.58									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			84.8%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2024
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Future Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		322			553			286			301	
Travel Time (s)		7.3			12.6			5.6			5.9	
Confl. Peds. (#/hr)			12	12						87		29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	421	0	45	239	0	0	0	0	0	2133	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.84		0.54	0.46						0.64	
Control Delay		61.6		52.4	28.9						10.1	
Queue Delay		59.0		105.3	0.0						0.1	
Total Delay		120.7		157.7	28.9						10.2	
Queue Length 50th (ft)		351		40	208						157	
Queue Length 95th (ft)		#523		m#85	294						391	
Internal Link Dist (ft)		242			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		503		83	518						3329	
Starvation Cap Reductn		0		0	0						293	
Spillback Cap Reductn		286		48	0						167	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		1.94		1.29	0.46						0.70	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Future Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1770		1770	1863						5010	
Flt Permitted		1.00		0.16	1.00						1.00	
Satd. Flow (perm)		1770		300	1863						5010	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	299	122	45	239	0	0	0	0	70	2042	21
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	411	0	45	239	0	0	0	0	0	2132	0
Confl. Peds. (#/hr)			12	12						87		29
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3		37.3	37.3						91.3	
Effective Green, g (s)		39.0		39.0	39.0						93.0	
Actuated g/C Ratio		0.28		0.28	0.28						0.66	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		493		83	518						3328	
v/s Ratio Prot		c0.23			0.13							
v/s Ratio Perm				0.15							0.43	
v/c Ratio		0.83		0.54	0.46						0.64	
Uniform Delay, d1		47.4		42.9	41.8						13.7	
Progression Factor		1.00		0.64	0.62						0.67	
Incremental Delay, d2		15.2		21.8	2.8						0.8	
Delay (s)		62.6		49.4	28.6						10.0	
Level of Service		E		D	C						A	
Approach Delay (s)		62.6			31.9			0.0			10.0	
Approach LOS		E			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			20.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			86.2%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Build 2024
Timing Plan: AM PEAK

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↖						↖↗↘	
Traffic Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Future Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			5.9			5.6	
Confl. Peds. (#/hr)			39	39						185		66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	190	0	0	0	0	0	2065	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		-1.8			-1.8						-1.9	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.25			0.36						0.64	
Control Delay		35.3			37.0						14.1	
Queue Delay		0.0			0.0						1.1	
Total Delay		35.3			37.0						15.2	
Queue Length 50th (ft)		81			110						309	
Queue Length 95th (ft)		138			187						289	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		526			531						3217	
Starvation Cap Reductn		0			0						835	
Spillback Cap Reductn		0			0						9	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.25			0.36						0.87	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Future Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.97			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.96			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1731			1839						5003	
Flt Permitted		1.00			0.96						1.00	
Satd. Flow (perm)		1731			1773						5003	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	88	41	22	168	0	0	0	0	51	2002	12
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	121	0	0	190	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			39	39						185		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		42.0			42.0						90.0	
Actuated g/C Ratio		0.30			0.30						0.64	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		519			531						3216	
v/s Ratio Prot		0.07										
v/s Ratio Perm					0.11						0.41	
v/c Ratio		0.23			0.36						0.64	
Uniform Delay, d1		36.9			38.4						15.2	
Progression Factor		1.00			0.90						0.87	
Incremental Delay, d2		1.1			1.9						0.8	
Delay (s)		37.9			36.6						13.9	
Level of Service		D			D						B	
Approach Delay (s)		37.9			36.6			0.0			13.9	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			17.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			70.7%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2024
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Future Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		344			539			272			302	
Travel Time (s)		7.8			12.3			5.3			5.9	
Confl. Peds. (#/hr)			8	8						38		24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	0	203	0	0	0	0	0	2088	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7			-1.7						-1.7	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.60			0.63						0.62	
Control Delay		47.2			44.4						2.0	
Queue Delay		0.0			0.0						0.1	
Total Delay		47.2			44.4						2.1	
Queue Length 50th (ft)		225			120						23	
Queue Length 95th (ft)		328			m186						25	
Internal Link Dist (ft)		264			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		499			323						3348	
Starvation Cap Reductn		0			0						161	
Spillback Cap Reductn		0			0						127	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.60			0.63						0.66	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Future Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.99			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1751			1836						5042	
Flt Permitted		1.00			0.62						1.00	
Satd. Flow (perm)		1751			1162						5042	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	189	111	52	151	0	0	0	0	87	1994	7
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	288	0	0	203	0	0	0	0	0	2088	0
Confl. Peds. (#/hr)			8	8						38		24
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						91.3	
Effective Green, g (s)		39.0			39.0						93.0	
Actuated g/C Ratio		0.28			0.28						0.66	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		487			323						3349	
v/s Ratio Prot		0.16										
v/s Ratio Perm					0.17						0.41	
v/c Ratio		0.59			0.63						0.62	
Uniform Delay, d1		43.6			44.2						13.5	
Progression Factor		1.00			0.84						0.10	
Incremental Delay, d2		5.2			6.2						0.7	
Delay (s)		48.9			43.5						2.0	
Level of Service		D			D						A	
Approach Delay (s)		48.9			43.5			0.0			2.0	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			74.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2024
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Future Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		258			543			313			272	
Travel Time (s)		5.9			12.3			6.1			5.3	
Confl. Peds. (#/hr)			30	30						30		54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	354	0	96	431	0	0	0	0	0	2066	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.67		0.61	0.77						0.64	
Control Delay		48.3		50.2	44.8						4.4	
Queue Delay		0.0		0.0	1.6						0.1	
Total Delay		48.3		50.2	46.4						4.5	
Queue Length 50th (ft)		273		65	369						58	
Queue Length 95th (ft)		387		m140	m486						63	
Internal Link Dist (ft)		178			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		532		157	558						3249	
Starvation Cap Reductn		0		0	39						234	
Spillback Cap Reductn		0		0	0						138	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.67		0.61	0.83						0.69	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 9 (6%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Tampa St & Twiggs St



Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Future Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.98	1.00						1.00	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1745		1736	1863						5049	
Flt Permitted		1.00		0.29	1.00						1.00	
Satd. Flow (perm)		1745		526	1863						5049	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	245	109	96	431	0	0	0	0	52	1980	34
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	345	0	96	431	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			30	30						30		54
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.3		40.3	40.3						88.1	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		523		157	558						3245	
v/s Ratio Prot		0.20			0.23							
v/s Ratio Perm				0.18							0.41	
v/c Ratio		0.66		0.61	0.77						0.64	
Uniform Delay, d1		42.8		42.0	44.6						15.1	
Progression Factor		1.00		0.76	0.77						0.24	
Incremental Delay, d2		6.4		16.3	9.9						0.8	
Delay (s)		49.2		48.4	44.2						4.4	
Level of Service		D		D	D						A	
Approach Delay (s)		49.2			45.0			0.0			4.4	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			17.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			75.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2024
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Future Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		311			548			309			313	
Travel Time (s)		7.1			12.5			6.0			6.1	
Confl. Peds. (#/hr)			53	53						29		66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	228	0	130	24	0	0	0	0	0	2044	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.47		0.53	0.04						0.63	
Control Delay		41.7		46.7	31.4						5.4	
Queue Delay		0.0		0.0	0.0						0.3	
Total Delay		41.7		46.7	31.4						5.7	
Queue Length 50th (ft)		161		114	13						68	
Queue Length 95th (ft)		245		m161	m25						72	
Internal Link Dist (ft)		231			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		480		244	558						3247	
Starvation Cap Reductn		0		0	0						261	
Spillback Cap Reductn		1		0	0						549	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.48		0.53	0.04						0.76	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Future Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.92		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.94	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1576		1663	1863						5048	
Flt Permitted		1.00		0.47	1.00						1.00	
Satd. Flow (perm)		1576		816	1863						5048	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	85	143	130	24	0	0	0	0	61	1967	16
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	220	0	130	24	0	0	0	0	0	2043	0
Confl. Peds. (#/hr)			53	53						29		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.1		40.1	40.1						88.2	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		472		244	558						3245	
v/s Ratio Prot		0.14			0.01							
v/s Ratio Perm				0.16							0.40	
v/c Ratio		0.47		0.53	0.04						0.63	
Uniform Delay, d1		39.9		40.8	34.7						15.0	
Progression Factor		1.00		0.94	0.89						0.31	
Incremental Delay, d2		3.3		7.1	0.1						0.7	
Delay (s)		43.1		45.4	31.1						5.3	
Level of Service		D		D	C						A	
Approach Delay (s)		43.1			43.2			0.0			5.3	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.3			HCM 2000 Level of Service					B	
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)					8.0	
Intersection Capacity Utilization			87.3%			ICU Level of Service					E	
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Build 2024
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Future Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		314			546			274			309	
Travel Time (s)		7.1			12.4			5.3			6.0	
Confl. Peds. (#/hr)				26								42
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	257	1706	0	0	0	0	0	2108	0
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Minimum Split (s)				25.8	25.8						26.8	
Total Split (s)				72.0	72.0						68.0	
Total Split (%)				51.4%	51.4%						48.6%	
Yellow Time (s)				3.7	3.7						3.7	
All-Red Time (s)				2.1	2.1						2.1	
Lost Time Adjust (s)				-1.8	-1.8						-1.8	
Total Lost Time (s)				4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.36	0.73						0.94	
Control Delay				6.9	15.6						32.1	
Queue Delay				89.1	26.9						19.6	
Total Delay				96.0	42.5						51.7	
Queue Length 50th (ft)				63	513						694	
Queue Length 95th (ft)				110	582						660	
Internal Link Dist (ft)		234			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				710	2341						2242	
Starvation Cap Reductn				0	382						100	
Spillback Cap Reductn				643	714						213	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				3.84	1.05						1.04	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 23 (16%), Referenced to phase 2:SBT, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
Splits and Phases: 10: Tampa St & Kennedy Blvd												
 Ø2 (R)						 Ø4						
68 s						72 s						

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Future Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.86	0.86						0.91	
Frpb, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				0.95	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1439	4797						4893	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1439	4797						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	286	1677	0	0	0	0	0	1778	330
RTOR Reduction (vph)	0	0	0	11	11	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	0	246	1695	0	0	0	0	0	2103	0
Confl. Peds. (#/hr)				26								42
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				66.2	66.2						62.2	
Effective Green, g (s)				68.0	68.0						64.0	
Actuated g/C Ratio				0.49	0.49						0.46	
Clearance Time (s)				5.8	5.8						5.8	
Lane Grp Cap (vph)				698	2329						2236	
v/s Ratio Prot											c0.43	
v/s Ratio Perm				0.17	0.35							
v/c Ratio				0.35	0.73						0.94	
Uniform Delay, d1				22.3	28.6						36.2	
Progression Factor				0.28	0.49						0.66	
Incremental Delay, d2				1.2	1.7						7.8	
Delay (s)				7.3	15.7						31.8	
Level of Service				A	B						C	
Approach Delay (s)		0.0			14.6			0.0			31.8	
Approach LOS		A			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			23.5		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)			8.0				
Intersection Capacity Utilization			72.7%		ICU Level of Service			C				
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

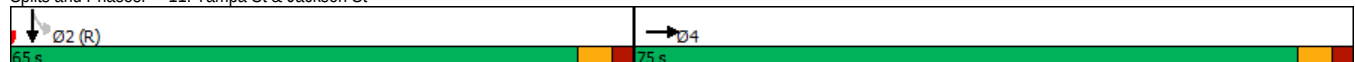
Build 2024
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↘	↑↑↑	
Traffic Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Future Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		275			260			589			274	
Travel Time (s)		6.3			5.9			11.5			5.3	
Confl. Peds. (#/hr)			71							39		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1066	0	0	0	0	0	0	0	351	1758	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		75.0								65.0	65.0	
Total Split (%)		53.6%								46.4%	46.4%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		-2.0								-2.0	-2.0	
Total Lost Time (s)		4.0								4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.48								0.45	0.79	
Control Delay		23.3								20.5	32.8	
Queue Delay		0.0								3.7	47.7	
Total Delay		23.3								24.2	80.6	
Queue Length 50th (ft)		224								99	297	
Queue Length 95th (ft)		265								m124	m339	
Internal Link Dist (ft)		195			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2217								781	2215	
Starvation Cap Reductn		0								334	717	
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.48								0.79	1.17	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2024
Timing Plan: AM PEAK

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↓	↑↑↑	
Traffic Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Future Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								1.00	0.91	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								0.92	1.00	
Frt		0.93								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4368								1632	5085	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4368								1632	5085	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	548	518	0	0	0	0	0	0	351	1758	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	70	0	0
Lane Group Flow (vph)	0	1064	0	0	0	0	0	0	0	281	1758	0
Confl. Peds. (#/hr)			71							39		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		69.0								59.0	59.0	
Effective Green, g (s)		71.0								61.0	61.0	
Actuated g/C Ratio		0.51								0.44	0.44	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2215								711	2215	
v/s Ratio Prot		c0.24									c0.35	
v/s Ratio Perm										0.17		
v/c Ratio		0.48								0.40	0.79	
Uniform Delay, d1		22.5								26.9	34.1	
Progression Factor		1.00								1.12	0.91	
Incremental Delay, d2		0.7								0.8	1.5	
Delay (s)		23.2								31.1	32.6	
Level of Service		C								C	C	
Approach Delay (s)		23.2			0.0			0.0			32.3	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			29.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.63									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			72.7%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2024
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Future Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		404			553			171			589	
Travel Time (s)		9.2			12.6			3.3			11.5	
Confl. Peds. (#/hr)			94	94						30		43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	321	0	111	106	0	0	0	0	0	162	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.26		0.35	0.15						0.06	
Control Delay		22.6		15.2	11.5						14.7	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		22.6		15.2	11.5						14.7	
Queue Length 50th (ft)		76		19	17						20	
Queue Length 95th (ft)		115		34	26						m26	
Internal Link Dist (ft)		324			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1240		321	705						2818	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.26		0.35	0.15						0.06	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	120 (86%), Referenced to phase 2:SBTL, Start of Green											
Natural Cycle:	60											
Control Type:	Pretimed											
m	Volume for 95th percentile queue is metered by upstream signal.											
Splits and Phases: 12: Tampa St & Whiting St												
												

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2024
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 						 	
Traffic Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Future Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.90	1.00						1.00	
Frt		0.95		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.98	
Satd. Flow (prot)		3143		1596	1863						4993	
Flt Permitted		1.00		0.50	1.00						0.98	
Satd. Flow (perm)		3143		848	1863						4993	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	209	112	111	106	0	0	0	0	60	102	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	271	0	111	106	0	0	0	0	0	162	0
Confl. Peds. (#/hr)			94	94						30		43
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		53.0		53.0	53.0						79.0	
Actuated g/C Ratio		0.38		0.38	0.38						0.56	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1189		321	705						2817	
v/s Ratio Prot		0.09			0.06						c0.03	
v/s Ratio Perm				c0.13								
v/c Ratio		0.23		0.35	0.15						0.06	
Uniform Delay, d1		29.6		31.1	28.7						13.7	
Progression Factor		1.00		0.38	0.38						1.07	
Incremental Delay, d2		0.4		2.9	0.4						0.0	
Delay (s)		30.0		14.8	11.4						14.7	
Level of Service		C		B	B						B	
Approach Delay (s)		30.0			13.1			0.0			14.7	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			21.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.17									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			55.0%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Future Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	16					16	6		5			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	27	280	0	0	454	0	0	1264	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.0	22.0			22.1		30.1	30.1				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	0.5	0.5			2.1		2.1	2.1				
Lost Time Adjust (s)	-0.5	-0.5			-2.1			-2.1				
Total Lost Time (s)	4.0	4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.15	0.40			0.67			0.45				
Control Delay	30.0	31.4			40.7			11.8				
Queue Delay	0.0	0.8			0.0			0.0				
Total Delay	30.0	32.2			40.7			11.8				
Queue Length 50th (ft)	14	152			330			210				
Queue Length 95th (ft)	m31	211			458			243				
Internal Link Dist (ft)		379			809			935			162	
Turn Bay Length (ft)	100											
Base Capacity (vph)	183	705			675			2786				
Starvation Cap Reductn	0	199			0			0				
Spillback Cap Reductn	0	0			0			0				
Storage Cap Reductn	0	0			0			0				
Reduced v/c Ratio	0.15	0.55			0.67			0.45				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 129 (92%), Referenced to phase 6:NBTL, Start of Green
 Natural Cycle: 55
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Future Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frpb, ped/bikes	1.00	1.00			0.98			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1756			4895				
Flt Permitted	0.26	1.00			1.00			1.00				
Satd. Flow (perm)	487	1863			1756			4895				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	280	0	0	314	140	71	960	233	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	26	0	0	0	0
Lane Group Flow (vph)	27	280	0	0	443	0	0	1238	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		5			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	52.5	52.5			50.9			76.9				
Effective Green, g (s)	53.0	53.0			53.0			79.0				
Actuated g/C Ratio	0.38	0.38			0.38			0.56				
Clearance Time (s)	4.5	4.5			6.1			6.1				
Lane Grp Cap (vph)	184	705			664			2762				
v/s Ratio Prot		0.15			0.25							
v/s Ratio Perm	0.06							0.25				
v/c Ratio	0.15	0.40			0.67			0.45				
Uniform Delay, d1	28.6	31.8			36.2			17.8				
Progression Factor	0.95	0.93			1.00			0.67				
Incremental Delay, d2	1.6	1.6			5.2			0.5				
Delay (s)	28.9	31.0			41.4			12.4				
Level of Service	C	C			D			B				
Approach Delay (s)		30.8			41.4			12.4			0.0	
Approach LOS		C			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			21.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			66.6%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Future Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		183			376			1146			1015	
Travel Time (s)		5.0			10.3			22.3			19.8	
Confl. Peds. (#/hr)	3					3	4		11			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	84	0	0	220	0	0	1305	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.4	22.4			22.4		24.4	24.4				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	-2.4	-2.4			-2.4		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.21	0.15			0.40		0.44					
Control Delay	20.7	18.9			15.7		8.5					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	20.7	18.9			15.7		8.5					
Queue Length 50th (ft)	20	26			50		164					
Queue Length 95th (ft)	50	57			105		m168					
Internal Link Dist (ft)		103			296		1066			935		
Turn Bay Length (ft)	50											
Base Capacity (vph)	299	558			556		2962					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.21	0.15			0.40		0.44					

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 17 (24%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Future Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1765	1863			1696			5055				
Flt Permitted	0.54	1.00			1.00			1.00				
Satd. Flow (perm)	998	1863			1696			5055				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	84	0	0	88	132	100	1195	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	48	0	0	1	0	0	0	0
Lane Group Flow (vph)	64	84	0	0	172	0	0	1304	0	0	0	0
Confl. Peds. (#/hr)	3					3	4		11			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	21.0	21.0			21.0			41.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.59				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	299	558			508			2960				
v/s Ratio Prot		0.05			c0.10							
v/s Ratio Perm	0.06							0.26				
v/c Ratio	0.21	0.15			0.34			0.44				
Uniform Delay, d1	18.3	18.0			19.1			8.1				
Progression Factor	1.00	1.00			1.00			1.04				
Incremental Delay, d2	1.6	0.6			1.8			0.1				
Delay (s)	20.0	18.5			20.9			8.5				
Level of Service	B	B			C			A				
Approach Delay (s)		19.1			20.9			8.5			0.0	
Approach LOS		B			C			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.1			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.41										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		55.0%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Future Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			377			701			1146	
Travel Time (s)		8.4			8.6			13.7			22.3	
Confl. Peds. (#/hr)	4								8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1507	0	0	0	0	0	2581	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	60.0	60.0						80.0				
Total Split (%)	42.9%	42.9%						57.1%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		-1.7						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.07						0.98				
Control Delay		78.5						17.9				
Queue Delay		0.0						1.3				
Total Delay		78.5						19.2				
Queue Length 50th (ft)		~798						202				
Queue Length 95th (ft)		#941						#157				
Internal Link Dist (ft)		291			297			621			1066	
Turn Bay Length (ft)												
Base Capacity (vph)		1403						2635				
Starvation Cap Reductn		0						23				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.07						0.99				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 64 (46%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Future Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.96				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3475						4828				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3475						4828				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	451	1056	0	0	0	0	0	1871	710	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	14	0	0	0	0
Lane Group Flow (vph)	0	1493	0	0	0	0	0	2567	0	0	0	0
Confl. Peds. (#/hr)	4								8			
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		54.3						74.0				
Effective Green, g (s)		56.0						76.0				
Actuated g/C Ratio		0.40						0.54				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1390						2620				
v/s Ratio Prot								0.53				
v/s Ratio Perm		0.43										
v/c Ratio		1.07						0.98				
Uniform Delay, d1		42.0						31.2				
Progression Factor		0.79						0.23				
Incremental Delay, d2		46.4						9.5				
Delay (s)		79.5						16.8				
Level of Service		E						B				
Approach Delay (s)		79.5			0.0			16.8			0.0	
Approach LOS		E			A			B			A	
Intersection Summary												
HCM 2000 Control Delay		39.9						HCM 2000 Level of Service		D		
HCM 2000 Volume to Capacity ratio		1.02										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		98.4%						ICU Level of Service		F		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Future Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		272			273			483			701	
Travel Time (s)		6.2			6.2			11.0			15.9	
Confl. Peds. (#/hr)	13					13	5		7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Minimum Split (s)	23.4	23.4					24.0	24.0				
Total Split (s)	43.0	43.0					97.0	97.0				
Total Split (%)	30.7%	30.7%					69.3%	69.3%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		-1.4						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.20						0.81				
Control Delay		39.9						2.2				
Queue Delay		0.0						0.2				
Total Delay		39.9						2.5				
Queue Length 50th (ft)		67						28				
Queue Length 95th (ft)		116						36				
Internal Link Dist (ft)		192			193			403			621	
Turn Bay Length (ft)												
Base Capacity (vph)		488						3369				
Starvation Cap Reductn		0						143				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.20						0.84				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 41 (29%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 65												
Control Type: Pretimed												
Splits and Phases: 16: Florida Ave & Fortune St												
												

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔						↔↔↔				
Traffic Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Future Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.97						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1753						5076				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1753						5076				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	28	0	0	0	0	38	2674	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Confl. Peds. (#/hr)	13					13	5		7			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.6						91.0				
Effective Green, g (s)		39.0						93.0				
Actuated g/C Ratio		0.28						0.66				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		488						3371				
v/s Ratio Prot												
v/s Ratio Perm		0.05						0.54				
v/c Ratio		0.20						0.81				
Uniform Delay, d1		38.5						17.0				
Progression Factor		1.00						0.06				
Incremental Delay, d2		0.9						1.2				
Delay (s)		39.4						2.2				
Level of Service		D						A				
Approach Delay (s)		39.4			0.0			2.2			0.0	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		3.5							A			
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		66.6%							C			
Analysis Period (min)		15										

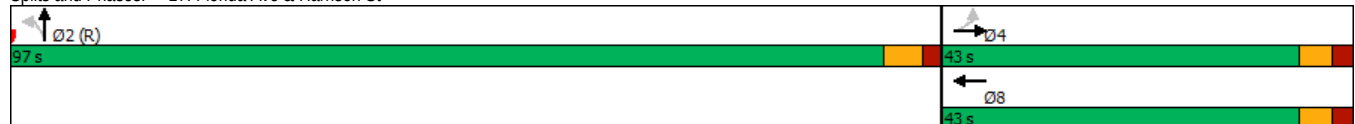
c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Future Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		297			296			282			483	
Travel Time (s)		6.8			6.7			6.4			9.4	
Confl. Peds. (#/hr)	8					8	7		12			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	90	0	0	2836	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-2.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.13			0.20			0.84				
Control Delay		38.9			38.7			32.3				
Queue Delay		0.0			0.0			46.9				
Total Delay		38.9			38.7			79.2				
Queue Length 50th (ft)		42			61			993				
Queue Length 95th (ft)		80			108			1023				
Internal Link Dist (ft)		217			216			202			403	
Turn Bay Length (ft)												
Base Capacity (vph)		465			450			3373				
Starvation Cap Reductn		0			0			1296				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.13			0.20			1.37				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Future Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Flpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.88			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1823			1609			5075				
Flt Permitted		0.90			1.00			1.00				
Satd. Flow (perm)		1671			1609			5075				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	40	0	0	13	77	18	2798	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	61	0	0	88	0	0	2835	0	0	0	0
Confl. Peds. (#/hr)	8					8	7		12			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.2			37.2			91.0				
Effective Green, g (s)		39.0			39.0			93.0				
Actuated g/C Ratio		0.28			0.28			0.66				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		465			448			3371				
v/s Ratio Prot					c0.05							
v/s Ratio Perm		0.04						0.56				
v/c Ratio		0.13			0.20			0.84				
Uniform Delay, d1		37.8			38.5			17.9				
Progression Factor		1.00			1.00			1.69				
Incremental Delay, d2		0.6			1.0			1.6				
Delay (s)		38.4			39.5			31.8				
Level of Service		D			D			C				
Approach Delay (s)		38.4			39.5			31.8			0.0	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		32.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		74.7%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Future Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			288			286			282	
Travel Time (s)		13.0			6.5			5.6			5.5	
Confl. Peds. (#/hr)	11					11	4		21			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	105	0	0	300	0	33	2742	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.57	0.20			0.60		0.03	0.81				
Control Delay	66.4	48.0			49.1		7.5	10.5				
Queue Delay	0.0	0.0			0.0		0.0	47.2				
Total Delay	66.4	48.0			49.1		7.5	57.7				
Queue Length 50th (ft)	81	81			235		7	220				
Queue Length 95th (ft)	148	136			337		m8	211				
Internal Link Dist (ft)		490			208		206			202		
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	173	518			502		1159	3374				
Starvation Cap Reductn	0	0			0		0	116				
Spillback Cap Reductn	0	0			0		0	1465				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.57	0.20			0.60		0.03	1.44				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 128 (91%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 65
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Future Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	0.99	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1754	1863			1796		1745	5081				
Flt Permitted	0.34	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	623	1863			1796		1745	5081				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	98	105	0	0	236	64	33	2732	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	98	105	0	0	298	0	33	2742	0	0	0	0
Confl. Peds. (#/hr)	11					11	4		21			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.2	37.2			37.2		91.0	91.0				
Effective Green, g (s)	39.0	39.0			39.0		93.0	93.0				
Actuated g/C Ratio	0.28	0.28			0.28		0.66	0.66				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	173	518			500		1159	3375				
v/s Ratio Prot		0.06			c0.17			c0.54				
v/s Ratio Perm	0.16						0.02					
v/c Ratio	0.57	0.20			0.60		0.03	0.81				
Uniform Delay, d1	43.3	38.6			43.7		8.0	17.1				
Progression Factor	1.19	1.21			1.00		0.92	0.53				
Incremental Delay, d2	12.6	0.9			5.2		0.0	1.3				
Delay (s)	64.1	47.4			48.8		7.5	10.3				
Level of Service	E	D			D		A	B				
Approach Delay (s)		55.5			48.8			10.3			0.0	
Approach LOS		E			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		16.6			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.75										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		84.8%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0
Future Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			311			283			286	
Travel Time (s)		12.6			7.1			5.5			5.6	
Confl. Peds. (#/hr)	4					4	5		74			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	309	0	0	273	0	57	2659	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.43	0.55			0.50		0.05	0.82				
Control Delay	74.8	75.1			43.8		9.1	11.0				
Queue Delay	2.5	0.0			1.8		0.0	4.5				
Total Delay	77.3	75.1			45.6		9.1	15.6				
Queue Length 50th (ft)	84	278			203		12	201				
Queue Length 95th (ft)	m113	m347			295		m19	296				
Internal Link Dist (ft)		473			231			203			206	
Turn Bay Length (ft)	70						60					
Base Capacity (vph)	223	558			542		1116	3243				
Starvation Cap Reductn	0	0			0		0	516				
Spillback Cap Reductn	57	0			139		0	0				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.57	0.55			0.68		0.05	0.98				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 70												
Control Type: Pretimed												
m	Volume for 95th percentile queue is metered by upstream signal.											
Splits and Phases: 19: Florida Ave & Cass St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0
Future Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			1.00		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		0.98	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1763	1863			1802		1737	5044				
Flt Permitted	0.40	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	744	1863			1802		1737	5044				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	95	309	0	0	215	58	57	2610	49	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	95	309	0	0	271	0	57	2658	0	0	0	0
Confl. Peds. (#/hr)	4					4	5		74			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.0	40.0			40.0		88.0	88.0				
Effective Green, g (s)	42.0	42.0			42.0		90.0	90.0				
Actuated g/C Ratio	0.30	0.30			0.30		0.64	0.64				
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)	223	558			540		1116	3242				
v/s Ratio Prot		c0.17			0.15			c0.53				
v/s Ratio Perm	0.13						0.03					
v/c Ratio	0.43	0.55			0.50		0.05	0.82				
Uniform Delay, d1	39.3	41.1			40.4		9.2	18.9				
Progression Factor	1.74	1.74			1.00		0.97	0.51				
Incremental Delay, d2	3.9	2.6			3.3		0.0	1.3				
Delay (s)	72.5	74.1			43.7		9.0	10.9				
Level of Service	E	E			D		A	B				
Approach Delay (s)		73.7			43.7			10.8			0.0	
Approach LOS		E			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		21.0			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		86.2%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Future Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			394			300			283	
Travel Time (s)		12.2			9.0			5.8			5.5	
Confl. Peds. (#/hr)	33					33	6		68			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	200	0	0	135	0	47	2818	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.41			0.27		0.04	0.86				
Control Delay		36.1			38.5		2.6	7.4				
Queue Delay		0.3			0.1		0.0	0.8				
Total Delay		36.4			38.6		2.6	8.2				
Queue Length 50th (ft)		161			92		4	83				
Queue Length 95th (ft)		241			151		m4	86				
Internal Link Dist (ft)		457			314			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		491			503		1116	3260				
Starvation Cap Reductn		0			0		0	187				
Spillback Cap Reductn		51			52		0	93				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.45			0.30		0.04	0.92				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 75

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↗		↖	↗				
Traffic Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Future Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.96		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.98	1.00				
Frt		1.00			0.94		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1815			1675		1736	5068				
Flt Permitted		0.89			1.00		0.95	1.00				
Satd. Flow (perm)		1637			1675		1736	5068				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	51	149	0	0	70	65	47	2793	25	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	200	0	0	134	0	47	2817	0	0	0	0
Confl. Peds. (#/hr)	33					33	6		68			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.2			40.2		88.0	88.0				
Effective Green, g (s)		42.0			42.0		90.0	90.0				
Actuated g/C Ratio		0.30			0.30		0.64	0.64				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		491			502		1116	3258				
v/s Ratio Prot					0.08			c0.56				
v/s Ratio Perm		c0.12					0.03					
v/c Ratio		0.41			0.27		0.04	0.86				
Uniform Delay, d1		39.1			37.3		9.2	20.1				
Progression Factor		0.85			1.00		0.28	0.27				
Incremental Delay, d2		2.4			1.3		0.0	1.8				
Delay (s)		35.6			38.6		2.6	7.3				
Level of Service		D			D		A	A				
Approach Delay (s)		35.6			38.6			7.2			0.0	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		10.3			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		86.0%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

Build 2024
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Future Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			418			283			300	
Travel Time (s)		12.3			9.5			5.5			5.8	
Confl. Peds. (#/hr)	24					24	10		15			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	202	0	0	300	0	0	2774	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.51			0.60			0.85				
Control Delay		22.9			47.4			8.2				
Queue Delay		0.0			0.0			12.6				
Total Delay		22.9			47.4			20.8				
Queue Length 50th (ft)		67			232			233				
Queue Length 95th (ft)		112			334			282				
Internal Link Dist (ft)		459			338			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		395			498			3245				
Starvation Cap Reductn		0			0			513				
Spillback Cap Reductn		0			0			138				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.51			0.60			1.02				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Future Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.96			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		1834			1654			5047				
Flt Permitted		0.71			1.00			1.00				
Satd. Flow (perm)		1319			1654			5047				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	45	157	0	0	122	178	100	2619	55	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	202	0	0	298	0	0	2773	0	0	0	0
Confl. Peds. (#/hr)	24					24	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.1			40.1			88.3				
Effective Green, g (s)		42.0			42.0			90.0				
Actuated g/C Ratio		0.30			0.30			0.64				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		395			496			3244				
v/s Ratio Prot					c0.18							
v/s Ratio Perm		0.15						0.55				
v/c Ratio		0.51			0.60			0.85				
Uniform Delay, d1		40.5			41.8			19.8				
Progression Factor		0.46			1.00			0.34				
Incremental Delay, d2		3.7			5.3			1.3				
Delay (s)		22.5			47.1			8.0				
Level of Service		C			D			A				
Approach Delay (s)		22.5			47.1			8.0			0.0	
Approach LOS		C			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		12.5			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.77										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		88.4%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Future Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			396			298			283	
Travel Time (s)		12.3			9.0			5.8			5.5	
Confl. Peds. (#/hr)	16					16	6		13			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	358	0	0	193	339	0	2775	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	54.0	54.0			54.0	54.0	86.0	86.0				
Total Split (%)	38.6%	38.6%			38.6%	38.6%	61.4%	61.4%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.31			0.29	0.61		0.94				
Control Delay		17.6			33.8	39.9		16.4				
Queue Delay		0.0			0.1	0.0		14.0				
Total Delay		17.6			33.9	39.9		30.4				
Queue Length 50th (ft)		55			126	236		109				
Queue Length 95th (ft)		83			191	346		110				
Internal Link Dist (ft)		463			316			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		1172			665	556		2947				
Starvation Cap Reductn		0			0	0		178				
Spillback Cap Reductn		0			67	0		239				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.31			0.32	0.61		1.02				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Future Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.91				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		0.99				
Flt Protected		1.00			1.00	1.00		1.00				
Satd. Flow (prot)		3525			1863	1517		5026				
Flt Permitted		0.93			1.00	1.00		1.00				
Satd. Flow (perm)		3285			1863	1517		5026				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	337	0	0	193	339	64	2565	146	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	15	0	4	0	0	0	0
Lane Group Flow (vph)	0	358	0	0	193	324	0	2771	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		13			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		48.1			48.1	48.1		80.0				
Effective Green, g (s)		50.0			50.0	50.0		82.0				
Actuated g/C Ratio		0.36			0.36	0.36		0.59				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		1173			665	541		2943				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.11				c0.21		0.55				
v/c Ratio		0.31			0.29	0.60		0.94				
Uniform Delay, d1		32.5			32.3	36.8		26.8				
Progression Factor		0.52			1.00	1.00		0.43				
Incremental Delay, d2		0.6			1.1	4.8		4.5				
Delay (s)		17.5			33.4	41.7		15.9				
Level of Service		B			C	D		B				
Approach Delay (s)		17.5			38.6			15.9			0.0	
Approach LOS		B			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		19.4			HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio		0.81										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)				8.0			
Intersection Capacity Utilization		91.6%			ICU Level of Service				F			
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Future Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			408			314			298	
Travel Time (s)		12.5			9.3			6.1			5.8	
Confl. Peds. (#/hr)	21					21	8		15			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	105	130	0	0	159	0	0	2805	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	-1.9	-1.9			-1.9		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.34	0.23			0.32		0.86					
Control Delay	37.4	34.2			39.5		25.1					
Queue Delay	0.0	0.0			0.0		3.6					
Total Delay	37.4	34.2			39.5		28.7					
Queue Length 50th (ft)	59	71			110		793					
Queue Length 95th (ft)	m111	129			176		864					
Internal Link Dist (ft)		468			328		234			218		
Turn Bay Length (ft)	75											
Base Capacity (vph)	309	558			494		3251					
Starvation Cap Reductn	0	0			0		363					
Spillback Cap Reductn	0	0			0		147					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.34	0.23			0.32		0.97					

Intersection Summary

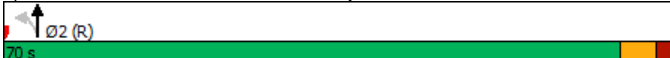
Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 3 (2%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



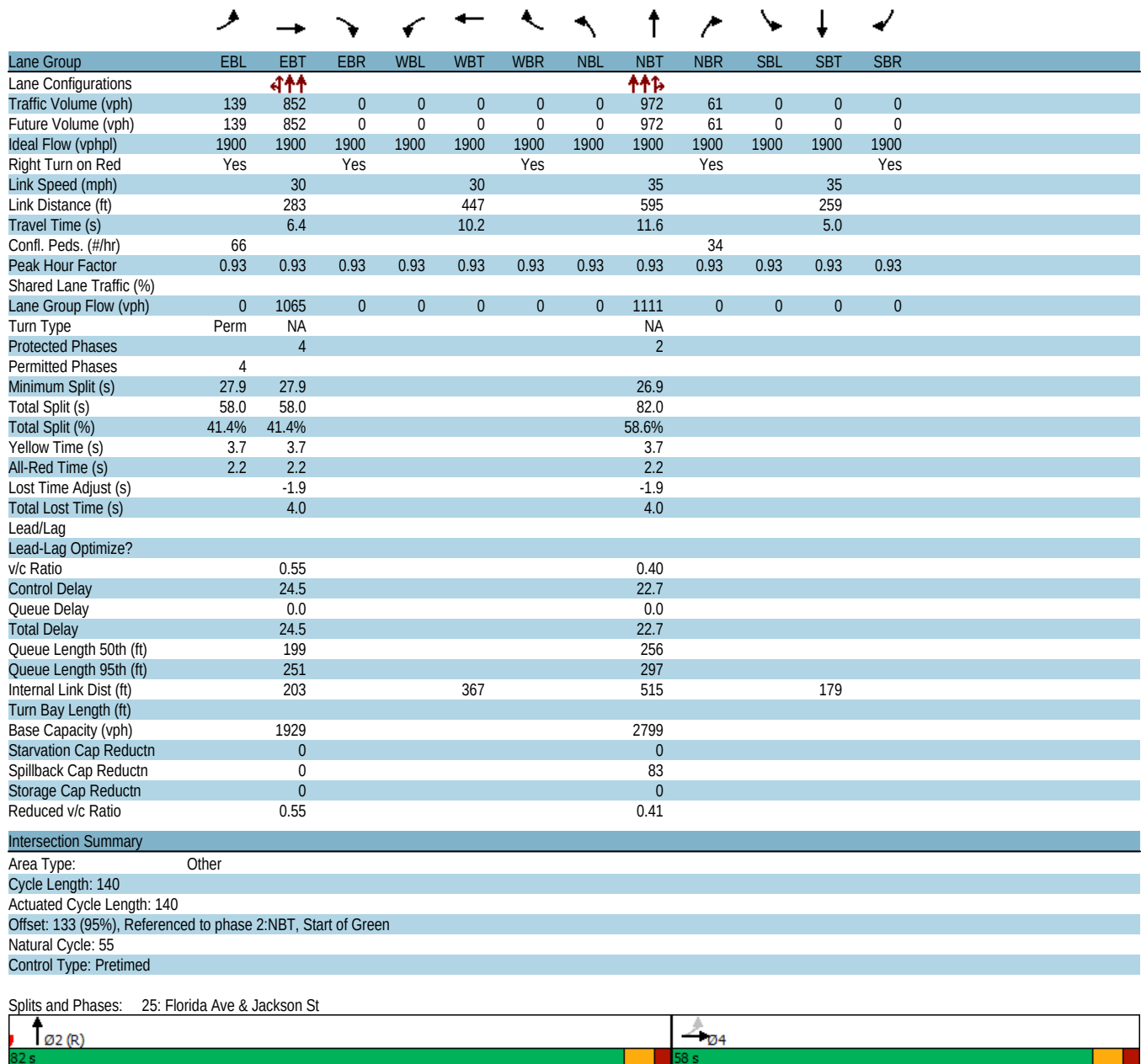
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Future Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.97	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1720	1863			1641			5054				
Flt Permitted	0.57	1.00			1.00			1.00				
Satd. Flow (perm)	1033	1863			1641			5054				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	105	130	0	0	55	104	72	2681	52	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	105	130	0	0	157	0	0	2804	0	0	0	0
Confl. Peds. (#/hr)	21					21	8		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.1	40.1			40.1			88.0				
Effective Green, g (s)	42.0	42.0			42.0			90.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.64				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	309	558			492			3249				
v/s Ratio Prot		0.07			0.10							
v/s Ratio Perm	0.10							0.55				
v/c Ratio	0.34	0.23			0.32			0.86				
Uniform Delay, d1	38.2	36.9			37.9			20.1				
Progression Factor	0.88	0.89			1.00			1.07				
Incremental Delay, d2	2.8	0.9			1.7			3.2				
Delay (s)	36.6	33.8			39.6			24.7				
Level of Service	D	C			D			C				
Approach Delay (s)		35.0			39.6			24.7			0.0	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		26.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.70										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		87.3%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Future Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			427			259			314	
Travel Time (s)		12.4			9.7			5.0			6.1	
Confl. Peds. (#/hr)						33	10					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2043	0	127	938	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					70.0		70.0	70.0				
Total Split (%)					50.0%		50.0%	50.0%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					-1.7		-1.8	-1.8				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.71		0.15	0.39				
Control Delay					29.7		6.0	11.6				
Queue Delay					0.2		0.7	0.3				
Total Delay					29.9		6.7	11.9				
Queue Length 50th (ft)					406		12	77				
Queue Length 95th (ft)					449		23	101				
Internal Link Dist (ft)		466			347			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					2897		828	2397				
Starvation Cap Reductn					0		476	776				
Spillback Cap Reductn					221		0	584				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.76		0.36	0.58				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 24: Florida Ave & Kennedy Blvd												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Future Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.98	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6062		1734	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6062		1734	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	1544	499	127	938	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	41	0	11	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2002	0	116	938	0	0	0	0
Confl. Peds. (#/hr)					33		10					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					64.3		64.2	64.2				
Effective Green, g (s)					66.0		66.0	66.0				
Actuated g/C Ratio					0.47		0.47	0.47				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2857		817	2397				
v/s Ratio Prot					c0.33			c0.18				
v/s Ratio Perm							0.07					
v/c Ratio					0.70		0.14	0.39				
Uniform Delay, d1					29.2		21.0	24.0				
Progression Factor					1.00		0.32	0.46				
Incremental Delay, d2					1.5		0.3	0.4				
Delay (s)					30.7		7.0	11.6				
Level of Service					C		A	B				
Approach Delay (s)		0.0			30.7			11.0			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			23.9			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			72.7%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	139	852	0	0	0	0	0	972	61	0	0	0
Future Volume (vph)	139	852	0	0	0	0	0	972	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Flpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4961						5016				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4961						5016				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	149	916	0	0	0	0	0	1045	66	0	0	0
RTOR Reduction (vph)	0	16	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1049	0	0	0	0	0	1106	0	0	0	0
Confl. Peds. (#/hr)	66								34			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1913						2794				
v/s Ratio Prot								c0.22				
v/s Ratio Perm		0.21										
v/c Ratio		0.55						0.40				
Uniform Delay, d1		33.5						17.6				
Progression Factor		0.71						1.27				
Incremental Delay, d2		1.1						0.4				
Delay (s)		25.0						22.8				
Level of Service		C						C				
Approach Delay (s)		25.0			0.0			22.8			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		23.9										
HCM 2000 Volume to Capacity ratio		0.46										
Actuated Cycle Length (s)		140.0							8.0			
Intersection Capacity Utilization		54.8%							A			
Analysis Period (min)		15										

c Critical Lane Group

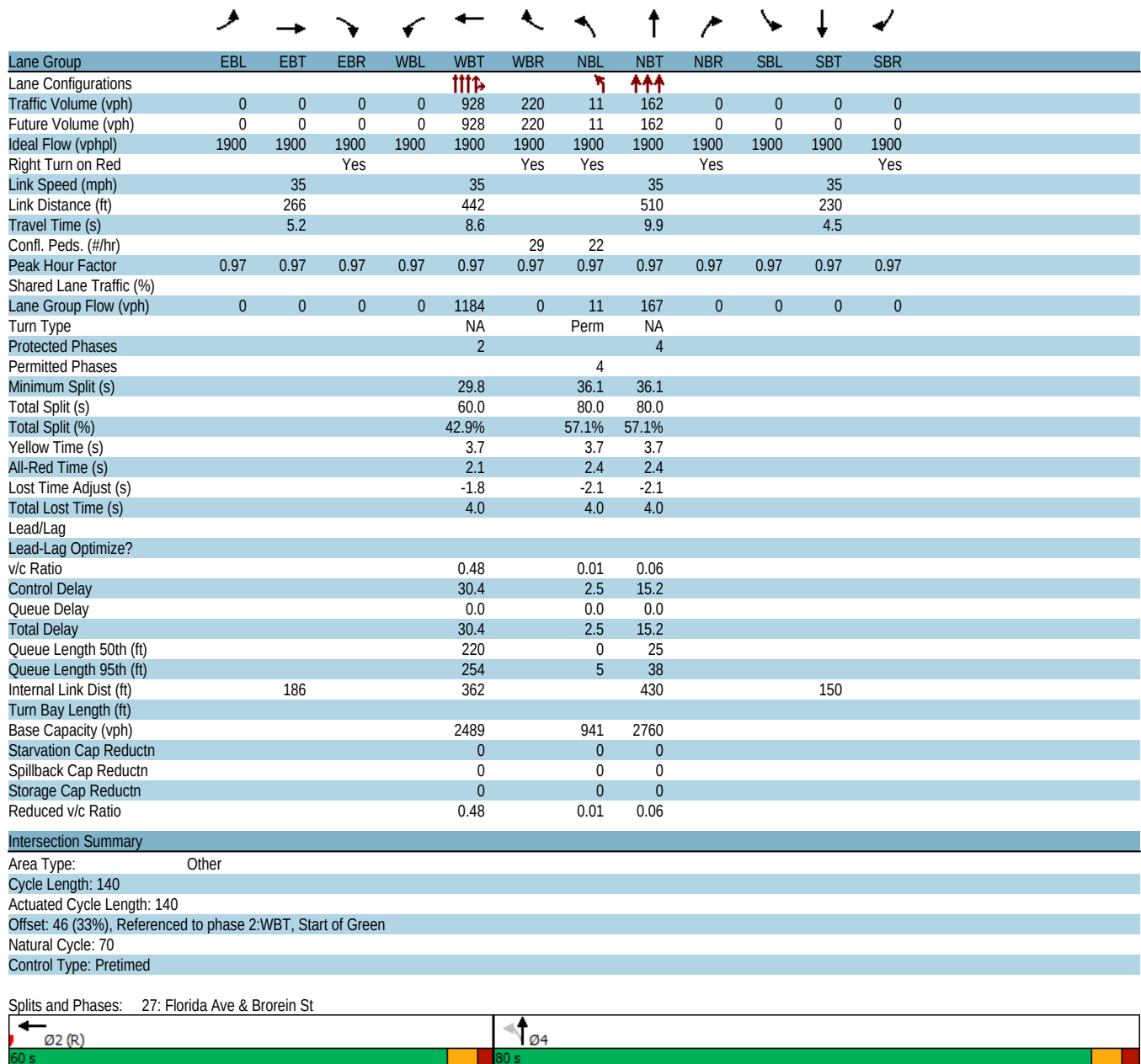
												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Future Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			299			397			595	
Travel Time (s)		12.6			6.8			7.7			11.6	
Confl. Peds. (#/hr)	130					130	45		103			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	227	0	0	336	0	0	185	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	29.0	29.0			29.0		24.7	24.7				
Total Split (s)	60.0	60.0			60.0		80.0	80.0				
Total Split (%)	42.9%	42.9%			42.9%		57.1%	57.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)		-2.0			-2.0			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.25			0.26			0.07				
Control Delay		18.2			25.5			26.6				
Queue Delay		0.0			0.0			0.0				
Total Delay		18.2			25.5			26.6				
Queue Length 50th (ft)		42			94			36				
Queue Length 95th (ft)		54			132			56				
Internal Link Dist (ft)		473			219			317			515	
Turn Bay Length (ft)												
Base Capacity (vph)		912			1306			2713				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.25			0.26			0.07				
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	121 (86%), Referenced to phase 2:NBT, Start of Green											
Natural Cycle:	55											
Control Type:	Pretimed											

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Future Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			0.91				
Frpb, ped/bikes		1.00			0.94			0.99				
Flpb, ped/bikes		0.94			1.00			0.99				
Frt		1.00			0.96			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		3275			3210			4997				
Flt Permitted		0.68			1.00			1.00				
Satd. Flow (perm)		2279			3210			4997				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	95	132	0	0	255	81	6	174	5	0	0	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	227	0	0	314	0	0	183	0	0	0	0
Confl. Peds. (#/hr)	130					130	45		103			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		54.0			54.0			74.3				
Effective Green, g (s)		56.0			56.0			76.0				
Actuated g/C Ratio		0.40			0.40			0.54				
Clearance Time (s)		6.0			6.0			5.7				
Lane Grp Cap (vph)		911			1284			2712				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.10						0.04				
v/c Ratio		0.25			0.24			0.07				
Uniform Delay, d1		28.0			27.9			15.2				
Progression Factor		0.62			1.00			1.78				
Incremental Delay, d2		0.6			0.5			0.0				
Delay (s)		18.0			28.4			27.1				
Level of Service		B			C			C				
Approach Delay (s)		18.0			28.4			27.1			0.0	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM 2000 Control Delay			24.9			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.14									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			53.3%			ICU Level of Service			A			
Analysis Period (min)			15									

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↱	↑↑↑				
Traffic Volume (vph)	0	0	0	0	928	220	11	162	0	0	0	0
Future Volume (vph)	0	0	0	0	928	220	11	162	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		0.97	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6150		1715	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6150		1715	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	957	227	11	167	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	31	0	5	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1153	0	6	167	0	0	0	0
Confl. Peds. (#/hr)					29		22					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					56.0		76.0	76.0				
Actuated g/C Ratio					0.40		0.54	0.54				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2460		931	2760				
v/s Ratio Prot					c0.19			c0.03				
v/s Ratio Perm							0.00					
v/c Ratio					0.47		0.01	0.06				
Uniform Delay, d1					31.0		14.7	15.1				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.6		0.0	0.0				
Delay (s)					31.7		14.7	15.2				
Level of Service					C		B	B				
Approach Delay (s)		0.0			31.7			15.1			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			29.5		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.23									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			35.0%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	246	0	0	728	55
Future Volume (vph)	0	246	0	0	728	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	267	0	0	851	0
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	988	0	0	974	0
Future Volume (vph)	0	988	0	0	974	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1074	0	0	1059	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				  		
Traffic Volume (vph)	0	0	416	900	0	0
Future Volume (vph)	0	0	416	900	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	294			171	309	
Travel Time (s)	6.7			3.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	452	978	0	0
Sign Control	Stop			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Build 2024 PM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑↑↑	
Traffic Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Future Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			246	
Travel Time (s)		14.9			10.4			37.4			4.8	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	314	126	116	181	0	0	0	0	0	1332	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	
Total Split (s)		60.0	60.0	60.0	60.0					80.0	80.0	
Total Split (%)		42.9%	42.9%	42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0						-2.4	
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.42	0.18	0.36	0.24						0.49	
Control Delay		32.5	9.3	19.6	16.9						20.6	
Queue Delay		0.1	0.0	0.0	0.0						0.0	
Total Delay		32.6	9.3	19.6	16.9						20.6	
Queue Length 50th (ft)		205	18	34	52						266	
Queue Length 95th (ft)		290	61	55	77						306	
Internal Link Dist (ft)		576			379			1841			166	
Turn Bay Length (ft)				150								
Base Capacity (vph)		745	689	320	745						2718	
Starvation Cap Reductn		0	0	0	0						0	
Spillback Cap Reductn		58	0	0	0						0	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.46	0.18	0.36	0.24						0.49	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 100 (71%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Future Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						0.99	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1583	1770	1863						4998	
Flt Permitted		1.00	1.00	0.43	1.00						0.99	
Satd. Flow (perm)		1863	1583	801	1863						4998	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	314	126	116	181	0	0	0	0	282	1003	47
RTOR Reduction (vph)	0	0	56	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	314	70	116	181	0	0	0	0	0	1329	0
Confl. Peds. (#/hr)										1		1
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4							2	
Actuated Green, G (s)		54.0	54.0	54.0	54.0						73.6	
Effective Green, g (s)		56.0	56.0	56.0	56.0						76.0	
Actuated g/C Ratio		0.40	0.40	0.40	0.40						0.54	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		745	633	320	745						2713	
v/s Ratio Prot		c0.17			0.10							
v/s Ratio Perm			0.04	0.14							0.27	
v/c Ratio		0.42	0.11	0.36	0.24						0.49	
Uniform Delay, d1		30.3	26.4	29.5	27.9						19.9	
Progression Factor		1.00	1.00	0.55	0.57						1.00	
Incremental Delay, d2		1.7	0.4	3.0	0.7						0.6	
Delay (s)		32.1	26.7	19.1	16.7						20.6	
Level of Service		C	C	B	B						C	
Approach Delay (s)		30.5			17.7			0.0			20.6	
Approach LOS		C			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			22.3			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.46									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			60.2%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street/Kay St

Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Future Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		391			229			247			1921	
Travel Time (s)		8.9			5.2			4.8			37.4	
Confl. Peds. (#/hr)												1
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)				11%								
Lane Group Flow (vph)	0	0	0	35	1705	0	0	0	0	0	1358	0
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Minimum Split (s)				26.7	26.7						31.0	
Total Split (s)				84.0	84.0						56.0	
Total Split (%)				60.0%	60.0%						40.0%	
Yellow Time (s)				3.7	3.7						4.0	
All-Red Time (s)				2.0	2.0						2.0	
Lost Time Adjust (s)				-1.7	-1.7						-2.0	
Total Lost Time (s)				4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.04	0.88						0.92dr	
Control Delay				6.3	31.8						38.8	
Queue Delay				0.0	0.0						2.3	
Total Delay				6.3	31.8						41.2	
Queue Length 50th (ft)				4	696						431	
Queue Length 95th (ft)				21	821						484	
Internal Link Dist (ft)		311			149			167			1841	
Turn Bay Length (ft)												
Base Capacity (vph)				930	1947						1773	
Starvation Cap Reductn				0	0						0	
Spillback Cap Reductn				1	0						279	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.04	0.88						0.91	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green												
Natural Cycle: 75												
Control Type: Pretimed												
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
Splits and Phases: 2: Tampa St & Kay Street/Kay St												
 Ø2 (R) 56 s  Ø4 34 s												

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street/Kay St

Build 2024
Timing Plan: PM PEAK

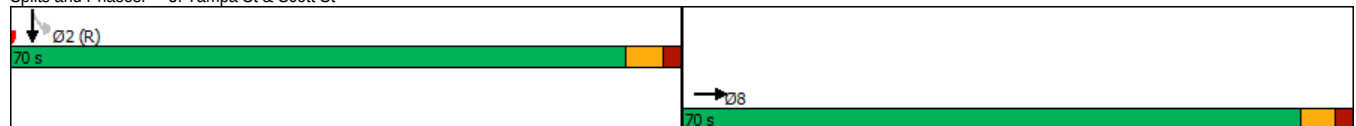
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Future Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						0.91	
Frpb, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				1.00	1.00						1.00	
Frt				1.00	1.00						0.94	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1610	3390						4744	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1610	3390						4744	
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	39	1701	0	0	0	0	0	799	559
RTOR Reduction (vph)	0	0	0	11	10	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	0	0	24	1695	0	0	0	0	0	1346	0
Confl. Peds. (#/hr)												1
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Actuated Green, G (s)				78.3	78.3						50.0	
Effective Green, g (s)				80.0	80.0						52.0	
Actuated g/C Ratio				0.57	0.57						0.37	
Clearance Time (s)				5.7	5.7						6.0	
Lane Grp Cap (vph)				920	1937						1762	
v/s Ratio Prot				0.02	c0.50						c0.28	
v/s Ratio Perm												
v/c Ratio				0.03	0.88						0.92dr	
Uniform Delay, d1				13.1	25.7						38.6	
Progression Factor				1.00	1.00						0.93	
Incremental Delay, d2				0.1	5.9						3.0	
Delay (s)				13.1	31.6						39.1	
Level of Service				B	C						D	
Approach Delay (s)		0.0			31.2			0.0			39.1	
Approach LOS		A			C			A			D	
Intersection Summary												
HCM 2000 Control Delay			34.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			68.8%			ICU Level of Service			C			
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2024
Timing Plan: PM PEAK

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕									↕↕↕	
Traffic Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Future Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		385			62			346			247	
Travel Time (s)		8.8			1.4			6.7			4.8	
Confl. Peds. (#/hr)			2									
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	859	0	0	0	0	0	0	0	0	816	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		-1.7									-2.0	
Total Lost Time (s)		4.0									4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.52									0.34	
Control Delay		27.1									9.4	
Queue Delay		4.6									4.4	
Total Delay		31.7									13.8	
Queue Length 50th (ft)		280									196	
Queue Length 95th (ft)		342									191	
Internal Link Dist (ft)		305			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1653									2406	
Starvation Cap Reductn		0									1492	
Spillback Cap Reductn		706									4	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.91									0.89	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	62 (44%), Referenced to phase 2:SBTL, Start of Green											
Natural Cycle:	50											
Control Type:	Pretimed											

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									 	
Traffic Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Future Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.99									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3501									5033	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3501									5033	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	803	56	0	0	0	0	0	0	169	647	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	33	0
Lane Group Flow (vph)	0	855	0	0	0	0	0	0	0	0	783	0
Confl. Peds. (#/hr)			2									
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		66.0									66.0	
Actuated g/C Ratio		0.47									0.47	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1650									2372	
v/s Ratio Prot		c0.24										
v/s Ratio Perm											0.16	
v/c Ratio		0.52									0.33	
Uniform Delay, d1		25.9									23.2	
Progression Factor		1.00									0.43	
Incremental Delay, d2		1.2									0.2	
Delay (s)		27.0									10.2	
Level of Service		C									B	
Approach Delay (s)		27.0			0.0			0.0			10.2	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay		18.8				HCM 2000 Level of Service		B				
HCM 2000 Volume to Capacity ratio		0.42										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		45.0%				ICU Level of Service		A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Future Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			5.9			2.5	
Confl. Peds. (#/hr)			24	24						53		25
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	96	203	0	0	0	0	0	2088	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					26.8	26.8	
Total Split (s)		60.0		60.0	60.0					80.0	80.0	
Total Split (%)		42.9%		42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.30		0.24	0.27						0.77	
Control Delay		29.1		24.2	24.1						23.0	
Queue Delay		0.1		0.1	0.0						50.6	
Total Delay		29.2		24.4	24.1						73.6	
Queue Length 50th (ft)		120		75	160						609	
Queue Length 95th (ft)		185		m131	242						666	
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		681		400	745						2722	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		70		40	0						1880	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.33		0.27	0.27						2.48	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 85.8 (61%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Future Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.97		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.97	1.00						1.00	
Frt		0.94		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1693		1714	1863						5008	
Flt Permitted		1.00		0.56	1.00						1.00	
Satd. Flow (perm)		1693		1002	1863						5008	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	107	96	96	203	0	0	0	0	29	1959	100
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	199	0	96	203	0	0	0	0	0	2084	0
Confl. Peds. (#/hr)			24	24						53		25
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		54.2		54.2	54.2						74.2	
Effective Green, g (s)		56.0		56.0	56.0						76.0	
Actuated g/C Ratio		0.40		0.40	0.40						0.54	
Clearance Time (s)		5.8		5.8	5.8						5.8	
Lane Grp Cap (vph)		677		400	745						2718	
v/s Ratio Prot		c0.12			0.11							
v/s Ratio Perm				0.10							0.42	
v/c Ratio		0.29		0.24	0.27						0.77	
Uniform Delay, d1		28.6		27.9	28.3						25.1	
Progression Factor		1.00		0.80	0.81						0.83	
Incremental Delay, d2		1.1		1.3	0.8						2.1	
Delay (s)		29.7		23.7	23.8						22.9	
Level of Service		C		C	C						C	
Approach Delay (s)		29.7			23.8			0.0			22.9	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			23.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			84.2%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Future Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		302			553			286			301	
Travel Time (s)		6.9			12.6			5.6			5.9	
Confl. Peds. (#/hr)			31	31						63		43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	407	0	75	200	0	0	0	0	0	2066	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		60.0		60.0	60.0					80.0	80.0	
Total Split (%)		42.9%		42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.56		0.30	0.27						0.76	
Control Delay		35.6		19.5	16.7						54.6	
Queue Delay		0.0		0.0	0.0						49.4	
Total Delay		35.6		19.5	16.7						104.0	
Queue Length 50th (ft)		280		19	50						678	
Queue Length 95th (ft)		389		45	95						730	
Internal Link Dist (ft)		222			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		723		246	745						2703	
Starvation Cap Reductn		0		0	0						1640	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.56		0.30	0.27						1.94	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 20 (14%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Future Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.98		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1798		1770	1863						4975	
Flt Permitted		1.00		0.33	1.00						1.00	
Satd. Flow (perm)		1798		617	1863						4975	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	340	67	75	200	0	0	0	0	121	1911	34
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	403	0	75	200	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			31	31						63		43
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		54.3		54.3	54.3						74.3	
Effective Green, g (s)		56.0		56.0	56.0						76.0	
Actuated g/C Ratio		0.40		0.40	0.40						0.54	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		719		246	745						2700	
v/s Ratio Prot		0.22			0.11							
v/s Ratio Perm				0.12							0.42	
v/c Ratio		0.56		0.30	0.27						0.76	
Uniform Delay, d1		32.5		28.7	28.2						25.0	
Progression Factor		1.00		0.56	0.56						2.11	
Incremental Delay, d2		3.1		2.9	0.8						1.4	
Delay (s)		35.6		18.9	16.5						54.2	
Level of Service		D		B	B						D	
Approach Delay (s)		35.6			17.2			0.0			54.2	
Approach LOS		D			B			A			D	
Intersection Summary												
HCM 2000 Control Delay			47.7			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			86.6%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Future Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			5.9			5.6	
Confl. Peds. (#/hr)			53	53						168		62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	128	0	0	189	0	0	0	0	0	2044	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		-1.8			-1.8						-1.9	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.25			0.41						0.65	
Control Delay		34.1			38.8						4.5	
Queue Delay		0.0			0.0						0.3	
Total Delay		34.1			38.8						4.8	
Queue Length 50th (ft)		77			122						75	
Queue Length 95th (ft)		133			201						76	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		517			458						3151	
Starvation Cap Reductn		0			0						435	
Spillback Cap Reductn		0			0						0	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.25			0.41						0.75	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Future Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.96			1.00						1.00	
Flpb, ped/bikes		1.00			0.97						0.97	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1692			1774						4901	
Flt Permitted		1.00			0.85						1.00	
Satd. Flow (perm)		1692			1527						4901	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	81	47	68	121	0	0	0	0	114	1899	31
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	118	0	0	189	0	0	0	0	0	2043	0
Confl. Peds. (#/hr)			53	53						168		62
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		42.0			42.0						90.0	
Actuated g/C Ratio		0.30			0.30						0.64	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		507			458						3150	
v/s Ratio Prot		0.07										
v/s Ratio Perm					0.12						0.42	
v/c Ratio		0.23			0.41						0.65	
Uniform Delay, d1		36.9			39.1						15.3	
Progression Factor		1.00			0.91						0.25	
Incremental Delay, d2		1.1			2.7						0.7	
Delay (s)		37.9			38.2						4.5	
Level of Service		D			D						A	
Approach Delay (s)		37.9			38.2			0.0			4.5	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.0			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			74.5%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Future Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red		Yes				Yes				Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		286			539			272			302	
Travel Time (s)		6.5			12.3			5.3			5.9	
Confl. Peds. (#/hr)			19	19						54		36
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	203	0	0	300	0	0	0	0	0	2087	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7			-1.7						-1.7	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.41			0.82						0.63	
Control Delay		40.8			57.2						3.1	
Queue Delay		0.0			0.0						0.6	
Total Delay		40.8			57.2						3.7	
Queue Length 50th (ft)		139			199						47	
Queue Length 95th (ft)		216			m#385						51	
Internal Link Dist (ft)		206			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		491			366						3327	
Starvation Cap Reductn		0			0						272	
Spillback Cap Reductn		1			0						735	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.41			0.82						0.81	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Future Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.98			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1725			1826						5010	
Flt Permitted		1.00			0.71						1.00	
Satd. Flow (perm)		1725			1315						5010	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	121	82	81	219	0	0	0	0	67	1969	51
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	191	0	0	300	0	0	0	0	0	2085	0
Confl. Peds. (#/hr)			19	19						54		36
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						91.3	
Effective Green, g (s)		39.0			39.0						93.0	
Actuated g/C Ratio		0.28			0.28						0.66	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		480			366						3328	
v/s Ratio Prot		0.11										
v/s Ratio Perm					0.23						0.42	
v/c Ratio		0.40			0.82						0.63	
Uniform Delay, d1		41.0			47.2						13.5	
Progression Factor		1.00			0.81						0.18	
Incremental Delay, d2		2.5			18.0						0.7	
Delay (s)		43.5			56.2						3.1	
Level of Service		D			E						A	
Approach Delay (s)		43.5			56.2			0.0			3.1	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			12.4			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			79.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2024
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Future Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		284			543			313			272	
Travel Time (s)		6.5			12.3			6.1			5.3	
Confl. Peds. (#/hr)			8	8						31		74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	531	0	146	214	0	0	0	0	0	2086	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		61.0		61.0	61.0					79.0	79.0	
Total Split (%)		43.6%		43.6%	43.6%					56.4%	56.4%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.72		0.90	0.28						0.78	
Control Delay		41.2		82.2	20.2						15.0	
Queue Delay		0.0		0.0	0.0						1.3	
Total Delay		41.2		82.2	20.2						16.3	
Queue Length 50th (ft)		397		130	85						473	
Queue Length 95th (ft)		540		m#263	m122						433	
Internal Link Dist (ft)		204			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		733		162	758						2672	
Starvation Cap Reductn		0		0	0						358	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.72		0.90	0.28						0.90	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 34 (24%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Tampa St & Twiggs St



Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Future Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1790		1770	1863						4987	
Flt Permitted		1.00		0.22	1.00						0.99	
Satd. Flow (perm)		1790		401	1863						4987	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	404	127	146	214	0	0	0	0	297	1765	24
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	526	0	146	214	0	0	0	0	0	2085	0
Confl. Peds. (#/hr)			8	8						31		74
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		55.3		55.3	55.3						73.1	
Effective Green, g (s)		57.0		57.0	57.0						75.0	
Actuated g/C Ratio		0.41		0.41	0.41						0.54	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		728		163	758						2671	
v/s Ratio Prot		0.29			0.11							
v/s Ratio Perm				0.36							0.42	
v/c Ratio		0.72		0.90	0.28						0.78	
Uniform Delay, d1		34.9		38.7	27.8						25.9	
Progression Factor		1.00		0.80	0.68						0.50	
Incremental Delay, d2		6.1		47.1	0.9						1.8	
Delay (s)		41.0		78.1	19.9						14.8	
Level of Service		D		E	B						B	
Approach Delay (s)		41.0			43.5			0.0			14.8	
Approach LOS		D			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			23.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			84.1%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2024
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Future Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		397			548			309			313	
Travel Time (s)		9.0			12.5			6.0			6.1	
Confl. Peds. (#/hr)			43	43						36		75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	243	0	96	69	0	0	0	0	0	2180	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.49		0.41	0.12						0.68	
Control Delay		42.8		26.3	21.0						4.7	
Queue Delay		0.6		0.7	0.0						0.4	
Total Delay		43.4		27.0	21.0						5.1	
Queue Length 50th (ft)		176		37	25						107	
Queue Length 95th (ft)		263		m56	m39						112	
Internal Link Dist (ft)		317			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		491		236	558						3225	
Starvation Cap Reductn		0		0	0						489	
Spillback Cap Reductn		63		30	0						438	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.57		0.47	0.12						0.80	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m	Volume for 95th percentile queue is metered by upstream signal.											
Splits and Phases: 9: Tampa St & Madison St												
 02 (R)										 04		
34 s										46 s		

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Future Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.95	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1618		1688	1863						5017	
Flt Permitted		1.00		0.44	1.00						1.00	
Satd. Flow (perm)		1618		790	1863						5017	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	103	140	96	69	0	0	0	0	72	2067	41
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	237	0	96	69	0	0	0	0	0	2179	0
Confl. Peds. (#/hr)			43	43						36		75
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.1		40.1	40.1						88.2	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		485		237	558						3225	
v/s Ratio Prot		c0.15			0.04							
v/s Ratio Perm				0.12							0.43	
v/c Ratio		0.49		0.41	0.12						0.68	
Uniform Delay, d1		40.2		39.0	35.6						15.8	
Progression Factor		1.00		0.54	0.57						0.24	
Incremental Delay, d2		3.5		4.5	0.4						0.8	
Delay (s)		43.7		25.5	20.7						4.6	
Level of Service		D		C	C						A	
Approach Delay (s)		43.7			23.5			0.0			4.6	
Approach LOS		D			C			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.5			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			87.2%			ICU Level of Service				E		
Analysis Period (min)			15									

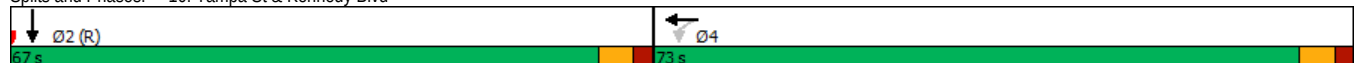
c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Future Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		358			546			274			309	
Travel Time (s)		8.1			12.4			5.3			6.0	
Confl. Peds. (#/hr)				46								79
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	285	1656	0	0	0	0	0	2086	0
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Minimum Split (s)				25.8	25.8						26.8	
Total Split (s)				73.0	73.0						67.0	
Total Split (%)				52.1%	52.1%						47.9%	
Yellow Time (s)				3.7	3.7						3.7	
All-Red Time (s)				2.1	2.1						2.1	
Lost Time Adjust (s)				-1.8	-1.8						-1.8	
Total Lost Time (s)				4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.41	0.70						0.94	
Control Delay				4.7	8.3						31.1	
Queue Delay				90.9	13.3						15.3	
Total Delay				95.5	21.6						46.3	
Queue Length 50th (ft)				22	109						305	
Queue Length 95th (ft)				m29	140						#391	
Internal Link Dist (ft)		278			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				688	2372						2208	
Starvation Cap Reductn				0	561						178	
Spillback Cap Reductn				625	727						60	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				4.52	1.01						1.03	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 28 (20%), Referenced to phase 2:SBT, Start of Green
 Natural Cycle: 60
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Future Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.86	0.86						0.91	
Frpb, ped/bikes				1.00	1.00						0.98	
Flpb, ped/bikes				0.90	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1375	4792						4893	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1375	4792						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	317	1624	0	0	0	0	0	1834	252
RTOR Reduction (vph)	0	0	0	11	11	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	0	0	274	1645	0	0	0	0	0	2079	0
Confl. Peds. (#/hr)				46								79
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				67.2	67.2						61.2	
Effective Green, g (s)				69.0	69.0						63.0	
Actuated g/C Ratio				0.49	0.49						0.45	
Clearance Time (s)				5.8	5.8						5.8	
Lane Grp Cap (vph)				677	2361						2201	
v/s Ratio Prot											c0.43	
v/s Ratio Perm				0.20	0.34							
v/c Ratio				0.40	0.70						0.94	
Uniform Delay, d1				22.5	27.4						36.8	
Progression Factor				0.16	0.26						0.62	
Incremental Delay, d2				1.2	1.2						8.0	
Delay (s)				4.9	8.4						30.7	
Level of Service				A	A						C	
Approach Delay (s)		0.0			7.9			0.0			30.7	
Approach LOS		A			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			19.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			72.6%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

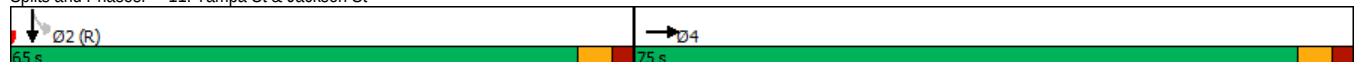
Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↘	↑↑↑	
Traffic Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Future Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		291			260			589			274	
Travel Time (s)		6.6			5.9			11.5			5.3	
Confl. Peds. (#/hr)			106							87		
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1153	0	0	0	0	0	0	0	562	1719	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		75.0								65.0	65.0	
Total Split (%)		53.6%								46.4%	46.4%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		-2.0								-2.0	-2.0	
Total Lost Time (s)		4.0								4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.48								0.81	0.78	
Control Delay		23.3								31.1	31.9	
Queue Delay		0.0								24.6	47.9	
Total Delay		23.3								55.8	79.8	
Queue Length 50th (ft)		243								201	287	
Queue Length 95th (ft)		267								m239	316	
Internal Link Dist (ft)		211			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2383								694	2215	
Starvation Cap Reductn		0								146	731	
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.48								1.03	1.16	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 10 (7%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↓	↑↑↑	
Traffic Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Future Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								1.00	0.91	
Frpb, ped/bikes		0.95								1.00	1.00	
Flpb, ped/bikes		1.00								0.83	1.00	
Frt		0.97								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4696								1462	5085	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4696								1462	5085	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	910	243	0	0	0	0	0	0	562	1719	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	57	0	0
Lane Group Flow (vph)	0	1151	0	0	0	0	0	0	0	505	1719	0
Confl. Peds. (#/hr)			106							87		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		69.0								59.0	59.0	
Effective Green, g (s)		71.0								61.0	61.0	
Actuated g/C Ratio		0.51								0.44	0.44	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2381								637	2215	
v/s Ratio Prot		c0.24									0.34	
v/s Ratio Perm										c0.35		
v/c Ratio		0.48								0.79	0.78	
Uniform Delay, d1		22.5								34.1	33.7	
Progression Factor		1.00								0.89	0.90	
Incremental Delay, d2		0.7								5.5	1.5	
Delay (s)		23.2								35.7	31.6	
Level of Service		C								D	C	
Approach Delay (s)		23.2			0.0			0.0			32.7	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay		29.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		72.6%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Future Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		243			553			171			589	
Travel Time (s)		5.5			12.6			3.3			11.5	
Confl. Peds. (#/hr)			182	182						42		132
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	237	0	169	182	0	0	0	0	0	176	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.19		0.53	0.26						0.06	
Control Delay		25.9		37.6	28.1						16.3	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		25.9		37.6	28.1						16.3	
Queue Length 50th (ft)		65		102	100						23	
Queue Length 95th (ft)		96		198	142						m30	
Internal Link Dist (ft)		163			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1224		321	705						2855	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.19		0.53	0.26						0.06	
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	120 (86%), Referenced to phase 2:SBTL, Start of Green											
Natural Cycle:	60											
Control Type:	Pretimed											
m	Volume for 95th percentile queue is metered by upstream signal.											
Splits and Phases: 12: Tampa St & Whiting St												
 02 (R)									 04			
83 s									57 s			

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2024
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↔	↔						↔↔↔	
Traffic Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Future Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.93		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.79	1.00						1.00	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3188		1400	1863						5058	
Flt Permitted		1.00		0.58	1.00						0.99	
Satd. Flow (perm)		3188		849	1863						5058	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	185	52	169	182	0	0	0	0	19	157	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	219	0	169	182	0	0	0	0	0	176	0
Confl. Peds. (#/hr)			182	182						42		132
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2		2
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		53.0		53.0	53.0						79.0	
Actuated g/C Ratio		0.38		0.38	0.38						0.56	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1206		321	705						2854	
v/s Ratio Prot		0.07			0.10						c0.03	
v/s Ratio Perm				c0.20								
v/c Ratio		0.18		0.53	0.26						0.06	
Uniform Delay, d1		29.0		33.8	30.0						13.8	
Progression Factor		1.00		0.90	0.90						1.18	
Incremental Delay, d2		0.3		6.1	0.9						0.0	
Delay (s)		29.4		36.5	27.8						16.3	
Level of Service		C		D	C						B	
Approach Delay (s)		29.4			32.0			0.0			16.3	
Approach LOS		C			C			A			B	
Intersection Summary												
HCM 2000 Control Delay			27.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			55.0%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

Build 2024
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Future Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	26					26	12		7			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	395	0	0	310	0	0	1278	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.1	22.1			22.1		30.3	30.3				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.3	2.3				
Lost Time Adjust (s)	-2.1	-2.1			-2.1		-2.3	-2.3				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.22	0.56			0.46		0.45					
Control Delay	30.6	37.6			33.3		14.3					
Queue Delay	0.0	1.2			0.0		0.0					
Total Delay	30.6	38.8			33.3		14.3					
Queue Length 50th (ft)	30	337			198		188					
Queue Length 95th (ft)	68	446			287		261					
Internal Link Dist (ft)		379			809		935			162		
Turn Bay Length (ft)	100											
Base Capacity (vph)	288	705			669		2837					
Starvation Cap Reductn	0	142			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.22	0.70			0.46		0.45					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 107 (76%), Referenced to phase 6:NBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations									  			
Traffic Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Future Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.98	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.99				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1726	1863			1735			5018				
Flt Permitted	0.42	1.00			1.00			1.00				
Satd. Flow (perm)	762	1863			1735			5018				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	64	395	0	0	209	101	22	1176	80	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	5	0	0	0	0
Lane Group Flow (vph)	64	395	0	0	298	0	0	1273	0	0	0	0
Confl. Peds. (#/hr)	26					26	12		7			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	50.9	50.9			50.9			76.7				
Effective Green, g (s)	53.0	53.0			53.0			79.0				
Actuated g/C Ratio	0.38	0.38			0.38			0.56				
Clearance Time (s)	6.1	6.1			6.1			6.3				
Lane Grp Cap (vph)	288	705			656			2831				
v/s Ratio Prot		c0.21			0.17							
v/s Ratio Perm	0.08							0.25				
v/c Ratio	0.22	0.56			0.45			0.45				
Uniform Delay, d1	29.5	34.3			32.6			17.8				
Progression Factor	0.95	0.99			1.00			0.78				
Incremental Delay, d2	1.6	2.9			2.3			0.5				
Delay (s)	29.8	37.0			34.9			14.3				
Level of Service	C	D			C			B				
Approach Delay (s)		36.0			34.9			14.3			0.0	
Approach LOS		D			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.49										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		60.2%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Future Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		183			365			1146			1015	
Travel Time (s)		4.2			8.3			22.3			19.8	
Confl. Peds. (#/hr)	7					7	14		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	72	0	0	148	0	0	1305	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	-2.4	-2.4			-2.4		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.41	0.13			0.27		0.44					
Control Delay	23.8	18.7			13.5		8.4					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	23.8	18.7			13.5		8.4					
Queue Length 50th (ft)	50	22			29		171					
Queue Length 95th (ft)	100	51			71		m174					
Internal Link Dist (ft)		103			285		1066				935	
Turn Bay Length (ft)	50											
Base Capacity (vph)	361	558			546		2970					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.41	0.13			0.27		0.44					

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 17 (24%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Future Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	0.99	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1757	1863			1690			5067				
Flt Permitted	0.65	1.00			1.00			1.00				
Satd. Flow (perm)	1203	1863			1690			5067				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	72	0	0	59	89	28	1264	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	39	0	0	1	0	0	0	0
Lane Group Flow (vph)	148	72	0	0	109	0	0	1304	0	0	0	0
Confl. Peds. (#/hr)	7					7	14		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	21.0	21.0			21.0			41.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.59				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	360	558			507			2967				
v/s Ratio Prot		0.04			0.06							
v/s Ratio Perm	0.12							0.26				
v/c Ratio	0.41	0.13			0.21			0.44				
Uniform Delay, d1	19.6	17.8			18.3			8.1				
Progression Factor	1.00	1.00			1.00			1.04				
Incremental Delay, d2	3.4	0.5			1.0			0.0				
Delay (s)	23.0	18.3			19.3			8.4				
Level of Service	C	B			B			A				
Approach Delay (s)		21.5			19.3			8.4			0.0	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM 2000 Control Delay		11.1			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.43										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		54.9%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

	↖	→	↗	↖	←	↖	↗	↑	↖	↗	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕↕				
Traffic Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Future Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			481			701			1146	
Travel Time (s)		8.4			10.9			13.7			22.3	
Confl. Peds. (#/hr)									5			
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1554	0	0	0	0	0	2664	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		-1.7						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.15						0.98				
Control Delay		106.7						21.4				
Queue Delay		0.0						0.2				
Total Delay		106.7						21.5				
Queue Length 50th (ft)		~868						447				
Queue Length 95th (ft)		#1012						#82				
Internal Link Dist (ft)		291			401			621		1066		
Turn Bay Length (ft)												
Base Capacity (vph)		1357						2732				
Starvation Cap Reductn		0						4				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.15						0.98				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 65 (46%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						 				
Traffic Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Future Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3484						4885				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3484						4885				
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	493	1061	0	0	0	0	0	2066	598	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	12	0	0	0	0
Lane Group Flow (vph)	0	1540	0	0	0	0	0	2652	0	0	0	0
Confl. Peds. (#/hr)												5
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		52.3						76.0				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1343						2721				
v/s Ratio Prot								c0.54				
v/s Ratio Perm		0.44										
v/c Ratio		1.15						0.97				
Uniform Delay, d1		43.0						30.0				
Progression Factor		0.80						0.40				
Incremental Delay, d2		74.9						8.5				
Delay (s)		109.4						20.5				
Level of Service		F						C				
Approach Delay (s)		109.4			0.0			20.5			0.0	
Approach LOS		F			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		53.2						HCM 2000 Level of Service		D		
HCM 2000 Volume to Capacity ratio		1.04										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		97.9%						ICU Level of Service		F		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Future Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		264			171			478			701	
Travel Time (s)		6.0			3.9			10.9			15.9	
Confl. Peds. (#/hr)	11					11	9		8			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		8						6				
Permitted Phases	8						6					
Minimum Split (s)	23.4	23.4					24.0	24.0				
Total Split (s)	43.0	43.0					97.0	97.0				
Total Split (%)	30.7%	30.7%					69.3%	69.3%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		-1.4						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.20						0.81				
Control Delay		39.9						4.2				
Queue Delay		0.0						0.4				
Total Delay		39.9						4.6				
Queue Length 50th (ft)		67						68				
Queue Length 95th (ft)		116						87				
Internal Link Dist (ft)		184			91			398			621	
Turn Bay Length (ft)												
Base Capacity (vph)		492						3376				
Starvation Cap Reductn		0						178				
Spillback Cap Reductn		0						236				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.20						0.87				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 41 (29%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 65
Control Type: Pretimed

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Future Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1767						5078				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1767						5078				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	33	0	0	0	0	23	2692	7	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Confl. Peds. (#/hr)	11					11	9		8			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		8						6				
Permitted Phases	8						6					
Actuated Green, G (s)		37.6						91.0				
Effective Green, g (s)		39.0						93.0				
Actuated g/C Ratio		0.28						0.66				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		492						3373				
v/s Ratio Prot												
v/s Ratio Perm		0.05						0.54				
v/c Ratio		0.20						0.81				
Uniform Delay, d1		38.5						17.0				
Progression Factor		1.00						0.17				
Incremental Delay, d2		0.9						1.2				
Delay (s)		39.4						4.1				
Level of Service		D						A				
Approach Delay (s)		39.4			0.0			4.1			0.0	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		5.3						HCM 2000 Level of Service		A		
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		66.5%						ICU Level of Service		C		
Analysis Period (min)		15										

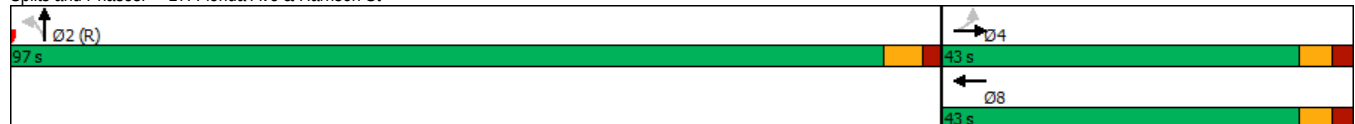
c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Future Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		341			265			293			478	
Travel Time (s)		7.8			6.0			6.7			9.3	
Confl. Peds. (#/hr)	5					5	10		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	0	90	0	0	2835	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-2.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.15			0.20			0.84				
Control Delay		39.5			38.7			6.0				
Queue Delay		0.0			0.0			0.3				
Total Delay		39.5			38.7			6.2				
Queue Length 50th (ft)		42			61			78				
Queue Length 95th (ft)		81			108			82				
Internal Link Dist (ft)		261			185			213			398	
Turn Bay Length (ft)												
Base Capacity (vph)		396			453			3372				
Starvation Cap Reductn		0			0			121				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.15			0.20			0.87				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 36 (26%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Future Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Flpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		0.99			1.00			1.00				
Frt		1.00			0.89			1.00				
Flt Protected		0.96			1.00			1.00				
Satd. Flow (prot)		1783			1620			5074				
Flt Permitted		0.77			1.00			1.00				
Satd. Flow (perm)		1424			1620			5074				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	15	0	0	14	76	13	2800	22	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	61	0	0	88	0	0	2834	0	0	0	0
Confl. Peds. (#/hr)	5					5	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.2			37.2			91.0				
Effective Green, g (s)		39.0			39.0			93.0				
Actuated g/C Ratio		0.28			0.28			0.66				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		396			451			3370				
v/s Ratio Prot					c0.05							
v/s Ratio Perm		0.04						0.56				
v/c Ratio		0.15			0.19			0.84				
Uniform Delay, d1		38.1			38.5			17.9				
Progression Factor		1.00			1.00			0.24				
Incremental Delay, d2		0.8			1.0			1.6				
Delay (s)		38.9			39.5			5.9				
Level of Service		D			D			A				
Approach Delay (s)		38.9			39.5			5.9			0.0	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		7.6			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		74.6%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Future Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			573			286			293	
Travel Time (s)		13.0			13.0			5.6			5.7	
Confl. Peds. (#/hr)	16					16	3		28			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	128	76	0	0	303	0	69	2736	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.75	0.15			0.62		0.06	0.81				
Control Delay	90.5	55.2			50.1		2.0	4.3				
Queue Delay	0.0	0.0			0.0		0.0	1.0				
Total Delay	90.5	55.2			50.1		2.0	5.3				
Queue Length 50th (ft)	118	61			239		4	0				
Queue Length 95th (ft)	m#212	m106			343		m5	63				
Internal Link Dist (ft)		490			493			206			213	
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	170	518			489		1163	3376				
Starvation Cap Reductn	0	0			0		0	360				
Spillback Cap Reductn	0	0			0		0	149				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.75	0.15			0.62		0.06	0.91				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 31 (22%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 65

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Future Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.98		1.00	1.00				
Flpb, ped/bikes	0.99	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.95		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1747	1863			1750		1751	5081				
Flt Permitted	0.33	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	612	1863			1750		1751	5081				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	128	76	0	0	200	103	69	2727	9	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	76	0	0	301	0	69	2736	0	0	0	0
Confl. Peds. (#/hr)	16					16	3		28			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.2	37.2			37.2		91.0	91.0				
Effective Green, g (s)	39.0	39.0			39.0		93.0	93.0				
Actuated g/C Ratio	0.28	0.28			0.28		0.66	0.66				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	170	518			487		1163	3375				
v/s Ratio Prot		0.04			0.17			0.54				
v/s Ratio Perm	0.21						0.04					
v/c Ratio	0.75	0.15			0.62		0.06	0.81				
Uniform Delay, d1	46.1	38.0			44.0		8.2	17.1				
Progression Factor	1.38	1.42			1.00		0.24	0.18				
Incremental Delay, d2	25.6	0.6			5.8		0.0	1.1				
Delay (s)	89.3	54.6			49.8		2.0	4.3				
Level of Service	F	D			D		A	A				
Approach Delay (s)		76.4			49.8			4.2			0.0	
Approach LOS		E			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		12.8			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.79										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		84.2%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Future Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			550			283			286	
Travel Time (s)		12.6			12.5			5.5			5.6	
Confl. Peds. (#/hr)	5					5	3		100			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	113	312	0	0	287	0	43	2823	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.53	0.56			0.53		0.04	0.87				
Control Delay	32.6	28.1			44.9		1.7	4.5				
Queue Delay	0.0	0.0			0.0		0.0	0.9				
Total Delay	32.6	28.1			44.9		1.7	5.4				
Queue Length 50th (ft)	77	226			217		2	45				
Queue Length 95th (ft)	m139	m288			312		m2	52				
Internal Link Dist (ft)		473			470			203			206	
Turn Bay Length (ft)	70						60					
Base Capacity (vph)	212	558			539		1125	3228				
Starvation Cap Reductn	0	0			0		0	175				
Spillback Cap Reductn	0	0			0		0	40				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	0.53	0.56			0.53		0.04	0.92				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 26 (19%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 75
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Future Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1762	1863			1791		1750	5021				
Flt Permitted	0.38	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	707	1863			1791		1750	5021				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	113	312	0	0	216	71	43	2756	67	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	2	0	0	0	0
Lane Group Flow (vph)	113	312	0	0	286	0	43	2821	0	0	0	0
Confl. Peds. (#/hr)	5					5	3		100			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.0	40.0			40.0		88.0	88.0				
Effective Green, g (s)	42.0	42.0			42.0		90.0	90.0				
Actuated g/C Ratio	0.30	0.30			0.30		0.64	0.64				
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)	212	558			537		1125	3227				
v/s Ratio Prot		c0.17			0.16			c0.56				
v/s Ratio Perm	0.16						0.02					
v/c Ratio	0.53	0.56			0.53		0.04	0.87				
Uniform Delay, d1	40.8	41.2			40.8		9.2	20.4				
Progression Factor	0.59	0.60			1.00		0.18	0.13				
Incremental Delay, d2	7.4	3.2			3.7		0.0	1.8				
Delay (s)	31.7	27.8			44.6		1.7	4.4				
Level of Service	C	C			D		A	A				
Approach Delay (s)		28.8			44.6			4.4			0.0	
Approach LOS		C			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		10.5			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.77										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		86.6%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Future Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			559			300			283	
Travel Time (s)		12.2			12.7			5.8			5.5	
Confl. Peds. (#/hr)	34					34	26		55			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	208	0	0	141	0	80	2918	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.44			0.29		0.08	0.89				
Control Delay		40.7			39.2		3.2	10.7				
Queue Delay		0.0			0.0		0.0	1.3				
Total Delay		40.7			39.2		3.2	12.0				
Queue Length 50th (ft)		175			98		8	495				
Queue Length 95th (ft)		249			152		m9	220				
Internal Link Dist (ft)		457			479			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		475			492		1043	3262				
Starvation Cap Reductn		0			0		0	168				
Spillback Cap Reductn		0			0		0	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.44			0.29		0.08	0.94				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 75

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Future Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Flpb, ped/bikes		1.00			0.95		1.00	1.00				
Flpb, ped/bikes		0.98			1.00		0.92	1.00				
Frt		1.00			0.92		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1806			1640		1623	5073				
Flt Permitted		0.86			1.00		0.95	1.00				
Satd. Flow (perm)		1585			1640		1623	5073				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	145	0	0	61	80	80	2898	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	208	0	0	140	0	80	2918	0	0	0	0
Confl. Peds. (#/hr)	34					34	26		55			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.2			40.2		88.0	88.0				
Effective Green, g (s)		42.0			42.0		90.0	90.0				
Actuated g/C Ratio		0.30			0.30		0.64	0.64				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		475			492		1043	3261				
v/s Ratio Prot					0.09			c0.58				
v/s Ratio Perm		c0.13					0.05					
v/c Ratio		0.44			0.29		0.08	0.89				
Uniform Delay, d1		39.5			37.5		9.4	21.0				
Progression Factor		0.95			1.00		0.33	0.39				
Incremental Delay, d2		2.7			1.5		0.1	2.3				
Delay (s)		40.2			39.0		3.1	10.5				
Level of Service		D			D		A	B				
Approach Delay (s)		40.2			39.0			10.3			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		13.4			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.75										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		85.5%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Future Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			576			283			300	
Travel Time (s)		12.3			13.1			5.5			5.8	
Confl. Peds. (#/hr)	36					36	9		22			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	296	0	0	201	0	0	2745	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	48.0	48.0			48.0		92.0	92.0				
Total Split (%)	34.3%	34.3%			34.3%		65.7%	65.7%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.91			0.39			0.86				
Control Delay		67.2			39.7			10.9				
Queue Delay		0.0			0.0			2.0				
Total Delay		67.2			39.7			12.9				
Queue Length 50th (ft)		268			141			434				
Queue Length 95th (ft)		#448			215			336				
Internal Link Dist (ft)		459			496			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		325			513			3186				
Starvation Cap Reductn		0			0			292				
Spillback Cap Reductn		0			0			199				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.91			0.39			0.95				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Future Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Flpb, ped/bikes		1.00			0.95			1.00				
Flpb, ped/bikes		0.97			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1759			1628			5070				
Flt Permitted		0.57			1.00			1.00				
Satd. Flow (perm)		1037			1628			5070				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	181	115	0	0	81	120	42	2683	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	296	0	0	199	0	0	2745	0	0	0	0
Confl. Peds. (#/hr)	36					36	9		22			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		42.1			42.1			86.3				
Effective Green, g (s)		44.0			44.0			88.0				
Actuated g/C Ratio		0.31			0.31			0.63				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		325			511			3186				
v/s Ratio Prot					0.12							
v/s Ratio Perm		0.29						0.54				
v/c Ratio		0.91			0.39			0.86				
Uniform Delay, d1		46.1			37.5			21.1				
Progression Factor		0.76			1.00			0.42				
Incremental Delay, d2		30.9			2.2			1.9				
Delay (s)		65.8			39.7			10.7				
Level of Service		E			D			B				
Approach Delay (s)		65.8			39.7			10.7			0.0	
Approach LOS		E			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		17.5			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.88										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		93.3%			ICU Level of Service			F				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Future Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			597			298			283	
Travel Time (s)		12.3			13.6			5.8			5.5	
Confl. Peds. (#/hr)	15					15	9		30			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	525	0	0	129	225	0	2744	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	46.0	46.0			46.0	46.0	94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%	32.9%	67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.62			0.23	0.48		0.84				
Control Delay		43.9			38.2	39.7		14.4				
Queue Delay		0.0			0.0	0.0		1.4				
Total Delay		43.9			38.2	39.7		15.9				
Queue Length 50th (ft)		186			89	150		817				
Queue Length 95th (ft)		252			145	234		610				
Internal Link Dist (ft)		463			517			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		847			558	472		3250				
Starvation Cap Reductn		0			0	0		226				
Spillback Cap Reductn		0			0	1		305				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.62			0.23	0.48		0.93				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 75												
Control Type: Pretimed												
Splits and Phases: 22: Florida Ave & Twiggs St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Future Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.91				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		1.00				
Flt Protected		0.99			1.00	1.00		1.00				
Satd. Flow (prot)		3483			1863	1520		5052				
Flt Permitted		0.80			1.00	1.00		1.00				
Satd. Flow (perm)		2823			1863	1520		5052				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	118	407	0	0	129	225	27	2648	69	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	2	0	0	0	0
Lane Group Flow (vph)	0	525	0	0	129	209	0	2742	0	0	0	0
Confl. Peds. (#/hr)	15					15	9		30			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		40.1			40.1	40.1		88.0				
Effective Green, g (s)		42.0			42.0	42.0		90.0				
Actuated g/C Ratio		0.30			0.30	0.30		0.64				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		846			558	456		3247				
v/s Ratio Prot					0.07							
v/s Ratio Perm		0.19				0.14		0.54				
v/c Ratio		0.62			0.23	0.46		0.84				
Uniform Delay, d1		42.1			36.9	39.8		19.5				
Progression Factor		0.98			1.00	1.00		0.63				
Incremental Delay, d2		2.2			1.0	3.3		1.9				
Delay (s)		43.5			37.8	43.1		14.3				
Level of Service		D			D	D		B				
Approach Delay (s)		43.5			41.2			14.3			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		21.1			HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio		0.77										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)					8.0		
Intersection Capacity Utilization		93.0%			ICU Level of Service					F		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Future Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			607			314			298	
Travel Time (s)		12.5			13.8			6.1			5.8	
Confl. Peds. (#/hr)	45					45	21		9			
Peak Hour Factor	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	58	101	0	0	235	0	0	2805	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	34.0	34.0			34.0		106.0	106.0				
Total Split (%)	24.3%	24.3%			24.3%		75.7%	75.7%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	-1.9	-1.9			-1.9		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.43	0.25			0.68		0.76					
Control Delay	43.0	34.0			60.2		17.2					
Queue Delay	0.0	0.0			0.0		0.8					
Total Delay	43.0	34.0			60.2		18.0					
Queue Length 50th (ft)	29	49			194		695					
Queue Length 95th (ft)	m64	m95			291		761					
Internal Link Dist (ft)		468			527		234			218		
Turn Bay Length (ft)	75											
Base Capacity (vph)	136	399			347		3693					
Starvation Cap Reductn	0	0			0		525					
Spillback Cap Reductn	0	0			0		439					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.43	0.25			0.68		0.89					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 3 (2%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



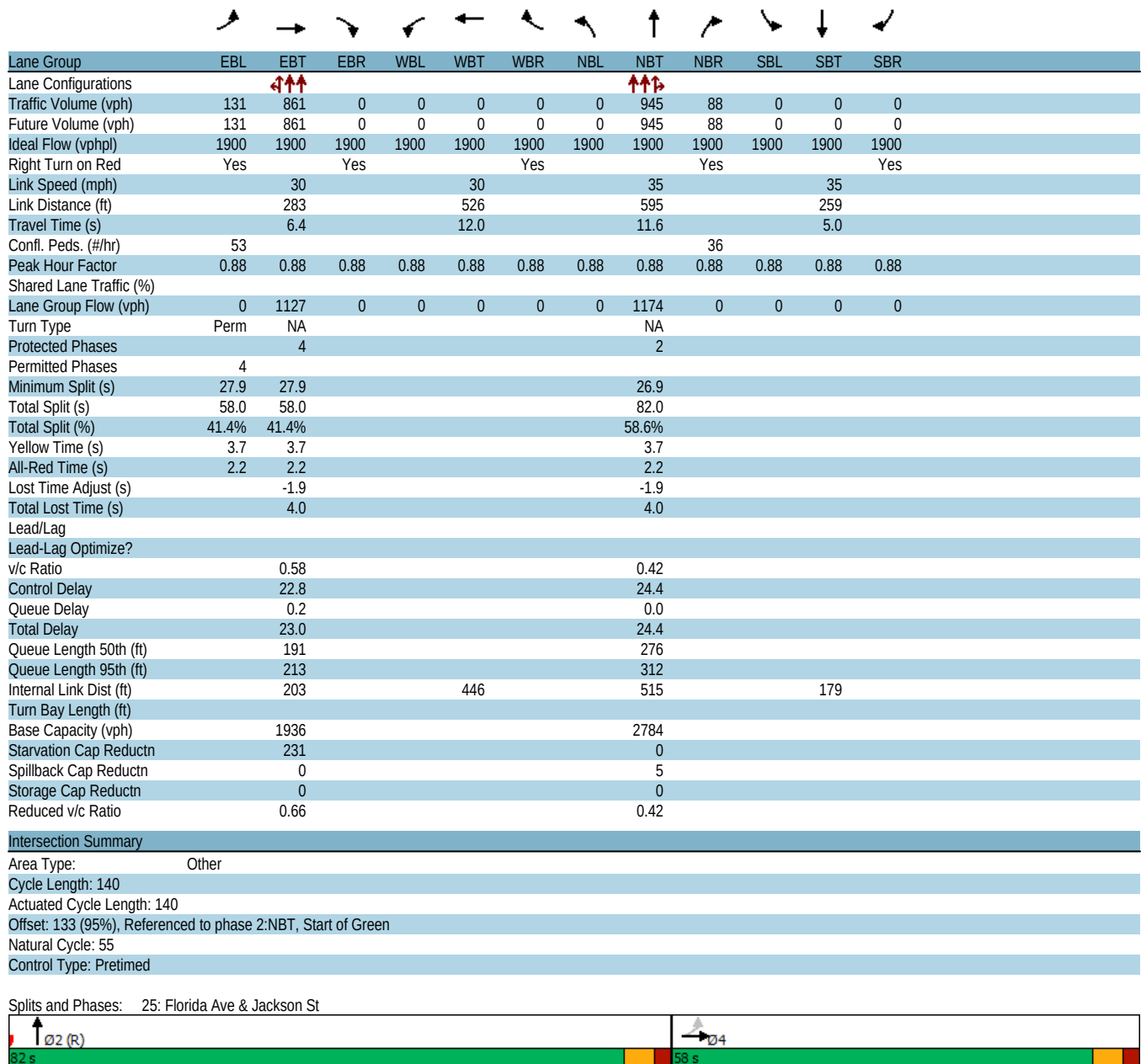
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Future Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.94			1.00				
Flpb, ped/bikes	0.96	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1691	1863			1599			5070				
Flt Permitted	0.36	1.00			1.00			1.00				
Satd. Flow (perm)	635	1863			1599			5070				
Peak-hour factor, PHF	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	58	101	0	0	86	149	30	2751	24	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	0	1	0	0	0	0
Lane Group Flow (vph)	58	101	0	0	230	0	0	2804	0	0	0	0
Confl. Peds. (#/hr)	45					45	21		9			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	28.1	28.1			28.1			100.0				
Effective Green, g (s)	30.0	30.0			30.0			102.0				
Actuated g/C Ratio	0.21	0.21			0.21			0.73				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	136	399			342			3693				
v/s Ratio Prot		0.05			0.14							
v/s Ratio Perm	0.09							0.55				
v/c Ratio	0.43	0.25			0.67			0.76				
Uniform Delay, d1	47.6	45.7			50.5			11.5				
Progression Factor	0.71	0.71			1.00			1.34				
Incremental Delay, d2	7.9	1.3			10.1			1.5				
Delay (s)	41.7	33.7			60.6			16.9				
Level of Service	D	C			E			B				
Approach Delay (s)		36.6			60.6			16.9			0.0	
Approach LOS		D			E			B			A	
Intersection Summary												
HCM 2000 Control Delay		21.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		87.2%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Future Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			580			259			314	
Travel Time (s)		12.4			13.2			5.0			6.1	
Confl. Peds. (#/hr)						42	22					
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	2087	0	135	953	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					58.0		82.0	82.0				
Total Split (%)					41.4%		58.6%	58.6%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					-1.7		-1.8	-1.8				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.88		0.14	0.34				
Control Delay					44.0		3.5	6.4				
Queue Delay					0.3		0.6	0.2				
Total Delay					44.3		4.1	6.6				
Queue Length 50th (ft)					497		9	42				
Queue Length 95th (ft)					549		16	48				
Internal Link Dist (ft)		466			500			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					2369		951	2833				
Starvation Cap Reductn					0		555	954				
Spillback Cap Reductn					42		0	621				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.90		0.34	0.51				
Intersection Summary												
Area Type: Other												
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 139 (99%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 55												
Control Type: Pretimed												
Splits and Phases: 24: Florida Ave & Kennedy Blvd												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↘	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Future Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Frpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6033		1692	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6033		1692	5085				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	1573	514	135	953	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	42	0	9	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2045	0	126	953	0	0	0	0
Confl. Peds. (#/hr)					42		22					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					52.3		76.2	76.2				
Effective Green, g (s)					54.0		78.0	78.0				
Actuated g/C Ratio					0.39		0.56	0.56				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2327		942	2833				
v/s Ratio Prot					c0.34			c0.19				
v/s Ratio Perm							0.07					
v/c Ratio					0.88		0.13	0.34				
Uniform Delay, d1					40.0		14.8	16.9				
Progression Factor					1.00		0.26	0.36				
Incremental Delay, d2					5.1		0.3	0.3				
Delay (s)					45.1		4.1	6.4				
Level of Service					D		A	A				
Approach Delay (s)		0.0			45.1			6.1			0.0	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			31.7		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)						8.0	
Intersection Capacity Utilization			72.6%		ICU Level of Service						C	
Analysis Period (min)			15									

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	131	861	0	0	0	0	0	945	88	0	0	0
Future Volume (vph)	131	861	0	0	0	0	0	945	88	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		0.99						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4984						4985				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4984						4985				
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	149	978	0	0	0	0	0	1074	100	0	0	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	1112	0	0	0	0	0	1166	0	0	0	0
Confl. Peds. (#/hr)	53								36			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1922						2777				
v/s Ratio Prot								0.23				
v/s Ratio Perm		0.22										
v/c Ratio		0.58						0.42				
Uniform Delay, d1		34.0						17.9				
Progression Factor		0.65						1.35				
Incremental Delay, d2		1.0						0.5				
Delay (s)		23.2						24.7				
Level of Service		C						C				
Approach Delay (s)		23.2			0.0			24.7			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		23.9							C			
HCM 2000 Volume to Capacity ratio		0.48										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)	8.0			
Intersection Capacity Utilization		54.8%						ICU Level of Service	A			
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
26: Florida Ave & Whiting St

Build 2024
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Future Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			557			397			595	
Travel Time (s)		12.6			12.7			7.7			11.6	
Confl. Peds. (#/hr)	106					106	71		94			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	336	0	0	227	0	0	187	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	29.0	29.0			29.0		26.7	26.7				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.39			0.19			0.07				
Control Delay		21.2			13.6			16.0				
Queue Delay		0.0			0.0			0.0				
Total Delay		21.2			13.6			16.0				
Queue Length 50th (ft)		66			32			21				
Queue Length 95th (ft)		86			62			32				
Internal Link Dist (ft)		473			477			317			515	
Turn Bay Length (ft)												
Base Capacity (vph)		868			1173			2800				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		0			0			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.39			0.19			0.07				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 120 (86%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Future Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			0.91				
Flpb, ped/bikes		1.00			0.89			0.99				
Flpb, ped/bikes		0.93			1.00			0.99				
Frt		1.00			0.92			0.99				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		3223			2901			4953				
Flt Permitted		0.70			1.00			1.00				
Satd. Flow (perm)		2296			2901			4953				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	167	169	0	0	105	122	5	172	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	76	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	336	0	0	151	0	0	183	0	0	0	0
Confl. Peds. (#/hr)	106					106	71		94			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		51.2			51.2			77.3				
Effective Green, g (s)		53.0			53.0			79.0				
Actuated g/C Ratio		0.38			0.38			0.56				
Clearance Time (s)		5.8			5.8			5.7				
Lane Grp Cap (vph)		869			1098			2794				
v/s Ratio Prot					0.05							
v/s Ratio Perm		0.15						0.04				
v/c Ratio		0.39			0.14			0.07				
Uniform Delay, d1		31.7			28.5			13.8				
Progression Factor		0.62			1.00			1.22				
Incremental Delay, d2		1.3			0.3			0.0				
Delay (s)		20.9			28.8			16.8				
Level of Service		C			C			B				
Approach Delay (s)		20.9			28.8			16.8			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.19										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		55.5%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  			  				
Traffic Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0
Future Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		240			537			151			230	
Travel Time (s)		5.5			12.2			2.9			4.5	
Confl. Peds. (#/hr)						21	28					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1261	0	13	177	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Minimum Split (s)					29.8		36.1	36.1				
Total Split (s)					60.0		80.0	80.0				
Total Split (%)					42.9%		57.1%	57.1%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.1		2.4	2.4				
Lost Time Adjust (s)					-1.8		-2.1	-2.1				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.50		0.01	0.06				
Control Delay					31.9		3.0	15.2				
Queue Delay					0.0		0.0	0.0				
Total Delay					31.9		3.0	15.2				
Queue Length 50th (ft)					244		0	27				
Queue Length 95th (ft)					280		7	40				
Internal Link Dist (ft)		160			457			71			150	
Turn Bay Length (ft)												
Base Capacity (vph)					2532		932	2760				
Starvation Cap Reductn					0		0	0				
Spillback Cap Reductn					0		0	0				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.50		0.01	0.06				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 46 (33%), Referenced to phase 2:WBT, Start of Green												
Natural Cycle: 70												
Control Type: Pretimed												
Splits and Phases: 27: Florida Ave & Brorein St												
 Ø2 (R) 60 s  Ø4 30 s												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0
Future Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6307		1700	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6307		1700	5085				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1160	101	13	177	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	6	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1251	0	7	177	0	0	0	0
Confl. Peds. (#/hr)					21		28					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					56.0		76.0	76.0				
Actuated g/C Ratio					0.40		0.54	0.54				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2522		922	2760				
v/s Ratio Prot					c0.20			c0.03				
v/s Ratio Perm							0.00					
v/c Ratio					0.50		0.01	0.06				
Uniform Delay, d1					31.4		14.7	15.2				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.7		0.0	0.0				
Delay (s)					32.1		14.7	15.2				
Level of Service					C		B	B				
Approach Delay (s)		0.0			32.1			15.2			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			29.9		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			35.0%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	246	0	0	698	85
Future Volume (vph)	0	246	0	0	698	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	267	0	0	851	0
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1018	0	0	944	0
Future Volume (vph)	0	1018	0	0	944	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1107	0	0	1026	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						  
Traffic Volume (vph)	0	0	0	0	900	0
Future Volume (vph)	0	0	0	0	900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	147		272			171
Travel Time (s)	3.3		6.2			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	978	0
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  			
Traffic Volume (vph)	0	333	1081	0	0	0
Future Volume (vph)	0	333	1081	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	531		103			170
Travel Time (s)	12.1		2.3			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	362	1175	0	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Build 2024 – Streetcar Phase AM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↑	↑	↑	↑						↑↑↑		
Traffic Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36	
Future Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	0		0	0		0	
Storage Lanes	0		1	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		656			459			1921			311		
Travel Time (s)		14.9			10.4			37.4			6.1		
Confl. Peds. (#/hr)			3	3						2		2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	201	119	227	246	0	0	0	0	0	1434	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		8			4						2		9
Permitted Phases			8	4						2			
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	20.0	
Total Split (s)		45.0	45.0	45.0	45.0					75.0	75.0	20.0	
Total Split (%)		32.1%	32.1%	32.1%	32.1%					53.6%	53.6%	14%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	2.0	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	0.0	
Lost Time Adjust (s)		-0.3	-0.3	-2.0	-2.0						-2.4		
Total Lost Time (s)		5.7	5.7	4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.39	0.23	0.80	0.45						0.56		
Control Delay		43.3	7.4	44.8	26.9						24.8		
Queue Delay		0.0	0.0	0.0	0.0						0.0		
Total Delay		43.3	7.4	44.8	26.9						24.8		
Queue Length 50th (ft)		148	0	78	83						320		
Queue Length 95th (ft)		223	48	m#221	m139						367		
Internal Link Dist (ft)		576			379			1841			231		
Turn Bay Length (ft)				150									
Base Capacity (vph)		522	522	284	545						2545		
Starvation Cap Reductn		0	0	0	0						0		
Spillback Cap Reductn		0	0	0	0						0		
Storage Cap Reductn		0	0	0	0						0		
Reduced v/c Ratio		0.39	0.23	0.80	0.45						0.56		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 80

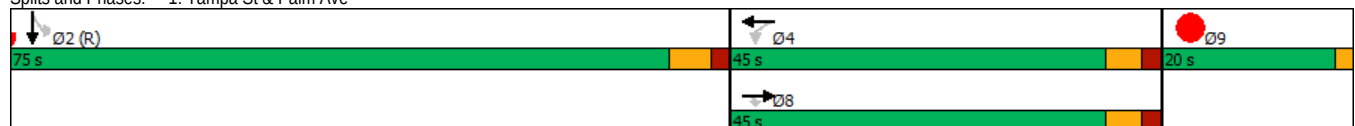
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Future Volume (vph)	0	183	108	207	224	0	0	0	0	211	1057	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Frpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						1.00	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1555	1763	1863						5015	
Flt Permitted		1.00	1.00	0.52	1.00						0.99	
Satd. Flow (perm)		1863	1555	973	1863						5015	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	201	119	227	246	0	0	0	0	232	1162	40
RTOR Reduction (vph)	0	0	86	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	201	33	227	246	0	0	0	0	0	1432	0
Confl. Peds. (#/hr)			3	3						2		2
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		39.0	39.0	39.0	39.0						68.6	
Effective Green, g (s)		39.3	39.3	41.0	41.0						71.0	
Actuated g/C Ratio		0.28	0.28	0.29	0.29						0.51	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		522	436	284	545						2543	
v/s Ratio Prot		0.11			0.13							
v/s Ratio Perm			0.02	0.23							0.29	
v/c Ratio		0.39	0.08	0.80	0.45						0.56	
Uniform Delay, d1		40.6	37.0	45.7	40.3						23.8	
Progression Factor		1.00	1.00	0.58	0.61						1.00	
Incremental Delay, d2		2.1	0.3	16.6	2.1						0.9	
Delay (s)		42.7	37.4	43.3	26.5						24.7	
Level of Service		D	D	D	C						C	
Approach Delay (s)		40.7			34.6			0.0			24.7	
Approach LOS		D			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			29.1			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)					11.7	
Intersection Capacity Utilization			68.0%			ICU Level of Service					C	
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391	
Future Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		475	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes	Yes		Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		360			350			247			1921		
Travel Time (s)		8.2			8.0			4.8			37.4		
Confl. Peds. (#/hr)				1								1	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	
Shared Lane Traffic (%)				11%									
Lane Group Flow (vph)	0	0	0	11	1746	0	0	0	0	0	1373	0	
Turn Type				Split	NA						NA		
Protected Phases				4	4						2		9
Permitted Phases													
Minimum Split (s)				26.7	26.7						31.0		20.0
Total Split (s)				77.0	77.0						43.0		20.0
Total Split (%)				55.0%	55.0%						30.7%		14%
Yellow Time (s)				3.7	3.7						4.0		2.0
All-Red Time (s)				2.0	2.0						2.0		0.0
Lost Time Adjust (s)				-1.7	-1.7						-2.0		
Total Lost Time (s)				4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio				0.01	0.98						0.98		
Control Delay				0.0	48.7						91.7		
Queue Delay				0.0	0.0						0.0		
Total Delay				0.0	48.7						91.7		
Queue Length 50th (ft)				0	817						452		
Queue Length 95th (ft)				0	#1022						#545		
Internal Link Dist (ft)		280			270			167			1841		
Turn Bay Length (ft)													
Base Capacity (vph)				858	1786						1402		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.01	0.98						0.98		

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:SBT, Start of Green
 Natural Cycle: 130
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Tampa St & Kay St



Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Future Volume (vph)	0	0	0	11	1658	0	0	0	0	0	913	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						0.91	
Frpb, ped/bikes				1.00	1.00						1.00	
Flpb, ped/bikes				1.00	1.00						1.00	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1610	3390						4837	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1610	3390						4837	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	12	1745	0	0	0	0	0	961	412
RTOR Reduction (vph)	0	0	0	5	19	0	0	0	0	0	55	0
Lane Group Flow (vph)	0	0	0	6	1727	0	0	0	0	0	1318	0
Confl. Peds. (#/hr)				1								1
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Actuated Green, G (s)				71.3	71.3						37.0	
Effective Green, g (s)				73.0	73.0						39.0	
Actuated g/C Ratio				0.52	0.52						0.28	
Clearance Time (s)				5.7	5.7						6.0	
Lane Grp Cap (vph)				839	1767						1347	
v/s Ratio Prot				0.00	c0.51						c0.27	
v/s Ratio Perm												
v/c Ratio				0.01	0.98						0.98	
Uniform Delay, d1				16.1	32.7						50.1	
Progression Factor				1.00	1.00						1.61	
Incremental Delay, d2				0.0	16.7						17.8	
Delay (s)				16.1	49.4						98.3	
Level of Service				B	D						F	
Approach Delay (s)		0.0			49.2			0.0			98.3	
Approach LOS		A			D			A			F	
Intersection Summary												
HCM 2000 Control Delay			70.7			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			68.3%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

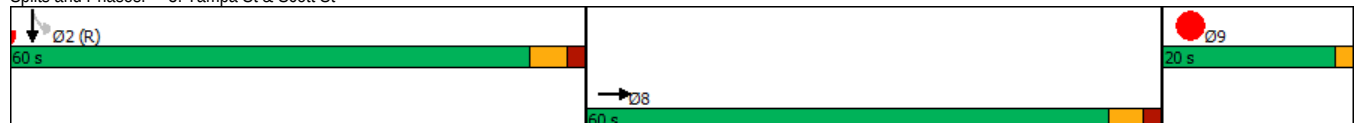
Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Group													
Lane Configurations		↕↕									↕↕↕		
Traffic Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0	
Future Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes	Yes		Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		386			62			346			247		
Travel Time (s)		8.8			1.4			6.7			4.8		
Confl. Peds. (#/hr)										3			
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	886	0	0	0	0	0	0	0	0	842	0	
Turn Type		NA								Perm	NA		
Protected Phases		8									2		9
Permitted Phases										2			
Minimum Split (s)		24.7								24.0	24.0		20.0
Total Split (s)		60.0								60.0	60.0		20.0
Total Split (%)		42.9%								42.9%	42.9%		14%
Yellow Time (s)		3.7								4.0	4.0		2.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.7									-2.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.63									0.41		
Control Delay		35.8									0.5		
Queue Delay		14.1									1.1		
Total Delay		49.9									1.6		
Queue Length 50th (ft)		334									1		
Queue Length 95th (ft)		406									m1		
Internal Link Dist (ft)		306			1			266			167		
Turn Bay Length (ft)													
Base Capacity (vph)		1398									2040		
Starvation Cap Reductn		0									887		
Spillback Cap Reductn		505									2		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.99									0.73		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Future Volume (vph)	0	730	94	0	0	0	0	0	0	150	633	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3479									5028	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3479									5028	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	785	101	0	0	0	0	0	0	161	681	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	879	0	0	0	0	0	0	0	0	814	0
Confl. Peds. (#/hr)											3	
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		54.3									54.0	
Effective Green, g (s)		56.0									56.0	
Actuated g/C Ratio		0.40									0.40	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1391									2011	
v/s Ratio Prot		c0.25										
v/s Ratio Perm											0.16	
v/c Ratio		0.63									0.40	
Uniform Delay, d1		33.7									30.1	
Progression Factor		1.00									0.01	
Incremental Delay, d2		2.2									0.2	
Delay (s)		35.9									0.5	
Level of Service		D									A	
Approach Delay (s)		35.9			0.0			0.0			0.5	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		18.7				HCM 2000 Level of Service		B				
HCM 2000 Volume to Capacity ratio		0.45										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		10.0				
Intersection Capacity Utilization		45.1%				ICU Level of Service		A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68	
Future Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		354			570			301			129		
Travel Time (s)		8.0			13.0			5.9			2.5		
Confl. Peds. (#/hr)			9	9						73		35	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	210	0	84	225	0	0	0	0	0	2156	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		8			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.8		25.8	25.8					26.8	26.8	18.0	
Total Split (s)		28.0		28.0	28.0					92.0	92.0	20.0	
Total Split (%)		20.0%		20.0%	20.0%					65.7%	65.7%	14%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	2.0	
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	0.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.61		0.81	0.71						0.68		
Control Delay		41.1		80.5	46.3						12.5		
Queue Delay		0.1		0.0	0.0						0.2		
Total Delay		41.2		80.5	46.3						12.7		
Queue Length 50th (ft)		111		32	86						288		
Queue Length 95th (ft)		200		m#121	m174						312		
Internal Link Dist (ft)		274			490			221			49		
Turn Bay Length (ft)				75									
Base Capacity (vph)		347		104	319						3156		
Starvation Cap Reductn		0		0	0						0		
Spillback Cap Reductn		3		0	0						271		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.61		0.81	0.71						0.75		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

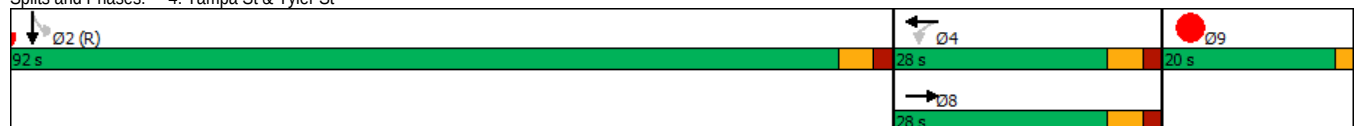
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Future Volume (vph)	0	54	137	76	205	0	0	0	0	21	1873	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.99	1.00						1.00	
Frt		0.90		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1645		1752	1863						5019	
Flt Permitted		1.00		0.33	1.00						1.00	
Satd. Flow (perm)		1645		610	1863						5019	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	59	151	84	225	0	0	0	0	23	2058	75
RTOR Reduction (vph)	0	65	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	145	0	84	225	0	0	0	0	0	2153	0
Confl. Peds. (#/hr)			9	9						73		35
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		22.2		22.2	22.2						86.2	
Effective Green, g (s)		24.0		24.0	24.0						88.0	
Actuated g/C Ratio		0.17		0.17	0.17						0.63	
Clearance Time (s)		5.8		5.8	5.8						5.8	
Lane Grp Cap (vph)		282		104	319						3154	
v/s Ratio Prot		0.09			0.12							
v/s Ratio Perm				0.14							0.43	
v/c Ratio		0.51		0.81	0.71						0.68	
Uniform Delay, d1		52.7		55.8	54.7						16.9	
Progression Factor		1.00		0.66	0.65						0.66	
Incremental Delay, d2		6.5		40.9	10.4						1.2	
Delay (s)		59.2		77.9	45.8						12.4	
Level of Service		E		E	D						B	
Approach Delay (s)		59.2			54.5			0.0			12.4	
Approach LOS		E			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			21.0			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			84.8%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19	
Future Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		322			553			286			301		
Travel Time (s)		7.3			12.6			5.6			5.9		
Confl. Peds. (#/hr)			12	12						87		29	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	421	0	45	239	0	0	0	0	0	2133	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7		20.0
Total Split (s)		39.0		39.0	39.0					81.0	81.0		20.0
Total Split (%)		27.9%		27.9%	27.9%					57.9%	57.9%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0		0.0
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.93		0.85	0.51						0.77		
Control Delay		77.5		113.1	27.2						14.8		
Queue Delay		0.0		0.0	0.0						0.4		
Total Delay		77.5		113.1	27.2						15.2		
Queue Length 50th (ft)		366		14	67						312		
Queue Length 95th (ft)		#571		m#84	154						348		
Internal Link Dist (ft)		242			473			206			221		
Turn Bay Length (ft)				75									
Base Capacity (vph)		453		53	465						2756		
Starvation Cap Reductn		0		0	0						216		
Spillback Cap Reductn		0		0	0						0		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.93		0.85	0.51						0.84		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Future Volume (vph)	0	275	112	41	220	0	0	0	0	64	1879	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1770		1770	1863						5010	
Flt Permitted		1.00		0.11	1.00						1.00	
Satd. Flow (perm)		1770		213	1863						5010	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	299	122	45	239	0	0	0	0	70	2042	21
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	411	0	45	239	0	0	0	0	0	2132	0
Confl. Peds. (#/hr)			12	12						87		29
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		33.3		33.3	33.3						75.3	
Effective Green, g (s)		35.0		35.0	35.0						77.0	
Actuated g/C Ratio		0.25		0.25	0.25						0.55	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		442		53	465						2755	
v/s Ratio Prot		0.23			0.13							
v/s Ratio Perm				0.21							0.43	
v/c Ratio		0.93		0.85	0.51						0.77	
Uniform Delay, d1		51.3		50.0	45.2						24.7	
Progression Factor		1.00		0.57	0.52						0.53	
Incremental Delay, d2		28.2		77.9	3.5						1.6	
Delay (s)		79.5		106.5	26.9						14.6	
Level of Service		E		F	C						B	
Approach Delay (s)		79.5			39.5			0.0			14.6	
Approach LOS		E			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			26.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			86.2%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11	
Future Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		325			537			302			286		
Travel Time (s)		7.4			12.2			5.9			5.6		
Confl. Peds. (#/hr)			39	39						185		66	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	129	0	0	190	0	0	0	0	0	2065	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9		20.0
Total Split (s)		36.0		36.0	36.0					84.0	84.0		20.0
Total Split (%)		25.7%		25.7%	25.7%					60.0%	60.0%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2		0.0
Lost Time Adjust (s)		-1.8			-1.8						-1.9		
Total Lost Time (s)		4.0			4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.32			0.47						0.72		
Control Delay		41.7			38.3						5.5		
Queue Delay		0.0			0.0						0.3		
Total Delay		41.7			38.3						5.8		
Queue Length 50th (ft)		86			117						74		
Queue Length 95th (ft)		148			171						79		
Internal Link Dist (ft)		245			457			222			206		
Turn Bay Length (ft)													
Base Capacity (vph)		407			404						2859		
Starvation Cap Reductn		0			0						230		
Spillback Cap Reductn		0			0						0		
Storage Cap Reductn		0			0						0		
Reduced v/c Ratio		0.32			0.47						0.79		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 90													
Control Type: Pretimed													
Splits and Phases: 6: Tampa St & Polk St													
 Ø2 (R)									 Ø4			 Ø9	
84 s									36 s			20 s	

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Future Volume (vph)	0	84	39	21	160	0	0	0	0	48	1902	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.97			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.96			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1731			1839						5003	
Flt Permitted		1.00			0.96						1.00	
Satd. Flow (perm)		1731			1769						5003	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	88	41	22	168	0	0	0	0	51	2002	12
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	117	0	0	190	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			39	39						185		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		30.2			30.2						78.1	
Effective Green, g (s)		32.0			32.0						80.0	
Actuated g/C Ratio		0.23			0.23						0.57	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		395			404						2858	
v/s Ratio Prot		0.07										
v/s Ratio Perm					0.11						0.41	
v/c Ratio		0.30			0.47						0.72	
Uniform Delay, d1		44.7			46.7						21.9	
Progression Factor		1.00			0.73						0.21	
Incremental Delay, d2		1.9			3.9						1.0	
Delay (s)		46.6			37.8						5.5	
Level of Service		D			D						A	
Approach Delay (s)		46.6			37.8			0.0			5.5	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		10.3			HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio		0.56										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)					10.0		
Intersection Capacity Utilization		70.7%			ICU Level of Service					C		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7	
Future Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		344			539			272			302		
Travel Time (s)		7.8			12.3			5.3			5.9		
Confl. Peds. (#/hr)			8	8						38		24	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	300	0	0	203	0	0	0	0	0	2088	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7		20.0
Total Split (s)		37.0		37.0	37.0					83.0	83.0		20.0
Total Split (%)		26.4%		26.4%	26.4%					59.3%	59.3%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0		0.0
Lost Time Adjust (s)		-1.7			-1.7						-1.7		
Total Lost Time (s)		4.0			4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.70			0.91						0.73		
Control Delay		55.5			61.9						4.9		
Queue Delay		0.0			0.0						0.1		
Total Delay		55.5			61.9						5.0		
Queue Length 50th (ft)		236			113						53		
Queue Length 95th (ft)		344			m#252						57		
Internal Link Dist (ft)		264			459			192			222		
Turn Bay Length (ft)													
Base Capacity (vph)		428			224						2844		
Starvation Cap Reductn		0			0						72		
Spillback Cap Reductn		0			0						16		
Storage Cap Reductn		0			0						0		
Reduced v/c Ratio		0.70			0.91						0.75		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Future Volume (vph)	0	178	104	49	142	0	0	0	0	82	1874	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.99			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1751			1836						5042	
Flt Permitted		1.00			0.51						1.00	
Satd. Flow (perm)		1751			954						5042	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	189	111	52	151	0	0	0	0	87	1994	7
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	285	0	0	203	0	0	0	0	0	2088	0
Confl. Peds. (#/hr)			8	8						38		24
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		31.3			31.3						77.3	
Effective Green, g (s)		33.0			33.0						79.0	
Actuated g/C Ratio		0.24			0.24						0.56	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		412			224						2845	
v/s Ratio Prot		0.16										
v/s Ratio Perm					0.21						0.41	
v/c Ratio		0.69			0.91						0.73	
Uniform Delay, d1		48.8			52.0						22.7	
Progression Factor		1.00			0.66						0.16	
Incremental Delay, d2		9.2			25.6						1.2	
Delay (s)		58.0			60.0						4.9	
Level of Service		E			E						A	
Approach Delay (s)		58.0			60.0			0.0			4.9	
Approach LOS		E			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			15.4			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			74.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32	
Future Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		258			543			313			272		
Travel Time (s)		5.9			12.3			6.1			5.3		
Confl. Peds. (#/hr)			30	30						30		54	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	354	0	96	431	0	0	0	0	0	2066	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9		20.0
Total Split (s)		40.0		40.0	40.0					80.0	80.0		20.0
Total Split (%)		28.6%		28.6%	28.6%					57.1%	57.1%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2		0.0
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.77		0.91	0.90						0.75		
Control Delay		58.6		101.1	56.8						7.6		
Queue Delay		0.0		0.0	0.1						0.3		
Total Delay		58.6		101.1	56.9						7.9		
Queue Length 50th (ft)		289		54	242						87		
Queue Length 95th (ft)		#411		m#184	m#531						101		
Internal Link Dist (ft)		178			463			233			192		
Turn Bay Length (ft)				75									
Base Capacity (vph)		459		106	479						2744		
Starvation Cap Reductn		0		0	1						190		
Spillback Cap Reductn		0		0	0						0		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.77		0.91	0.90						0.81		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Tampa St & Twiggs St



Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Future Volume (vph)	0	233	104	91	409	0	0	0	0	49	1881	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1745		1770	1863						5049	
Flt Permitted		1.00		0.22	1.00						1.00	
Satd. Flow (perm)		1745		413	1863						5049	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	245	109	96	431	0	0	0	0	52	1980	34
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	343	0	96	431	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			30	30						30		54
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		34.3		34.3	34.3						74.1	
Effective Green, g (s)		36.0		36.0	36.0						76.0	
Actuated g/C Ratio		0.26		0.26	0.26						0.54	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		448		106	479						2740	
v/s Ratio Prot		0.20			0.23							
v/s Ratio Perm				0.23							0.41	
v/c Ratio		0.77		0.91	0.90						0.75	
Uniform Delay, d1		48.1		50.4	50.3						24.8	
Progression Factor		1.00		0.68	0.67						0.25	
Incremental Delay, d2		11.8		63.4	22.0						1.3	
Delay (s)		59.9		97.7	55.8						7.6	
Level of Service		E		F	E						A	
Approach Delay (s)		59.9			63.4			0.0			7.6	
Approach LOS		E			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			23.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.69									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			75.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15	
Future Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		311			548			309			313		
Travel Time (s)		7.1			12.5			6.0			6.1		
Confl. Peds. (#/hr)			53	53						29		66	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	228	0	130	24	0	0	0	0	0	2044	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8		20.0
Total Split (s)		36.0		36.0	36.0					84.0	84.0		20.0
Total Split (%)		25.7%		25.7%	25.7%					60.0%	60.0%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1		0.0
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.57		0.83	0.06						0.71		
Control Delay		41.9		71.9	30.8						5.7		
Queue Delay		0.6		8.8	0.0						0.2		
Total Delay		42.5		80.7	30.8						6.0		
Queue Length 50th (ft)		140		97	15						76		
Queue Length 95th (ft)		231		m#178	m24						90		
Internal Link Dist (ft)		231			468			229			233		
Turn Bay Length (ft)				75									
Base Capacity (vph)		403		157	425						2886		
Starvation Cap Reductn		0		0	0						224		
Spillback Cap Reductn		34		13	0						192		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.62		0.90	0.06						0.77		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Future Volume (vph)	0	82	137	125	23	0	0	0	0	59	1888	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.92		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.94	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1576		1668	1863						5048	
Flt Permitted		1.00		0.39	1.00						1.00	
Satd. Flow (perm)		1576		688	1863						5048	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	85	143	130	24	0	0	0	0	61	1967	16
RTOR Reduction (vph)	0	43	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	185	0	130	24	0	0	0	0	0	2044	0
Confl. Peds. (#/hr)			53	53						29		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		30.1		30.1	30.1						78.2	
Effective Green, g (s)		32.0		32.0	32.0						80.0	
Actuated g/C Ratio		0.23		0.23	0.23						0.57	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		360		157	425						2884	
v/s Ratio Prot		0.12			0.01							
v/s Ratio Perm				0.19							0.40	
v/c Ratio		0.51		0.83	0.06						0.71	
Uniform Delay, d1		47.2		51.4	42.2						21.6	
Progression Factor		1.00		0.74	0.72						0.22	
Incremental Delay, d2		5.2		31.9	0.2						0.9	
Delay (s)		52.3		70.0	30.6						5.7	
Level of Service		D		E	C						A	
Approach Delay (s)		52.3			63.8			0.0			5.7	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			13.8			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			87.3%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

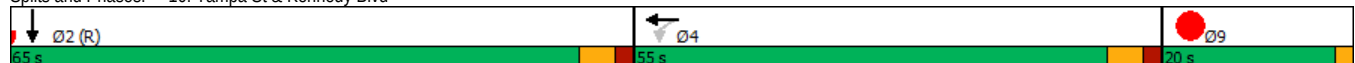
Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307	
Future Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes	Yes		Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		314			546			274			309		
Travel Time (s)		7.1			12.4			5.3			6.0		
Confl. Peds. (#/hr)				26								42	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93	
Shared Lane Traffic (%)				10%									
Lane Group Flow (vph)	0	0	0	257	1706	0	0	0	0	0	2108	0	
Turn Type				Perm	NA						NA		
Protected Phases					4						2		9
Permitted Phases				4									
Minimum Split (s)				25.8	25.8						26.8		20.0
Total Split (s)				55.0	55.0						65.0		20.0
Total Split (%)				39.3%	39.3%						46.4%		14%
Yellow Time (s)				3.7	3.7						3.7		2.0
All-Red Time (s)				2.1	2.1						2.1		0.0
Lost Time Adjust (s)				-1.8	-1.8						-1.8		
Total Lost Time (s)				4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio				0.40	0.96						0.98		
Control Delay				2.7	29.0						34.7		
Queue Delay				0.9	25.2						41.2		
Total Delay				3.6	54.2						75.8		
Queue Length 50th (ft)				3	144						474		
Queue Length 95th (ft)				m33	#672						#294		
Internal Link Dist (ft)		234			466			194			229		
Turn Bay Length (ft)													
Base Capacity (vph)				639	1771						2152		
Starvation Cap Reductn				0	38						87		
Spillback Cap Reductn				183	158						344		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.56	1.06						1.17		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBT, Start of Green
Natural Cycle: 130
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Future Volume (vph)	0	0	0	266	1560	0	0	0	0	0	1654	307
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.86	0.86						0.91	
Frbp, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				0.95	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1439	4797						4893	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1439	4797						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	286	1677	0	0	0	0	0	1778	330
RTOR Reduction (vph)	0	0	0	115	24	0	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	142	1682	0	0	0	0	0	2089	0
Confl. Peds. (#/hr)				26								42
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				49.2	49.2						59.2	
Effective Green, g (s)				51.0	51.0						61.0	
Actuated g/C Ratio				0.36	0.36						0.44	
Clearance Time (s)				5.8	5.8						5.8	
Lane Grp Cap (vph)				524	1747						2131	
v/s Ratio Prot											c0.43	
v/s Ratio Perm				0.10	0.35							
v/c Ratio				0.27	0.96						0.98	
Uniform Delay, d1				31.4	43.6						38.9	
Progression Factor				0.13	0.38						0.57	
Incremental Delay, d2				0.9	11.7						12.2	
Delay (s)				5.0	28.4						34.4	
Level of Service				A	C						C	
Approach Delay (s)		0.0			25.3			0.0			34.4	
Approach LOS		A			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			30.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			10.0			
Intersection Capacity Utilization			72.7%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0	
Future Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	100		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes	Yes		Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		275			260			589			274		
Travel Time (s)		6.3			5.9			11.5			5.3		
Confl. Peds. (#/hr)			71							39			
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1066	0	0	0	0	0	0	0	351	1758	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									2		9
Permitted Phases										2			
Minimum Split (s)		27.0								27.0	27.0		20.0
Total Split (s)		65.0								55.0	55.0		20.0
Total Split (%)		46.4%								39.3%	39.3%		14%
Yellow Time (s)		3.7								3.7	3.7		2.0
All-Red Time (s)		2.3								2.3	2.3		0.0
Lost Time Adjust (s)		-2.0								-2.0	-2.0		
Total Lost Time (s)		4.0								4.0	4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.53								0.53	0.95		
Control Delay		23.5								13.9	32.9		
Queue Delay		0.0								4.3	44.2		
Total Delay		23.5								18.1	77.1		
Queue Length 50th (ft)		204								58	368		
Queue Length 95th (ft)		248								m67	m417		
Internal Link Dist (ft)		195			180			509			194		
Turn Bay Length (ft)										100			
Base Capacity (vph)		2025								664	1852		
Starvation Cap Reductn		0								233	380		
Spillback Cap Reductn		0								0	0		
Storage Cap Reductn		0								0	0		
Reduced v/c Ratio		0.53								0.81	1.19		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Future Volume (vph)	0	510	482	0	0	0	0	0	0	326	1635	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								1.00	0.91	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								0.92	1.00	
Frt		0.93								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4368								1632	5085	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4368								1632	5085	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	548	518	0	0	0	0	0	0	351	1758	0
RTOR Reduction (vph)	0	122	0	0	0	0	0	0	0	70	0	0
Lane Group Flow (vph)	0	944	0	0	0	0	0	0	0	281	1758	0
Confl. Peds. (#/hr)			71							39		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		59.0								49.0	49.0	
Effective Green, g (s)		61.0								51.0	51.0	
Actuated g/C Ratio		0.44								0.36	0.36	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		1903								594	1852	
v/s Ratio Prot		c0.22									c0.35	
v/s Ratio Perm										0.17		
v/c Ratio		0.50								0.47	0.95	
Uniform Delay, d1		28.4								34.2	43.2	
Progression Factor		1.00								0.53	0.60	
Incremental Delay, d2		0.9								1.2	6.2	
Delay (s)		29.4								19.3	32.3	
Level of Service		C								B	C	
Approach Delay (s)		29.4			0.0			0.0			30.2	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			29.9			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.60									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			72.7%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0	
Future Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	100		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		404			553			171			589		
Travel Time (s)		9.2			12.6			3.3			11.5		
Confl. Peds. (#/hr)			94	94						30		43	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	321	0	111	106	0	0	0	0	0	162	0	
Turn Type		NA		Perm	NA					Split	NA		
Protected Phases		4			4					2	2		9
Permitted Phases				4									
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7		20.0
Total Split (s)		67.0		67.0	67.0					53.0	53.0		20.0
Total Split (%)		47.9%		47.9%	47.9%					37.9%	37.9%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0		0.0
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.22		0.28	0.13						0.09		
Control Delay		16.8		11.3	8.6						27.6		
Queue Delay		0.0		0.0	0.0						0.0		
Total Delay		16.8		11.3	8.6						27.6		
Queue Length 50th (ft)		64		16	15						22		
Queue Length 95th (ft)		96		36	23						m27		
Internal Link Dist (ft)		324			473			91			509		
Turn Bay Length (ft)				100									
Base Capacity (vph)		1465		393	838						1747		
Starvation Cap Reductn		0		0	0						0		
Spillback Cap Reductn		0		0	0						0		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.22		0.28	0.13						0.09		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 80													
Control Type: Pretimed													
m	Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 12: Tampa St & Whiting St													
 Ø2 (R)					 Ø4					 Ø9			
53 s					67 s					20 s			

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Future Volume (vph)	0	203	109	108	103	0	0	0	0	58	99	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.90	1.00						1.00	
Frt		0.95		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.98	
Satd. Flow (prot)		3143		1592	1863						4993	
Flt Permitted		1.00		0.52	1.00						0.98	
Satd. Flow (perm)		3143		875	1863						4993	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	209	112	111	106	0	0	0	0	60	102	0
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	270	0	111	106	0	0	0	0	0	162	0
Confl. Peds. (#/hr)			94	94						30		43
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Actuated Green, G (s)		61.2		61.2	61.2						47.3	
Effective Green, g (s)		63.0		63.0	63.0						49.0	
Actuated g/C Ratio		0.45		0.45	0.45						0.35	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1414		393	838						1747	
v/s Ratio Prot		0.09			0.06						c0.03	
v/s Ratio Perm				c0.13								
v/c Ratio		0.19		0.28	0.13						0.09	
Uniform Delay, d1		23.2		24.3	22.5						30.6	
Progression Factor		1.00		0.38	0.36						0.90	
Incremental Delay, d2		0.3		1.7	0.3						0.1	
Delay (s)		23.5		11.0	8.5						27.5	
Level of Service		C		B	A						C	
Approach Delay (s)		23.5			9.8			0.0			27.5	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			20.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.17									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			55.0%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0	
Future Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		459			889			1015			242		
Travel Time (s)		10.4			20.2			19.8			4.7		
Confl. Peds. (#/hr)	16					16	6		5				
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	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	27	280	0	0	454	0	0	1264	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	22.1	22.1			22.1		30.1	30.1					20.0
Total Split (s)	47.0	47.0			47.0		73.0	73.0					20.0
Total Split (%)	33.6%	33.6%			33.6%		52.1%	52.1%					14%
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.1	2.1					0.0
Lost Time Adjust (s)	-0.5	-0.5			-2.1			-2.1					
Total Lost Time (s)	5.6	5.6			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.32	0.51			0.83			0.52					
Control Delay	35.8	30.1			57.1			27.9					
Queue Delay	0.0	0.7			0.0			0.0					
Total Delay	35.8	30.8			57.1			27.9					
Queue Length 50th (ft)	14	152			371			250					
Queue Length 95th (ft)	m31	209			#544			243					
Internal Link Dist (ft)		379			809			935			162		
Turn Bay Length (ft)	100												
Base Capacity (vph)	84	550			550			2436					
Starvation Cap Reductn	0	84			0			0					
Spillback Cap Reductn	0	0			0			0					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.32	0.60			0.83			0.52					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 75

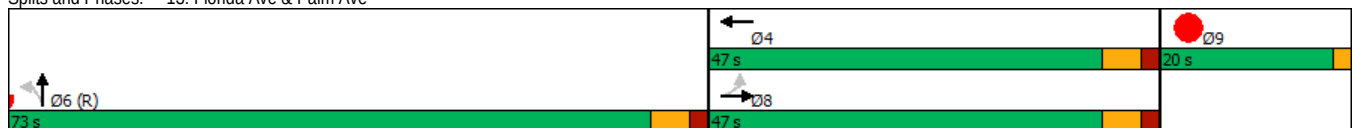
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Future Volume (vph)	26	266	0	0	298	133	67	912	221	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frpb, ped/bikes	1.00	1.00			0.98			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1756			4895				
Flt Permitted	0.15	1.00			1.00			1.00				
Satd. Flow (perm)	286	1863			1756			4895				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	27	280	0	0	314	140	71	960	233	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	26	0	0	0	0
Lane Group Flow (vph)	27	280	0	0	442	0	0	1238	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		5			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	40.9	40.9			40.9			66.9				
Effective Green, g (s)	41.4	41.4			43.0			69.0				
Actuated g/C Ratio	0.30	0.30			0.31			0.49				
Clearance Time (s)	6.1	6.1			6.1			6.1				
Lane Grp Cap (vph)	84	550			539			2412				
v/s Ratio Prot		0.15			0.25							
v/s Ratio Perm	0.09							0.25				
v/c Ratio	0.32	0.51			0.82			0.51				
Uniform Delay, d1	38.4	40.9			44.9			24.1				
Progression Factor	0.66	0.65			1.00			1.18				
Incremental Delay, d2	8.8	3.0			13.1			0.5				
Delay (s)	33.9	29.7			58.1			29.0				
Level of Service	C	C			E			C				
Approach Delay (s)		30.0			58.1			29.0			0.0	
Approach LOS		C			E			C			A	
Intersection Summary												
HCM 2000 Control Delay			35.7			HCM 2000 Level of Service			D			
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			11.6			
Intersection Capacity Utilization			68.0%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

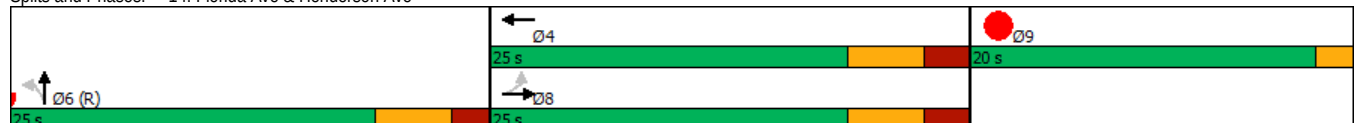
Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0	
Future Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		25			25			35			35		
Link Distance (ft)		183			376			1146			1015		
Travel Time (s)		5.0			10.3			22.3			19.8		
Confl. Peds. (#/hr)	3					3	4		11				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	64	84	0	0	220	0	0	1305	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	22.4	22.4			22.4		24.0	24.0					20.0
Total Split (s)	25.0	25.0			25.0		25.0	25.0					20.0
Total Split (%)	35.7%	35.7%			35.7%		35.7%	35.7%					29%
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0					2.0
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0					0.0
Lost Time Adjust (s)	-2.4	-2.4			-2.4			-2.0					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.21	0.15			0.38			0.86					
Control Delay	20.7	18.9			12.0			43.4					
Queue Delay	0.0	0.0			0.0			0.0					
Total Delay	20.7	18.9			12.0			43.4					
Queue Length 50th (ft)	20	26			35			378					
Queue Length 95th (ft)	50	57			87			m311					
Internal Link Dist (ft)		103			296			1066			935		
Turn Bay Length (ft)	50												
Base Capacity (vph)	299	558			585			1517					
Starvation Cap Reductn	0	0			0			0					
Spillback Cap Reductn	0	0			0			0					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.21	0.15			0.38			0.86					

Intersection Summary

Area Type: Other
Cycle Length: 70
Actuated Cycle Length: 70
Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 70
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Future Volume (vph)	59	77	0	0	81	121	92	1099	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1765	1863			1696			5055				
Flt Permitted	0.54	1.00			1.00			1.00				
Satd. Flow (perm)	998	1863			1696			5055				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	64	84	0	0	88	132	100	1195	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	77	0	0	1	0	0	0	0
Lane Group Flow (vph)	64	84	0	0	143	0	0	1304	0	0	0	0
Confl. Peds. (#/hr)	3					3	4		11			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			19.0				
Effective Green, g (s)	21.0	21.0			21.0			21.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.30				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	299	558			508			1516				
v/s Ratio Prot		0.05			c0.08							
v/s Ratio Perm	0.06							0.26				
v/c Ratio	0.21	0.15			0.28			0.86				
Uniform Delay, d1	18.3	18.0			18.7			23.1				
Progression Factor	1.00	1.00			1.00			1.84				
Incremental Delay, d2	1.6	0.6			1.4			0.6				
Delay (s)	20.0	18.5			20.1			43.2				
Level of Service	B	B			C			D				
Approach Delay (s)		19.1			20.1			43.2			0.0	
Approach LOS		B			C			D			A	
Intersection Summary												
HCM 2000 Control Delay		38.0			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.40										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		55.0%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

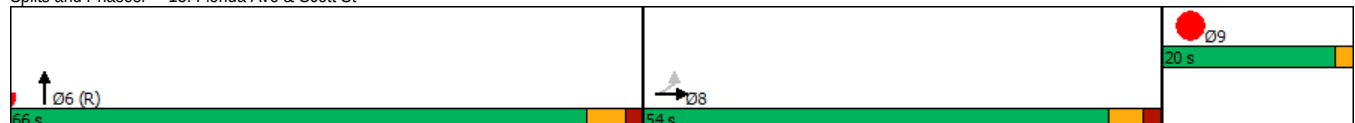
Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔↔						↔↔↔					
Traffic Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0	
Future Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red	Yes		Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		371			377			701			1146		
Travel Time (s)		8.4			8.6			13.7			22.3		
Confl. Peds. (#/hr)	4								8				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1507	0	0	0	0	0	2581	0	0	0	0	
Turn Type	Perm	NA						NA					
Protected Phases		8						6					9
Permitted Phases	8												
Minimum Split (s)	23.7	23.7						24.0					20.0
Total Split (s)	54.0	54.0						66.0					20.0
Total Split (%)	38.6%	38.6%						47.1%					14%
Yellow Time (s)	3.7	3.7						4.0					2.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)		-1.7						-2.0					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.18						1.18					
Control Delay		117.4						115.0					
Queue Delay		0.0						0.0					
Total Delay		117.4						115.0					
Queue Length 50th (ft)		~854						~527					
Queue Length 95th (ft)		#996						#593					
Internal Link Dist (ft)		291			297			621			1066		
Turn Bay Length (ft)													
Base Capacity (vph)		1274						2187					
Starvation Cap Reductn		0						16					
Spillback Cap Reductn		0						0					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		1.18						1.19					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Future Volume (vph)	437	1024	0	0	0	0	0	1815	689	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.96				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3475						4828				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3475						4828				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	451	1056	0	0	0	0	0	1871	710	0	0	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	49	0	0	0	0
Lane Group Flow (vph)	0	1473	0	0	0	0	0	2532	0	0	0	0
Confl. Peds. (#/hr)	4								8			
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		48.3						60.0				
Effective Green, g (s)		50.0						62.0				
Actuated g/C Ratio		0.36						0.44				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1241						2138				
v/s Ratio Prot								0.52				
v/s Ratio Perm		0.42										
v/c Ratio		1.19						1.18				
Uniform Delay, d1		45.0						39.0				
Progression Factor		0.63						0.89				
Incremental Delay, d2		92.0						85.2				
Delay (s)		120.3						119.9				
Level of Service		F						F				
Approach Delay (s)		120.3			0.0			119.9			0.0	
Approach LOS		F			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		120.1							F			
HCM 2000 Volume to Capacity ratio		1.02										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		98.4%							F			
Analysis Period (min)		15										

c Critical Lane Group

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0	
Future Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		272			273			483			701		
Travel Time (s)		6.2			6.2			11.0			15.9		
Confl. Peds. (#/hr)	13					13	5		7				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0	
Turn Type	Perm	NA					Perm	NA					
Protected Phases		4						2					9
Permitted Phases	4						2						
Minimum Split (s)	23.4	23.4					24.0	24.0					20.0
Total Split (s)	33.0	33.0					87.0	87.0					20.0
Total Split (%)	23.6%	23.6%					62.1%	62.1%					14%
Yellow Time (s)	3.4	3.4					4.0	4.0					2.0
All-Red Time (s)	2.0	2.0					2.0	2.0					0.0
Lost Time Adjust (s)		-1.4						-2.0					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.26						0.91					
Control Delay		48.9						9.6					
Queue Delay		0.0						1.0					
Total Delay		48.9						10.6					
Queue Length 50th (ft)		74						130					
Queue Length 95th (ft)		128						152					
Internal Link Dist (ft)		192			193			403			621		
Turn Bay Length (ft)													
Base Capacity (vph)		363						3007					
Starvation Cap Reductn		0						109					
Spillback Cap Reductn		0						0					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		0.26						0.94					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Future Volume (vph)	63	26	0	0	0	0	35	2460	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Flpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.97						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1753						5076				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1753						5076				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	68	28	0	0	0	0	38	2674	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Confl. Peds. (#/hr)	13					13	5		7			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		27.6						81.0				
Effective Green, g (s)		29.0						83.0				
Actuated g/C Ratio		0.21						0.59				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		363						3009				
v/s Ratio Prot												
v/s Ratio Perm		0.05						0.54				
v/c Ratio		0.26						0.90				
Uniform Delay, d1		46.6						25.0				
Progression Factor		1.00						0.29				
Incremental Delay, d2		1.8						2.1				
Delay (s)		48.3						9.3				
Level of Service		D						A				
Approach Delay (s)		48.3			0.0			9.3			0.0	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		10.6						HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		10.0		
Intersection Capacity Utilization		66.6%						ICU Level of Service		C		
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↖			↗			↖↗					
Traffic Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0	
Future Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			35		
Link Distance (ft)		297			296			282			483		
Travel Time (s)		6.8			6.7			6.4			9.4		
Confl. Peds. (#/hr)	8					8	7		12				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	61	0	0	90	0	0	2836	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			8			2					9
Permitted Phases	4						2						
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0					20.0
Total Split (s)	33.0	33.0			33.0		87.0	87.0					20.0
Total Split (%)	23.6%	23.6%			23.6%		62.1%	62.1%					14%
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0					2.0
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8			-2.0					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.18			0.23			0.94					
Control Delay		47.4			14.1			9.2					
Queue Delay		0.0			0.0			1.0					
Total Delay		47.4			14.1			10.2					
Queue Length 50th (ft)		46			10			102					
Queue Length 95th (ft)		89			57			m112					
Internal Link Dist (ft)		217			216			202			403		
Turn Bay Length (ft)													
Base Capacity (vph)		343			394			3010					
Starvation Cap Reductn		0			0			55					
Spillback Cap Reductn		0			0			20					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.18			0.23			0.96					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 110

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Florida Ave & Harrison St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Future Volume (vph)	19	37	0	0	12	71	17	2574	18	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.88			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1823			1609			5075				
Flt Permitted		0.90			1.00			1.00				
Satd. Flow (perm)		1660			1609			5075				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	40	0	0	13	77	18	2798	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	61	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	61	0	0	29	0	0	2836	0	0	0	0
Confl. Peds. (#/hr)	8					8	7		12			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		27.2			27.2			81.0				
Effective Green, g (s)		29.0			29.0			83.0				
Actuated g/C Ratio		0.21			0.21			0.59				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		343			333			3008				
v/s Ratio Prot					0.02							
v/s Ratio Perm		0.04						0.56				
v/c Ratio		0.18			0.09			0.94				
Uniform Delay, d1		45.7			44.8			26.3				
Progression Factor		1.00			1.00			0.21				
Incremental Delay, d2		1.1			0.5			3.2				
Delay (s)		46.8			45.3			8.6				
Level of Service		D			D			A				
Approach Delay (s)		46.8			45.3			8.6			0.0	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		10.5			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		74.7%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0	
Future Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		0	60		0	0		0	
Storage Lanes	1		0	0		0	1		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		570			288			286			282		
Travel Time (s)		13.0			6.5			5.6			5.5		
Confl. Peds. (#/hr)	11					11	4		21				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	98	105	0	0	300	0	33	2742	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0					20.0
Total Split (s)	35.0	35.0			35.0		85.0	85.0					20.0
Total Split (%)	25.0%	25.0%			25.0%		60.7%	60.7%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0					
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.98	0.25			0.74		0.03	0.93					
Control Delay	133.0	43.0			61.6		5.0	9.6					
Queue Delay	0.0	0.0			0.0		0.0	1.3					
Total Delay	133.0	43.0			61.6		5.0	10.9					
Queue Length 50th (ft)	73	68			250		3	104					
Queue Length 95th (ft)	m#203	m122			359		m4	113					
Internal Link Dist (ft)		490			208			206			202		
Turn Bay Length (ft)	75						60						
Base Capacity (vph)	100	412			404		1009	2938					
Starvation Cap Reductn	0	0			0		0	80					
Spillback Cap Reductn	0	0			0		0	74					
Storage Cap Reductn	0	0			0		0	0					
Reduced v/c Ratio	0.98	0.25			0.74		0.03	0.96					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 110

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Future Volume (vph)	92	99	0	0	222	60	31	2568	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	0.99	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1755	1863			1796		1745	5081				
Flt Permitted	0.25	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	454	1863			1796		1745	5081				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	98	105	0	0	236	64	33	2732	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	98	105	0	0	293	0	33	2742	0	0	0	0
Confl. Peds. (#/hr)	11					11	4		21			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	29.2	29.2			29.2		79.0	79.0				
Effective Green, g (s)	31.0	31.0			31.0		81.0	81.0				
Actuated g/C Ratio	0.22	0.22			0.22		0.58	0.58				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	100	412			397		1009	2939				
v/s Ratio Prot		0.06			0.16			c0.54				
v/s Ratio Perm	c0.22						0.02					
v/c Ratio	0.98	0.25			0.74		0.03	0.93				
Uniform Delay, d1	54.2	45.0			50.7		12.7	27.0				
Progression Factor	0.89	0.91			1.00		0.39	0.22				
Incremental Delay, d2	83.8	1.5			11.6		0.0	3.1				
Delay (s)	131.8	42.5			62.3		5.0	9.0				
Level of Service	F	D			E		A	A				
Approach Delay (s)		85.7			62.3			9.0			0.0	
Approach LOS		F			E			A			A	
Intersection Summary												
HCM 2000 Control Delay		18.6			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.81										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		84.8%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0	
Future Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	70		0	0		0	60		0	0		0	
Storage Lanes	1		0	0		0	1		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		553			311			283			286		
Travel Time (s)		12.6			7.1			5.5			5.6		
Confl. Peds. (#/hr)	4					4	5		74				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	95	309	0	0	273	0	57	2659	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0					20.0
Total Split (s)	36.0	36.0			36.0		84.0	84.0					20.0
Total Split (%)	25.7%	25.7%			25.7%		60.0%	60.0%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0					0.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0					
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.73	0.73			0.65		0.06	0.92					
Control Delay	56.0	41.6			55.7		5.0	8.0					
Queue Delay	0.0	0.0			0.0		0.0	5.4					
Total Delay	56.0	41.6			55.7		5.0	13.4					
Queue Length 50th (ft)	44	146			220		5	86					
Queue Length 95th (ft)	m57	m178			322		m6	m101					
Internal Link Dist (ft)		473			231			203			206		
Turn Bay Length (ft)	70						60						
Base Capacity (vph)	131	425			418		992	2883					
Starvation Cap Reductn	0	0			0		0	197					
Spillback Cap Reductn	0	0			0		0	98					
Storage Cap Reductn	0	0			0		0	0					
Reduced v/c Ratio	0.73	0.73			0.65		0.06	0.99					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 100
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0
Future Volume (vph)	91	297	0	0	206	56	55	2506	47	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			1.00		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		0.98	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1764	1863			1802		1737	5044				
Flt Permitted	0.31	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	573	1863			1802		1737	5044				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	95	309	0	0	215	58	57	2610	49	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	1	0	0	0	0
Lane Group Flow (vph)	95	309	0	0	266	0	57	2658	0	0	0	0
Confl. Peds. (#/hr)	4					4	5		74			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	30.0	30.0			30.0		78.0	78.0				
Effective Green, g (s)	32.0	32.0			32.0		80.0	80.0				
Actuated g/C Ratio	0.23	0.23			0.23		0.57	0.57				
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)	130	425			411		992	2882				
v/s Ratio Prot		c0.17			0.15			c0.53				
v/s Ratio Perm	0.17						0.03					
v/c Ratio	0.73	0.73			0.65		0.06	0.92				
Uniform Delay, d1	50.0	50.0			48.9		13.3	27.2				
Progression Factor	0.73	0.71			1.00		0.37	0.19				
Incremental Delay, d2	17.7	5.8			7.7		0.0	2.2				
Delay (s)	54.5	41.1			56.6		5.0	7.5				
Level of Service	D	D			E		A	A				
Approach Delay (s)		44.2			56.6			7.5			0.0	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay		15.8			HCM 2000 Level of Service		B					
HCM 2000 Volume to Capacity ratio		0.75										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)		10.0					
Intersection Capacity Utilization		86.2%			ICU Level of Service		E					
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
20: Florida Ave & Polk St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↖			↗		↖	↗					
Traffic Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0	
Future Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		537			394			300			283		
Travel Time (s)		12.2			9.0			5.8			5.5		
Confl. Peds. (#/hr)	33					33	6		68				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	200	0	0	135	0	47	2818	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0					20.0
Total Split (s)	36.0	36.0			36.0		84.0	84.0					20.0
Total Split (%)	25.7%	25.7%			25.7%		60.0%	60.0%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0					
Total Lost Time (s)		4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.55			0.33		0.05	0.97					
Control Delay		37.0			37.0		6.2	14.2					
Queue Delay		0.0			0.0		0.0	12.2					
Total Delay		37.0			37.0		6.2	26.4					
Queue Length 50th (ft)		111			79		6	127					
Queue Length 95th (ft)		m159			143		m7	m#319					
Internal Link Dist (ft)		457			314			220			203		
Turn Bay Length (ft)													
Base Capacity (vph)		364			406		992	2897					
Starvation Cap Reductn		0			0		0	150					
Spillback Cap Reductn		0			0		0	54					
Storage Cap Reductn		0			0		0	0					
Reduced v/c Ratio		0.55			0.33		0.05	1.03					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 110

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Future Volume (vph)	46	136	0	0	64	59	43	2542	23	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Flpb, ped/bikes		1.00			0.96		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.98	1.00				
Frt		1.00			0.94		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1816			1675		1736	5068				
Flt Permitted		0.87			1.00		0.95	1.00				
Satd. Flow (perm)		1594			1675		1736	5068				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	51	149	0	0	70	65	47	2793	25	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	200	0	0	111	0	47	2818	0	0	0	0
Confl. Peds. (#/hr)	33					33	6		68			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		30.2			30.2		78.0	78.0				
Effective Green, g (s)		32.0			32.0		80.0	80.0				
Actuated g/C Ratio		0.23			0.23		0.57	0.57				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		364			382		992	2896				
v/s Ratio Prot					0.07			c0.56				
v/s Ratio Perm		c0.13					0.03					
v/c Ratio		0.55			0.29		0.05	0.97				
Uniform Delay, d1		47.6			44.6		13.2	29.0				
Progression Factor		0.65			1.00		0.46	0.27				
Incremental Delay, d2		5.6			1.9		0.0	5.4				
Delay (s)		36.5			46.5		6.1	13.1				
Level of Service		D			D		A	B				
Approach Delay (s)		36.5			46.5			13.0			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		15.9			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		86.0%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Group													
Lane Configurations		↔			↔			↔↔↔					
Traffic Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0	
Future Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		539			418			283			300		
Travel Time (s)		12.3			9.5			5.5			5.8		
Confl. Peds. (#/hr)	24					24	10		15				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	202	0	0	300	0	0	2774	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7					20.0
Total Split (s)	36.0	36.0			36.0		84.0	84.0					20.0
Total Split (%)	25.7%	25.7%			25.7%		60.0%	60.0%					14%
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7					2.0
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0					0.0
Lost Time Adjust (s)		-1.9			-1.9			-1.7					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.90			0.72			0.96					
Control Delay		62.2			52.6			16.3					
Queue Delay		0.0			0.0			15.7					
Total Delay		62.2			52.6			32.0					
Queue Length 50th (ft)		80			215			139					
Queue Length 95th (ft)		m#312			325			#564					
Internal Link Dist (ft)		459			338			203			220		
Turn Bay Length (ft)													
Base Capacity (vph)		224			415			2884					
Starvation Cap Reductn		0			0			198					
Spillback Cap Reductn		0			0			127					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.90			0.72			1.03					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 120

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Future Volume (vph)	42	148	0	0	115	167	94	2462	52	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.96			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		1835			1654			5047				
Flt Permitted		0.53			1.00			1.00				
Satd. Flow (perm)		980			1654			5047				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	45	157	0	0	122	178	100	2619	55	0	0	0
RTOR Reduction (vph)	0	0	0	0	38	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	202	0	0	262	0	0	2773	0	0	0	0
Confl. Peds. (#/hr)	24					24	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		30.1			30.1			78.3				
Effective Green, g (s)		32.0			32.0			80.0				
Actuated g/C Ratio		0.23			0.23			0.57				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		224			378			2884				
v/s Ratio Prot					0.16							
v/s Ratio Perm		0.21						0.55				
v/c Ratio		0.90			0.69			0.96				
Uniform Delay, d1		52.5			49.5			28.5				
Progression Factor		0.56			1.00			0.36				
Incremental Delay, d2		30.2			10.0			5.2				
Delay (s)		59.8			59.6			15.5				
Level of Service		E			E			B				
Approach Delay (s)		59.8			59.6			15.5			0.0	
Approach LOS		E			E			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.81										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		88.4%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
22: Florida Ave & Twiggs St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Group													
Lane Configurations		↕↕			↑	↑		↕↕↕					
Traffic Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0	
Future Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		543			396			298			283		
Travel Time (s)		12.3			9.0			5.8			5.5		
Confl. Peds. (#/hr)	16					16	6		13				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	358	0	0	193	339	0	2775	0	0	0	0	
Turn Type	Perm	NA			NA	Perm	Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4					4	2						
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0					20.0
Total Split (s)	32.0	32.0			32.0	32.0	88.0	88.0					20.0
Total Split (%)	22.9%	22.9%			22.9%	22.9%	62.9%	62.9%					14%
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0					2.0
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0					0.0
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0					
Total Lost Time (s)		4.0			4.0	4.0		4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.56			0.52	0.74		0.92					
Control Delay		33.9			55.7	31.8		10.4					
Queue Delay		0.0			0.5	0.3		7.6					
Total Delay		33.9			56.2	32.1		18.0					
Queue Length 50th (ft)		72			159	123		115					
Queue Length 95th (ft)		130			241	244		188					
Internal Link Dist (ft)		463			316			218			203		
Turn Bay Length (ft)													
Base Capacity (vph)		640			372	461		3020					
Starvation Cap Reductn		0			0	0		169					
Spillback Cap Reductn		0			33	9		247					
Storage Cap Reductn		0			0	0		0					
Reduced v/c Ratio		0.56			0.57	0.75		1.00					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 110
Control Type: Pretimed

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Future Volume (vph)	20	317	0	0	181	319	60	2411	137	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.91				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		0.99				
Flt Protected		1.00			1.00	1.00		1.00				
Satd. Flow (prot)		3525			1863	1517		5026				
Flt Permitted		0.91			1.00	1.00		1.00				
Satd. Flow (perm)		3200			1863	1517		5026				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	21	337	0	0	193	339	64	2565	146	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	158	0	4	0	0	0	0
Lane Group Flow (vph)	0	358	0	0	193	181	0	2771	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		13			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		26.1			26.1	26.1		82.0				
Effective Green, g (s)		28.0			28.0	28.0		84.0				
Actuated g/C Ratio		0.20			0.20	0.20		0.60				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		640			372	303		3015				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.11				0.12		0.55				
v/c Ratio		0.56			0.52	0.60		0.92				
Uniform Delay, d1		50.4			50.0	50.9		25.0				
Progression Factor		0.61			1.00	1.00		0.29				
Incremental Delay, d2		2.7			5.1	8.4		2.8				
Delay (s)		33.7			55.1	59.2		10.0				
Level of Service		C			E	E		B				
Approach Delay (s)		33.7			57.7			10.0			0.0	
Approach LOS		C			E			B			A	
Intersection Summary												
HCM 2000 Control Delay		19.2			HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)				10.0			
Intersection Capacity Utilization		91.6%			ICU Level of Service				F			
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0	
Future Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		548			408			314			298		
Travel Time (s)		12.5			9.3			6.1			5.8		
Confl. Peds. (#/hr)	21					21	8		15				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	105	130	0	0	159	0	0	2805	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0					20.0
Total Split (s)	30.0	30.0			30.0		90.0	90.0					20.0
Total Split (%)	21.4%	21.4%			21.4%		64.3%	64.3%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0					0.0
Lost Time Adjust (s)	-1.9	-1.9			-1.9			-2.0					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.66	0.38			0.45			0.90					
Control Delay	60.8	42.5			35.6			26.9					
Queue Delay	0.0	0.0			0.0			20.8					
Total Delay	60.8	42.5			35.6			47.7					
Queue Length 50th (ft)	70	84			80			816					
Queue Length 95th (ft)	m#144	m134			153			889					
Internal Link Dist (ft)		468			328			234			218		
Turn Bay Length (ft)	75												
Base Capacity (vph)	160	345			353			3106					
Starvation Cap Reductn	0	0			0			410					
Spillback Cap Reductn	0	0			1			146					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.66	0.38			0.45			1.04					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Future Volume (vph)	98	121	0	0	51	97	67	2493	48	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.97	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1722	1863			1641			5054				
Flt Permitted	0.48	1.00			1.00			1.00				
Satd. Flow (perm)	867	1863			1641			5054				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	105	130	0	0	55	104	72	2681	52	0	0	0
RTOR Reduction (vph)	0	0	0	0	49	0	0	2	0	0	0	0
Lane Group Flow (vph)	105	130	0	0	110	0	0	2803	0	0	0	0
Confl. Peds. (#/hr)	21					21	8		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	24.1	24.1			24.1			84.0				
Effective Green, g (s)	26.0	26.0			26.0			86.0				
Actuated g/C Ratio	0.19	0.19			0.19			0.61				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	161	345			304			3104				
v/s Ratio Prot		0.07			0.07							
v/s Ratio Perm	0.12							0.55				
v/c Ratio	0.65	0.38			0.36			0.90				
Uniform Delay, d1	52.8	49.9			49.8			23.4				
Progression Factor	0.78	0.78			1.00			0.93				
Incremental Delay, d2	17.7	2.9			3.3			4.7				
Delay (s)	59.1	42.0			53.1			26.5				
Level of Service	E	D			D			C				
Approach Delay (s)		49.6			53.1			26.5			0.0	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		29.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		87.3%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
24: Florida Ave & Kennedy Blvd

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations					↑↑↑		↵	↑↑↑					
Traffic Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0	
Future Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes	Yes		Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		546			427			259			314		
Travel Time (s)		12.4			9.7			5.0			6.1		
Confl. Peds. (#/hr)						33	10						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	2043	0	127	938	0	0	0	0	
Turn Type					NA		Perm	NA					
Protected Phases					4			2					9
Permitted Phases							2						
Minimum Split (s)					27.7		26.8	26.8					20.0
Total Split (s)					60.0		60.0	60.0					20.0
Total Split (%)					42.9%		42.9%	42.9%					14%
Yellow Time (s)					3.7		3.7	3.7					2.0
All-Red Time (s)					2.0		2.1	2.1					0.0
Lost Time Adjust (s)					-1.7		-1.8	-1.8					
Total Lost Time (s)					4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio					0.83		0.17	0.46					
Control Delay					40.0		0.4	13.5					
Queue Delay					0.3		0.6	0.3					
Total Delay					40.3		1.0	13.8					
Queue Length 50th (ft)					467		0	69					
Queue Length 95th (ft)					517		m1	80					
Internal Link Dist (ft)		466			347			179			234		
Turn Bay Length (ft)													
Base Capacity (vph)					2465		769	2034					
Starvation Cap Reductn					0		398	496					
Spillback Cap Reductn					93		1	475					
Storage Cap Reductn					0		0	0					
Reduced v/c Ratio					0.86		0.34	0.61					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

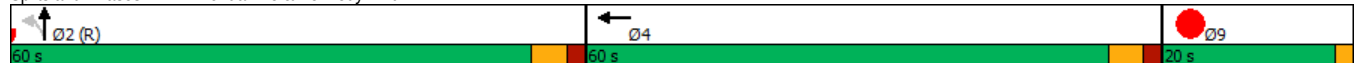
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 75

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Florida Ave & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Future Volume (vph)	0	0	0	0	1498	484	123	910	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.98	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6062		1734	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6062		1734	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	1544	499	127	938	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	41	0	76	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2002	0	51	938	0	0	0	0
Confl. Peds. (#/hr)					33		10					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					54.3		54.2	54.2				
Effective Green, g (s)					56.0		56.0	56.0				
Actuated g/C Ratio					0.40		0.40	0.40				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2424		693	2034				
v/s Ratio Prot					c0.33			c0.18				
v/s Ratio Perm							0.03					
v/c Ratio					0.83		0.07	0.46				
Uniform Delay, d1					37.6		26.0	30.9				
Progression Factor					1.00		0.00	0.41				
Incremental Delay, d2					3.4		0.2	0.7				
Delay (s)					41.0		0.3	13.5				
Level of Service					D		A	B				
Approach Delay (s)		0.0			41.0			11.9			0.0	
Approach LOS		A			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			31.0		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.55									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)						10.0	
Intersection Capacity Utilization			72.7%		ICU Level of Service						C	
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
25: Florida Ave & Jackson St

Build 2024 + Streetcar Phase
Timing Plan: AM PEAK

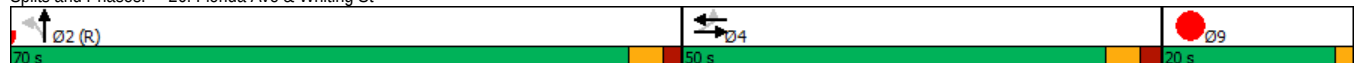
													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		  						  					
Traffic Volume (vph)	139	852	0	0	0	0	0	972	61	0	0	0	
Future Volume (vph)	139	852	0	0	0	0	0	972	61	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red	Yes		Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		283			447			595			259		
Travel Time (s)		6.4			10.2			11.6			5.0		
Confl. Peds. (#/hr)	66								34				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1065	0	0	0	0	0	1111	0	0	0	0	
Turn Type	Perm	NA						NA					
Protected Phases		4						2					9
Permitted Phases	4												
Minimum Split (s)	27.9	27.9						26.9					20.0
Total Split (s)	48.0	48.0						72.0					20.0
Total Split (%)	34.3%	34.3%						51.4%					14%
Yellow Time (s)	3.7	3.7						3.7					2.0
All-Red Time (s)	2.2	2.2						2.2					0.0
Lost Time Adjust (s)		-1.9						-1.9					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.67						0.46					
Control Delay		32.8						26.4					
Queue Delay		0.0						0.0					
Total Delay		32.8						26.4					
Queue Length 50th (ft)		318						259					
Queue Length 95th (ft)		372						299					
Internal Link Dist (ft)		203			367			515			179		
Turn Bay Length (ft)													
Base Capacity (vph)		1585						2441					
Starvation Cap Reductn		0						0					
Spillback Cap Reductn		0						0					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		0.67						0.46					
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green													
Natural Cycle: 75													
Control Type: Pretimed													
Splits and Phases: 25: Florida Ave & Jackson St													
													

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	139	852	0	0	0	0	0	972	61	0	0	0
Future Volume (vph)	139	852	0	0	0	0	0	972	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4961						5016				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4961						5016				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	149	916	0	0	0	0	0	1045	66	0	0	0
RTOR Reduction (vph)	0	26	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1039	0	0	0	0	0	1106	0	0	0	0
Confl. Peds. (#/hr)	66								34			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		42.1						66.1				
Effective Green, g (s)		44.0						68.0				
Actuated g/C Ratio		0.31						0.49				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1559						2436				
v/s Ratio Prot								0.22				
v/s Ratio Perm		0.21										
v/c Ratio		0.67						0.45				
Uniform Delay, d1		41.6						23.8				
Progression Factor		0.76						1.09				
Incremental Delay, d2		2.1						0.6				
Delay (s)		33.7						26.5				
Level of Service		C						C				
Approach Delay (s)		33.7			0.0			26.5			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		30.0						HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio		0.46										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		10.0		
Intersection Capacity Utilization		54.8%						ICU Level of Service		A		
Analysis Period (min)		15										

c Critical Lane Group

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		 			 			 					
Traffic Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0	
Future Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		50	0		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		553			299			397			595		
Travel Time (s)		12.6			6.8			7.7			11.6		
Confl. Peds. (#/hr)	130					130	45		103				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	227	0	0	336	0	0	185	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	29.0	29.0			29.0		24.7	24.7					20.0
Total Split (s)	50.0	50.0			50.0		70.0	70.0					20.0
Total Split (%)	35.7%	35.7%			35.7%		50.0%	50.0%					14%
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7					2.0
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0					0.0
Lost Time Adjust (s)		-2.0			-2.0			-1.7					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.31			0.31			0.08					
Control Delay		26.2			32.6			24.8					
Queue Delay		0.0			0.0			0.0					
Total Delay		26.2			32.6			24.8					
Queue Length 50th (ft)		90			108			31					
Queue Length 95th (ft)		130			151			45					
Internal Link Dist (ft)		473			219			317			515		
Turn Bay Length (ft)													
Base Capacity (vph)		726			1076			2357					
Starvation Cap Reductn		0			0			0					
Spillback Cap Reductn		0			0			0					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.31			0.31			0.08					
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green													
Natural Cycle: 75													
Control Type: Pretimed													

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Future Volume (vph)	88	123	0	0	237	75	6	162	5	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			0.91				
Frpb, ped/bikes		1.00			0.94			0.99				
Flpb, ped/bikes		0.95			1.00			0.99				
Frt		1.00			0.96			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		3280			3210			4997				
Flt Permitted		0.66			1.00			1.00				
Satd. Flow (perm)		2212			3210			4997				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	95	132	0	0	255	81	6	174	5	0	0	0
RTOR Reduction (vph)	0	0	0	0	21	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	227	0	0	315	0	0	183	0	0	0	0
Confl. Peds. (#/hr)	130					130	45		103			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		44.0			44.0			64.3				
Effective Green, g (s)		46.0			46.0			66.0				
Actuated g/C Ratio		0.33			0.33			0.47				
Clearance Time (s)		6.0			6.0			5.7				
Lane Grp Cap (vph)		726			1054			2355				
v/s Ratio Prot					0.10							
v/s Ratio Perm		c0.10						0.04				
v/c Ratio		0.31			0.30			0.08				
Uniform Delay, d1		35.2			35.0			20.3				
Progression Factor		0.71			1.00			1.24				
Incremental Delay, d2		1.1			0.7			0.1				
Delay (s)		26.0			35.7			25.3				
Level of Service		C			D			C				
Approach Delay (s)		26.0			35.7			25.3			0.0	
Approach LOS		C			D			C			A	
Intersection Summary												
HCM 2000 Control Delay			30.2			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.15									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			10.0			
Intersection Capacity Utilization			53.3%			ICU Level of Service			A			
Analysis Period (min)			15									

c Critical Lane Group

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations					  			 					
Traffic Volume (vph)	0	0	0	0	928	220	11	162	0	0	0	0	
Future Volume (vph)	0	0	0	0	928	220	11	162	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes	Yes		Yes			Yes	
Link Speed (mph)		35			35			35			35		
Link Distance (ft)		266			442			510			230		
Travel Time (s)		5.2			8.6			9.9			4.5		
Confl. Peds. (#/hr)						29	22						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1184	0	11	167	0	0	0	0	
Turn Type					NA		Perm	NA					
Protected Phases					2			4					9
Permitted Phases							4						
Minimum Split (s)					29.8		36.1	36.1					20.0
Total Split (s)					70.0		50.0	50.0					20.0
Total Split (%)					50.0%		35.7%	35.7%					14%
Yellow Time (s)					3.7		3.7	3.7					2.0
All-Red Time (s)					2.1		2.4	2.4					0.0
Lost Time Adjust (s)					-1.8		-2.1	-2.1					
Total Lost Time (s)					4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio					0.40		0.02	0.10					
Control Delay					23.3		0.1	32.9					
Queue Delay					0.0		0.0	0.0					
Total Delay					23.3		0.1	32.9					
Queue Length 50th (ft)					190		0	38					
Queue Length 95th (ft)					220		0	58					
Internal Link Dist (ft)		186			362			430			150		
Turn Bay Length (ft)													
Base Capacity (vph)					2929		588	1670					
Starvation Cap Reductn					0		0	0					
Spillback Cap Reductn					0		0	0					
Storage Cap Reductn					0		0	0					
Reduced v/c Ratio					0.40		0.02	0.10					
Intersection Summary													
Area Type: Other													
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green													
Natural Cycle: 90													
Control Type: Pretimed													
Splits and Phases: 27: Florida Ave & Brorein St													
													

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	928	220	11	162	0	0	0	0
Future Volume (vph)	0	0	0	0	928	220	11	162	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		0.97	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6150		1715	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6150		1715	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	957	227	11	167	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	31	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1153	0	4	167	0	0	0	0
Confl. Peds. (#/hr)					29		22					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					64.2		43.9	43.9				
Effective Green, g (s)					66.0		46.0	46.0				
Actuated g/C Ratio					0.47		0.33	0.33				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2899		563	1670				
v/s Ratio Prot					c0.19			c0.03				
v/s Ratio Perm							0.00					
v/c Ratio					0.40		0.01	0.10				
Uniform Delay, d1					24.1		31.6	32.6				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.4		0.0	0.1				
Delay (s)					24.5		31.6	32.7				
Level of Service					C		C	C				
Approach Delay (s)		0.0			24.5			32.7			0.0	
Approach LOS		A			C			C			A	
Intersection Summary												
HCM 2000 Control Delay			25.6		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.24									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					10.0		
Intersection Capacity Utilization			35.0%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	246	0	0	728	55
Future Volume (vph)	0	246	0	0	728	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	267	0	0	851	0
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	988	0	0	974	0
Future Volume (vph)	0	988	0	0	974	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1074	0	0	1059	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				  		
Traffic Volume (vph)	0	0	416	900	0	0
Future Volume (vph)	0	0	416	900	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	294			171	309	
Travel Time (s)	6.7			3.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	452	978	0	0
Sign Control	Stop			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Build 2024 – Streetcar Phase PM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

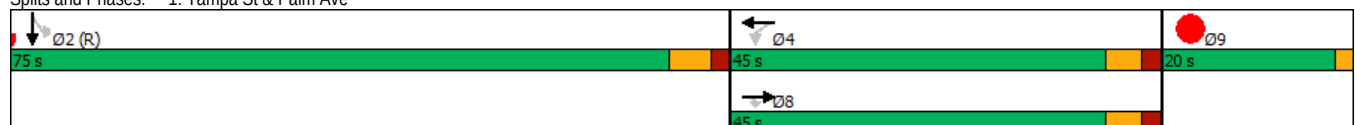
Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↑	↑	↑	↑						↑↑↑		
Traffic Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46	
Future Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	0		0	0		0	
Storage Lanes	0		1	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		656			459			1921			246		
Travel Time (s)		14.9			10.4			37.4			4.8		
Confl. Peds. (#/hr)										1		1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	314	126	116	181	0	0	0	0	0	1332	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		8			4						2		9
Permitted Phases			8	4						2			
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	20.0	
Total Split (s)		45.0	45.0	45.0	45.0					75.0	75.0	20.0	
Total Split (%)		32.1%	32.1%	32.1%	32.1%					53.6%	53.6%	14%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	2.0	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	0.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0						-2.4		
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.58	0.23	0.64	0.33						0.52		
Control Delay		47.1	6.9	33.8	19.6						24.0		
Queue Delay		0.2	0.0	0.0	0.0						0.0		
Total Delay		47.4	6.9	33.8	19.6						24.0		
Queue Length 50th (ft)		244	0	35	53						289		
Queue Length 95th (ft)		346	49	#63	82						332		
Internal Link Dist (ft)		576			379			1841			166		
Turn Bay Length (ft)				150									
Base Capacity (vph)		545	552	182	545						2539		
Starvation Cap Reductn		0	0	0	0						0		
Spillback Cap Reductn		26	0	0	0						0		
Storage Cap Reductn		0	0	0	0						0		
Reduced v/c Ratio		0.61	0.23	0.64	0.33						0.52		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Future Volume (vph)	0	308	123	114	177	0	0	0	0	276	983	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						0.99	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1583	1770	1863						4998	
Flt Permitted		1.00	1.00	0.33	1.00						0.99	
Satd. Flow (perm)		1863	1583	623	1863						4998	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	314	126	116	181	0	0	0	0	282	1003	47
RTOR Reduction (vph)	0	0	89	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	314	37	116	181	0	0	0	0	0	1329	0
Confl. Peds. (#/hr)										1		1
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		39.0	39.0	39.0	39.0						68.6	
Effective Green, g (s)		41.0	41.0	41.0	41.0						71.0	
Actuated g/C Ratio		0.29	0.29	0.29	0.29						0.51	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		545	463	182	545						2534	
v/s Ratio Prot		0.17			0.10							
v/s Ratio Perm			0.02	0.19							0.27	
v/c Ratio		0.58	0.08	0.64	0.33						0.52	
Uniform Delay, d1		42.1	35.8	43.0	38.8						23.2	
Progression Factor		1.00	1.00	0.43	0.46						1.00	
Incremental Delay, d2		4.4	0.3	14.4	1.5						0.8	
Delay (s)		46.5	36.2	32.8	19.4						23.9	
Level of Service		D	D	C	B						C	
Approach Delay (s)		43.5			24.6			0.0			23.9	
Approach LOS		D			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			28.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.49									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			60.2%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street/Kay St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537	
Future Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		475	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes	Yes		Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		391			229			247			1921		
Travel Time (s)		8.9			5.2			4.8			37.4		
Confl. Peds. (#/hr)													1
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	
Shared Lane Traffic (%)				11%									
Lane Group Flow (vph)	0	0	0	35	1705	0	0	0	0	0	1358	0	
Turn Type				Split	NA						NA		
Protected Phases				4	4						2		9
Permitted Phases													
Minimum Split (s)				26.7	26.7						31.0		20.0
Total Split (s)				74.0	74.0						46.0		20.0
Total Split (%)				52.9%	52.9%						32.9%		14%
Yellow Time (s)				3.7	3.7						4.0		2.0
All-Red Time (s)				2.0	2.0						2.0		0.0
Lost Time Adjust (s)				-1.7	-1.7						-2.0		
Total Lost Time (s)				4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio				0.04	0.99						0.98dr		
Control Delay				4.7	54.5						73.2		
Queue Delay				0.0	0.0						0.0		
Total Delay				4.7	54.5						73.2		
Queue Length 50th (ft)				0	817						398		
Queue Length 95th (ft)				18	#1015						455		
Internal Link Dist (ft)		311			149			167			1841		
Turn Bay Length (ft)													
Base Capacity (vph)				824	1714						1513		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.04	0.99						0.90		

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:SBT, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 2: Tampa St & Kay Street/Kay St



Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street/Kay St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Future Volume (vph)	0	0	0	37	1633	0	0	0	0	0	767	537
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						0.91	
Frpb, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				1.00	1.00						1.00	
Frt				1.00	1.00						0.94	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1610	3390						4744	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1610	3390						4744	
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	39	1701	0	0	0	0	0	799	559
RTOR Reduction (vph)	0	0	0	18	20	0	0	0	0	0	90	0
Lane Group Flow (vph)	0	0	0	18	1686	0	0	0	0	0	1268	0
Confl. Peds. (#/hr)												1
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Actuated Green, G (s)				68.3	68.3						40.0	
Effective Green, g (s)				70.0	70.0						42.0	
Actuated g/C Ratio				0.50	0.50						0.30	
Clearance Time (s)				5.7	5.7						6.0	
Lane Grp Cap (vph)				805	1695						1423	
v/s Ratio Prot				0.01	c0.50						c0.27	
v/s Ratio Perm												
v/c Ratio				0.02	0.99						0.98dr	
Uniform Delay, d1				17.7	34.8						46.8	
Progression Factor				1.00	1.00						1.54	
Incremental Delay, d2				0.0	20.6						8.0	
Delay (s)				17.7	55.4						80.2	
Level of Service				B	E						F	
Approach Delay (s)		0.0			54.6			0.0			80.2	
Approach LOS		A			D			A			F	
Intersection Summary												
HCM 2000 Control Delay			65.8		HCM 2000 Level of Service					E		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					10.0		
Intersection Capacity Utilization			68.8%		ICU Level of Service					C		
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

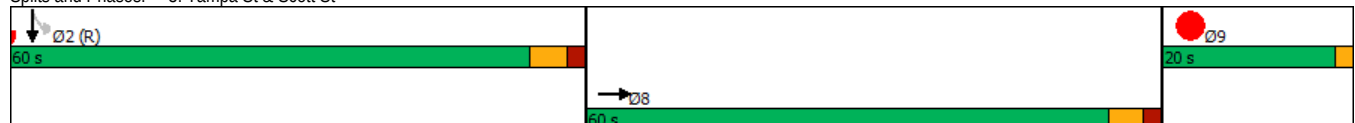
Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↕↕									↕↕↕		
Traffic Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0	
Future Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes	Yes		Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		385			62			346			247		
Travel Time (s)		8.8			1.4			6.7			4.8		
Confl. Peds. (#/hr)			2										
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	859	0	0	0	0	0	0	0	0	816	0	
Turn Type		NA								Perm	NA		
Protected Phases		8									2		9
Permitted Phases										2			
Minimum Split (s)		24.7								24.0	24.0		20.0
Total Split (s)		60.0								60.0	60.0		20.0
Total Split (%)		42.9%								42.9%	42.9%		14%
Yellow Time (s)		3.7								4.0	4.0		2.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.7									-2.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.61									0.40		
Control Delay		35.4									2.0		
Queue Delay		12.1									0.9		
Total Delay		47.5									2.9		
Queue Length 50th (ft)		322									11		
Queue Length 95th (ft)		392									m11		
Internal Link Dist (ft)		305			1			266			167		
Turn Bay Length (ft)													
Base Capacity (vph)		1403									2047		
Starvation Cap Reductn		0									871		
Spillback Cap Reductn		527									2		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		0.98									0.69		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 70
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Future Volume (vph)	0	771	54	0	0	0	0	0	0	162	621	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.99									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3501									5033	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3501									5033	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	803	56	0	0	0	0	0	0	169	647	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	34	0
Lane Group Flow (vph)	0	855	0	0	0	0	0	0	0	0	782	0
Confl. Peds. (#/hr)			2									
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		54.3									54.0	
Effective Green, g (s)		56.0									56.0	
Actuated g/C Ratio		0.40									0.40	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1400									2013	
v/s Ratio Prot		c0.24										
v/s Ratio Perm											0.16	
v/c Ratio		0.61									0.39	
Uniform Delay, d1		33.4									29.8	
Progression Factor		1.00									0.06	
Incremental Delay, d2		2.0									0.3	
Delay (s)		35.3									2.2	
Level of Service		D									A	
Approach Delay (s)		35.3			0.0			0.0			2.2	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		19.2				HCM 2000 Level of Service		B				
HCM 2000 Volume to Capacity ratio		0.43										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		10.0				
Intersection Capacity Utilization		45.0%				ICU Level of Service		A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94	
Future Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		354			570			301			129		
Travel Time (s)		8.0			13.0			5.9			2.5		
Confl. Peds. (#/hr)			24	24						53		25	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	203	0	96	203	0	0	0	0	0	2088	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		8			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.8		25.8	25.8					26.8	26.8	20.0	
Total Split (s)		40.0		40.0	40.0					80.0	80.0	20.0	
Total Split (%)		28.6%		28.6%	28.6%					57.1%	57.1%	14%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	2.0	
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	0.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8					-1.8	-1.8		
Total Lost Time (s)		4.0		4.0	4.0					4.0	4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.44		0.44	0.42						0.77		
Control Delay		40.2		32.6	28.2						21.7		
Queue Delay		0.0		0.0	0.0						0.2		
Total Delay		40.2		32.6	28.2						21.9		
Queue Length 50th (ft)		132		34	72						371		
Queue Length 95th (ft)		211		m76	147						427		
Internal Link Dist (ft)		274			490			221			49		
Turn Bay Length (ft)				75									
Base Capacity (vph)		458		218	479						2722		
Starvation Cap Reductn		0		0	0						0		
Spillback Cap Reductn		0		0	0						133		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.44		0.44	0.42						0.81		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 90
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Future Volume (vph)	0	101	90	90	191	0	0	0	0	27	1841	94
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Flpb, ped/bikes		0.97		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.97	1.00						1.00	
Frt		0.94		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1693		1718	1863						5008	
Flt Permitted		1.00		0.47	1.00						1.00	
Satd. Flow (perm)		1693		848	1863						5008	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	107	96	96	203	0	0	0	0	29	1959	100
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	180	0	96	203	0	0	0	0	0	2084	0
Confl. Peds. (#/hr)			24	24						53		25
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		34.2		34.2	34.2						74.2	
Effective Green, g (s)		36.0		36.0	36.0						76.0	
Actuated g/C Ratio		0.26		0.26	0.26						0.54	
Clearance Time (s)		5.8		5.8	5.8						5.8	
Lane Grp Cap (vph)		435		218	479						2718	
v/s Ratio Prot		0.11			0.11							
v/s Ratio Perm				0.11							0.42	
v/c Ratio		0.41		0.44	0.42						0.77	
Uniform Delay, d1		43.2		43.6	43.4						25.1	
Progression Factor		1.00		0.60	0.59						0.78	
Incremental Delay, d2		2.9		5.7	2.5						2.1	
Delay (s)		46.1		31.8	27.9						21.6	
Level of Service		D		C	C						C	
Approach Delay (s)		46.1			29.2			0.0			21.6	
Approach LOS		D			C			A			C	
Intersection Summary												
HCM 2000 Control Delay		24.4			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.57										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		84.2%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32	
Future Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		302			553			286			301		
Travel Time (s)		6.9			12.6			5.6			5.9		
Confl. Peds. (#/hr)			31	31						63		43	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	407	0	75	200	0	0	0	0	0	2066	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7		20.0
Total Split (s)		42.0		42.0	42.0					78.0	78.0		20.0
Total Split (%)		30.0%		30.0%	30.0%					55.7%	55.7%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0		0.0
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.83		0.89	0.40						0.78		
Control Delay		62.2		100.6	26.2						11.2		
Queue Delay		0.0		0.0	0.0						0.4		
Total Delay		62.2		100.6	26.2						11.6		
Queue Length 50th (ft)		344		29	53						120		
Queue Length 95th (ft)		#509		m#131	132						130		
Internal Link Dist (ft)		222			473			206			221		
Turn Bay Length (ft)				75									
Base Capacity (vph)		493		84	505						2632		
Starvation Cap Reductn		0		0	0						183		
Spillback Cap Reductn		0		0	0						0		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.83		0.89	0.40						0.84		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Tampa St & Cass St

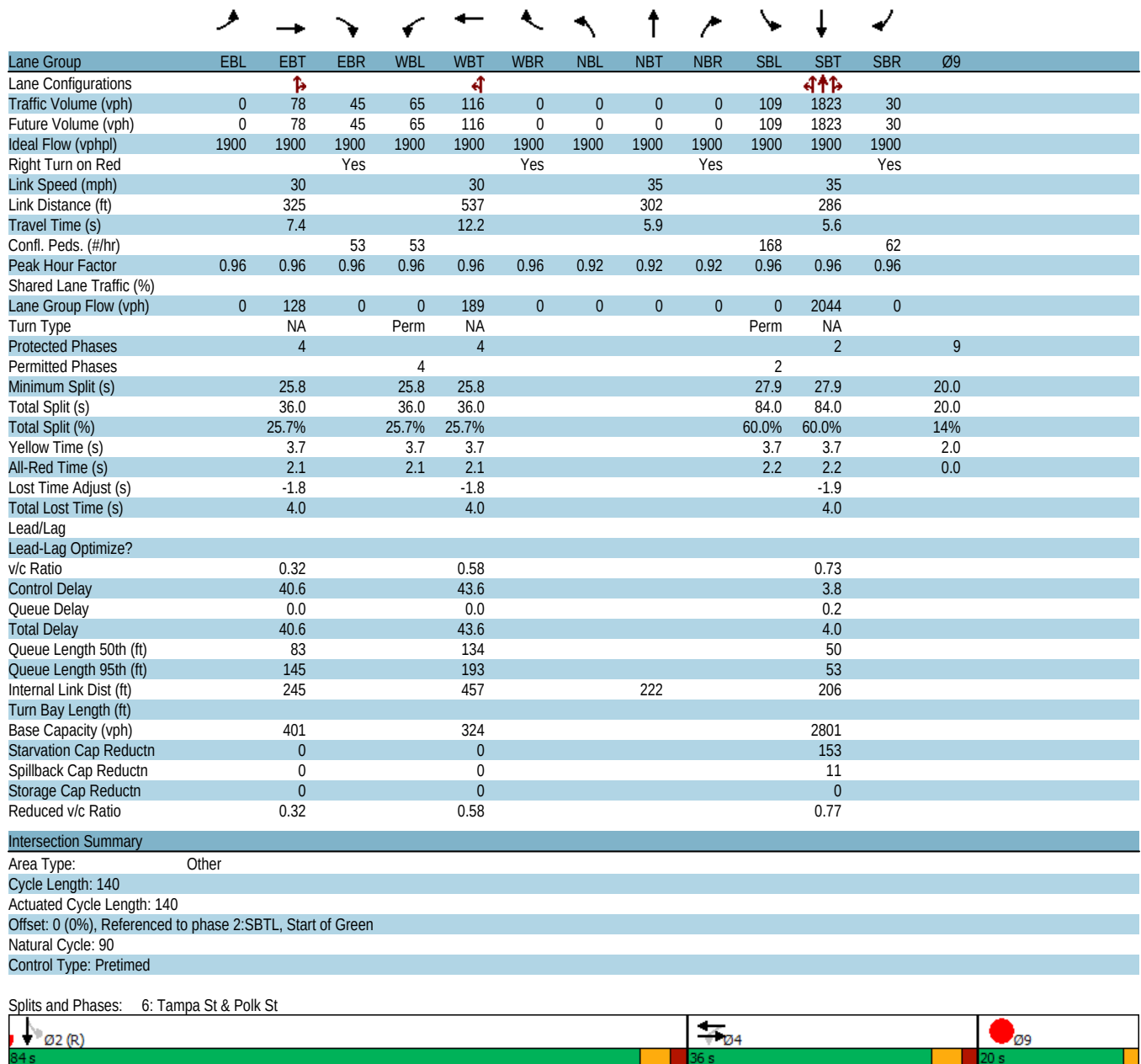


Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Future Volume (vph)	0	323	64	71	190	0	0	0	0	115	1815	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.98		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1798		1770	1863						4975	
Flt Permitted		1.00		0.17	1.00						1.00	
Satd. Flow (perm)		1798		313	1863						4975	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	340	67	75	200	0	0	0	0	121	1911	34
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	402	0	75	200	0	0	0	0	0	2065	0
Confl. Peds. (#/hr)			31	31						63		43
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		36.3		36.3	36.3						72.3	
Effective Green, g (s)		38.0		38.0	38.0						74.0	
Actuated g/C Ratio		0.27		0.27	0.27						0.53	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		488		84	505						2629	
v/s Ratio Prot		0.22			0.11							
v/s Ratio Perm				0.24							0.42	
v/c Ratio		0.82		0.89	0.40						0.79	
Uniform Delay, d1		47.9		49.0	41.6						26.6	
Progression Factor		1.00		0.64	0.58						0.36	
Incremental Delay, d2		14.6		64.6	2.0						1.6	
Delay (s)		62.4		96.1	25.9						11.1	
Level of Service		E		F	C						B	
Approach Delay (s)		62.4			45.1			0.0			11.1	
Approach LOS		E			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			22.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			86.6%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Future Volume (vph)	0	78	45	65	116	0	0	0	0	109	1823	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.96			1.00						1.00	
Flpb, ped/bikes		1.00			0.97						0.97	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1692			1775						4901	
Flt Permitted		1.00			0.79						1.00	
Satd. Flow (perm)		1692			1421						4901	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	81	47	68	121	0	0	0	0	114	1899	31
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	113	0	0	189	0	0	0	0	0	2043	0
Confl. Peds. (#/hr)			53	53						168		62
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		30.2			30.2						78.1	
Effective Green, g (s)		32.0			32.0						80.0	
Actuated g/C Ratio		0.23			0.23						0.57	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		386			324						2800	
v/s Ratio Prot		0.07										
v/s Ratio Perm					0.13						0.42	
v/c Ratio		0.29			0.58						0.73	
Uniform Delay, d1		44.7			48.1						22.0	
Progression Factor		1.00			0.74						0.13	
Incremental Delay, d2		1.9			7.4						1.0	
Delay (s)		46.6			43.0						3.8	
Level of Service		D			D						A	
Approach Delay (s)		46.6			43.0			0.0			3.8	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			9.3			HCM 2000 Level of Service				A		
HCM 2000 Volume to Capacity ratio			0.59									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			74.5%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48	
Future Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		286			539			272			302		
Travel Time (s)		6.5			12.3			5.3			5.9		
Confl. Peds. (#/hr)			19	19						54		36	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	203	0	0	300	0	0	0	0	0	2087	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7		20.0
Total Split (s)		41.0		41.0	41.0					79.0	79.0		20.0
Total Split (%)		29.3%		29.3%	29.3%					56.4%	56.4%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0		0.0
Lost Time Adjust (s)		-1.7			-1.7						-1.7		
Total Lost Time (s)		4.0			4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.43			0.89						0.78		
Control Delay		40.8			69.5						8.4		
Queue Delay		2.1			52.8						1.4		
Total Delay		42.8			122.3						9.8		
Queue Length 50th (ft)		136			269						94		
Queue Length 95th (ft)		214			m#416						104		
Internal Link Dist (ft)		206			459			192			222		
Turn Bay Length (ft)													
Base Capacity (vph)		473			336						2684		
Starvation Cap Reductn		0			0						154		
Spillback Cap Reductn		154			112						374		
Storage Cap Reductn		0			0						0		
Reduced v/c Ratio		0.64			1.34						0.90		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Future Volume (vph)	0	114	77	76	206	0	0	0	0	63	1851	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.98			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1725			1826						5010	
Flt Permitted		1.00			0.69						1.00	
Satd. Flow (perm)		1725			1274						5010	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	121	82	81	219	0	0	0	0	67	1969	51
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	185	0	0	300	0	0	0	0	0	2085	0
Confl. Peds. (#/hr)			19	19						54		36
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		35.3			35.3						73.3	
Effective Green, g (s)		37.0			37.0						75.0	
Actuated g/C Ratio		0.26			0.26						0.54	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		455			336						2683	
v/s Ratio Prot		0.11										
v/s Ratio Perm					0.24						0.42	
v/c Ratio		0.41			0.89						0.78	
Uniform Delay, d1		42.5			49.6						25.9	
Progression Factor		1.00			0.82						0.26	
Incremental Delay, d2		2.7			27.8						1.6	
Delay (s)		45.2			68.6						8.3	
Level of Service		D			E						A	
Approach Delay (s)		45.2			68.6			0.0			8.3	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			18.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.70									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			79.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23	
Future Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		284			543			313			272		
Travel Time (s)		6.5			12.3			6.1			5.3		
Confl. Peds. (#/hr)			8	8						31		74	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	531	0	146	214	0	0	0	0	0	2086	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9		20.0
Total Split (s)		58.0		58.0	58.0					62.0	62.0		20.0
Total Split (%)		41.4%		41.4%	41.4%					44.3%	44.3%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2		0.0
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.76		1.07	0.30						1.01		
Control Delay		44.8		131.1	21.5						42.3		
Queue Delay		0.0		0.0	0.0						20.1		
Total Delay		44.8		131.1	21.5						62.3		
Queue Length 50th (ft)		408		~148	90						~564		
Queue Length 95th (ft)		556		m#287	m129						#807		
Internal Link Dist (ft)		204			463			233			192		
Turn Bay Length (ft)				75									
Base Capacity (vph)		698		136	718						2066		
Starvation Cap Reductn		0		0	0						108		
Spillback Cap Reductn		0		0	0						57		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.76		1.07	0.30						1.07		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 150													
Control Type: Pretimed													
~ Volume exceeds capacity, queue is theoretically infinite.													
Queue shown is maximum after two cycles.													
# 95th percentile volume exceeds capacity, queue may be longer.													
Queue shown is maximum after two cycles.													
m Volume for 95th percentile queue is metered by upstream signal.													
Splits and Phases: 8: Tampa St & Twiggs St													
 Ø2 (R)							 Ø4				 Ø9		
62 s							58 s				20 s		

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Future Volume (vph)	0	380	119	137	201	0	0	0	0	279	1659	23
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1790		1770	1863						4987	
Flt Permitted		1.00		0.19	1.00						0.99	
Satd. Flow (perm)		1790		354	1863						4987	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	404	127	146	214	0	0	0	0	297	1765	24
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	523	0	146	214	0	0	0	0	0	2085	0
Confl. Peds. (#/hr)			8	8						31		74
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		52.3		52.3	52.3						56.1	
Effective Green, g (s)		54.0		54.0	54.0						58.0	
Actuated g/C Ratio		0.39		0.39	0.39						0.41	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		690		136	718						2066	
v/s Ratio Prot		0.29			0.11							
v/s Ratio Perm				0.41							0.42	
v/c Ratio		0.76		1.07	0.30						1.01	
Uniform Delay, d1		37.3		43.0	29.8						41.0	
Progression Factor		1.00		0.73	0.68						0.57	
Incremental Delay, d2		7.6		97.9	1.1						17.9	
Delay (s)		45.0		129.3	21.3						41.3	
Level of Service		D		F	C						D	
Approach Delay (s)		45.0			65.1			0.0			41.3	
Approach LOS		D			E			A			D	
Intersection Summary												
HCM 2000 Control Delay			44.8			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			84.1%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37	
Future Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		397			548			309			313		
Travel Time (s)		9.0			12.5			6.0			6.1		
Confl. Peds. (#/hr)			43	43						36		75	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	243	0	96	69	0	0	0	0	0	2180	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8		20.0
Total Split (s)		40.0		40.0	40.0					80.0	80.0		20.0
Total Split (%)		28.6%		28.6%	28.6%					57.1%	57.1%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1		0.0
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.54		0.52	0.14						0.80		
Control Delay		40.9		47.1	35.6						7.7		
Queue Delay		0.0		0.0	0.0						14.2		
Total Delay		40.9		47.1	35.6						21.9		
Queue Length 50th (ft)		155		53	34						104		
Queue Length 95th (ft)		246		m95	m63						m105		
Internal Link Dist (ft)		317			468			229			233		
Turn Bay Length (ft)				75									
Base Capacity (vph)		450		183	479						2723		
Starvation Cap Reductn		0		0	0						578		
Spillback Cap Reductn		2		0	0						329		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.54		0.52	0.14						1.02		

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Future Volume (vph)	0	93	126	86	62	0	0	0	0	65	1860	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.96	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1618		1690	1863						5017	
Flt Permitted		1.00		0.40	1.00						1.00	
Satd. Flow (perm)		1618		714	1863						5017	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	103	140	96	69	0	0	0	0	72	2067	41
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	208	0	96	69	0	0	0	0	0	2179	0
Confl. Peds. (#/hr)			43	43						36		75
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		34.1		34.1	34.1						74.2	
Effective Green, g (s)		36.0		36.0	36.0						76.0	
Actuated g/C Ratio		0.26		0.26	0.26						0.54	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		416		183	479						2723	
v/s Ratio Prot		0.13			0.04							
v/s Ratio Perm				0.13							0.43	
v/c Ratio		0.50		0.52	0.14						0.80	
Uniform Delay, d1		44.3		44.7	40.1						25.9	
Progression Factor		1.00		0.82	0.86						0.26	
Incremental Delay, d2		4.3		9.0	0.5						0.9	
Delay (s)		48.6		45.8	35.2						7.6	
Level of Service		D		D	D						A	
Approach Delay (s)		48.6			41.3			0.0			7.6	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			13.6			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			87.2%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

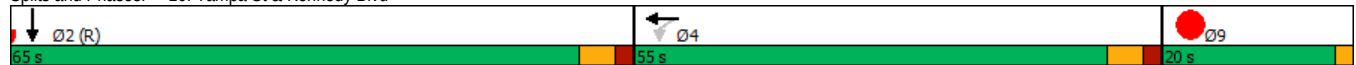
Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237	
Future Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes	Yes		Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		358			546			274			309		
Travel Time (s)		8.1			12.4			5.3			6.0		
Confl. Peds. (#/hr)				46								79	
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)				10%									
Lane Group Flow (vph)	0	0	0	285	1656	0	0	0	0	0	2086	0	
Turn Type				Perm	NA						NA		
Protected Phases					4						2		9
Permitted Phases				4									
Minimum Split (s)				25.8	25.8						26.8		20.0
Total Split (s)				55.0	55.0						65.0		20.0
Total Split (%)				39.3%	39.3%						46.4%		14%
Yellow Time (s)				3.7	3.7						3.7		2.0
All-Red Time (s)				2.1	2.1						2.1		0.0
Lost Time Adjust (s)				-1.8	-1.8						-1.8		
Total Lost Time (s)				4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio				0.45	0.94						0.97		
Control Delay				11.7	52.9						28.9		
Queue Delay				1.1	33.5						42.0		
Total Delay				12.8	86.4						71.0		
Queue Length 50th (ft)				54	551						372		
Queue Length 95th (ft)				148	#658						#247		
Internal Link Dist (ft)		278			466			194			229		
Turn Bay Length (ft)													
Base Capacity (vph)				633	1769						2144		
Starvation Cap Reductn				0	226						163		
Spillback Cap Reductn				166	142						340		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.61	1.07						1.16		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBT, Start of Green
Natural Cycle: 120
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 10: Tampa St & Kennedy Blvd



Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Future Volume (vph)	0	0	0	298	1527	0	0	0	0	0	1724	237
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.86	0.86						0.91	
Frbp, ped/bikes				1.00	1.00						0.98	
Flpb, ped/bikes				0.90	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1375	4792						4893	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1375	4792						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	317	1624	0	0	0	0	0	1834	252
RTOR Reduction (vph)	0	0	0	132	24	0	0	0	0	0	12	0
Lane Group Flow (vph)	0	0	0	153	1632	0	0	0	0	0	2074	0
Confl. Peds. (#/hr)				46								79
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				49.2	49.2						59.2	
Effective Green, g (s)				51.0	51.0						61.0	
Actuated g/C Ratio				0.36	0.36						0.44	
Clearance Time (s)				5.8	5.8						5.8	
Lane Grp Cap (vph)				500	1745						2131	
v/s Ratio Prot											c0.42	
v/s Ratio Perm				0.11	0.34							
v/c Ratio				0.31	0.94						0.97	
Uniform Delay, d1				31.8	42.9						38.7	
Progression Factor				1.00	1.00						0.47	
Incremental Delay, d2				1.6	10.9						10.1	
Delay (s)				33.4	53.8						28.3	
Level of Service				C	D						C	
Approach Delay (s)		0.0			50.8			0.0			28.3	
Approach LOS		A			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			39.1			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			10.0			
Intersection Capacity Utilization			72.6%			ICU Level of Service			C			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		  								  			
Traffic Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0	
Future Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	100		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes	Yes		Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		291			260			589			274		
Travel Time (s)		6.6			5.9			11.5			5.3		
Confl. Peds. (#/hr)			106							87			
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1153	0	0	0	0	0	0	0	562	1719	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									2		9
Permitted Phases										2			
Minimum Split (s)		27.0								27.0	27.0		20.0
Total Split (s)		65.0								55.0	55.0		20.0
Total Split (%)		46.4%								39.3%	39.3%		14%
Yellow Time (s)		3.7								3.7	3.7		2.0
All-Red Time (s)		2.3								2.3	2.3		0.0
Lost Time Adjust (s)		-2.0								-2.0	-2.0		
Total Lost Time (s)		4.0								4.0	4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.55								0.87	0.93		
Control Delay		28.9								23.3	33.4		
Queue Delay		0.0								14.9	45.4		
Total Delay		28.9								38.1	78.8		
Queue Length 50th (ft)		267								92	339		
Queue Length 95th (ft)		294								m123	m403		
Internal Link Dist (ft)		211			180			509			194		
Turn Bay Length (ft)										100			
Base Capacity (vph)		2080								647	1852		
Starvation Cap Reductn		0								83	411		
Spillback Cap Reductn		0								0	0		
Storage Cap Reductn		0								0	0		
Reduced v/c Ratio		0.55								1.00	1.19		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 75													
Control Type: Pretimed													
m Volume for 95th percentile queue is metered by upstream signal.													
Splits and Phases: 11: Tampa St & Jackson St													
 Ø2 (R)							 Ø4				 Ø9		
55 s							65 s				20 s		

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↓	↑↑↑	
Traffic Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Future Volume (vph)	0	783	209	0	0	0	0	0	0	483	1478	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								1.00	0.91	
Frpb, ped/bikes		0.95								1.00	1.00	
Flpb, ped/bikes		1.00								0.83	1.00	
Frt		0.97								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4696								1462	5085	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4696								1462	5085	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	910	243	0	0	0	0	0	0	562	1719	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	114	0	0
Lane Group Flow (vph)	0	1119	0	0	0	0	0	0	0	448	1719	0
Confl. Peds. (#/hr)			106								87	
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases											2	
Actuated Green, G (s)		59.0								49.0	49.0	
Effective Green, g (s)		61.0								51.0	51.0	
Actuated g/C Ratio		0.44								0.36	0.36	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2046								532	1852	
v/s Ratio Prot		c0.24									c0.34	
v/s Ratio Perm										0.31		
v/c Ratio		0.55								0.84	0.93	
Uniform Delay, d1		29.3								40.8	42.7	
Progression Factor		1.00								0.51	0.65	
Incremental Delay, d2		1.1								8.0	5.3	
Delay (s)		30.3								29.0	32.9	
Level of Service		C								C	C	
Approach Delay (s)		30.3			0.0			0.0			32.0	
Approach LOS		C			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			31.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.62									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			72.6%			ICU Level of Service				C		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↑↑		↵	↑						↑↑↑		
Traffic Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0	
Future Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	100		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		243			553			171			589		
Travel Time (s)		5.5			12.6			3.3			11.5		
Confl. Peds. (#/hr)			182	182						42		132	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	237	0	169	182	0	0	0	0	0	176	0	
Turn Type		NA		Perm	NA					Split	NA		
Protected Phases		4			4					2	2		9
Permitted Phases				4									
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7		20.0
Total Split (s)		50.0		50.0	50.0					70.0	70.0		20.0
Total Split (%)		35.7%		35.7%	35.7%					50.0%	50.0%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0		0.0
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.22		0.62	0.30						0.07		
Control Delay		30.7		51.0	36.7						6.4		
Queue Delay		0.0		0.0	0.0						0.0		
Total Delay		30.7		51.0	36.7						6.4		
Queue Length 50th (ft)		72		130	123						0		
Queue Length 95th (ft)		105		214	187						m0		
Internal Link Dist (ft)		163			473			91			509		
Turn Bay Length (ft)				100									
Base Capacity (vph)		1065		274	612						2385		
Starvation Cap Reductn		0		0	0						0		
Spillback Cap Reductn		0		0	0						0		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.22		0.62	0.30						0.07		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 80													
Control Type: Pretimed													
m	Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 12: Tampa St & Whiting St													
 Ø2 (R)							 Ø4				 Ø9		
70 s							50 s				20 s		

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Future Volume (vph)	0	165	46	150	162	0	0	0	0	17	140	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.93		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.79	1.00						1.00	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3188		1405	1863						5058	
Flt Permitted		1.00		0.56	1.00						0.99	
Satd. Flow (perm)		3188		835	1863						5058	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	185	52	169	182	0	0	0	0	19	157	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	219	0	169	182	0	0	0	0	0	176	0
Confl. Peds. (#/hr)			182	182						42		132
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2		2
Permitted Phases				4								
Actuated Green, G (s)		44.2		44.2	44.2						64.3	
Effective Green, g (s)		46.0		46.0	46.0						66.0	
Actuated g/C Ratio		0.33		0.33	0.33						0.47	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1047		274	612						2384	
v/s Ratio Prot		0.07			0.10						c0.03	
v/s Ratio Perm				c0.20								
v/c Ratio		0.21		0.62	0.30						0.07	
Uniform Delay, d1		33.9		39.6	35.0						20.3	
Progression Factor		1.00		1.00	1.00						0.31	
Incremental Delay, d2		0.5		10.0	1.2						0.0	
Delay (s)		34.3		49.6	36.2						6.4	
Level of Service		C		D	D						A	
Approach Delay (s)		34.3			42.6			0.0			6.4	
Approach LOS		C			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			31.7		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.26									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					10.0		
Intersection Capacity Utilization			55.0%		ICU Level of Service					B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0	
Future Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		459			889			1015			242		
Travel Time (s)		10.4			20.2			19.8			4.7		
Confl. Peds. (#/hr)	26					26	12		7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	64	395	0	0	310	0	0	1278	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	22.1	22.1			22.1		30.3	30.3					20.0
Total Split (s)	44.0	44.0			44.0		76.0	76.0					20.0
Total Split (%)	31.4%	31.4%			31.4%		54.3%	54.3%					14%
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.3	2.3					0.0
Lost Time Adjust (s)	-2.1	-2.1			-2.1			-2.3					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.36	0.74			0.61			0.49					
Control Delay	30.6	36.5			46.8			22.7					
Queue Delay	0.0	1.9			0.0			0.0					
Total Delay	30.6	38.4			46.8			22.7					
Queue Length 50th (ft)	31	197			232			268					
Queue Length 95th (ft)	m57	338			336			309					
Internal Link Dist (ft)		379			809			935			162		
Turn Bay Length (ft)	100												
Base Capacity (vph)	176	532			507			2586					
Starvation Cap Reductn	0	50			0			0					
Spillback Cap Reductn	0	0			0			0					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.36	0.82			0.61			0.49					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 75
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Future Volume (vph)	60	371	0	0	196	95	21	1105	75	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.99				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1735			5018				
Flt Permitted	0.33	1.00			1.00			1.00				
Satd. Flow (perm)	618	1863			1735			5018				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	64	395	0	0	209	101	22	1176	80	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	5	0	0	0	0
Lane Group Flow (vph)	64	395	0	0	298	0	0	1273	0	0	0	0
Confl. Peds. (#/hr)	26				26	12		7				
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.9	37.9			37.9			69.7				
Effective Green, g (s)	40.0	40.0			40.0			72.0				
Actuated g/C Ratio	0.29	0.29			0.29			0.51				
Clearance Time (s)	6.1	6.1			6.1			6.3				
Lane Grp Cap (vph)	176	532			495			2580				
v/s Ratio Prot		c0.21			0.17							
v/s Ratio Perm	0.10							0.25				
v/c Ratio	0.36	0.74			0.60			0.49				
Uniform Delay, d1	39.9	45.3			43.1			22.1				
Progression Factor	0.62	0.62			1.00			1.00				
Incremental Delay, d2	4.8	7.7			5.3			0.7				
Delay (s)	29.6	36.0			48.5			22.8				
Level of Service	C	D			D			C				
Approach Delay (s)		35.1			48.5			22.8			0.0	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		29.4			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.50										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		60.2%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0	
Future Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		183			365			1146			1015		
Travel Time (s)		4.2			8.3			22.3			19.8		
Confl. Peds. (#/hr)	7					7	14		15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	148	72	0	0	148	0	0	1305	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	25.0	25.0			25.0		45.0	45.0					20.0
Total Split (s)	17.0	17.0			17.0		41.0	41.0					20.0
Total Split (%)	21.8%	21.8%			21.8%		52.6%	52.6%					26%
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0					2.0
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0					0.0
Lost Time Adjust (s)	-2.4	-2.4			-2.4			-2.0					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.85	0.23			0.42			0.54					
Control Delay	72.1	30.5			18.1			15.5					
Queue Delay	0.0	0.0			0.0			0.0					
Total Delay	72.1	30.5			18.1			15.5					
Queue Length 50th (ft)	71	31			27			156					
Queue Length 95th (ft)	#173	67			79			196					
Internal Link Dist (ft)		103			285			1066			935		
Turn Bay Length (ft)	50												
Base Capacity (vph)	175	310			351			2405					
Starvation Cap Reductn	0	0			0			0					
Spillback Cap Reductn	0	0			0			0					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.85	0.23			0.42			0.54					

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 78

Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green

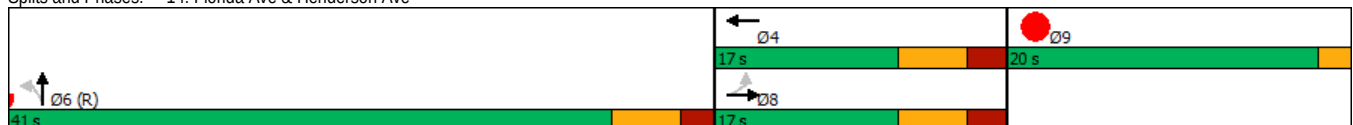
Natural Cycle: 90

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Future Volume (vph)	136	66	0	0	54	82	26	1163	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	0.99	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1756	1863			1689			5066				
Flt Permitted	0.57	1.00			1.00			1.00				
Satd. Flow (perm)	1053	1863			1689			5066				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	148	72	0	0	59	89	28	1264	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	70	0	0	1	0	0	0	0
Lane Group Flow (vph)	148	72	0	0	78	0	0	1304	0	0	0	0
Confl. Peds. (#/hr)	7					7	14		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	10.6	10.6			10.6			35.0				
Effective Green, g (s)	13.0	13.0			13.0			37.0				
Actuated g/C Ratio	0.17	0.17			0.17			0.47				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	175	310			281			2403				
v/s Ratio Prot		0.04			0.05							
v/s Ratio Perm	c0.14							0.26				
v/c Ratio	0.85	0.23			0.28			0.54				
Uniform Delay, d1	31.5	28.2			28.4			14.5				
Progression Factor	1.00	1.00			1.00			1.00				
Incremental Delay, d2	36.8	1.7			2.4			0.9				
Delay (s)	68.4	29.9			30.8			15.4				
Level of Service	E	C			C			B				
Approach Delay (s)		55.8			30.8			15.4			0.0	
Approach LOS		E			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.46										
Actuated Cycle Length (s)		78.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		54.9%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

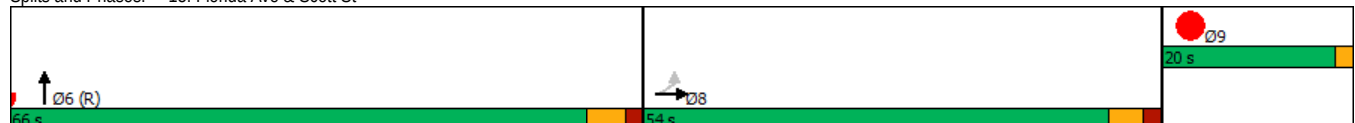
Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔↔						↔↔↔					
Traffic Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0	
Future Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red	Yes		Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		371			481			701			1146		
Travel Time (s)		8.4			10.9			13.7			22.3		
Confl. Peds. (#/hr)									5				
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1554	0	0	0	0	0	2664	0	0	0	0	
Turn Type	Perm	NA						NA					
Protected Phases		8						6					9
Permitted Phases	8												
Minimum Split (s)	23.7	23.7						24.0					20.0
Total Split (s)	54.0	54.0						66.0					20.0
Total Split (%)	38.6%	38.6%						47.1%					14%
Yellow Time (s)	3.7	3.7						4.0					2.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)		-1.7						-2.0					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.21						1.21					
Control Delay		129.3						148.7					
Queue Delay		0.0						0.1					
Total Delay		129.3						148.8					
Queue Length 50th (ft)		~894						~1052					
Queue Length 95th (ft)		#1036						#1142					
Internal Link Dist (ft)		291			401			621			1066		
Turn Bay Length (ft)													
Base Capacity (vph)		1283						2199					
Starvation Cap Reductn		0						57					
Spillback Cap Reductn		0						0					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		1.21						1.24					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Future Volume (vph)	463	997	0	0	0	0	0	1942	562	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3484						4885				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3484						4885				
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	493	1061	0	0	0	0	0	2066	598	0	0	0
RTOR Reduction (vph)	0	39	0	0	0	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	1515	0	0	0	0	0	2627	0	0	0	0
Confl. Peds. (#/hr)									5			
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		48.3						60.0				
Effective Green, g (s)		50.0						62.0				
Actuated g/C Ratio		0.36						0.44				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1244						2163				
v/s Ratio Prot								0.54				
v/s Ratio Perm		0.43										
v/c Ratio		1.22						1.21				
Uniform Delay, d1		45.0						39.0				
Progression Factor		0.63						1.67				
Incremental Delay, d2		105.1						98.5				
Delay (s)		133.6						163.5				
Level of Service		F						F				
Approach Delay (s)		133.6			0.0			163.5			0.0	
Approach LOS		F			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		152.5						HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio		1.05										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		10.0		
Intersection Capacity Utilization		97.9%						ICU Level of Service		F		
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0	
Future Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		264			171			478			701		
Travel Time (s)		6.0			3.9			10.9			15.9		
Confl. Peds. (#/hr)	11					11	9		8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0	
Turn Type	Perm	NA					Perm	NA					
Protected Phases		8						6					9
Permitted Phases	8						6						
Minimum Split (s)	23.4	23.4					24.0	24.0					20.0
Total Split (s)	33.0	33.0					87.0	87.0					20.0
Total Split (%)	23.6%	23.6%					62.1%	62.1%					14%
Yellow Time (s)	3.4	3.4					4.0	4.0					2.0
All-Red Time (s)	2.0	2.0					2.0	2.0					0.0
Lost Time Adjust (s)		-1.4						-2.0					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.26						0.90					
Control Delay		48.8						27.8					
Queue Delay		674.5						46.0					
Total Delay		723.3						73.7					
Queue Length 50th (ft)		74						965					
Queue Length 95th (ft)		128						1008					
Internal Link Dist (ft)		184			91			398			621		
Turn Bay Length (ft)													
Base Capacity (vph)		366						3013					
Starvation Cap Reductn		0						825					
Spillback Cap Reductn		366						667					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		96.00						1.24					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 41 (29%), Referenced to phase 2: and 6:NBTL, Start of Green

Natural Cycle: 100

Control Type: Pretimed

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Future Volume (vph)	58	30	0	0	0	0	21	2477	6	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1767						5078				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1767						5078				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	63	33	0	0	0	0	23	2692	7	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	96	0	0	0	0	0	2722	0	0	0	0
Confl. Peds. (#/hr)	11					11	9		8			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		8						6				
Permitted Phases	8						6					
Actuated Green, G (s)		27.6						81.0				
Effective Green, g (s)		29.0						83.0				
Actuated g/C Ratio		0.21						0.59				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		366						3010				
v/s Ratio Prot												
v/s Ratio Perm		0.05						0.54				
v/c Ratio		0.26						0.90				
Uniform Delay, d1		46.5						25.0				
Progression Factor		1.00						0.99				
Incremental Delay, d2		1.7						2.6				
Delay (s)		48.3						27.4				
Level of Service		D						C				
Approach Delay (s)		48.3			0.0			27.4			0.0	
Approach LOS		D			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		28.1										C
HCM 2000 Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		140.0							10.0			
Intersection Capacity Utilization		66.5%										C
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↖			↗			↑↑↑					
Traffic Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0	
Future Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			35		
Link Distance (ft)		341			265			293			478		
Travel Time (s)		7.8			6.0			6.7			9.3		
Confl. Peds. (#/hr)	5					5	10		15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	61	0	0	90	0	0	2835	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			8			2					9
Permitted Phases	4						2						
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0					20.0
Total Split (s)	28.0	28.0			28.0		92.0	92.0					20.0
Total Split (%)	20.0%	20.0%			20.0%		65.7%	65.7%					14%
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0					2.0
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8			-2.0					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.26			0.26			0.89					
Control Delay		53.6			16.2			4.8					
Queue Delay		0.0			0.1			46.2					
Total Delay		53.6			16.3			51.0					
Queue Length 50th (ft)		49			11			76					
Queue Length 95th (ft)		94			61			m79					
Internal Link Dist (ft)		261			185			213			398		
Turn Bay Length (ft)													
Base Capacity (vph)		237			340			3191					
Starvation Cap Reductn		0			0			257					
Spillback Cap Reductn		0			14			969					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.26			0.28			1.28					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 110

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Florida Ave & Harrison St

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Future Volume (vph)	42	14	0	0	13	70	12	2576	20	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		0.99			1.00			1.00				
Frt		1.00			0.89			1.00				
Flt Protected		0.96			1.00			1.00				
Satd. Flow (prot)		1784			1620			5074				
Flt Permitted		0.75			1.00			1.00				
Satd. Flow (perm)		1386			1620			5074				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	46	15	0	0	14	76	13	2800	22	0	0	0
RTOR Reduction (vph)	0	0	0	0	63	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	61	0	0	27	0	0	2835	0	0	0	0
Confl. Peds. (#/hr)	5					5	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		22.2			22.2			86.0				
Effective Green, g (s)		24.0			24.0			88.0				
Actuated g/C Ratio		0.17			0.17			0.63				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		237			277			3189				
v/s Ratio Prot					0.02							
v/s Ratio Perm		0.04						0.56				
v/c Ratio		0.26			0.10			0.89				
Uniform Delay, d1		50.3			48.9			21.9				
Progression Factor		1.00			1.00			0.16				
Incremental Delay, d2		2.6			0.7			1.3				
Delay (s)		52.9			49.6			4.7				
Level of Service		D			D			A				
Approach Delay (s)		52.9			49.6			4.7			0.0	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		7.1			HCM 2000 Level of Service			A				
HCM 2000 Volume to Capacity ratio		0.65										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		74.6%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0	
Future Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		0	60		0	0		0	
Storage Lanes	1		0	0		0	1		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		570			573			286			293		
Travel Time (s)		13.0			13.0			5.6			5.7		
Confl. Peds. (#/hr)	16					16	3		28				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	128	76	0	0	303	0	69	2736	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0					20.0
Total Split (s)	39.0	39.0			39.0		81.0	81.0					20.0
Total Split (%)	27.9%	27.9%			27.9%		57.9%	57.9%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0					
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.96	0.16			0.67		0.07	0.98					
Control Delay	100.4	26.7			52.9		8.1	17.0					
Queue Delay	0.0	0.0			0.0		0.0	25.8					
Total Delay	100.4	26.7			52.9		8.1	42.7					
Queue Length 50th (ft)	118	34			236		10	186					
Queue Length 95th (ft)	m#244	m58			343		m11	m277					
Internal Link Dist (ft)		490			493			206			213		
Turn Bay Length (ft)	75						60						
Base Capacity (vph)	134	465			451		963	2796					
Starvation Cap Reductn	0	0			0		0	221					
Spillback Cap Reductn	0	0			0		0	6					
Storage Cap Reductn	0	0			0		0	0					
Reduced v/c Ratio	0.96	0.16			0.67		0.07	1.06					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 120

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Future Volume (vph)	119	71	0	0	186	96	64	2536	8	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.98		1.00	1.00				
Flpb, ped/bikes	0.99	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.95		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1747	1863			1750		1751	5081				
Flt Permitted	0.29	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	537	1863			1750		1751	5081				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	128	76	0	0	200	103	69	2727	9	0	0	0
RTOR Reduction (vph)	0	0	0	0	14	0	0	0	0	0	0	0
Lane Group Flow (vph)	128	76	0	0	290	0	69	2736	0	0	0	0
Confl. Peds. (#/hr)	16					16	3		28			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	33.2	33.2			33.2		75.0	75.0				
Effective Green, g (s)	35.0	35.0			35.0		77.0	77.0				
Actuated g/C Ratio	0.25	0.25			0.25		0.55	0.55				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	134	465			437		963	2794				
v/s Ratio Prot		0.04			0.17			0.54				
v/s Ratio Perm	0.24						0.04					
v/c Ratio	0.96	0.16			0.66		0.07	0.98				
Uniform Delay, d1	51.7	41.1			47.2		14.8	30.7				
Progression Factor	0.62	0.63			1.00		0.54	0.35				
Incremental Delay, d2	64.9	0.7			7.7		0.0	5.3				
Delay (s)	97.0	26.4			54.9		8.0	16.0				
Level of Service	F	C			D		A	B				
Approach Delay (s)		70.7			54.9			15.8			0.0	
Approach LOS		E			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.8			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		84.2%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0	
Future Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	70		0	0		0	60		0	0		0	
Storage Lanes	1		0	0		0	1		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		553			550			283			286		
Travel Time (s)		12.6			12.5			5.5			5.6		
Confl. Peds. (#/hr)	5					5	3		100				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	113	312	0	0	287	0	43	2823	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0					20.0
Total Split (s)	36.0	36.0			36.0		84.0	84.0					20.0
Total Split (%)	25.7%	25.7%			25.7%		60.0%	60.0%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0					0.0
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0					
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.94	0.73			0.69		0.04	0.98					
Control Delay	83.3	36.6			57.0		7.2	16.6					
Queue Delay	0.0	0.0			0.0		0.0	28.2					
Total Delay	83.3	36.6			57.0		7.2	44.8					
Queue Length 50th (ft)	44	124			232		5	116					
Queue Length 95th (ft)	m#143	m225			337		m7	#1024					
Internal Link Dist (ft)		473			470			203			206		
Turn Bay Length (ft)	70						60						
Base Capacity (vph)	120	425			418		1000	2869					
Starvation Cap Reductn	0	0			0		0	144					
Spillback Cap Reductn	0	0			0		0	231					
Storage Cap Reductn	0	0			0		0	0					
Reduced v/c Ratio	0.94	0.73			0.69		0.04	1.07					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 120

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Future Volume (vph)	103	284	0	0	197	65	39	2508	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1763	1863			1791		1750	5021				
Flt Permitted	0.28	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	525	1863			1791		1750	5021				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	113	312	0	0	216	71	43	2756	67	0	0	0
RTOR Reduction (vph)	0	0	0	0	8	0	0	2	0	0	0	0
Lane Group Flow (vph)	113	312	0	0	279	0	43	2821	0	0	0	0
Confl. Peds. (#/hr)	5					5	3		100			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	30.0	30.0			30.0		78.0	78.0				
Effective Green, g (s)	32.0	32.0			32.0		80.0	80.0				
Actuated g/C Ratio	0.23	0.23			0.23		0.57	0.57				
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)	120	425			409		1000	2869				
v/s Ratio Prot		0.17			0.16			0.56				
v/s Ratio Perm	0.22						0.02					
v/c Ratio	0.94	0.73			0.68		0.04	0.98				
Uniform Delay, d1	53.1	50.1			49.3		13.2	29.3				
Progression Factor	0.60	0.60			1.00		0.54	0.28				
Incremental Delay, d2	47.5	6.1			8.8		0.0	6.9				
Delay (s)	79.6	36.2			58.2		7.1	15.3				
Level of Service	E	D			E		A	B				
Approach Delay (s)		47.7			58.2			15.1			0.0	
Approach LOS		D			E			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		86.6%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Group													
Lane Configurations		↖			↗		↖	↗					
Traffic Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0	
Future Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		537			559			300			283		
Travel Time (s)		12.2			12.7			5.8			5.5		
Confl. Peds. (#/hr)	34					34	26		55				
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	208	0	0	141	0	80	2918	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0					20.0
Total Split (s)	31.0	31.0			31.0		89.0	89.0					20.0
Total Split (%)	22.1%	22.1%			22.1%		63.6%	63.6%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0					
Total Lost Time (s)		4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.81			0.40		0.08	0.95					
Control Delay		60.4			38.3		3.8	8.5					
Queue Delay		0.0			0.0		0.0	15.5					
Total Delay		60.4			38.3		3.8	24.0					
Queue Length 50th (ft)		195			79		7	99					
Queue Length 95th (ft)		#300			140		m8	m99					
Internal Link Dist (ft)		457			479			220			203		
Turn Bay Length (ft)													
Base Capacity (vph)		257			349		985	3081					
Starvation Cap Reductn		0			0		0	248					
Spillback Cap Reductn		0			0		0	178					
Storage Cap Reductn		0			0		0	0					
Reduced v/c Ratio		0.81			0.40		0.08	1.03					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 110

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Future Volume (vph)	55	126	0	0	53	70	70	2521	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.95		1.00	1.00				
Flpb, ped/bikes		0.98			1.00		0.92	1.00				
Frt		1.00			0.92		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1807			1640		1623	5073				
Flt Permitted		0.73			1.00		0.95	1.00				
Satd. Flow (perm)		1337			1640		1623	5073				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	63	145	0	0	61	80	80	2898	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	34	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	208	0	0	107	0	80	2918	0	0	0	0
Confl. Peds. (#/hr)	34					34	26		55			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		25.2			25.2		83.0	83.0				
Effective Green, g (s)		27.0			27.0		85.0	85.0				
Actuated g/C Ratio		0.19			0.19		0.61	0.61				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		257			316		985	3080				
v/s Ratio Prot					0.07			c0.58				
v/s Ratio Perm		c0.16					0.05					
v/c Ratio		0.81			0.34		0.08	0.95				
Uniform Delay, d1		54.0			48.8		11.4	25.4				
Progression Factor		0.72			1.00		0.33	0.22				
Incremental Delay, d2		20.7			2.9		0.0	2.3				
Delay (s)		59.3			51.7		3.8	7.9				
Level of Service		E			D		A	A				
Approach Delay (s)		59.3			51.7			7.7			0.0	
Approach LOS		E			D			A			A	
Intersection Summary												
HCM 2000 Control Delay		12.8			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.79										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		85.5%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↖			↗			↖↗↘					
Traffic Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0	
Future Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		539			576			283			300		
Travel Time (s)		12.3			13.1			5.5			5.8		
Confl. Peds. (#/hr)	36					36	9		22				
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	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	296	0	0	201	0	0	2745	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7					20.0
Total Split (s)	41.0	41.0			41.0		79.0	79.0					20.0
Total Split (%)	29.3%	29.3%			29.3%		56.4%	56.4%					14%
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7					2.0
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0					0.0
Lost Time Adjust (s)		-1.9			-1.9			-1.7					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.17			0.43			1.01					
Control Delay		142.0			34.5			27.5					
Queue Delay		0.0			0.0			27.9					
Total Delay		142.0			34.5			55.4					
Queue Length 50th (ft)		~322			112			~373					
Queue Length 95th (ft)		m#508			190			#1027					
Internal Link Dist (ft)		459			496			203			220		
Turn Bay Length (ft)													
Base Capacity (vph)		254			468			2716					
Starvation Cap Reductn		0			0			182					
Spillback Cap Reductn		0			0			62					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		1.17			0.43			1.08					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Future Volume (vph)	172	109	0	0	77	114	40	2549	19	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.95			1.00				
Flpb, ped/bikes		0.97			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1760			1628			5070				
Flt Permitted		0.53			1.00			1.00				
Satd. Flow (perm)		963			1628			5070				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	181	115	0	0	81	120	42	2683	20	0	0	0
RTOR Reduction (vph)	0	0	0	0	38	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	296	0	0	163	0	0	2745	0	0	0	0
Confl. Peds. (#/hr)	36					36	9		22			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		35.1			35.1			73.3				
Effective Green, g (s)		37.0			37.0			75.0				
Actuated g/C Ratio		0.26			0.26			0.54				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		254			430			2716				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.31						0.54				
v/c Ratio		1.17			0.38			1.01				
Uniform Delay, d1		51.5			42.1			32.5				
Progression Factor		0.70			1.00			0.38				
Incremental Delay, d2		107.4			2.5			13.6				
Delay (s)		143.6			44.6			26.0				
Level of Service		F			D			C				
Approach Delay (s)		143.6			44.6			26.0			0.0	
Approach LOS		F			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		37.9			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.91										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		93.3%			ICU Level of Service			F				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
22: Florida Ave & Twiggs St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↕↕			↕	↕		↕↕↕					
Traffic Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0	
Future Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		543			597			298			283		
Travel Time (s)		12.3			13.6			5.8			5.5		
Confl. Peds. (#/hr)	15					15	9		30				
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	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	525	0	0	129	225	0	2744	0	0	0	0	
Turn Type	Perm	NA			NA	Perm	Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4					4	2						
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0					20.0
Total Split (s)	36.0	36.0			36.0	36.0	84.0	84.0					20.0
Total Split (%)	25.7%	25.7%			25.7%	25.7%	60.0%	60.0%					14%
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0					2.0
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0					0.0
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0					
Total Lost Time (s)		4.0			4.0	4.0		4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.83			0.30	0.44		0.95					
Control Delay		41.5			47.1	10.6		15.2					
Queue Delay		0.0			0.0	0.1		24.1					
Total Delay		41.5			47.1	10.7		39.4					
Queue Length 50th (ft)		228			98	14		138					
Queue Length 95th (ft)		m264			161	87		486					
Internal Link Dist (ft)		463			517			218			203		
Turn Bay Length (ft)													
Base Capacity (vph)		629			425	506		2889					
Starvation Cap Reductn		0			0	0		183					
Spillback Cap Reductn		0			0	21		282					
Storage Cap Reductn		0			0	0		0					
Reduced v/c Ratio		0.83			0.30	0.46		1.05					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 110

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Future Volume (vph)	112	387	0	0	123	214	26	2516	66	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.91				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		1.00				
Flt Protected		0.99			1.00	1.00		1.00				
Satd. Flow (prot)		3483			1863	1520		5052				
Flt Permitted		0.78			1.00	1.00		1.00				
Satd. Flow (perm)		2755			1863	1520		5052				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	118	407	0	0	129	225	27	2648	69	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	159	0	2	0	0	0	0
Lane Group Flow (vph)	0	525	0	0	129	66	0	2742	0	0	0	0
Confl. Peds. (#/hr)	15					15	9		30			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		30.1			30.1	30.1		78.0				
Effective Green, g (s)		32.0			32.0	32.0		80.0				
Actuated g/C Ratio		0.23			0.23	0.23		0.57				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		629			425	347		2886				
v/s Ratio Prot					0.07							
v/s Ratio Perm		0.19				0.04		0.54				
v/c Ratio		0.83			0.30	0.19		0.95				
Uniform Delay, d1		51.5			44.8	43.6		28.1				
Progression Factor		0.67			1.00	1.00		0.36				
Incremental Delay, d2		6.3			1.8	1.2		4.4				
Delay (s)		41.0			46.6	44.8		14.6				
Level of Service		D			D	D		B				
Approach Delay (s)		41.0			45.4			14.6			0.0	
Approach LOS		D			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		21.5			HCM 2000 Level of Service				C			
HCM 2000 Volume to Capacity ratio		0.79										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)				10.0			
Intersection Capacity Utilization		93.0%			ICU Level of Service				F			
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0	
Future Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		548			607			314			298		
Travel Time (s)		12.5			13.8			6.1			5.8		
Confl. Peds. (#/hr)	45					45	21		9				
Peak Hour Factor	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	58	101	0	0	235	0	0	2805	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0					20.0
Total Split (s)	30.0	30.0			30.0		90.0	90.0					20.0
Total Split (%)	21.4%	21.4%			21.4%		64.3%	64.3%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0					0.0
Lost Time Adjust (s)	-1.9	-1.9			-1.9			-2.0					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.58	0.29			0.69			0.90					
Control Delay	51.0	31.7			52.0			28.5					
Queue Delay	0.0	0.0			0.1			46.2					
Total Delay	51.0	31.7			52.0			74.6					
Queue Length 50th (ft)	31	54			156			767					
Queue Length 95th (ft)	m64	m78			254			842					
Internal Link Dist (ft)		468			527			234			218		
Turn Bay Length (ft)	75												
Base Capacity (vph)	100	345			341			3114					
Starvation Cap Reductn	0	0			0			1025					
Spillback Cap Reductn	0	0			2			235					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.58	0.29			0.69			1.34					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Future Volume (vph)	54	94	0	0	80	139	28	2558	22	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.94			1.00				
Flpb, ped/bikes	0.96	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1693	1863			1599			5070				
Flt Permitted	0.30	1.00			1.00			1.00				
Satd. Flow (perm)	541	1863			1599			5070				
Peak-hour factor, PHF	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	58	101	0	0	86	149	30	2751	24	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	1	0	0	0	0
Lane Group Flow (vph)	58	101	0	0	190	0	0	2804	0	0	0	0
Confl. Peds. (#/hr)	45					45	21		9			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	24.1	24.1			24.1			84.0				
Effective Green, g (s)	26.0	26.0			26.0			86.0				
Actuated g/C Ratio	0.19	0.19			0.19			0.61				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	100	345			296			3114				
v/s Ratio Prot		0.05			c0.12							
v/s Ratio Perm	0.11							0.55				
v/c Ratio	0.58	0.29			0.64			0.90				
Uniform Delay, d1	52.0	49.1			52.7			23.3				
Progression Factor	0.61	0.61			1.00			1.00				
Incremental Delay, d2	17.3	1.6			10.3			4.7				
Delay (s)	49.1	31.4			63.0			28.0				
Level of Service	D	C			E			C				
Approach Delay (s)		37.8			63.0			28.0			0.0	
Approach LOS		D			E			C			A	
Intersection Summary												
HCM 2000 Control Delay		31.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		87.2%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
24: Florida Ave & Kennedy Blvd

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

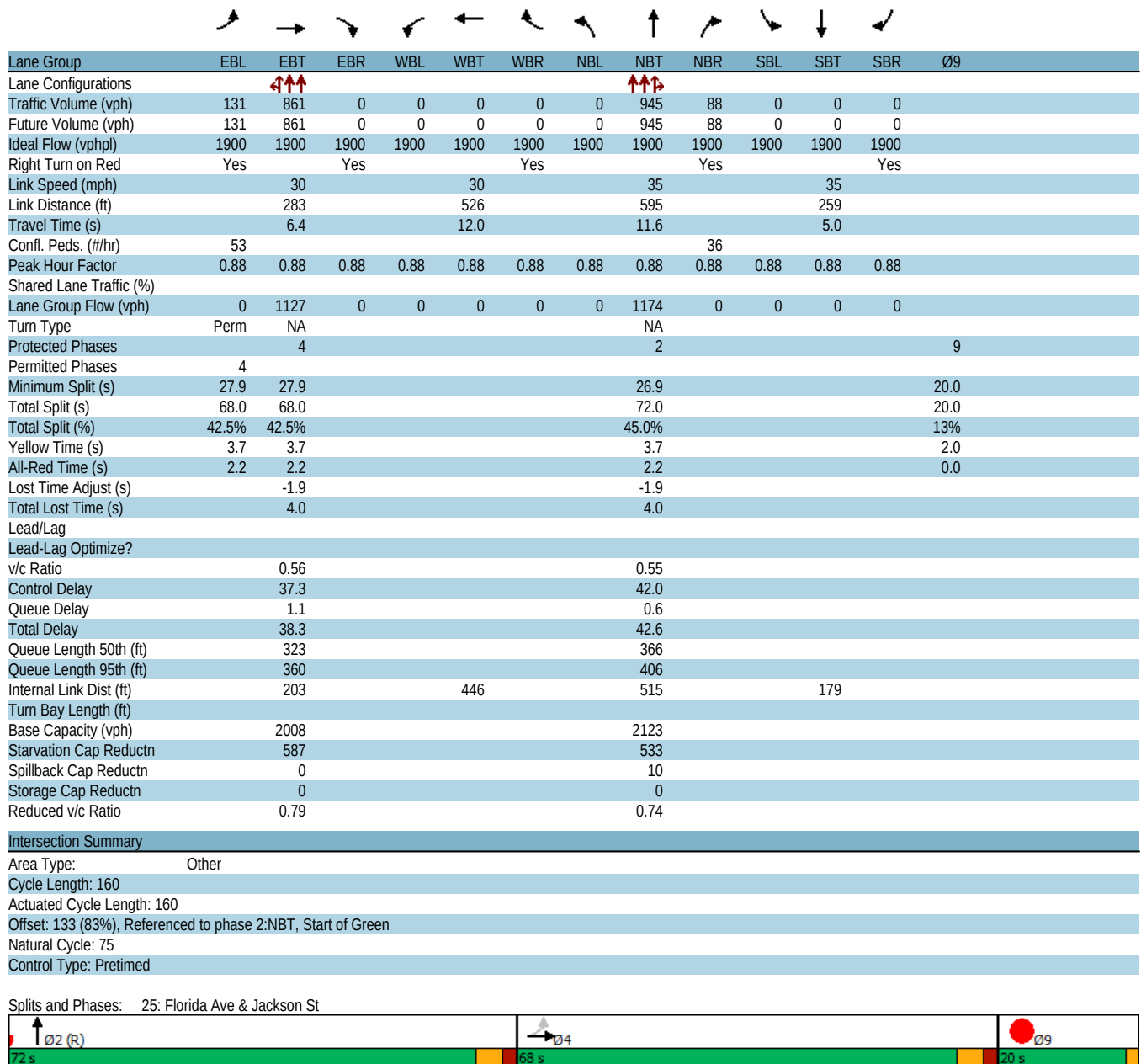
													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0	
Future Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes	Yes		Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		546			580			259			314		
Travel Time (s)		12.4			13.2			5.0			6.1		
Confl. Peds. (#/hr)						42	22						
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	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	2087	0	135	953	0	0	0	0	
Turn Type					NA		Perm	NA					
Protected Phases					4			2					9
Permitted Phases							2						
Minimum Split (s)					27.7		26.8	26.8					20.0
Total Split (s)					68.0		72.0	72.0					20.0
Total Split (%)					42.5%		45.0%	45.0%					13%
Yellow Time (s)					3.7		3.7	3.7					2.0
All-Red Time (s)					2.0		2.1	2.1					0.0
Lost Time Adjust (s)					-1.7		-1.8	-1.8					
Total Lost Time (s)					4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio					0.85		0.17	0.44					
Control Delay					46.7		0.4	10.0					
Queue Delay					0.0		0.7	0.3					
Total Delay					46.7		1.1	10.3					
Queue Length 50th (ft)					562		0	48					
Queue Length 95th (ft)					611		0	54					
Internal Link Dist (ft)		466			500			179			234		
Turn Bay Length (ft)													
Base Capacity (vph)					2443		792	2161					
Starvation Cap Reductn					0		421	523					
Spillback Cap Reductn					0		0	0					
Storage Cap Reductn					0		0	0					
Reduced v/c Ratio					0.85		0.36	0.58					
Intersection Summary													
Area Type:	Other												
Cycle Length: 160													
Actuated Cycle Length: 160													
Offset: 139 (87%), Referenced to phase 2:NBT, Start of Green													
Natural Cycle: 80													
Control Type: Pretimed													
Splits and Phases: 24: Florida Ave & Kennedy Blvd													
 Ø2 (R)							 Ø4				 Ø9		
72 s							68 s				20 s		

Tampa Streetcar Feasibility Study
24: Florida Ave & Kennedy Blvd

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↘	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Future Volume (vph)	0	0	0	0	1494	488	128	905	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.97		1.00	1.00				
Flpb, ped/bikes					1.00		0.95	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6016		1681	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6016		1681	5085				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	1573	514	135	953	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	37	0	78	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2050	0	57	953	0	0	0	0
Confl. Peds. (#/hr)					42		22					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					62.3		66.2	66.2				
Effective Green, g (s)					64.0		68.0	68.0				
Actuated g/C Ratio					0.40		0.42	0.42				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2406		714	2161				
v/s Ratio Prot					0.34			0.19				
v/s Ratio Perm							0.03					
v/c Ratio					0.85		0.08	0.44				
Uniform Delay, d1					43.7		27.4	32.6				
Progression Factor					1.00		0.00	0.29				
Incremental Delay, d2					4.1		0.2	0.6				
Delay (s)					47.8		0.3	10.0				
Level of Service					D		A	A				
Approach Delay (s)		0.0			47.8			8.8			0.0	
Approach LOS		A			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			34.4		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.56									
Actuated Cycle Length (s)			160.0		Sum of lost time (s)						10.0	
Intersection Capacity Utilization			72.6%		ICU Level of Service						C	
Analysis Period (min)			15									

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	131	861	0	0	0	0	0	945	88	0	0	0
Future Volume (vph)	131	861	0	0	0	0	0	945	88	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4975						4981				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4975						4981				
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	149	978	0	0	0	0	0	1074	100	0	0	0
RTOR Reduction (vph)	0	20	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	1107	0	0	0	0	0	1167	0	0	0	0
Confl. Peds. (#/hr)	53								36			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		62.1						66.1				
Effective Green, g (s)		64.0						68.0				
Actuated g/C Ratio		0.40						0.42				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1990						2116				
v/s Ratio Prot								0.23				
v/s Ratio Perm		0.22										
v/c Ratio		0.56						0.55				
Uniform Delay, d1		37.0						34.5				
Progression Factor		1.00						1.19				
Incremental Delay, d2		1.1						1.0				
Delay (s)		38.2						42.2				
Level of Service		D						D				
Approach Delay (s)		38.2			0.0			42.2			0.0	
Approach LOS		D			A			D			A	
Intersection Summary												
HCM 2000 Control Delay		40.2						HCM 2000 Level of Service		D		
HCM 2000 Volume to Capacity ratio		0.49										
Actuated Cycle Length (s)		160.0						Sum of lost time (s)		10.0		
Intersection Capacity Utilization		54.8%						ICU Level of Service		A		
Analysis Period (min)		15										

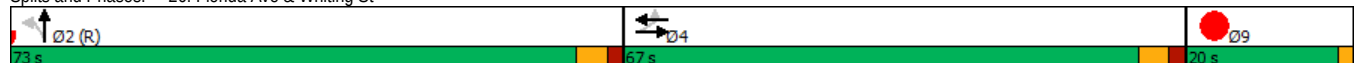
c Critical Lane Group

Tampa Streetcar Feasibility Study
26: Florida Ave & Whiting St

Build 2024 + Streetcar Phase
Timing Plan: PM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔↗			↔↗			↔↗↗					
Traffic Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0	
Future Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		50	0		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		553			557			397			595		
Travel Time (s)		12.6			12.7			7.7			11.6		
Confl. Peds. (#/hr)	106					106	71		94				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	336	0	0	227	0	0	187	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	29.0	29.0			29.0		26.7	26.7					20.0
Total Split (s)	67.0	67.0			67.0		73.0	73.0					20.0
Total Split (%)	41.9%	41.9%			41.9%		45.6%	45.6%					13%
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8			-1.7					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.38			0.19			0.09					
Control Delay		36.1			14.7			26.0					
Queue Delay		0.0			0.0			0.0					
Total Delay		36.1			14.7			26.0					
Queue Length 50th (ft)		131			36			40					
Queue Length 95th (ft)		176			67			58					
Internal Link Dist (ft)		473			477			317			515		
Turn Bay Length (ft)													
Base Capacity (vph)		891			1197			2136					
Starvation Cap Reductn		0			0			0					
Spillback Cap Reductn		0			0			0					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.38			0.19			0.09					
Intersection Summary													
Area Type:	Other												
Cycle Length: 160													
Actuated Cycle Length: 160													
Offset: 120 (75%), Referenced to phase 2:NBT, Start of Green													
Natural Cycle: 80													
Control Type: Pretimed													

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Future Volume (vph)	155	157	0	0	98	113	5	160	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			0.91				
Flpb, ped/bikes		1.00			0.88			0.99				
Flpb, ped/bikes		0.92			1.00			0.99				
Frt		1.00			0.92			0.99				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		3194			2854			4942				
Flt Permitted		0.69			1.00			1.00				
Satd. Flow (perm)		2266			2854			4942				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	167	169	0	0	105	122	5	172	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	74	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	336	0	0	153	0	0	183	0	0	0	0
Confl. Peds. (#/hr)	106					106	71		94			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		61.2			61.2			67.3				
Effective Green, g (s)		63.0			63.0			69.0				
Actuated g/C Ratio		0.39			0.39			0.43				
Clearance Time (s)		5.8			5.8			5.7				
Lane Grp Cap (vph)		892			1123			2131				
v/s Ratio Prot					0.05							
v/s Ratio Perm		0.15						0.04				
v/c Ratio		0.38			0.14			0.09				
Uniform Delay, d1		34.5			31.1			26.9				
Progression Factor		1.00			1.00			1.00				
Incremental Delay, d2		1.2			0.3			0.1				
Delay (s)		35.7			31.3			27.0				
Level of Service		D			C			C				
Approach Delay (s)		35.7			31.3			27.0			0.0	
Approach LOS		D			C			C			A	
Intersection Summary												
HCM 2000 Control Delay		32.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.20										
Actuated Cycle Length (s)		160.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		55.5%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations					  			  					
Traffic Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0	
Future Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes	Yes		Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		240			537			151			230		
Travel Time (s)		5.5			12.2			2.9			4.5		
Confl. Peds. (#/hr)						21	28						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1261	0	13	177	0	0	0	0	
Turn Type					NA		Perm	NA					
Protected Phases					2			4					9
Permitted Phases							4						
Minimum Split (s)					29.8		36.1	36.1					20.0
Total Split (s)					50.0		70.0	70.0					20.0
Total Split (%)					35.7%		50.0%	50.0%					14%
Yellow Time (s)					3.7		3.7	3.7					2.0
All-Red Time (s)					2.1		2.4	2.4					0.0
Lost Time Adjust (s)					-1.8		-2.1	-2.1					
Total Lost Time (s)					4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio					0.61		0.02	0.07					
Control Delay					40.4		0.0	20.4					
Queue Delay					0.0		0.0	0.0					
Total Delay					40.4		0.0	20.4					
Queue Length 50th (ft)					276		0	31					
Queue Length 95th (ft)					316		1	47					
Internal Link Dist (ft)		160			457			71			150		
Turn Bay Length (ft)													
Base Capacity (vph)					2082		820	2397					
Starvation Cap Reductn					0		0	0					
Spillback Cap Reductn					0		0	0					
Storage Cap Reductn					0		0	0					
Reduced v/c Ratio					0.61		0.02	0.07					
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 46 (33%), Referenced to phase 2:WBT, Start of Green													
Natural Cycle: 90													
Control Type: Pretimed													
Splits and Phases: 27: Florida Ave & Brorein St													
 Ø2 (R)				 Ø4				 Ø9					
50 s				70 s				20 s					

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0
Future Volume (vph)	0	0	0	0	1056	92	12	161	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6307		1700	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6307		1700	5085				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1160	101	13	177	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1251	0	6	177	0	0	0	0
Confl. Peds. (#/hr)					21		28					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					44.2		63.9	63.9				
Effective Green, g (s)					46.0		66.0	66.0				
Actuated g/C Ratio					0.33		0.47	0.47				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2072		801	2397				
v/s Ratio Prot					c0.20			c0.03				
v/s Ratio Perm							0.00					
v/c Ratio					0.60		0.01	0.07				
Uniform Delay, d1					39.4		19.6	20.3				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					1.3		0.0	0.1				
Delay (s)					40.7		19.6	20.3				
Level of Service					D		B	C				
Approach Delay (s)		0.0			40.7			20.3			0.0	
Approach LOS		A			D			C			A	
Intersection Summary												
HCM 2000 Control Delay			38.0		HCM 2000 Level of Service					D		
HCM 2000 Volume to Capacity ratio			0.25									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					10.0		
Intersection Capacity Utilization			35.0%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	246	0	0	698	85
Future Volume (vph)	0	246	0	0	698	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	267	0	0	851	0
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1018	0	0	944	0
Future Volume (vph)	0	1018	0	0	944	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1107	0	0	1026	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

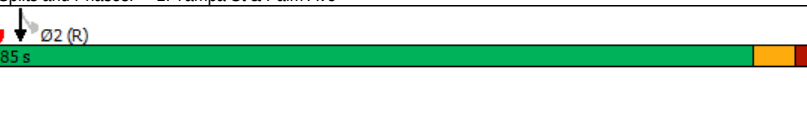
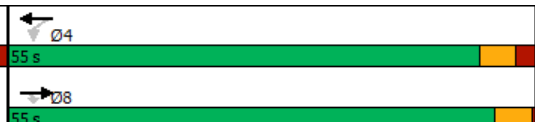
						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						  
Traffic Volume (vph)	0	0	0	0	900	0
Future Volume (vph)	0	0	0	0	900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	147		272			171
Travel Time (s)	3.3		6.2			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	978	0
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  			
Traffic Volume (vph)	0	333	1081	0	0	0
Future Volume (vph)	0	333	1081	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	531		103			170
Travel Time (s)	12.1		2.3			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	362	1175	0	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

No Build 2040 AM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

No Build 2040
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑						↖↗↑	
Traffic Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Future Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			311	
Travel Time (s)		14.9			10.4			37.4			6.1	
Confl. Peds. (#/hr)			3	3						2		2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	299	176	337	365	0	0	0	0	0	2128	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		25.3	25.3	27.0	27.0					31.4	31.4	
Total Split (s)		55.0	55.0	55.0	55.0					85.0	85.0	
Total Split (%)		39.3%	39.3%	39.3%	39.3%					60.7%	60.7%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		0.5	0.5	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		-0.3	-0.3	-2.0	-2.0						-2.4	
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.44	0.30	1.18	0.54						0.73	
Control Delay		36.3	28.6	130.6	24.3						23.4	
Queue Delay		0.1	0.0	0.0	1.9						0.0	
Total Delay		36.3	28.6	130.6	26.3						23.4	
Queue Length 50th (ft)		206	96	~360	141						497	
Queue Length 95th (ft)		293	159	m#430	m158						554	
Internal Link Dist (ft)		576			379			1841			231	
Turn Bay Length (ft)				150								
Base Capacity (vph)		678	582	285	678						2904	
Starvation Cap Reductn		0	0	0	178						0	
Spillback Cap Reductn		30	0	0	0						0	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.46	0.30	1.18	0.73						0.73	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 130 (93%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 1: Tampa St & Palm Ave												
												

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Future Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						1.00	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1555	1765	1863						5015	
Flt Permitted		1.00	1.00	0.42	1.00						0.99	
Satd. Flow (perm)		1863	1555	784	1863						5015	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	299	176	337	365	0	0	0	0	345	1724	59
RTOR Reduction (vph)	0	0	17	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	299	159	337	365	0	0	0	0	0	2126	0
Confl. Peds. (#/hr)			3	3						2		2
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		50.7	50.7	49.0	49.0						78.6	
Effective Green, g (s)		51.0	51.0	51.0	51.0						81.0	
Actuated g/C Ratio		0.36	0.36	0.36	0.36						0.58	
Clearance Time (s)		4.3	4.3	6.0	6.0						6.4	
Lane Grp Cap (vph)		678	566	285	678						2901	
v/s Ratio Prot		0.16			0.20							
v/s Ratio Perm			0.10	0.43							0.42	
v/c Ratio		0.44	0.28	1.18	0.54						0.73	
Uniform Delay, d1		33.7	31.5	44.5	35.2						21.6	
Progression Factor		1.00	1.00	0.61	0.63						1.00	
Incremental Delay, d2		2.1	1.2	102.7	1.9						1.7	
Delay (s)		35.8	32.8	129.7	24.0						23.3	
Level of Service		D	C	F	C						C	
Approach Delay (s)		34.7			74.8			0.0			23.3	
Approach LOS		C			E			A			C	
Intersection Summary												
HCM 2000 Control Delay			35.8			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)					8.0	
Intersection Capacity Utilization			89.7%			ICU Level of Service					E	
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

No Build 2040
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Future Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		360			350			247			1921	
Travel Time (s)		8.2			8.0			4.8			37.4	
Confl. Peds. (#/hr)				1								1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)				11%								
Lane Group Flow (vph)	0	0	0	16	2593	0	0	0	0	0	1426	612
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Minimum Split (s)				26.7	26.7						31.0	31.0
Total Split (s)				76.0	76.0						64.0	64.0
Total Split (%)				54.3%	54.3%						45.7%	45.7%
Yellow Time (s)				3.7	3.7						4.0	4.0
All-Red Time (s)				2.0	2.0						2.0	2.0
Lost Time Adjust (s)				-1.7	-1.7						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.02	1.48						0.65	0.90
Control Delay				4.3	246.9						23.1	39.0
Queue Delay				0.0	0.0						2.5	0.0
Total Delay				4.3	246.9						25.6	39.0
Queue Length 50th (ft)				0	~1787						356	285
Queue Length 95th (ft)				9	#1917						m346	m#459
Internal Link Dist (ft)		280			270			167			1841	
Turn Bay Length (ft)												475
Base Capacity (vph)				839	1754						2179	681
Starvation Cap Reductn				0	0						0	0
Spillback Cap Reductn				2	0						599	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				0.02	1.48						0.90	0.90
Intersection Summary												
Area Type: Other												
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green												
Natural Cycle: 130												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 2: Tampa St & Kay St												
 02 (R)						 04						
64 s						76 s						

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Future Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.91	0.91						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1610	3390						5085	1562
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1610	3390						5085	1562
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	18	2591	0	0	0	0	0	1426	612
RTOR Reduction (vph)	0	0	0	8	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	8	2582	0	0	0	0	0	1426	600
Confl. Peds. (#/hr)				1								1
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Actuated Green, G (s)				70.3	70.3						58.0	58.0
Effective Green, g (s)				72.0	72.0						60.0	60.0
Actuated g/C Ratio				0.51	0.51						0.43	0.43
Clearance Time (s)				5.7	5.7						6.0	6.0
Lane Grp Cap (vph)				828	1743						2179	669
v/s Ratio Prot				0.01	c0.76						0.28	
v/s Ratio Perm												c0.38
v/c Ratio				0.01	1.48						0.65	0.90
Uniform Delay, d1				16.6	34.0						31.8	37.1
Progression Factor				1.00	1.00						0.69	0.74
Incremental Delay, d2				0.0	219.7						1.0	11.6
Delay (s)				16.6	253.7						23.0	39.0
Level of Service				B	F						C	D
Approach Delay (s)		0.0			252.2			0.0			27.8	
Approach LOS		A			F			A			C	
Intersection Summary												
HCM 2000 Control Delay			153.8			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.22									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			92.9%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

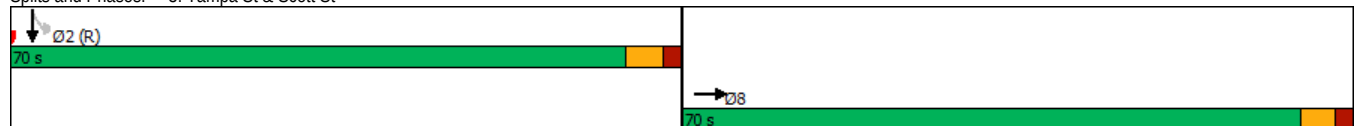
No Build 2040
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑↑	
Traffic Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Future Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			30	
Link Distance (ft)		386			62			346			247	
Travel Time (s)		8.8			1.4			6.7			5.6	
Confl. Peds. (#/hr)										3		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1317	0	0	0	0	0	0	0	0	1249	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		-1.7									-2.0	
Total Lost Time (s)		4.0									4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.80									0.52	
Control Delay		35.6									15.0	
Queue Delay		49.7									2.9	
Total Delay		85.4									17.8	
Queue Length 50th (ft)		520									399	
Queue Length 95th (ft)		617									456	
Internal Link Dist (ft)		306			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1647									2392	
Starvation Cap Reductn		0									998	
Spillback Cap Reductn		776									140	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		1.51									0.90	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 62 (44%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Future Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3478									5028	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3478									5028	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	1166	151	0	0	0	0	0	0	239	1010	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	21	0
Lane Group Flow (vph)	0	1310	0	0	0	0	0	0	0	0	1228	0
Confl. Peds. (#/hr)											3	
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		66.0									66.0	
Actuated g/C Ratio		0.47									0.47	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1639									2370	
v/s Ratio Prot		c0.38										
v/s Ratio Perm											0.24	
v/c Ratio		0.80									0.52	
Uniform Delay, d1		31.4									25.9	
Progression Factor		1.00									0.57	
Incremental Delay, d2		4.2									0.6	
Delay (s)		35.5									15.4	
Level of Service		D									B	
Approach Delay (s)		35.5			0.0			0.0			15.4	
Approach LOS		D			A			A			B	
Intersection Summary												
HCM 2000 Control Delay		25.7									C	
HCM 2000 Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		140.0								8.0		
Intersection Capacity Utilization		63.7%								B		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

No Build 2040
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Future Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			6.8			2.5	
Confl. Peds. (#/hr)			9	9						73		35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	310	0	124	335	0	0	0	0	0	3089	110
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Minimum Split (s)		25.8		25.8	25.8					102.8	102.8	102.8
Total Split (s)		35.0		35.0	35.0					105.0	105.0	105.0
Total Split (%)		25.0%		25.0%	25.0%					75.0%	75.0%	75.0%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	3.7
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	2.1
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8	-1.8
Total Lost Time (s)		4.0		4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.85		1.33	0.81						0.85	0.11
Control Delay		73.0		228.0	50.5						13.2	1.2
Queue Delay		66.1		34.6	0.0						1.7	0.0
Total Delay		139.1		262.7	50.5						14.8	1.2
Queue Length 50th (ft)		270		~150	322						424	0
Queue Length 95th (ft)		#429		m#204	m378						478	m14
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		366		93	412						3655	1016
Starvation Cap Reductn		0		0	0						0	0
Spillback Cap Reductn		238		60	0						376	0
Storage Cap Reductn		0		0	0						0	0
Reduced v/c Ratio		2.42		3.76	0.81						0.94	0.11

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 140

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

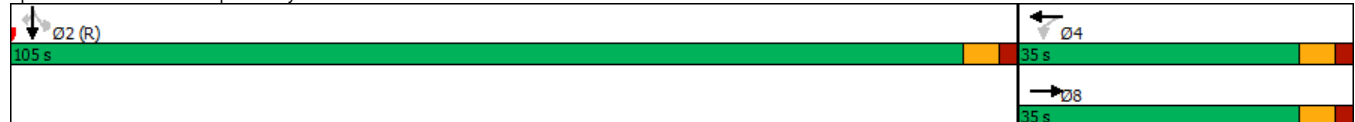
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Future Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						0.91	1.00
Frpb, ped/bikes		0.98		1.00	1.00						1.00	0.87
Flpb, ped/bikes		1.00		0.99	1.00						1.00	1.00
Frt		0.90		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1646		1758	1863						5069	1371
Flt Permitted		1.00		0.23	1.00						1.00	1.00
Satd. Flow (perm)		1646		421	1863						5069	1371
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	88	222	124	335	0	0	0	0	34	3055	110
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	0	28
Lane Group Flow (vph)	0	308	0	124	335	0	0	0	0	0	3089	82
Confl. Peds. (#/hr)			9	9						73		35
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		29.2		29.2	29.2						99.2	99.2
Effective Green, g (s)		31.0		31.0	31.0						101.0	101.0
Actuated g/C Ratio		0.22		0.22	0.22						0.72	0.72
Clearance Time (s)		5.8		5.8	5.8						5.8	5.8
Lane Grp Cap (vph)		364		93	412						3656	989
v/s Ratio Prot		0.19			0.18							
v/s Ratio Perm				c0.29							0.61	0.06
v/c Ratio		0.85		1.33	0.81						0.84	0.08
Uniform Delay, d1		52.2		54.5	51.7						13.9	5.8
Progression Factor		1.00		0.74	0.73						0.74	0.76
Incremental Delay, d2		20.8		193.4	12.0						2.6	0.2
Delay (s)		73.0		233.9	49.7						12.9	4.6
Level of Service		E		F	D						B	A
Approach Delay (s)		73.0			99.5			0.0			12.6	
Approach LOS		E			F			A			B	
Intersection Summary												
HCM 2000 Control Delay			27.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.96									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			115.2%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

No Build 2040
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Future Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		322			553			286			301	
Travel Time (s)		7.3			12.6			6.5			6.8	
Confl. Peds. (#/hr)			12	12						87		29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	625	0	66	355	0	0	0	0	0	3164	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.27		1.25	0.69						0.95	
Control Delay		176.0		220.4	25.4						21.4	
Queue Delay		9.3		33.4	0.4						44.4	
Total Delay		185.3		253.8	25.8						65.8	
Queue Length 50th (ft)		~716		~74	98						820	
Queue Length 95th (ft)		#957		m#128	211						m897	
Internal Link Dist (ft)		242			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		494		53	518						3329	
Starvation Cap Reductn		0		0	18						188	
Spillback Cap Reductn		276		29	0						744	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		2.87		2.75	0.71						1.22	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 110												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 5: Tampa St & Cass St												
												

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Future Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1771		1770	1863						5011	
Flt Permitted		1.00		0.10	1.00						1.00	
Satd. Flow (perm)		1771		191	1863						5011	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	445	180	66	355	0	0	0	0	103	3032	29
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	624	0	66	355	0	0	0	0	0	3163	0
Confl. Peds. (#/hr)			12	12						87		29
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3		37.3	37.3						91.3	
Effective Green, g (s)		39.0		39.0	39.0						93.0	
Actuated g/C Ratio		0.28		0.28	0.28						0.66	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		493		53	518						3328	
v/s Ratio Prot		c0.35			0.19							
v/s Ratio Perm				0.35							0.63	
v/c Ratio		1.26		1.25	0.69						0.95	
Uniform Delay, d1		50.5		50.5	45.0						21.4	
Progression Factor		1.00		0.44	0.42						0.78	
Incremental Delay, d2		134.6		192.4	6.0						4.2	
Delay (s)		185.1		214.7	25.1						20.9	
Level of Service		F		F	C						C	
Approach Delay (s)		185.1			54.9			0.0			20.9	
Approach LOS		F			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			48.7			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)					8.0	
Intersection Capacity Utilization			106.8%			ICU Level of Service					G	
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

No Build 2040
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Future Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			6.9			6.5	
Confl. Peds. (#/hr)			39	39						185		66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	284	0	0	0	0	0	3065	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		-1.8			-1.8						-1.9	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.37			0.54						0.95	
Control Delay		40.9			46.2						22.6	
Queue Delay		0.0			0.0						44.4	
Total Delay		40.9			46.2						67.0	
Queue Length 50th (ft)		137			190						501	
Queue Length 95th (ft)		210			294						m542	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		519			525						3217	
Starvation Cap Reductn		0			0						870	
Spillback Cap Reductn		0			0						31	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.37			0.54						1.31	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 80

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Future Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.97			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.96			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1731			1841						5004	
Flt Permitted		1.00			0.95						1.00	
Satd. Flow (perm)		1731			1750						5004	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	131	61	33	251	0	0	0	0	75	2973	17
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	191	0	0	284	0	0	0	0	0	3065	0
Confl. Peds. (#/hr)			39	39						185		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		42.0			42.0						90.0	
Actuated g/C Ratio		0.30			0.30						0.64	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		519			525						3216	
v/s Ratio Prot		0.11										
v/s Ratio Perm					0.16						0.61	
v/c Ratio		0.37			0.54						0.95	
Uniform Delay, d1		38.6			40.9						23.0	
Progression Factor		1.00			1.02						0.84	
Incremental Delay, d2		2.0			3.9						2.8	
Delay (s)		40.6			45.5						22.2	
Level of Service		D			D						C	
Approach Delay (s)		40.6			45.5			0.0			22.2	
Approach LOS		D			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			25.1			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			97.3%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

No Build 2040
Timing Plan: AM Peak

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↖						↖↗↘	
Traffic Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Future Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		344			539			272			302	
Travel Time (s)		7.8			12.3			6.2			6.9	
Confl. Peds. (#/hr)			8	8						38		24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	444	0	0	300	0	0	0	0	0	3098	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7			-1.7						-1.7	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.91			2.19						0.92	
Control Delay		72.1			568.7						4.1	
Queue Delay		0.0			0.0						3.2	
Total Delay		72.1			568.7						7.3	
Queue Length 50th (ft)		391			~433						36	
Queue Length 95th (ft)		#593			m#476						38	
Internal Link Dist (ft)		264			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		489			137						3351	
Starvation Cap Reductn		0			0						124	
Spillback Cap Reductn		0			0						184	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.91			2.19						0.98	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Future Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.99			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1751			1839						5043	
Flt Permitted		1.00			0.27						1.00	
Satd. Flow (perm)		1751			494						5043	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	280	164	77	223	0	0	0	0	129	2959	10
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	443	0	0	300	0	0	0	0	0	3098	0
Confl. Peds. (#/hr)			8	8						38		24
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						91.3	
Effective Green, g (s)		39.0			39.0						93.0	
Actuated g/C Ratio		0.28			0.28						0.66	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		487			137						3349	
v/s Ratio Prot		0.25										
v/s Ratio Perm					0.61						0.61	
v/c Ratio		0.91			2.19						0.92	
Uniform Delay, d1		48.8			50.5						20.5	
Progression Factor		1.00			0.96						0.07	
Incremental Delay, d2		23.4			543.8						2.3	
Delay (s)		72.2			592.2						3.7	
Level of Service		E			F						A	
Approach Delay (s)		72.2			592.2			0.0			3.7	
Approach LOS		E			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			57.6			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.30									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			105.0%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

No Build 2040
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Future Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		258			543			313			272	
Travel Time (s)		5.9			12.3			7.1			6.2	
Confl. Peds. (#/hr)			30	30						30		54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	526	0	141	639	0	0	0	0	0	3064	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.01		2.66	1.15						0.94	
Control Delay		89.1		816.6	121.6						10.2	
Queue Delay		0.0		0.0	0.3						12.2	
Total Delay		89.1		816.6	121.9						22.4	
Queue Length 50th (ft)		~483		~219	~684						113	
Queue Length 95th (ft)		#726		m#341	m#875						m141	
Internal Link Dist (ft)		178			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		523		53	558						3249	
Starvation Cap Reductn		0		0	19						234	
Spillback Cap Reductn		0		0	0						246	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		1.01		2.66	1.19						1.02	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 9 (6%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 120												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 8: Tampa St & Twiggs St												
												

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Future Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1745		1770	1863						5050	
Flt Permitted		1.00		0.10	1.00						1.00	
Satd. Flow (perm)		1745		177	1863						5050	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	364	162	141	639	0	0	0	0	76	2939	49
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	525	0	141	639	0	0	0	0	0	3063	0
Confl. Peds. (#/hr)			30	30						30		54
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.3		40.3	40.3						88.1	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		523		53	558						3246	
v/s Ratio Prot		0.30			0.34							
v/s Ratio Perm				0.79							0.61	
v/c Ratio		1.00		2.66	1.15						0.94	
Uniform Delay, d1		49.0		49.0	49.0						22.7	
Progression Factor		1.00		0.82	0.81						0.31	
Incremental Delay, d2		40.4		796.9	84.5						2.7	
Delay (s)		89.4		837.0	124.3						9.6	
Level of Service		F		F	F						A	
Approach Delay (s)		89.4			253.1			0.0			9.6	
Approach LOS		F			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			62.7			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.49									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			103.3%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

No Build 2040
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Future Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		311			548			309			313	
Travel Time (s)		7.1			12.5			7.0			7.1	
Confl. Peds. (#/hr)			53	53						29		66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	339	0	194	35	0	0	0	0	0	3034	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.72		1.18	0.06						0.94	
Control Delay		53.4		156.4	30.2						7.5	
Queue Delay		61.2		17.0	0.0						44.9	
Total Delay		114.7		173.4	30.2						52.3	
Queue Length 50th (ft)		275		~213	20						300	
Queue Length 95th (ft)		394		m#300	m31						m249	
Internal Link Dist (ft)		231			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		473		165	558						3244	
Starvation Cap Reductn		0		0	0						256	
Spillback Cap Reductn		254		88	0						553	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		1.55		2.52	0.06						1.13	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 100

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Future Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.92		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.96	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1575		1704	1863						5048	
Flt Permitted		1.00		0.31	1.00						1.00	
Satd. Flow (perm)		1575		553	1863						5048	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	126	212	194	35	0	0	0	0	92	2919	23
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	338	0	194	35	0	0	0	0	0	3033	0
Confl. Peds. (#/hr)			53	53						29		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.1		40.1	40.1						88.2	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		472		165	558						3245	
v/s Ratio Prot		0.21			0.02							
v/s Ratio Perm				0.35							0.60	
v/c Ratio		0.72		1.18	0.06						0.93	
Uniform Delay, d1		43.7		49.0	35.0						22.4	
Progression Factor		1.00		0.91	0.85						0.28	
Incremental Delay, d2		9.0		116.5	0.2						0.7	
Delay (s)		52.7		160.9	30.0						6.9	
Level of Service		D		F	C						A	
Approach Delay (s)		52.7			140.9			0.0			6.9	
Approach LOS		D			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			19.7			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			98.2%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

No Build 2040
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Future Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		314			546			274			309	
Travel Time (s)		7.1			12.4			6.2			7.0	
Confl. Peds. (#/hr)				26								42
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	382	2531	0	0	0	0	0	2640	490
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Minimum Split (s)				25.8	25.8						26.8	26.8
Total Split (s)				72.0	72.0						68.0	68.0
Total Split (%)				51.4%	51.4%						48.6%	48.6%
Yellow Time (s)				3.7	3.7						3.7	3.7
All-Red Time (s)				2.1	2.1						2.1	2.1
Lost Time Adjust (s)				-1.8	-1.8						-1.8	-1.8
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.54	1.08						1.14	0.73
Control Delay				7.7	59.3						90.4	23.9
Queue Delay				84.7	9.0						0.6	36.3
Total Delay				92.3	68.3						91.0	60.2
Queue Length 50th (ft)				98	~1010						~1016	186
Queue Length 95th (ft)				m103	m#946						m#1083	m251
Internal Link Dist (ft)		234			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				710	2341						2324	667
Starvation Cap Reductn				164	351						391	202
Spillback Cap Reductn				633	701						490	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				4.96	1.54						1.44	1.05

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 23 (16%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 130

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

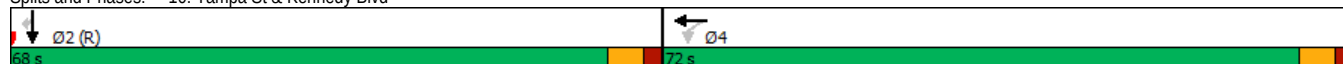
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Future Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.91
Flpb, ped/bikes				0.95	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1439	4798						5085	1434
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1439	4798						5085	1434
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	424	2489	0	0	0	0	0	2640	490
RTOR Reduction (vph)	0	0	0	11	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	371	2520	0	0	0	0	0	2640	478
Confl. Peds. (#/hr)				26							42	
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Actuated Green, G (s)				66.2	66.2						62.2	62.2
Effective Green, g (s)				68.0	68.0						64.0	64.0
Actuated g/C Ratio				0.49	0.49						0.46	0.46
Clearance Time (s)				5.8	5.8						5.8	5.8
Lane Grp Cap (vph)				698	2330						2324	655
v/s Ratio Prot											c0.52	
v/s Ratio Perm				0.26	0.53							0.33
v/c Ratio				0.53	1.08						1.14	0.73
Uniform Delay, d1				25.0	36.0						38.0	31.0
Progression Factor				0.26	0.45						0.70	0.70
Incremental Delay, d2				1.5	41.2						63.4	2.6
Delay (s)				7.9	57.4						90.0	24.2
Level of Service				A	E						F	C
Approach Delay (s)		0.0			50.9			0.0			79.7	
Approach LOS		A			D			A			E	
Intersection Summary												
HCM 2000 Control Delay			65.8			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			93.6%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

No Build 2040
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↖↖↖	↑↑↑	
Traffic Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Future Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		275			260			589			274	
Travel Time (s)		6.3			5.9			13.4			6.2	
Confl. Peds. (#/hr)			71							39		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	1582	0	0	0	0	0	0	0	468	2662	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		75.0								65.0	65.0	
Total Split (%)		53.6%								46.4%	46.4%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		-2.0								-2.0	-2.0	
Total Lost Time (s)		4.0								4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.02dr								0.70	1.27	
Control Delay		28.9								26.5	153.4	
Queue Delay		0.1								30.3	0.5	
Total Delay		29.1								56.8	153.9	
Queue Length 50th (ft)		397								202	~1156	
Queue Length 95th (ft)		456								m183	m#971	
Internal Link Dist (ft)		195			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2215								672	2101	
Starvation Cap Reductn		0								219	370	
Spillback Cap Reductn		87								2	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.74								1.03	1.54	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

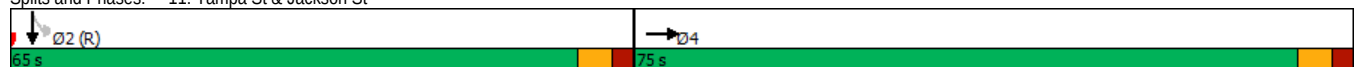
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Future Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.86	0.86	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								0.92	1.00	
Frt		0.93								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4368								1403	4794	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4368								1403	4794	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	813	769	0	0	0	0	0	0	520	2610	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	62	13	0
Lane Group Flow (vph)	0	1582	0	0	0	0	0	0	0	406	2649	0
Confl. Peds. (#/hr)			71							39		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		69.0								59.0	59.0	
Effective Green, g (s)		71.0								61.0	61.0	
Actuated g/C Ratio		0.51								0.44	0.44	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2215								611	2088	
v/s Ratio Prot		c0.36										
v/s Ratio Perm										0.29	0.55	
v/c Ratio		1.02dr								0.67	1.27	
Uniform Delay, d1		26.7								31.4	39.5	
Progression Factor		1.00								1.06	0.94	
Incremental Delay, d2		2.0								0.5	121.3	
Delay (s)		28.7								33.7	158.4	
Level of Service		C								C	F	
Approach Delay (s)		28.7			0.0			0.0			139.8	
Approach LOS		C			A			A			F	
Intersection Summary												
HCM 2000 Control Delay			102.5			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			93.6%			ICU Level of Service				F		
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

No Build 2040
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Future Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		404			553			171			589	
Travel Time (s)		9.2			12.6			3.9			13.4	
Confl. Peds. (#/hr)			94	94						30		43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	478	0	166	157	0	0	0	0	0	241	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.39		0.65	0.22						0.09	
Control Delay		27.0		27.7	11.3						16.3	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		27.0		27.7	11.3						16.3	
Queue Length 50th (ft)		136		40	24						34	
Queue Length 95th (ft)		185		98	34						m30	
Internal Link Dist (ft)		324			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1240		254	705						2818	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.39		0.65	0.22						0.09	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 120 (86%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 12: Tampa St & Whiting St												
 02 (R)								 04				
83 s								57 s				

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Future Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.93	1.00						1.00	
Frt		0.95		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.98	
Satd. Flow (prot)		3143		1648	1863						4993	
Flt Permitted		1.00		0.39	1.00						0.98	
Satd. Flow (perm)		3143		672	1863						4993	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	311	167	166	157	0	0	0	0	89	152	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	428	0	166	157	0	0	0	0	0	241	0
Confl. Peds. (#/hr)			94	94						30		43
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		53.0		53.0	53.0						79.0	
Actuated g/C Ratio		0.38		0.38	0.38						0.56	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1189		254	705						2817	
v/s Ratio Prot		0.14			0.08						c0.05	
v/s Ratio Perm				c0.25								
v/c Ratio		0.36		0.65	0.22						0.09	
Uniform Delay, d1		31.3		35.9	29.5						14.0	
Progression Factor		1.00		0.42	0.36						1.16	
Incremental Delay, d2		0.8		11.7	0.7						0.0	
Delay (s)		32.1		26.9	11.2						16.3	
Level of Service		C		C	B						B	
Approach Delay (s)		32.1			19.3			0.0			16.3	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			24.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			55.6%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

No Build 2040
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Future Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	16					16	6		5			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	415	0	0	672	0	0	1875	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.0	22.0			22.1		30.1	30.1				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	0.5	0.5			2.1		2.1	2.1				
Lost Time Adjust (s)	-0.5	-0.5			-2.1		-2.1	-2.1				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.75	0.59			1.00		0.67					
Control Delay	95.4	33.0			75.7		15.0					
Queue Delay	0.0	1.5			0.0		0.0					
Total Delay	95.4	34.5			75.7		15.0					
Queue Length 50th (ft)	36	232			595		360					
Queue Length 95th (ft)	m#79	357			#864		394					
Internal Link Dist (ft)		379			809		935			162		
Turn Bay Length (ft)	100											
Base Capacity (vph)	53	705			675		2786					
Starvation Cap Reductn	0	140			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.75	0.73			1.00		0.67					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 129 (92%), Referenced to phase 6:NBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Future Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frpb, ped/bikes	1.00	1.00			0.98			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1756			4895				
Flt Permitted	0.08	1.00			1.00			1.00				
Satd. Flow (perm)	141	1863			1756			4895				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	415	0	0	465	207	105	1425	345	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	0	26	0	0	0	0
Lane Group Flow (vph)	40	415	0	0	661	0	0	1849	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		5			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	52.5	52.5			50.9			76.9				
Effective Green, g (s)	53.0	53.0			53.0			79.0				
Actuated g/C Ratio	0.38	0.38			0.38			0.56				
Clearance Time (s)	4.5	4.5			6.1			6.1				
Lane Grp Cap (vph)	53	705			664			2762				
v/s Ratio Prot		0.22			0.38							
v/s Ratio Perm	0.28							0.38				
v/c Ratio	0.75	0.59			1.00			0.67				
Uniform Delay, d1	37.8	34.8			43.4			21.4				
Progression Factor	0.88	0.85			1.00			0.67				
Incremental Delay, d2	55.9	2.9			33.8			1.0				
Delay (s)	89.1	32.5			77.2			15.3				
Level of Service	F	C			E			B				
Approach Delay (s)		37.4			77.2			15.3			0.0	
Approach LOS		D			E			B			A	
Intersection Summary												
HCM 2000 Control Delay		32.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.80										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		89.7%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

No Build 2040
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Future Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		183			376			1146			1015	
Travel Time (s)		5.0			10.3			22.3			19.8	
Confl. Peds. (#/hr)	3					3	4		11			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	125	0	0	325	0	0	1936	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.4	22.4			22.4		24.0	24.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	-2.4	-2.4			-2.4		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.45	0.22			0.62		0.65					
Control Delay	28.2	19.7			26.2		10.2					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	28.2	19.7			26.2		10.2					
Queue Length 50th (ft)	33	40			113		263					
Queue Length 95th (ft)	78	79			194		m169					
Internal Link Dist (ft)		103			296		1066			935		
Turn Bay Length (ft)	50											
Base Capacity (vph)	212	558			520		2962					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.45	0.22			0.63		0.65					

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 17 (24%), Referenced to phase 2: and 6:NBTL, Start of Green

Natural Cycle: 50

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

No Build 2040
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Future Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1766	1863			1696			5056				
Flt Permitted	0.38	1.00			1.00			1.00				
Satd. Flow (perm)	709	1863			1696			5056				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	125	0	0	130	195	149	1773	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	1	0	0	0	0
Lane Group Flow (vph)	96	125	0	0	313	0	0	1935	0	0	0	0
Confl. Peds. (#/hr)	3					3	4		11			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	21.0	21.0			21.0			41.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.59				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	212	558			508			2961				
v/s Ratio Prot		0.07			0.18							
v/s Ratio Perm	0.14							0.38				
v/c Ratio	0.45	0.22			0.62			0.65				
Uniform Delay, d1	19.8	18.4			21.0			9.7				
Progression Factor	1.00	1.00			1.00			1.03				
Incremental Delay, d2	6.8	0.9			5.5			0.1				
Delay (s)	26.7	19.3			26.6			10.1				
Level of Service	C	B			C			B				
Approach Delay (s)		22.5			26.6			10.1			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		13.4			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		70.4%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

No Build 2040
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑↑				
Traffic Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Future Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			377			701			1146	
Travel Time (s)		8.4			8.6			13.7			22.3	
Confl. Peds. (#/hr)	4								8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2235	0	0	0	0	0	3831	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	60.0	60.0						80.0				
Total Split (%)	42.9%	42.9%						57.1%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		-1.7						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.59						1.46				
Control Delay		295.5						227.0				
Queue Delay		0.0						0.0				
Total Delay		295.5						227.0				
Queue Length 50th (ft)		~1533						~1737				
Queue Length 95th (ft)		#1644						m#1309				
Internal Link Dist (ft)		291			297			621			1066	
Turn Bay Length (ft)												
Base Capacity (vph)		1403						2623				
Starvation Cap Reductn		0						20				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.59						1.47				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 64 (46%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Future Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.96				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3475						4828				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3475						4828				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	668	1567	0	0	0	0	0	2777	1054	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	2221	0	0	0	0	0	3829	0	0	0	0
Confl. Peds. (#/hr)	4								8			
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		54.3						74.0				
Effective Green, g (s)		56.0						76.0				
Actuated g/C Ratio		0.40						0.54				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1390						2620				
v/s Ratio Prot								c0.79				
v/s Ratio Perm		0.64										
v/c Ratio		1.60						1.46				
Uniform Delay, d1		42.0						32.0				
Progression Factor		0.71						0.44				
Incremental Delay, d2		272.2						207.8				
Delay (s)		302.1						221.9				
Level of Service		F						F				
Approach Delay (s)		302.1			0.0			221.9			0.0	
Approach LOS		F			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		251.5						HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio		1.52										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		142.6%						ICU Level of Service		H		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Future Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		258			273			465			701	
Travel Time (s)		5.9			6.2			10.6			15.9	
Confl. Peds. (#/hr)	13					13	5		7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	0	0	0	0	0	4040	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Minimum Split (s)	24.4	24.4					24.0	24.0				
Total Split (s)	43.0	43.0					97.0	97.0				
Total Split (%)	30.7%	30.7%					69.3%	69.3%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		-1.4						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.29						1.20				
Control Delay		41.7						101.0				
Queue Delay		0.0						0.3				
Total Delay		41.7						101.3				
Queue Length 50th (ft)		102						~1617				
Queue Length 95th (ft)		163						m100				
Internal Link Dist (ft)		178			193			385		621		
Turn Bay Length (ft)												
Base Capacity (vph)		488						3373				
Starvation Cap Reductn		0						146				
Spillback Cap Reductn		0						546				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.29						1.43				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 41 (29%), Referenced to phase 2:NBT and 6:, Start of Green

Natural Cycle: 130

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Future Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.97						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1752						5077				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1752						5077				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	41	0	0	0	0	57	3970	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	142	0	0	0	0	0	4040	0	0	0	0
Confl. Peds. (#/hr)	13					13	5		7			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.6						91.0				
Effective Green, g (s)		39.0						93.0				
Actuated g/C Ratio		0.28						0.66				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		488						3372				
v/s Ratio Prot												
v/s Ratio Perm		0.08						0.80				
v/c Ratio		0.29						1.20				
Uniform Delay, d1		39.6						23.5				
Progression Factor		1.00						0.21				
Incremental Delay, d2		1.5						89.4				
Delay (s)		41.2						94.3				
Level of Service		D						F				
Approach Delay (s)		41.2			0.0			94.3			0.0	
Approach LOS		D			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		92.5							F			
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)	8.0			
Intersection Capacity Utilization		92.4%						ICU Level of Service	F			
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔↔↔				
Traffic Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Future Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		320			287			301			465	
Travel Time (s)		7.3			6.5			6.8			9.1	
Confl. Peds. (#/hr)	8					8	7		12			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	133	0	0	4207	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-2.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.20			0.30			1.25				
Control Delay		40.0			42.0			145.4				
Queue Delay		0.0			0.0			1.1				
Total Delay		40.0			42.0			146.5				
Queue Length 50th (ft)		63			96			~1790				
Queue Length 95th (ft)		111			156			m#1253				
Internal Link Dist (ft)		240			207			221			385	
Turn Bay Length (ft)												
Base Capacity (vph)		455			447			3372				
Starvation Cap Reductn		0			0			1373				
Spillback Cap Reductn		0			0			293				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.20			0.30			2.10				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 36 (26%), Referenced to phase 2:NBT and 6:, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

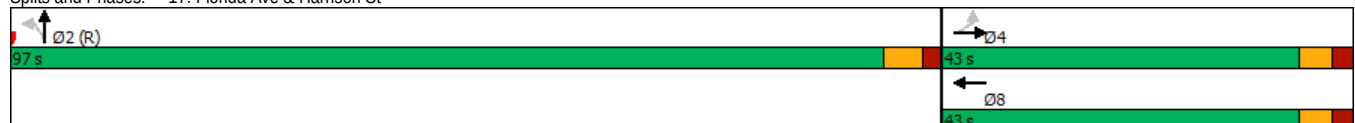
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Future Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.88			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1825			1606			5075				
Flt Permitted		0.88			1.00			1.00				
Satd. Flow (perm)		1634			1606			5075				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	60	0	0	18	115	26	4153	28	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	133	0	0	4207	0	0	0	0
Confl. Peds. (#/hr)	8					8	7		12			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.2			37.2			91.0				
Effective Green, g (s)		39.0			39.0			93.0				
Actuated g/C Ratio		0.28			0.28			0.66				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		455			447			3371				
v/s Ratio Prot					c0.08							
v/s Ratio Perm		0.06						0.83				
v/c Ratio		0.20			0.30			1.25				
Uniform Delay, d1		38.6			39.7			23.5				
Progression Factor		1.00			1.00			1.60				
Incremental Delay, d2		1.0			1.7			111.8				
Delay (s)		39.5			41.4			149.4				
Level of Service		D			D			F				
Approach Delay (s)		39.5			41.4			149.4			0.0	
Approach LOS		D			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		144.0							F			
HCM 2000 Volume to Capacity ratio		0.97										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		106.8%							G			
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

No Build 2040
Timing Plan: AM Peak

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Future Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			288			286			301	
Travel Time (s)		13.0			6.5			5.6			5.9	
Confl. Peds. (#/hr)	11					11	4		21			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	155	0	0	444	0	49	4069	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	2.20	0.30			0.89		0.04	1.21				
Control Delay	609.9	49.4			69.1		11.9	116.3				
Queue Delay	0.0	0.0			0.0		0.0	1.4				
Total Delay	609.9	49.4			69.1		11.9	117.7				
Queue Length 50th (ft)	~213	123			389		20	~1636				
Queue Length 95th (ft)	m#320	m173			#582		m17	m573				
Internal Link Dist (ft)		490			208		206			221		
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	66	518			500		1159	3374				
Starvation Cap Reductn	0	0			0		0	916				
Spillback Cap Reductn	0	0			0		0	1609				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	2.20	0.30			0.89		0.04	2.31				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 128 (91%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 140
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Future Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1770	1863			1796		1745	5081				
Flt Permitted	0.13	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	240	1863			1796		1745	5081				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	145	155	0	0	350	94	49	4055	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	145	155	0	0	444	0	49	4069	0	0	0	0
Confl. Peds. (#/hr)	11					11	4		21			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.2	37.2			37.2		91.0	91.0				
Effective Green, g (s)	39.0	39.0			39.0		93.0	93.0				
Actuated g/C Ratio	0.28	0.28			0.28		0.66	0.66				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	66	518			500		1159	3375				
v/s Ratio Prot		0.08			0.25			0.80				
v/s Ratio Perm	0.60						0.03					
v/c Ratio	2.20	0.30			0.89		0.04	1.21				
Uniform Delay, d1	50.5	39.7			48.4		8.1	23.5				
Progression Factor	1.17	1.19			1.00		1.45	0.92				
Incremental Delay, d2	582.8	1.4			20.3		0.0	92.8				
Delay (s)	642.2	48.8			68.7		11.8	114.4				
Level of Service	F	D			E		B	F				
Approach Delay (s)		335.6			68.7			113.1			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		122.8			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.49										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		115.2%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

No Build 2040
Timing Plan: AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Future Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			311			283			286	
Travel Time (s)		12.6			7.1			5.5			5.6	
Confl. Peds. (#/hr)	4					4	5		74			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	592	0	0	400	0	85	3906	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		3.10			0.74		0.08	1.20				
Control Delay		963.8			53.7		1.5	102.9				
Queue Delay		12.0			57.5		0.0	0.7				
Total Delay		975.9			111.2		1.5	103.6				
Queue Length 50th (ft)		~922			328		4	~1568				
Queue Length 95th (ft)		m#774			455		m3	m48				
Internal Link Dist (ft)		473			231			203			206	
Turn Bay Length (ft)							60					
Base Capacity (vph)		191			540		1116	3244				
Starvation Cap Reductn		0			0		0	256				
Spillback Cap Reductn		88			249		0	955				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		5.75			1.37		0.08	1.71				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 26 (19%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 130												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 19: Florida Ave & Cass St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Future Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			1.00		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.98	1.00				
Frt		1.00			0.97		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1841			1801		1737	5045				
Flt Permitted		0.34			1.00		0.95	1.00				
Satd. Flow (perm)		638			1801		1737	5045				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	138	454	0	0	314	86	85	3835	71	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	592	0	0	400	0	85	3905	0	0	0	0
Confl. Peds. (#/hr)	4					4	5		74			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.0			40.0		88.0	88.0				
Effective Green, g (s)		42.0			42.0		90.0	90.0				
Actuated g/C Ratio		0.30			0.30		0.64	0.64				
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		191			540		1116	3243				
v/s Ratio Prot					0.22			c0.77				
v/s Ratio Perm		c0.93					0.05					
v/c Ratio		3.10			0.74		0.08	1.20				
Uniform Delay, d1		49.0			44.1		9.4	25.0				
Progression Factor		0.93			1.00		0.16	0.13				
Incremental Delay, d2		946.0			8.9		0.0	92.1				
Delay (s)		991.4			53.0		1.5	95.4				
Level of Service		F			D		A	F				
Approach Delay (s)		991.4			53.0			93.4			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		196.9			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.80										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		135.3%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Future Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			394			300			283	
Travel Time (s)		12.2			9.0			5.8			5.5	
Confl. Peds. (#/hr)	33					33	6		68			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	297	0	0	200	0	69	4184	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.70			0.40		0.06	1.28				
Control Delay		45.7			41.9		2.5	142.9				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		45.7			41.9		2.5	142.9				
Queue Length 50th (ft)		260			145		6	~1758				
Queue Length 95th (ft)		m347			220		m6	m#1761				
Internal Link Dist (ft)		457			314			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		423			502		1116	3260				
Starvation Cap Reductn		0			0		0	0				
Spillback Cap Reductn		0			0		0	79				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.70			0.40		0.06	1.32				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 140

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Future Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Flpb, ped/bikes		1.00			0.96		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.98	1.00				
Frt		1.00			0.94		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1820			1675		1736	5068				
Flt Permitted		0.77			1.00		0.95	1.00				
Satd. Flow (perm)		1410			1675		1736	5068				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	75	222	0	0	104	96	69	4147	37	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	297	0	0	200	0	69	4183	0	0	0	0
Confl. Peds. (#/hr)	33					33	6		68			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.2			40.2		88.0	88.0				
Effective Green, g (s)		42.0			42.0		90.0	90.0				
Actuated g/C Ratio		0.30			0.30		0.64	0.64				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		423			502		1116	3258				
v/s Ratio Prot					0.12			c0.83				
v/s Ratio Perm		c0.21					0.04					
v/c Ratio		0.70			0.40		0.06	1.28				
Uniform Delay, d1		43.5			39.0		9.3	25.0				
Progression Factor		0.83			1.00		0.26	0.29				
Incremental Delay, d2		8.8			2.4		0.0	128.5				
Delay (s)		44.9			41.3		2.4	135.6				
Level of Service		D			D		A	F				
Approach Delay (s)		44.9			41.3			133.5			0.0	
Approach LOS		D			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		124.0							F			
HCM 2000 Volume to Capacity ratio		1.10										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		114.8%							H			
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

No Build 2040
Timing Plan: AM Peak

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Future Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			418			283			300	
Travel Time (s)		12.3			9.5			5.5			5.8	
Confl. Peds. (#/hr)	24					24	10		15			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	297	0	0	439	0	0	4074	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.39			0.89			1.00				
Control Delay		212.6			67.3			15.2				
Queue Delay		0.0			0.0			39.8				
Total Delay		212.6			67.3			55.0				
Queue Length 50th (ft)		~365			382			1126				
Queue Length 95th (ft)		m#402			#576			m236				
Internal Link Dist (ft)		459			338			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		213			496			4089				
Starvation Cap Reductn		0			0			830				
Spillback Cap Reductn		0			0			372				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		1.39			0.89			1.25				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 100

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Future Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.86				
Frpb, ped/bikes		1.00			0.97			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		1843			1654			6359				
Flt Permitted		0.38			1.00			1.00				
Satd. Flow (perm)		712			1654			6359				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	65	232	0	0	179	260	146	3847	81	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	297	0	0	439	0	0	4072	0	0	0	0
Confl. Peds. (#/hr)	24					24	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.1			40.1			88.3				
Effective Green, g (s)		42.0			42.0			90.0				
Actuated g/C Ratio		0.30			0.30			0.64				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		213			496			4087				
v/s Ratio Prot					0.27							
v/s Ratio Perm		0.42						0.64				
v/c Ratio		1.39			0.89			1.00				
Uniform Delay, d1		49.0			46.7			24.8				
Progression Factor		0.46			1.00			0.43				
Incremental Delay, d2		188.5			20.1			3.5				
Delay (s)		211.0			66.8			14.3				
Level of Service		F			E			B				
Approach Delay (s)		211.0			66.8			14.3			0.0	
Approach LOS		F			E			B			A	
Intersection Summary												
HCM 2000 Control Delay		31.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		1.12										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		106.8%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Future Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			396			298			283	
Travel Time (s)		12.3			9.0			5.8			5.5	
Confl. Peds. (#/hr)	16					16	6		13			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	528	0	0	282	498	0	4075	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	60.0	60.0			60.0	60.0	80.0	80.0				
Total Split (%)	42.9%	42.9%			42.9%	42.9%	57.1%	57.1%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.41			0.38	0.80		1.18				
Control Delay		21.5			31.6	46.8		103.1				
Queue Delay		0.0			3.2	0.0		0.2				
Total Delay		21.5			34.7	46.8		103.3				
Queue Length 50th (ft)		106			180	382		~1282				
Queue Length 95th (ft)		m110			259	539		m#1252				
Internal Link Dist (ft)		463			316			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		1295			745	620		3443				
Starvation Cap Reductn		0			0	0		226				
Spillback Cap Reductn		0			357	1		397				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.41			0.73	0.80		1.34				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Future Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.86				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		0.99				
Flt Protected		1.00			1.00	1.00		1.00				
Satd. Flow (prot)		3525			1863	1517		6333				
Flt Permitted		0.92			1.00	1.00		1.00				
Satd. Flow (perm)		3239			1863	1517		6333				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	32	496	0	0	282	498	94	3767	214	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	14	0	5	0	0	0	0
Lane Group Flow (vph)	0	528	0	0	282	484	0	4070	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		13			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		54.1			54.1	54.1		74.0				
Effective Green, g (s)		56.0			56.0	56.0		76.0				
Actuated g/C Ratio		0.40			0.40	0.40		0.54				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		1295			745	606		3437				
v/s Ratio Prot					0.15							
v/s Ratio Perm		0.16				0.32		0.64				
v/c Ratio		0.41			0.38	0.80		1.18				
Uniform Delay, d1		30.1			29.7	37.0		32.0				
Progression Factor		0.69			1.00	1.00		0.52				
Incremental Delay, d2		0.5			1.5	10.6		83.7				
Delay (s)		21.4			31.2	47.6		100.2				
Level of Service		C			C	D		F				
Approach Delay (s)		21.4			41.7			100.2			0.0	
Approach LOS		C			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		84.0							F			
HCM 2000 Volume to Capacity ratio		1.02										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		111.4%							H			
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Future Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			408			314			298	
Travel Time (s)		12.5			9.3			6.1			5.8	
Confl. Peds. (#/hr)	21					21	8		15			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	194	0	0	237	0	0	4162	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	-1.9	-1.9			-1.9		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.63	0.35			0.48		1.02					
Control Delay	52.7	39.6			44.1		44.4					
Queue Delay	1.3	0.0			0.3		34.5					
Total Delay	53.9	39.6			44.4		78.9					
Queue Length 50th (ft)	106	123			177		~1166					
Queue Length 95th (ft)	m162	m179			263		m#1174					
Internal Link Dist (ft)		468			328		234			218		
Turn Bay Length (ft)	75											
Base Capacity (vph)	247	558			492		4096					
Starvation Cap Reductn	0	0			0		459					
Spillback Cap Reductn	19	0			38		621					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.68	0.35			0.52		1.20					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 3 (2%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Future Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.86				
Frbp, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.98	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1731	1863			1641			6369				
Flt Permitted	0.45	1.00			1.00			1.00				
Satd. Flow (perm)	826	1863			1641			6369				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	156	194	0	0	82	155	108	3978	76	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	156	194	0	0	237	0	0	4160	0	0	0	0
Confl. Peds. (#/hr)	21					21	8		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.1	40.1			40.1			88.0				
Effective Green, g (s)	42.0	42.0			42.0			90.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.64				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	247	558			492			4094				
v/s Ratio Prot		0.10			0.14							
v/s Ratio Perm	0.19							0.65				
v/c Ratio	0.63	0.35			0.48			1.02				
Uniform Delay, d1	42.3	38.3			40.1			25.0				
Progression Factor	0.97	0.98			1.00			1.07				
Incremental Delay, d2	10.3	1.5			3.4			17.9				
Delay (s)	51.2	39.2			43.4			44.5				
Level of Service	D	D			D			D				
Approach Delay (s)		44.5			43.4			44.5			0.0	
Approach LOS		D			D			D			A	
Intersection Summary												
HCM 2000 Control Delay		44.5			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.89										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		98.2%			ICU Level of Service			F				
Analysis Period (min)		15										

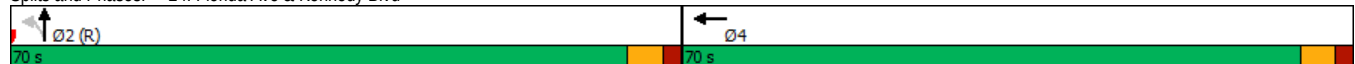
c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↑	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Future Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			427			259			314	
Travel Time (s)		12.4			9.7			5.0			6.1	
Confl. Peds. (#/hr)						33	10					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3033	0	188	1393	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					70.0		70.0	70.0				
Total Split (%)					50.0%		50.0%	50.0%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					-1.7		-1.8	-1.8				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					1.06		0.23	0.58				
Control Delay					70.5		6.4	11.9				
Queue Delay					18.3		1.1	0.8				
Total Delay					88.8		7.5	12.6				
Queue Length 50th (ft)					~876		21	178				
Queue Length 95th (ft)					#938		m34	190				
Internal Link Dist (ft)		466			347			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					2867		828	2397				
Starvation Cap Reductn					0		438	496				
Spillback Cap Reductn					547		1	624				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					1.31		0.48	0.79				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 65
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Florida Ave & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↘	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Future Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.98	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6062		1734	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6062		1734	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	2292	741	188	1393	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	11	0	11	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3022	0	177	1393	0	0	0	0
Confl. Peds. (#/hr)					33		10					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					64.3		64.2	64.2				
Effective Green, g (s)					66.0		66.0	66.0				
Actuated g/C Ratio					0.47		0.47	0.47				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2857		817	2397				
v/s Ratio Prot					c0.50			c0.27				
v/s Ratio Perm							0.10					
v/c Ratio					1.06		0.22	0.58				
Uniform Delay, d1					37.0		21.8	26.9				
Progression Factor					1.00		0.30	0.41				
Incremental Delay, d2					34.7		0.5	0.8				
Delay (s)					71.7		7.1	11.8				
Level of Service					E		A	B				
Approach Delay (s)		0.0			71.7			11.2			0.0	
Approach LOS		A			E			B			A	
Intersection Summary												
HCM 2000 Control Delay			51.0		HCM 2000 Level of Service						D	
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)						8.0	
Intersection Capacity Utilization			93.6%		ICU Level of Service						F	
Analysis Period (min)			15									

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0
Future Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		283			447			595			259	
Travel Time (s)		6.4			10.2			11.6			5.0	
Confl. Peds. (#/hr)	66								34			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1582	0	0	0	0	0	1649	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	27.9	27.9						26.9				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						3.7				
All-Red Time (s)	2.2	2.2						2.2				
Lost Time Adjust (s)		-1.9						-1.9				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.82						0.59				
Control Delay		31.8						27.0				
Queue Delay		3.2						0.8				
Total Delay		35.0						27.8				
Queue Length 50th (ft)		404						426				
Queue Length 95th (ft)		m453						476				
Internal Link Dist (ft)		203			367			515			179	
Turn Bay Length (ft)												
Base Capacity (vph)		1928						2798				
Starvation Cap Reductn		248						742				
Spillback Cap Reductn		0						164				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.94						0.80				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 133 (95%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 55

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Florida Ave & Jackson St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0
Future Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4961						5017				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4961						5017				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	222	1360	0	0	0	0	0	1552	97	0	0	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1567	0	0	0	0	0	1645	0	0	0	0
Confl. Peds. (#/hr)	66								34			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1913						2795				
v/s Ratio Prot								0.33				
v/s Ratio Perm		0.32										
v/c Ratio		0.82						0.59				
Uniform Delay, d1		38.6						20.4				
Progression Factor		0.75						1.27				
Incremental Delay, d2		3.2						0.9				
Delay (s)		32.0						26.9				
Level of Service		C						C				
Approach Delay (s)		32.0			0.0			26.9			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		29.4							C			
HCM 2000 Volume to Capacity ratio		0.68										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		77.7%							D			
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↔↔			↔↔			↔↔↔	↔			
Traffic Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Future Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			299			397			595	
Travel Time (s)		12.6			6.8			7.7			11.6	
Confl. Peds. (#/hr)	130					130	45		103			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	337	0	0	497	0	0	269	8	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Minimum Split (s)	29.0	29.0			29.0		24.7	24.7	24.7			
Total Split (s)	60.0	60.0			60.0		80.0	80.0	80.0			
Total Split (%)	42.9%	42.9%			42.9%		57.1%	57.1%	57.1%			
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7	3.7			
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0	2.0			
Lost Time Adjust (s)		-2.0			-2.0		-1.7	-1.7				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.42			0.38		0.10	0.01				
Control Delay		18.6			28.4		25.5	6.6				
Queue Delay		0.0			0.0		0.0	0.0				
Total Delay		18.6			28.4		25.5	6.6				
Queue Length 50th (ft)		57			154		58	1				
Queue Length 95th (ft)		73			203		93	m2				
Internal Link Dist (ft)		473			219		317			515		
Turn Bay Length (ft)								50				
Base Capacity (vph)		811			1306		2738	667				
Starvation Cap Reductn		0			0		0	0				
Spillback Cap Reductn		0			0		9	0				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.42			0.38		0.10	0.01				

Intersection Summary

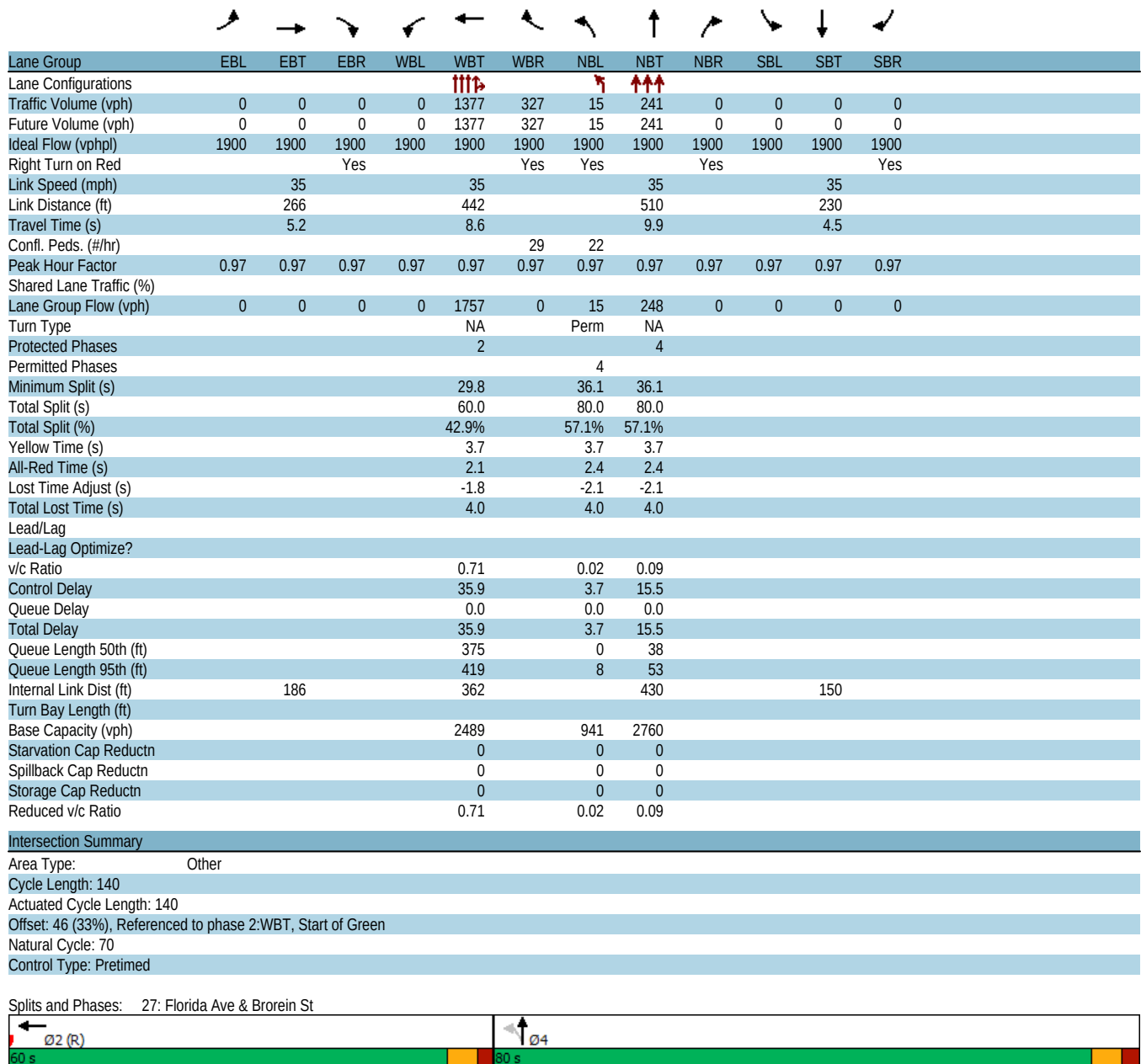
Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 121 (86%), Referenced to phase 2:NBTL, Start of Green
 Natural Cycle: 55
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Future Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.95			0.95			0.91	1.00			
Frpb, ped/bikes		1.00			0.94			1.00	0.76			
Flpb, ped/bikes		0.96			1.00			0.99	1.00			
Frt		1.00			0.96			1.00	0.85			
Flt Protected		0.98			1.00			1.00	1.00			
Satd. Flow (prot)		3334			3212			5045	1211			
Flt Permitted		0.60			1.00			1.00	1.00			
Satd. Flow (perm)		2029			3212			5045	1211			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	140	197	0	0	378	119	10	259	8	0	0	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	0	4	0	0	0
Lane Group Flow (vph)	0	337	0	0	475	0	0	269	4	0	0	0
Confl. Peds. (#/hr)	130					130	45		103			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		54.0			54.0			74.3	74.3			
Effective Green, g (s)		56.0			56.0			76.0	76.0			
Actuated g/C Ratio		0.40			0.40			0.54	0.54			
Clearance Time (s)		6.0			6.0			5.7	5.7			
Lane Grp Cap (vph)		811			1284			2738	657			
v/s Ratio Prot					0.15							
v/s Ratio Perm		0.17						0.05	0.00			
v/c Ratio		0.42			0.37			0.10	0.01			
Uniform Delay, d1		30.2			29.6			15.5	14.7			
Progression Factor		0.56			1.00			1.64	7.40			
Incremental Delay, d2		1.5			0.8			0.1	0.0			
Delay (s)		18.4			30.4			25.4	108.6			
Level of Service		B			C			C	F			
Approach Delay (s)		18.4			30.4			27.8			0.0	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM 2000 Control Delay		26.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.23										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		53.8%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↓	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0
Future Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		0.97	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6150		1715	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6150		1715	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	1420	337	15	248	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	31	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1726	0	8	248	0	0	0	0
Confl. Peds. (#/hr)					29		22					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					56.0		76.0	76.0				
Actuated g/C Ratio					0.40		0.54	0.54				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2460		931	2760				
v/s Ratio Prot					c0.28			c0.05				
v/s Ratio Perm							0.00					
v/c Ratio					0.70		0.01	0.09				
Uniform Delay, d1					35.0		14.7	15.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					1.7		0.0	0.1				
Delay (s)					36.7		14.7	15.4				
Level of Service					D		B	B				
Approach Delay (s)		0.0			36.7			15.4			0.0	
Approach LOS		A			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			34.0		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)						8.0	
Intersection Capacity Utilization			40.9%		ICU Level of Service						A	
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	365	0	0	1081	81
Future Volume (vph)	0	365	0	0	1081	81
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.90	0.90	0.92	0.92	0.90	0.90
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	406	0	0	1201	90
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1612	0	0	1299	0
Future Volume (vph)	0	1612	0	0	1299	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1752	0	0	1412	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				  		
Traffic Volume (vph)	0	0	0	416	0	0
Future Volume (vph)	0	0	0	416	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	337			171	309	
Travel Time (s)	7.7			3.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	452	0	0
Sign Control	Stop			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

No Build 2040 PM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

No Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑↑↑	
Traffic Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Future Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			246	
Travel Time (s)		14.9			10.4			37.4			4.8	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	466	186	172	268	0	0	0	0	0	1362	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	
Total Split (s)		60.0	60.0	60.0	60.0					80.0	80.0	
Total Split (%)		42.9%	42.9%	42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0						-2.4	
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.63	0.25	0.85	0.36						0.52	
Control Delay		38.2	4.4	53.4	19.3						19.2	
Queue Delay		11.6	0.0	0.0	0.6						0.0	
Total Delay		49.8	4.4	53.4	19.9						19.2	
Queue Length 50th (ft)		337	0	52	77						255	
Queue Length 95th (ft)		457	48	m#275	137						297	
Internal Link Dist (ft)		576			379			1841			166	
Turn Bay Length (ft)				150								
Base Capacity (vph)		745	744	202	745						2634	
Starvation Cap Reductn		0	0	0	205						0	
Spillback Cap Reductn		253	0	0	0						4	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.95	0.25	0.85	0.50						0.52	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 100 (71%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

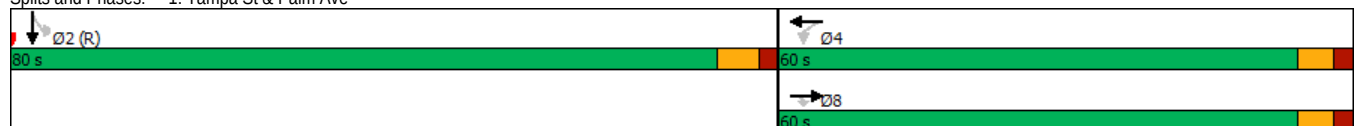
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Future Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						0.96	
Flt Protected		1.00	1.00	0.95	1.00						0.98	
Satd. Flow (prot)		1863	1583	1770	1863						4759	
Flt Permitted		1.00	1.00	0.27	1.00						0.98	
Satd. Flow (perm)		1863	1583	505	1863						4759	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	466	186	172	268	0	0	0	0	417	556	389
RTOR Reduction (vph)	0	0	112	0	0	0	0	0	0	0	52	0
Lane Group Flow (vph)	0	466	74	172	268	0	0	0	0	0	1310	0
Confl. Peds. (#/hr)										1		1
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		54.0	54.0	54.0	54.0						73.6	
Effective Green, g (s)		56.0	56.0	56.0	56.0						76.0	
Actuated g/C Ratio		0.40	0.40	0.40	0.40						0.54	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		745	633	202	745						2583	
v/s Ratio Prot		0.25			0.14							
v/s Ratio Perm			0.05	0.34							0.28	
v/c Ratio		0.63	0.12	0.85	0.36						0.51	
Uniform Delay, d1		33.6	26.4	38.2	29.4						20.2	
Progression Factor		1.00	1.00	0.53	0.61						1.00	
Incremental Delay, d2		3.9	0.4	30.1	1.2						0.7	
Delay (s)		37.6	26.8	50.4	19.1						20.9	
Level of Service		D	C	D	B						C	
Approach Delay (s)		34.5			31.3			0.0			20.9	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			26.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			106.9%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street

No Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↰	↰↰						↰↰↰	↰
Traffic Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Future Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		391			229			247			1921	
Travel Time (s)		8.9			5.2			4.8			37.4	
Confl. Peds. (#/hr)												1
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)				11%								
Lane Group Flow (vph)	0	0	0	50	2530	0	0	0	0	0	1185	830
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Minimum Split (s)				26.7	26.7						31.0	31.0
Total Split (s)				100.0	100.0						40.0	40.0
Total Split (%)				71.4%	71.4%						28.6%	28.6%
Yellow Time (s)				3.7	3.7						4.0	4.0
All-Red Time (s)				2.0	2.0						2.0	2.0
Lost Time Adjust (s)				-1.7	-1.7						-2.0	-2.0
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.05	1.09						0.91	1.99
Control Delay				4.5	69.3						60.0	481.3
Queue Delay				0.0	0.0						49.6	0.0
Total Delay				4.5	69.3						109.7	481.3
Queue Length 50th (ft)				7	~1415						389	~1175
Queue Length 95th (ft)				23	#1547						#467	#1431
Internal Link Dist (ft)		311			149			167			1841	
Turn Bay Length (ft)												475
Base Capacity (vph)				1111	2331						1307	417
Starvation Cap Reductn				0	0						0	0
Spillback Cap Reductn				3	0						702	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				0.05	1.09						1.96	1.99

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 2: Tampa St & Kay Street



Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Future Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.91	0.91						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.99
Flpb, ped/bikes				1.00	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1610	3390						5085	1562
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1610	3390						5085	1562
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	56	2524	0	0	0	0	0	1185	830
RTOR Reduction (vph)	0	0	0	7	7	0	0	0	0	0	0	16
Lane Group Flow (vph)	0	0	0	43	2523	0	0	0	0	0	1185	814
Confl. Peds. (#/hr)												1
Turn Type				Split	NA						NA	Perm
Protected Phases				4	4						2	
Permitted Phases												2
Actuated Green, G (s)				94.3	94.3						34.0	34.0
Effective Green, g (s)				96.0	96.0						36.0	36.0
Actuated g/C Ratio				0.69	0.69						0.26	0.26
Clearance Time (s)				5.7	5.7						6.0	6.0
Lane Grp Cap (vph)				1104	2324						1307	401
v/s Ratio Prot				0.03	c0.74						0.23	
v/s Ratio Perm												c0.52
v/c Ratio				0.04	1.09						0.91	2.03
Uniform Delay, d1				7.1	22.0						50.4	52.0
Progression Factor				1.00	1.00						0.98	0.98
Incremental Delay, d2				0.1	46.6						10.5	472.5
Delay (s)				7.2	68.6						59.9	523.5
Level of Service				A	E						E	F
Approach Delay (s)		0.0			67.4			0.0			250.9	
Approach LOS		A			E			A			F	
Intersection Summary												
HCM 2000 Control Delay			147.9			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.34									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			106.3%			ICU Level of Service			G			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

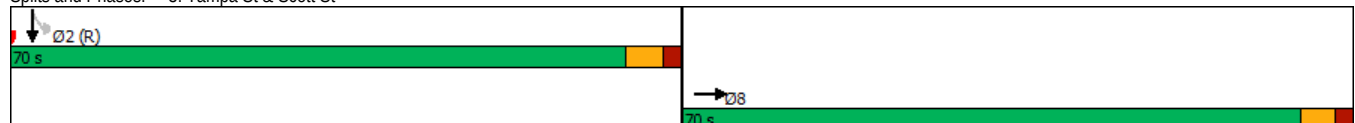
No Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑↑	
Traffic Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Future Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		385			62			346			247	
Travel Time (s)		8.8			1.4			6.7			4.8	
Confl. Peds. (#/hr)			2									
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1275	0	0	0	0	0	0	0	0	1210	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		-1.7									-2.0	
Total Lost Time (s)		4.0									4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.77									0.51	
Control Delay		34.5									19.3	
Queue Delay		50.4									52.4	
Total Delay		84.9									71.8	
Queue Length 50th (ft)		495									419	
Queue Length 95th (ft)		587									m463	
Internal Link Dist (ft)		305			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1653									2392	
Starvation Cap Reductn		0									1730	
Spillback Cap Reductn		852									152	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		1.59									1.83	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 62 (44%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									 	
Traffic Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Future Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.99									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3501									5033	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3501									5033	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	1192	83	0	0	0	0	0	0	250	960	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	19	0
Lane Group Flow (vph)	0	1271	0	0	0	0	0	0	0	0	1191	0
Confl. Peds. (#/hr)			2									
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		66.0									66.0	
Actuated g/C Ratio		0.47									0.47	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1650									2372	
v/s Ratio Prot		0.36										
v/s Ratio Perm											0.24	
v/c Ratio		0.77									0.50	
Uniform Delay, d1		30.7									25.6	
Progression Factor		1.00									0.76	
Incremental Delay, d2		3.5									0.4	
Delay (s)		34.3									19.8	
Level of Service		C									B	
Approach Delay (s)		34.3			0.0			0.0			19.8	
Approach LOS		C			A			A			B	
Intersection Summary												
HCM 2000 Control Delay			27.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			63.5%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

No Build 2040
Timing Plan: PM PEAK

Intersection Summary	
Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	140
Offset:	85.8 (61%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle:	90
Control Type:	Pretimed
~	Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

 Ø2 (R) 	 Ø4 
	 Ø8 

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139
Future Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	4.0
Lane Util. Factor		1.00		1.00	1.00						0.91	1.00
Frpb, ped/bikes		0.97		1.00	1.00						1.00	0.90
Flpb, ped/bikes		1.00		0.98	1.00						1.00	1.00
Frt		0.94		1.00	1.00						1.00	0.85
Flt Protected		1.00		0.95	1.00						1.00	1.00
Satd. Flow (prot)		1694		1730	1863						5069	1422
Flt Permitted		1.00		0.45	1.00						1.00	1.00
Satd. Flow (perm)		1694		810	1863						5069	1422
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	159	141	141	302	0	0	0	0	41	2907	148
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	39
Lane Group Flow (vph)	0	300	0	141	302	0	0	0	0	0	2948	109
Confl. Peds. (#/hr)			24	24						53		25
Turn Type		NA		Perm	NA					Perm	NA	Perm
Protected Phases		8			4						2	
Permitted Phases				4						2		2
Actuated Green, G (s)		54.2		54.2	54.2						74.2	74.2
Effective Green, g (s)		56.0		56.0	56.0						76.0	76.0
Actuated g/C Ratio		0.40		0.40	0.40						0.54	0.54
Clearance Time (s)		5.8		5.8	5.8						5.8	5.8
Lane Grp Cap (vph)		677		324	745						2751	771
v/s Ratio Prot		c0.18			0.16							
v/s Ratio Perm				0.17							0.58	0.08
v/c Ratio		0.44		0.44	0.41						1.07	0.14
Uniform Delay, d1		30.6		30.5	30.1						32.0	15.8
Progression Factor		1.00		0.80	0.78						0.85	0.55
Incremental Delay, d2		2.1		3.3	1.3						40.1	0.4
Delay (s)		32.7		27.5	24.7						67.3	9.1
Level of Service		C		C	C						E	A
Approach Delay (s)		32.7			25.6			0.0			64.5	
Approach LOS		C			C			A			E	
Intersection Summary												
HCM 2000 Control Delay			57.6			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			116.5%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

No Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Future Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		302			553			286			301	
Travel Time (s)		6.9			12.6			5.6			5.9	
Confl. Peds. (#/hr)			31	31						63		43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	604	0	112	297	0	0	0	0	0	3064	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		60.0		60.0	60.0					80.0	80.0	
Total Split (%)		42.9%		42.9%	42.9%					57.1%	57.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.84		1.10	0.40						1.13	
Control Delay		50.0		147.0	27.5						110.6	
Queue Delay		74.9		80.1	0.0						2.3	
Total Delay		124.9		227.1	27.5						113.0	
Queue Length 50th (ft)		492		~109	111						~1167	
Queue Length 95th (ft)		#676		m#180	m187						m#1044	
Internal Link Dist (ft)		222			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		719		102	745						2703	
Starvation Cap Reductn		0		0	0						1487	
Spillback Cap Reductn		618		87	0						91	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		5.98		7.47	0.40						2.52	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 20 (14%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 70												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 5: Tampa St & Cass St												
												

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Future Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.98		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1797		1770	1863						4976	
Flt Permitted		1.00		0.14	1.00						1.00	
Satd. Flow (perm)		1797		255	1863						4976	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	504	100	112	297	0	0	0	0	179	2836	49
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	603	0	112	297	0	0	0	0	0	3063	0
Confl. Peds. (#/hr)			31	31						63		43
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		54.3		54.3	54.3						74.3	
Effective Green, g (s)		56.0		56.0	56.0						76.0	
Actuated g/C Ratio		0.40		0.40	0.40						0.54	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		718		102	745						2701	
v/s Ratio Prot		0.34			0.16							
v/s Ratio Perm				0.44							0.62	
v/c Ratio		0.84		1.10	0.40						1.13	
Uniform Delay, d1		38.0		42.0	30.0						32.0	
Progression Factor		1.00		0.98	0.87						1.76	
Incremental Delay, d2		11.4		107.0	1.2						60.8	
Delay (s)		49.4		148.2	27.2						117.1	
Level of Service		D		F	C						F	
Approach Delay (s)		49.4			60.3			0.0			117.1	
Approach LOS		D			E			A			F	
Intersection Summary												
HCM 2000 Control Delay			101.4			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			114.0%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

No Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Future Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			5.9			5.6	
Confl. Peds. (#/hr)			53	53						168		62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	190	0	0	281	0	0	0	0	0	3033	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		-1.8			-1.8						-1.9	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.37			0.75						0.96	
Control Delay		40.9			57.2						15.7	
Queue Delay		0.0			0.0						43.5	
Total Delay		40.9			57.2						59.1	
Queue Length 50th (ft)		135			210						283	
Queue Length 95th (ft)		208			#331						m199	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		508			375						3151	
Starvation Cap Reductn		0			0						440	
Spillback Cap Reductn		0			0						158	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.37			0.75						1.12	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Future Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.96			1.00						1.00	
Flpb, ped/bikes		1.00			0.98						0.97	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1691			1784						4901	
Flt Permitted		1.00			0.69						1.00	
Satd. Flow (perm)		1691			1251						4901	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	120	70	101	180	0	0	0	0	169	2818	46
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	189	0	0	281	0	0	0	0	0	3032	0
Confl. Peds. (#/hr)			53	53						168		62
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		42.0			42.0						90.0	
Actuated g/C Ratio		0.30			0.30						0.64	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		507			375						3150	
v/s Ratio Prot		0.11										
v/s Ratio Perm					0.22						0.62	
v/c Ratio		0.37			0.75						0.96	
Uniform Delay, d1		38.6			44.2						23.4	
Progression Factor		1.00			0.98						0.59	
Incremental Delay, d2		2.1			12.8						1.2	
Delay (s)		40.7			56.2						15.1	
Level of Service		D			E						B	
Approach Delay (s)		40.7			56.2			0.0			15.1	
Approach LOS		D			E			A			B	
Intersection Summary												
HCM 2000 Control Delay		19.7			HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio		0.89										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)					8.0		
Intersection Capacity Utilization		97.7%			ICU Level of Service					F		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

No Build 2040
Timing Plan: PM PEAK

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↖						↖↗↘	
Traffic Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Future Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		286			539			272			302	
Travel Time (s)		6.5			12.3			5.3			5.9	
Confl. Peds. (#/hr)			19	19						54		36
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	0	443	0	0	0	0	0	3097	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		43.0		43.0	43.0					97.0	97.0	
Total Split (%)		30.7%		30.7%	30.7%					69.3%	69.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7			-1.7						-1.7	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.62			1.82						0.93	
Control Delay		50.4			410.5						7.0	
Queue Delay		0.0			0.0						45.3	
Total Delay		50.4			410.5						52.3	
Queue Length 50th (ft)		238			~599						73	
Queue Length 95th (ft)		342			m#793						76	
Internal Link Dist (ft)		206			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		482			244						3328	
Starvation Cap Reductn		0			0						253	
Spillback Cap Reductn		0			0						966	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.62			1.82						1.31	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 100

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Future Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.98			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1725			1830						5010	
Flt Permitted		1.00			0.47						1.00	
Satd. Flow (perm)		1725			877						5010	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	179	121	119	324	0	0	0	0	99	2922	76
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	299	0	0	443	0	0	0	0	0	3095	0
Confl. Peds. (#/hr)			19	19						54		36
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						91.3	
Effective Green, g (s)		39.0			39.0						93.0	
Actuated g/C Ratio		0.28			0.28						0.66	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		480			244						3328	
v/s Ratio Prot		0.17										
v/s Ratio Perm					0.51						0.62	
v/c Ratio		0.62			1.82						0.93	
Uniform Delay, d1		44.1			50.5						20.6	
Progression Factor		1.00			0.87						0.19	
Incremental Delay, d2		6.0			382.3						2.6	
Delay (s)		50.0			426.4						6.5	
Level of Service		D			F						A	
Approach Delay (s)		50.0			426.4			0.0			6.5	
Approach LOS		D			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			58.3			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.19									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			105.5%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

No Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Future Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		284			543			313			272	
Travel Time (s)		6.5			12.3			6.1			5.3	
Confl. Peds. (#/hr)			8	8						31		74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	788	0	215	317	0	0	0	0	0	3097	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.46		4.06	0.57						0.97	
Control Delay		253.7		1432.3	37.2						26.0	
Queue Delay		74.2		224.8	0.0						43.5	
Total Delay		327.9		1657.2	37.2						69.5	
Queue Length 50th (ft)		~984		~324	258						1070	
Queue Length 95th (ft)		#1237		m#480	m354						m1099	
Internal Link Dist (ft)		204			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		539		53	558						3206	
Starvation Cap Reductn		0		0	0						799	
Spillback Cap Reductn		514		50	0						76	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		31.52		71.67	0.57						1.29	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 34 (24%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Tampa St & Twiggs St



Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Future Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1791		1770	1863						4987	
Flt Permitted		1.00		0.10	1.00						0.99	
Satd. Flow (perm)		1791		177	1863						4987	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	600	188	215	317	0	0	0	0	440	2620	37
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	786	0	215	317	0	0	0	0	0	3096	0
Confl. Peds. (#/hr)			8	8						31		74
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.3		40.3	40.3						88.1	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		537		53	558						3205	
v/s Ratio Prot		0.44			0.17							
v/s Ratio Perm				c1.21							0.62	
v/c Ratio		1.46		4.06	0.57						0.97	
Uniform Delay, d1		49.0		49.0	41.3						23.6	
Progression Factor		1.00		0.83	0.79						0.92	
Incremental Delay, d2		218.7		1418.7	4.1						4.0	
Delay (s)		267.7		1459.5	36.7						25.6	
Level of Service		F		F	D						C	
Approach Delay (s)		267.7			611.7			0.0			25.6	
Approach LOS		F			F			A			C	
Intersection Summary												
HCM 2000 Control Delay		139.4			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.95										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		118.7%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

No Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Future Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		397			548			309			313	
Travel Time (s)		9.0			12.5			6.0			6.1	
Confl. Peds. (#/hr)			43	43						36		75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	0	141	103	0	0	0	0	0	3236	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.74		0.90	0.18						1.00	
Control Delay		54.6		75.0	20.7						22.4	
Queue Delay		58.6		61.6	0.0						37.7	
Total Delay		113.2		136.6	20.7						60.2	
Queue Length 50th (ft)		295		126	39						~668	
Queue Length 95th (ft)		417		m#206	m53						m569	
Internal Link Dist (ft)		317			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		486		156	558						3225	
Starvation Cap Reductn		0		0	0						455	
Spillback Cap Reductn		226		72	0						701	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		1.38		1.68	0.18						1.28	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 100

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Future Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1619		1770	1863						5018	
Flt Permitted		1.00		0.28	1.00						1.00	
Satd. Flow (perm)		1619		521	1863						5018	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	153	207	141	103	0	0	0	0	108	3068	60
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	359	0	141	103	0	0	0	0	0	3235	0
Confl. Peds. (#/hr)			43	43						36		75
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.1		40.1	40.1						88.2	
Effective Green, g (s)		42.0		42.0	42.0						90.0	
Actuated g/C Ratio		0.30		0.30	0.30						0.64	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		485		156	558						3225	
v/s Ratio Prot		0.22			0.06							
v/s Ratio Perm				0.27							0.64	
v/c Ratio		0.74		0.90	0.18						1.00	
Uniform Delay, d1		44.1		47.1	36.3						25.0	
Progression Factor		1.00		0.58	0.55						0.64	
Incremental Delay, d2		9.8		44.4	0.6						5.5	
Delay (s)		53.9		71.7	20.5						21.6	
Level of Service		D		E	C						C	
Approach Delay (s)		53.9			50.1			0.0			21.6	
Approach LOS		D			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			26.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			95.8%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

No Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Future Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		358			546			274			309	
Travel Time (s)		8.1			12.4			5.3			6.0	
Confl. Peds. (#/hr)				46								79
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	424	2459	0	0	0	0	0	2722	374
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Minimum Split (s)				25.8	25.8						26.8	26.8
Total Split (s)				73.0	73.0						67.0	67.0
Total Split (%)				52.1%	52.1%						47.9%	47.9%
Yellow Time (s)				3.7	3.7						3.7	3.7
All-Red Time (s)				2.1	2.1						2.1	2.1
Lost Time Adjust (s)				-1.8	-1.8						-1.8	-1.8
Total Lost Time (s)				4.0	4.0						4.0	4.0
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.62	1.04						1.19	0.62
Control Delay				5.6	34.4						115.1	21.5
Queue Delay				95.1	26.9						0.5	13.5
Total Delay				100.7	61.3						115.6	35.0
Queue Length 50th (ft)				39	~947						~1086	105
Queue Length 95th (ft)				m33	m377						m#1089	m109
Internal Link Dist (ft)		278			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				688	2372						2288	605
Starvation Cap Reductn				170	527						402	210
Spillback Cap Reductn				634	735						371	0
Storage Cap Reductn				0	0						0	0
Reduced v/c Ratio				7.85	1.50						1.44	0.95

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 28 (20%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 120

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

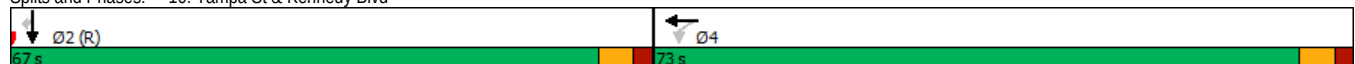
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Future Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	4.0
Lane Util. Factor				0.86	0.86						0.91	1.00
Frpb, ped/bikes				1.00	1.00						1.00	0.83
Flpb, ped/bikes				0.90	1.00						1.00	1.00
Frt				1.00	1.00						1.00	0.85
Flt Protected				0.95	1.00						1.00	1.00
Satd. Flow (prot)				1375	4792						5085	1319
Flt Permitted				0.95	1.00						1.00	1.00
Satd. Flow (perm)				1375	4792						5085	1319
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	471	2412	0	0	0	0	0	2722	374
RTOR Reduction (vph)	0	0	0	11	11	0	0	0	0	0	0	12
Lane Group Flow (vph)	0	0	0	413	2448	0	0	0	0	0	2722	362
Confl. Peds. (#/hr)				46							79	
Turn Type				Perm	NA						NA	Perm
Protected Phases					4						2	
Permitted Phases				4								2
Actuated Green, G (s)				67.2	67.2						61.2	61.2
Effective Green, g (s)				69.0	69.0						63.0	63.0
Actuated g/C Ratio				0.49	0.49						0.45	0.45
Clearance Time (s)				5.8	5.8						5.8	5.8
Lane Grp Cap (vph)				677	2361						2288	593
v/s Ratio Prot											c0.54	
v/s Ratio Perm				0.30	0.51							0.27
v/c Ratio				0.61	1.04						1.19	0.61
Uniform Delay, d1				25.7	35.5						38.5	29.2
Progression Factor				0.21	0.41						0.75	0.72
Incremental Delay, d2				0.4	18.3						86.6	1.2
Delay (s)				5.7	32.8						115.5	22.2
Level of Service				A	C						F	C
Approach Delay (s)		0.0			28.8			0.0			104.2	
Approach LOS		A			C			A			F	
Intersection Summary												
HCM 2000 Control Delay			67.9			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			95.7%			ICU Level of Service			F			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

No Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Future Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		291			260			589			274	
Travel Time (s)		6.6			5.9			11.5			5.3	
Confl. Peds. (#/hr)			106							87		
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Shared Lane Traffic (%)										10%		
Lane Group Flow (vph)	0	1711	0	0	0	0	0	0	0	751	2634	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		75.0								65.0	65.0	
Total Split (%)		53.6%								46.4%	46.4%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		-2.0								-2.0	-2.0	
Total Lost Time (s)		4.0								4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.72								1.33	1.26	
Control Delay		28.9								180.3	149.0	
Queue Delay		0.2								0.6	0.6	
Total Delay		29.1								180.9	149.6	
Queue Length 50th (ft)		431								~997	~1140	
Queue Length 95th (ft)		454								m#822	m#891	
Internal Link Dist (ft)		211			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2381								564	2091	
Starvation Cap Reductn		0								43	391	
Spillback Cap Reductn		124								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.76								1.44	1.55	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 10 (7%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 80												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 11: Tampa St & Jackson St												
 02 (R) 65 s  04 75 s												

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Future Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								0.86	0.86	
Frpb, ped/bikes		0.95								1.00	1.00	
Flpb, ped/bikes		1.00								0.83	0.99	
Frt		0.97								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4697								1257	4772	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4697								1257	4772	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	1351	360	0	0	0	0	0	0	834	2551	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	17	13	0
Lane Group Flow (vph)	0	1711	0	0	0	0	0	0	0	734	2621	0
Confl. Peds. (#/hr)			106							87		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		69.0								59.0	59.0	
Effective Green, g (s)		71.0								61.0	61.0	
Actuated g/C Ratio		0.51								0.44	0.44	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2382								547	2079	
v/s Ratio Prot		c0.36										
v/s Ratio Perm										c0.58	0.55	
v/c Ratio		0.72								1.34	1.26	
Uniform Delay, d1		26.7								39.5	39.5	
Progression Factor		1.00								0.89	0.89	
Incremental Delay, d2		1.9								155.1	117.7	
Delay (s)		28.6								190.1	152.9	
Level of Service		C								F	F	
Approach Delay (s)		28.6			0.0			0.0			161.2	
Approach LOS		C			A			A			F	
Intersection Summary												
HCM 2000 Control Delay		116.7								F		
HCM 2000 Volume to Capacity ratio		1.01										
Actuated Cycle Length (s)		140.0								8.0		
Intersection Capacity Utilization		95.7%								F		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

No Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕						↕↕↕	
Traffic Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Future Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		243			553			171			589	
Travel Time (s)		5.5			12.6			3.3			11.5	
Confl. Peds. (#/hr)			182	182						42		132
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	351	0	251	271	0	0	0	0	0	262	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.29		0.89	0.38						0.09	
Control Delay		28.4		69.7	30.3						18.6	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		28.4		69.7	30.3						18.6	
Queue Length 50th (ft)		106		214	156						38	
Queue Length 95th (ft)		144		#379	209						m32	
Internal Link Dist (ft)		163			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1227		283	705						2852	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.29		0.89	0.38						0.09	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 120 (86%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Tampa St & Whiting St



Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Future Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.93		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.84	1.00						1.00	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3193		1480	1863						5057	
Flt Permitted		1.00		0.48	1.00						0.99	
Satd. Flow (perm)		3193		749	1863						5057	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	275	76	251	271	0	0	0	0	29	233	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	333	0	251	271	0	0	0	0	0	262	0
Confl. Peds. (#/hr)			182	182						42		132
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2		2
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		53.0		53.0	53.0						79.0	
Actuated g/C Ratio		0.38		0.38	0.38						0.56	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1208		283	705						2853	
v/s Ratio Prot		0.10			0.15						c0.05	
v/s Ratio Perm				c0.34								
v/c Ratio		0.28		0.89	0.38						0.09	
Uniform Delay, d1		30.2		40.7	31.6						14.0	
Progression Factor		1.00		0.92	0.89						1.32	
Incremental Delay, d2		0.6		31.0	1.6						0.0	
Delay (s)		30.7		68.4	29.9						18.5	
Level of Service		C		E	C						B	
Approach Delay (s)		30.7			48.4			0.0			18.5	
Approach LOS		C			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			36.1			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)					8.0	
Intersection Capacity Utilization			59.0%			ICU Level of Service					B	
Analysis Period (min)			15									

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Future Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	26					26	12		7			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	585	0	0	459	0	0	1896	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.1	22.1			22.1		30.3	30.3				
Total Split (s)	57.0	57.0			57.0		83.0	83.0				
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.3	2.3				
Lost Time Adjust (s)	-2.1	-2.1			-2.1		-2.3	-2.3				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.53	0.83			0.69		0.67					
Control Delay	41.4	46.8			41.8		24.2					
Queue Delay	0.0	11.5			0.0		0.0					
Total Delay	41.4	58.3			41.8		24.2					
Queue Length 50th (ft)	60	527			339		412					
Queue Length 95th (ft)	m130	#672			469		507					
Internal Link Dist (ft)		379			809		935			162		
Turn Bay Length (ft)	100											
Base Capacity (vph)	180	705			666		2837					
Starvation Cap Reductn	0	105			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.53	0.97			0.69		0.67					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 107 (76%), Referenced to phase 6:NBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Future Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.99				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1736			5018				
Flt Permitted	0.26	1.00			1.00			1.00				
Satd. Flow (perm)	477	1863			1736			5018				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	95	585	0	0	310	149	33	1745	118	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	5	0	0	0	0
Lane Group Flow (vph)	95	585	0	0	450	0	0	1891	0	0	0	0
Confl. Peds. (#/hr)	26					26	12		7			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	50.9	50.9			50.9			76.7				
Effective Green, g (s)	53.0	53.0			53.0			79.0				
Actuated g/C Ratio	0.38	0.38			0.38			0.56				
Clearance Time (s)	6.1	6.1			6.1			6.3				
Lane Grp Cap (vph)	180	705			657			2831				
v/s Ratio Prot		c0.31			0.26							
v/s Ratio Perm	0.20							0.38				
v/c Ratio	0.53	0.83			0.68			0.67				
Uniform Delay, d1	33.8	39.4			36.5			21.3				
Progression Factor	0.90	0.94			1.00			1.09				
Incremental Delay, d2	8.8	9.2			5.7			1.0				
Delay (s)	39.4	46.1			42.2			24.2				
Level of Service	D	D			D			C				
Approach Delay (s)		45.2			42.2			24.2			0.0	
Approach LOS		D			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		31.6			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		106.9%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

No Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Future Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		183			365			1146			1015	
Travel Time (s)		4.2			8.3			22.3			19.8	
Confl. Peds. (#/hr)	7					7	14		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	105	0	0	220	0	0	1935	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	-2.4	-2.4			-2.4		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.74	0.19			0.43		0.65					
Control Delay	39.7	19.3			21.6		10.2					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	39.7	19.3			21.6		10.2					
Queue Length 50th (ft)	84	33			71		273					
Queue Length 95th (ft)	#190	68			129		m174					
Internal Link Dist (ft)		103			285		1066			935		
Turn Bay Length (ft)	50											
Base Capacity (vph)	298	558			515		2970					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.74	0.19			0.43		0.65					

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 17 (24%), Referenced to phase 6:NBTL, Start of Green

Natural Cycle: 70

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Future Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	0.99	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1759	1863			1689			5068				
Flt Permitted	0.54	1.00			1.00			1.00				
Satd. Flow (perm)	995	1863			1689			5068				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	105	0	0	87	133	41	1876	18	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	1	0	0	0	0
Lane Group Flow (vph)	220	105	0	0	211	0	0	1934	0	0	0	0
Confl. Peds. (#/hr)	7					7	14		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	21.0	21.0			21.0			41.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.59				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	298	558			506			2968				
v/s Ratio Prot		0.06			0.12							
v/s Ratio Perm	0.22							0.38				
v/c Ratio	0.74	0.19			0.42			0.65				
Uniform Delay, d1	22.0	18.2			19.6			9.7				
Progression Factor	1.00	1.00			1.00			1.04				
Incremental Delay, d2	15.1	0.7			2.5			0.1				
Delay (s)	37.1	18.9			22.1			10.2				
Level of Service	D	B			C			B				
Approach Delay (s)		31.2			22.1			10.2			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		14.0			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.68										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		69.0%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

No Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑						↑↑↑				
Traffic Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Future Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			481			701			1146	
Travel Time (s)		8.4			10.9			13.7			22.3	
Confl. Peds. (#/hr)									5			
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2306	0	0	0	0	0	3952	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		-1.7						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.70						1.45				
Control Delay		342.8						221.9				
Queue Delay		0.0						0.0				
Total Delay		342.8						221.9				
Queue Length 50th (ft)		~1628						~1786				
Queue Length 95th (ft)		#1758						m#1345				
Internal Link Dist (ft)		291			401			621		1066		
Turn Bay Length (ft)												
Base Capacity (vph)		1357						2722				
Starvation Cap Reductn		0						4				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.70						1.45				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 65 (46%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Future Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3484						4885				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3484						4885				
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	732	1574	0	0	0	0	0	3066	886	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	2292	0	0	0	0	0	3950	0	0	0	0
Confl. Peds. (#/hr)												
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		52.3						76.0				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1343						2721				
v/s Ratio Prot								c0.81				
v/s Ratio Perm		0.66										
v/c Ratio		1.71						1.45				
Uniform Delay, d1		43.0						31.0				
Progression Factor		0.73						0.37				
Incremental Delay, d2		320.8						203.5				
Delay (s)		352.3						215.1				
Level of Service		F						F				
Approach Delay (s)		352.3			0.0			215.1			0.0	
Approach LOS		F			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		265.6						HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio		1.56										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		142.0%						ICU Level of Service		H		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
16: Florida Ave & Fortune St

No Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Future Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		213			171			476			701	
Travel Time (s)		4.8			3.9			10.8			15.9	
Confl. Peds. (#/hr)	11					11	9		8			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	144	0	0	0	0	0	4041	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Minimum Split (s)	23.4	23.4					24.0	24.0				
Total Split (s)	43.0	43.0					97.0	97.0				
Total Split (%)	30.7%	30.7%					69.3%	69.3%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		-1.4						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.29						1.20				
Control Delay		41.7						101.3				
Queue Delay		0.0						0.3				
Total Delay		41.7						101.6				
Queue Length 50th (ft)		104						~1618				
Queue Length 95th (ft)		166						m117				
Internal Link Dist (ft)		133			91			396			621	
Turn Bay Length (ft)												
Base Capacity (vph)		491						3376				
Starvation Cap Reductn		0						177				
Spillback Cap Reductn		0						464				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.29						1.39				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 41 (29%), Referenced to phase 2:NBT and 6:, Start of Green
 Natural Cycle: 120
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Future Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1767						5079				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1767						5079				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	49	0	0	0	0	34	3997	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	144	0	0	0	0	0	4041	0	0	0	0
Confl. Peds. (#/hr)	11						11	9	8			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.6						91.0				
Effective Green, g (s)		39.0						93.0				
Actuated g/C Ratio		0.28						0.66				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		492						3373				
v/s Ratio Prot												
v/s Ratio Perm		0.08						0.80				
v/c Ratio		0.29						1.20				
Uniform Delay, d1		39.7						23.5				
Progression Factor		1.00						0.25				
Incremental Delay, d2		1.5						89.4				
Delay (s)		41.2						95.3				
Level of Service		D						F				
Approach Delay (s)		41.2			0.0			95.3			0.0	
Approach LOS		D			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		93.4							F			
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		92.4%							F			
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↰			↱			↰↱↰				
Traffic Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Future Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		293			280			292			476	
Travel Time (s)		6.7			6.4			6.6			9.3	
Confl. Peds. (#/hr)	5					5	10		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	133	0	0	4208	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-2.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.24			0.29			1.25				
Control Delay		41.3			41.9			125.3				
Queue Delay		0.0			0.0			0.2				
Total Delay		41.3			41.9			125.5				
Queue Length 50th (ft)		64			96			~1738				
Queue Length 95th (ft)		113			156			m#268				
Internal Link Dist (ft)		213			200			212			396	
Turn Bay Length (ft)												
Base Capacity (vph)		371			451			3372				
Starvation Cap Reductn		0			0			120				
Spillback Cap Reductn		0			0			327				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.24			0.29			1.38				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 36 (26%), Referenced to phase 2:NBT and 6:, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Future Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		0.99			1.00			1.00				
Frt		1.00			0.89			1.00				
Flt Protected		0.96			1.00			1.00				
Satd. Flow (prot)		1786			1621			5074				
Flt Permitted		0.72			1.00			1.00				
Satd. Flow (perm)		1334			1621			5074				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	23	0	0	21	112	18	4157	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	133	0	0	4207	0	0	0	0
Confl. Peds. (#/hr)	5					5	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.2			37.2			91.0				
Effective Green, g (s)		39.0			39.0			93.0				
Actuated g/C Ratio		0.28			0.28			0.66				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		371			451			3370				
v/s Ratio Prot					c0.08							
v/s Ratio Perm		0.07						0.83				
v/c Ratio		0.24			0.29			1.25				
Uniform Delay, d1		39.1			39.7			23.5				
Progression Factor		1.00			1.00			0.26				
Incremental Delay, d2		1.5			1.7			112.1				
Delay (s)		40.6			41.4			118.2				
Level of Service		D			D			F				
Approach Delay (s)		40.6			41.4			118.2			0.0	
Approach LOS		D			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		114.3			HCM 2000 Level of Service				F			
HCM 2000 Volume to Capacity ratio		0.97										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)				8.0			
Intersection Capacity Utilization		106.9%			ICU Level of Service				G			
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Future Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			573			286			292	
Travel Time (s)		13.0			13.0			5.6			5.7	
Confl. Peds. (#/hr)	16					16	3		28			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	113	0	0	449	0	101	4060	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	43.0	43.0			43.0		97.0	97.0				
Total Split (%)	30.7%	30.7%			30.7%		69.3%	69.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	3.02	0.22			0.92		0.09	1.20				
Control Delay	966.7	56.8			74.6		1.6	103.6				
Queue Delay	0.0	0.0			0.0		0.0	0.2				
Total Delay	966.7	56.8			74.6		1.6	103.8				
Queue Length 50th (ft)	~305	92			398		6	~1665				
Queue Length 95th (ft)	m#443	m143			#603		m4	m70				
Internal Link Dist (ft)		490			493			206			212	
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	63	518			487		1163	3376				
Starvation Cap Reductn	0	0			0		0	363				
Spillback Cap Reductn	0	0			0		0	292				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	3.02	0.22			0.92		0.09	1.35				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 31 (22%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 140
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

No Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Future Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.98		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.95		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1770	1863			1750		1751	5081				
Flt Permitted	0.12	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	227	1863			1750		1751	5081				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	190	113	0	0	296	153	101	4047	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	190	113	0	0	449	0	101	4060	0	0	0	0
Confl. Peds. (#/hr)	16					16	3		28			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	37.2	37.2			37.2		91.0	91.0				
Effective Green, g (s)	39.0	39.0			39.0		93.0	93.0				
Actuated g/C Ratio	0.28	0.28			0.28		0.66	0.66				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	63	518			487		1163	3375				
v/s Ratio Prot		0.06			0.26			c0.80				
v/s Ratio Perm	c0.84						0.06					
v/c Ratio	3.02	0.22			0.92		0.09	1.20				
Uniform Delay, d1	50.5	38.8			49.0		8.4	23.5				
Progression Factor	1.36	1.43			1.00		0.19	0.23				
Incremental Delay, d2	945.8	0.9			25.4		0.0	91.6				
Delay (s)	1014.7	56.2			74.4		1.6	97.0				
Level of Service	F	E			E		A	F				
Approach Delay (s)		657.2			74.4			94.7			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		127.6			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.74										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		116.5%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

No Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Future Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	70		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			550			283			286	
Travel Time (s)		12.6			12.5			5.5			5.6	
Confl. Peds. (#/hr)	5					5	3		100			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	168	463	0	0	428	0	63	4191	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)	-2.0	-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	1.60	0.83			0.80		0.06	1.30				
Control Delay	312.0	31.5			57.5		1.7	147.4				
Queue Delay	0.0	3.4			0.0		0.0	0.2				
Total Delay	312.0	34.8			57.5		1.7	147.5				
Queue Length 50th (ft)	~136	318			359		3	~1773				
Queue Length 95th (ft)	m#252	m375			#501		m2	m58				
Internal Link Dist (ft)		473			470			203			206	
Turn Bay Length (ft)	70						60					
Base Capacity (vph)	105	558			537		1125	3228				
Starvation Cap Reductn	0	42			0		0	176				
Spillback Cap Reductn	0	0			0		0	298				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	1.60	0.90			0.80		0.06	1.43				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 26 (19%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Future Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.99		1.00	0.99				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1770	1863			1790		1750	5022				
Flt Permitted	0.19	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	351	1863			1790		1750	5022				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	168	463	0	0	321	107	63	4092	99	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	168	463	0	0	428	0	63	4189	0	0	0	0
Confl. Peds. (#/hr)	5					5	3		100			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.0	40.0			40.0		88.0	88.0				
Effective Green, g (s)	42.0	42.0			42.0		90.0	90.0				
Actuated g/C Ratio	0.30	0.30			0.30		0.64	0.64				
Clearance Time (s)	6.0	6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)	105	558			537		1125	3228				
v/s Ratio Prot		0.25			0.24			c0.83				
v/s Ratio Perm	c0.48						0.04					
v/c Ratio	1.60	0.83			0.80		0.06	1.30				
Uniform Delay, d1	49.0	45.7			45.1		9.3	25.0				
Progression Factor	0.57	0.55			1.00		0.18	0.15				
Incremental Delay, d2	286.6	5.6			11.7		0.0	134.2				
Delay (s)	314.7	30.6			56.7		1.7	138.1				
Level of Service	F	C			E		A	F				
Approach Delay (s)		106.2			56.7			136.0			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		126.1			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.39										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		114.0%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Future Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			559			300			283	
Travel Time (s)		12.2			12.7			5.8			5.5	
Confl. Peds. (#/hr)	34					34	26		55			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	309	0	0	210	0	120	4330	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.82			0.43		0.12	1.33				
Control Delay		59.4			42.7		3.1	163.5				
Queue Delay		0.0			0.0		1.1	0.1				
Total Delay		59.4			42.7		4.2	163.6				
Queue Length 50th (ft)		282			154		12	~1868				
Queue Length 95th (ft)		m332			223		m13	m#1718				
Internal Link Dist (ft)		457			479			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		379			491		1043	3262				
Starvation Cap Reductn		0			0		738	0				
Spillback Cap Reductn		0			0		0	125				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		0.82			0.43		0.39	1.38				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 130

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Future Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.95		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.92	1.00				
Frt		1.00			0.92		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1812			1639		1623	5074				
Flt Permitted		0.69			1.00		0.95	1.00				
Satd. Flow (perm)		1266			1639		1623	5074				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	94	215	0	0	90	120	120	4301	29	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	309	0	0	210	0	120	4330	0	0	0	0
Confl. Peds. (#/hr)	34					34	26		55			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.2			40.2		88.0	88.0				
Effective Green, g (s)		42.0			42.0		90.0	90.0				
Actuated g/C Ratio		0.30			0.30		0.64	0.64				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		379			491		1043	3261				
v/s Ratio Prot					0.13			0.85				
v/s Ratio Perm		0.24					0.07					
v/c Ratio		0.82			0.43		0.12	1.33				
Uniform Delay, d1		45.4			39.3		9.6	25.0				
Progression Factor		1.00			1.00		0.32	0.34				
Incremental Delay, d2		13.3			2.7		0.0	147.7				
Delay (s)		58.6			42.1		3.1	156.2				
Level of Service		E			D		A	F				
Approach Delay (s)		58.6			42.1			152.1			0.0	
Approach LOS		E			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		141.6							F			
HCM 2000 Volume to Capacity ratio		1.16										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		113.9%							H			
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

No Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Future Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			576			283			300	
Travel Time (s)		12.3			13.1			5.5			5.8	
Confl. Peds. (#/hr)	36					36	9		22			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	440	0	0	297	0	0	4074	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.95			0.61			0.99				
Control Delay		464.8			48.3			15.0				
Queue Delay		0.0			0.0			40.5				
Total Delay		464.8			48.3			55.4				
Queue Length 50th (ft)		~626			232			488				
Queue Length 95th (ft)		m#809			336			m552				
Internal Link Dist (ft)		459			496			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		226			488			4106				
Starvation Cap Reductn		0			0			376				
Spillback Cap Reductn		0			0			455				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		1.95			0.61			1.12				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 140

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Future Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.86				
Frpb, ped/bikes		1.00			0.95			1.00				
Flpb, ped/bikes		0.98			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1774			1627			6388				
Flt Permitted		0.41			1.00			1.00				
Satd. Flow (perm)		755			1627			6388				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	171	0	0	119	178	62	3983	29	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	440	0	0	297	0	0	4073	0	0	0	0
Confl. Peds. (#/hr)	36					36	9		22			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.1			40.1			88.3				
Effective Green, g (s)		42.0			42.0			90.0				
Actuated g/C Ratio		0.30			0.30			0.64				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		226			488			4106				
v/s Ratio Prot					0.18							
v/s Ratio Perm		0.58						0.64				
v/c Ratio		1.95			0.61			0.99				
Uniform Delay, d1		49.0			42.0			24.6				
Progression Factor		0.73			1.00			0.33				
Incremental Delay, d2		440.4			5.6			5.8				
Delay (s)		476.1			47.5			13.9				
Level of Service		F			D			B				
Approach Delay (s)		476.1			47.5			13.9			0.0	
Approach LOS		F			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		58.2			HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio		1.29										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		107.1%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
22: Florida Ave & Twiggs St

No Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Future Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			597			298			283	
Travel Time (s)		12.3			13.6			5.8			5.5	
Confl. Peds. (#/hr)	15					15	9		30			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	780	0	0	193	335	0	4075	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	46.0	46.0			46.0	46.0	94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%	32.9%	67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.99			0.35	0.71		0.99				
Control Delay		70.1			40.4	50.0		14.3				
Queue Delay		0.0			0.0	0.0		39.9				
Total Delay		70.1			40.4	50.0		54.2				
Queue Length 50th (ft)		362			138	255		80				
Queue Length 95th (ft)		m291			209	373		m79				
Internal Link Dist (ft)		463			517			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		785			558	472		4096				
Starvation Cap Reductn		0			0	0		375				
Spillback Cap Reductn		0			0	1		419				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.99			0.35	0.71		1.11				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 110

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Future Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.86				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		1.00				
Flt Protected		0.99			1.00	1.00		1.00				
Satd. Flow (prot)		3486			1863	1520		6366				
Flt Permitted		0.74			1.00	1.00		1.00				
Satd. Flow (perm)		2617			1863	1520		6366				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	175	605	0	0	193	335	40	3932	103	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	16	0	3	0	0	0	0
Lane Group Flow (vph)	0	780	0	0	193	319	0	4073	0	0	0	0
Confl. Peds. (#/hr)	15					15	9		30			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		40.1			40.1	40.1		88.0				
Effective Green, g (s)		42.0			42.0	42.0		90.0				
Actuated g/C Ratio		0.30			0.30	0.30		0.64				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		785			558	456		4092				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.30				0.21		0.64				
v/c Ratio		0.99			0.35	0.70		1.00				
Uniform Delay, d1		48.9			38.3	43.4		24.8				
Progression Factor		1.30			1.00	1.00		0.29				
Incremental Delay, d2		8.3			1.7	8.6		5.9				
Delay (s)		71.6			40.0	52.0		13.2				
Level of Service		E			D	D		B				
Approach Delay (s)		71.6			47.6			13.2			0.0	
Approach LOS		E			D			B			A	
Intersection Summary												
HCM 2000 Control Delay		25.1				HCM 2000 Level of Service		C				
HCM 2000 Volume to Capacity ratio		0.99										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		108.3%				ICU Level of Service		G				
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Future Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			607			314			298	
Travel Time (s)		12.5			13.8			6.1			5.8	
Confl. Peds. (#/hr)	45					45	21		9			
Peak Hour Factor	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	149	0	0	350	0	0	4163	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	-1.9	-1.9			-1.9		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.54	0.27			0.73		1.01					
Control Delay	48.8	38.0			54.2		45.7					
Queue Delay	0.0	0.0			0.0		25.3					
Total Delay	48.8	38.0			54.2		71.0					
Queue Length 50th (ft)	51	84			286		~1161					
Queue Length 95th (ft)	m72	m117			407		m1059					
Internal Link Dist (ft)		468			527		234			218		
Turn Bay Length (ft)	75											
Base Capacity (vph)	159	558			479		4106					
Starvation Cap Reductn	0	0			0		243					
Spillback Cap Reductn	0	0			0		86					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.54	0.27			0.73		1.08					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 3 (2%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Future Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.86				
Frbp, ped/bikes	1.00	1.00			0.94			1.00				
Flpb, ped/bikes	0.97	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1718	1863			1599			6389				
Flt Permitted	0.29	1.00			1.00			1.00				
Satd. Flow (perm)	530	1863			1599			6389				
Peak-hour factor, PHF	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	86	149	0	0	128	222	45	4084	34	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	86	149	0	0	350	0	0	4162	0	0	0	0
Confl. Peds. (#/hr)	45					45	21		9			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	40.1	40.1			40.1			88.0				
Effective Green, g (s)	42.0	42.0			42.0			90.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.64				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	159	558			479			4107				
v/s Ratio Prot		0.08			0.22							
v/s Ratio Perm	0.16							0.65				
v/c Ratio	0.54	0.27			0.73			1.01				
Uniform Delay, d1	40.9	37.3			43.9			25.0				
Progression Factor	0.98	0.99			1.00			1.16				
Incremental Delay, d2	6.4	0.6			9.5			17.0				
Delay (s)	46.6	37.6			53.4			45.9				
Level of Service	D	D			D			D				
Approach Delay (s)		40.9			53.4			45.9			0.0	
Approach LOS		D			D			D			A	
Intersection Summary												
HCM 2000 Control Delay		46.2			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.92										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		95.8%			ICU Level of Service			F				
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↖	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Future Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			580			259			314	
Travel Time (s)		12.4			13.2			5.0			6.1	
Confl. Peds. (#/hr)						42	22					
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3097	0	200	1414	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					58.0		82.0	82.0				
Total Split (%)					41.4%		58.6%	58.6%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					-1.7		-1.8	-1.8				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					1.32		0.21	0.50				
Control Delay					181.7		3.4	6.0				
Queue Delay					0.6		0.9	0.3				
Total Delay					182.3		4.3	6.3				
Queue Length 50th (ft)					~1055		15	61				
Queue Length 95th (ft)					#1115		m23	74				
Internal Link Dist (ft)		466			500			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					2349		951	2833				
Starvation Cap Reductn					0		520	706				
Spillback Cap Reductn					469		1	661				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					1.65		0.46	0.66				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 139 (99%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 65

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Florida Ave & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↘	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Future Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6033		1692	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6033		1692	5085				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2334	763	200	1414	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	22	0	9	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3075	0	191	1414	0	0	0	0
Confl. Peds. (#/hr)					42		22					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					52.3		76.2	76.2				
Effective Green, g (s)					54.0		78.0	78.0				
Actuated g/C Ratio					0.39		0.56	0.56				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					2327		942	2833				
v/s Ratio Prot					c0.51			c0.28				
v/s Ratio Perm							0.11					
v/c Ratio					1.32		0.20	0.50				
Uniform Delay, d1					43.0		15.5	19.0				
Progression Factor					1.00		0.22	0.29				
Incremental Delay, d2					147.7		0.4	0.5				
Delay (s)					190.7		3.7	6.0				
Level of Service					F		A	A				
Approach Delay (s)		0.0			190.7			5.7			0.0	
Approach LOS		A			F			A			A	
Intersection Summary												
HCM 2000 Control Delay		127.3			HCM 2000 Level of Service				F			
HCM 2000 Volume to Capacity ratio		0.84										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)				8.0			
Intersection Capacity Utilization		95.7%			ICU Level of Service				F			
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Future Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		283			526			595			259	
Travel Time (s)		6.4			12.0			11.6			5.0	
Confl. Peds. (#/hr)	53								36			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1672	0	0	0	0	0	1742	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	27.9	27.9						26.9				
Total Split (s)	58.0	58.0						82.0				
Total Split (%)	41.4%	41.4%						58.6%				
Yellow Time (s)	3.7	3.7						3.7				
All-Red Time (s)	2.2	2.2						2.2				
Lost Time Adjust (s)		-1.9						-1.9				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.86						0.63				
Control Delay		29.0						29.2				
Queue Delay		6.3						1.2				
Total Delay		35.3						30.4				
Queue Length 50th (ft)		384						461				
Queue Length 95th (ft)		m376						501				
Internal Link Dist (ft)		203			446			515			179	
Turn Bay Length (ft)												
Base Capacity (vph)		1935						2779				
Starvation Cap Reductn		227						737				
Spillback Cap Reductn		0						49				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.98						0.85				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 133 (95%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 55

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Florida Ave & Jackson St



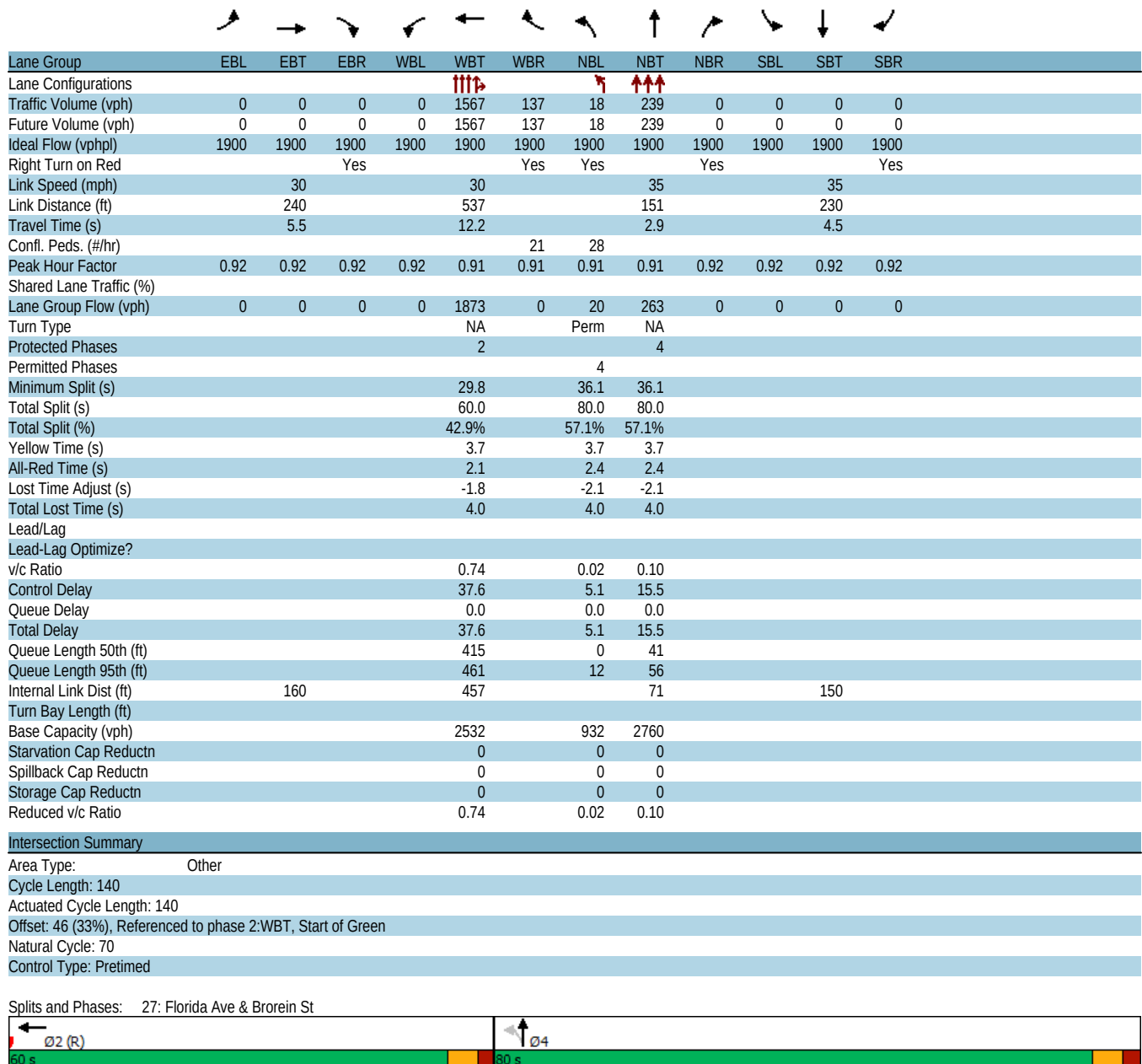
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Future Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		0.99						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4985						4985				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4985						4985				
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	220	1452	0	0	0	0	0	1594	148	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	1658	0	0	0	0	0	1739	0	0	0	0
Confl. Peds. (#/hr)	53								36			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1922						2777				
v/s Ratio Prot								0.35				
v/s Ratio Perm		0.33										
v/c Ratio		0.86						0.63				
Uniform Delay, d1		39.6						21.1				
Progression Factor		0.69						1.33				
Incremental Delay, d2		1.9						1.1				
Delay (s)		29.2						29.1				
Level of Service		C						C				
Approach Delay (s)		29.2			0.0			29.1			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		29.1										C
HCM 2000 Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		140.0							8.0			
Intersection Capacity Utilization		77.7%										D
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Future Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			557			397			595	
Travel Time (s)		12.6			12.7			7.7			11.6	
Confl. Peds. (#/hr)	106					106	71		94			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	498	0	0	337	0	0	263	14	0	0	0
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Minimum Split (s)	29.0	29.0			29.0		26.7	26.7	26.7			
Total Split (s)	57.0	57.0			57.0		83.0	83.0	83.0			
Total Split (%)	40.7%	40.7%			40.7%		59.3%	59.3%	59.3%			
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7	3.7			
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0	2.0			
Lost Time Adjust (s)		-1.8			-1.8		-1.7	-1.7				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.61			0.28			0.09	0.02			
Control Delay		25.0			14.1			15.6	3.6			
Queue Delay		0.0			0.0			0.0	0.0			
Total Delay		25.0			14.1			15.6	3.6			
Queue Length 50th (ft)		100			48			33	0			
Queue Length 95th (ft)		260			85			m46	m3			
Internal Link Dist (ft)		473			477			317		515		
Turn Bay Length (ft)									50			
Base Capacity (vph)		813			1210			2843	727			
Starvation Cap Reductn		0			0			0	0			
Spillback Cap Reductn		0			2			115	0			
Storage Cap Reductn		0			0			0	0			
Reduced v/c Ratio		0.61			0.28			0.10	0.02			
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 120 (86%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 26: Florida Ave & Whiting St												
83 s									57 s			

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Future Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0	4.0			
Lane Util. Factor		0.95			0.95			0.91	1.00			
Frpb, ped/bikes		1.00			0.89			1.00	0.80			
Flpb, ped/bikes		0.95			1.00			0.99	1.00			
Frt		1.00			0.92			1.00	0.85			
Flt Protected		0.98			1.00			1.00	1.00			
Satd. Flow (prot)		3271			2902			5041	1273			
Flt Permitted		0.64			1.00			1.00	1.00			
Satd. Flow (perm)		2147			2902			5041	1273			
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	247	251	0	0	156	181	8	255	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	112	0	0	0	6	0	0	0
Lane Group Flow (vph)	0	498	0	0	225	0	0	263	8	0	0	0
Confl. Peds. (#/hr)	106					106	71		94			
Turn Type	Perm	NA			NA		Perm	NA	Perm			
Protected Phases		4			4			2				
Permitted Phases	4						2		2			
Actuated Green, G (s)		51.2			51.2			77.3	77.3			
Effective Green, g (s)		53.0			53.0			79.0	79.0			
Actuated g/C Ratio		0.38			0.38			0.56	0.56			
Clearance Time (s)		5.8			5.8			5.7	5.7			
Lane Grp Cap (vph)		812			1098			2844	718			
v/s Ratio Prot					0.08							
v/s Ratio Perm		0.23						0.05	0.01			
v/c Ratio		0.61			0.20			0.09	0.01			
Uniform Delay, d1		35.2			29.3			14.0	13.4			
Progression Factor		0.61			1.00			1.11	1.17			
Incremental Delay, d2		3.4			0.4			0.1	0.0			
Delay (s)		24.8			29.7			15.6	15.7			
Level of Service		C			C			B	B			
Approach Delay (s)		24.8			29.7			15.6			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		24.0			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.30										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		59.8%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0
Future Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6306		1700	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6306		1700	5085				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1722	151	20	263	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	9	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1863	0	11	263	0	0	0	0
Confl. Peds. (#/hr)					21		28					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					56.0		76.0	76.0				
Actuated g/C Ratio					0.40		0.54	0.54				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2522		922	2760				
v/s Ratio Prot					c0.30			c0.05				
v/s Ratio Perm							0.01					
v/c Ratio					0.74		0.01	0.10				
Uniform Delay, d1					35.8		14.7	15.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					2.0		0.0	0.1				
Delay (s)					37.8		14.7	15.5				
Level of Service					D		B	B				
Approach Delay (s)		0.0			37.8			15.4			0.0	
Approach LOS		A			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			34.8		HCM 2000 Level of Service						C	
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)						8.0	
Intersection Capacity Utilization			40.2%		ICU Level of Service						A	
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	365	0	0	1036	126
Future Volume (vph)	0	365	0	0	1036	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			1
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	397	0	0	1126	137
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1657	0	0	1254	0
Future Volume (vph)	0	1657	0	0	1254	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1801	0	0	1363	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						  
Traffic Volume (vph)	0	0	0	0	900	0
Future Volume (vph)	0	0	0	0	900	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	147		294			171
Travel Time (s)	3.3		6.7			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	978	0
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  			
Traffic Volume (vph)	0	333	1081	0	0	0
Future Volume (vph)	0	333	1081	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	531		103			170
Travel Time (s)	12.1		2.3			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	362	1175	0	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Build 2040 AM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2040
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑						↑↑↑	
Traffic Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Future Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			311	
Travel Time (s)		14.9			10.4			37.4			6.1	
Confl. Peds. (#/hr)			3	3						2		2
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	299	176	337	365	0	0	0	0	0	2128	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		25.3	25.3	27.0	27.0					31.4	31.4	
Total Split (s)		62.0	62.0	62.0	62.0					78.0	78.0	
Total Split (%)		44.3%	44.3%	44.3%	44.3%					55.7%	55.7%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		0.5	0.5	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		-0.3	-0.3	-2.0	-2.0						-2.4	
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.39	0.27	0.96	0.47						0.80	
Control Delay		30.5	24.1	56.2	20.2						29.9	
Queue Delay		0.1	0.0	0.0	1.5						0.0	
Total Delay		30.6	24.1	56.2	21.7						29.9	
Queue Length 50th (ft)		188	88	170	128						563	
Queue Length 95th (ft)		268	145	m#384	m154						627	
Internal Link Dist (ft)		576			379			1841			231	
Turn Bay Length (ft)				150								
Base Capacity (vph)		771	659	350	771						2653	
Starvation Cap Reductn		0	0	0	235						0	
Spillback Cap Reductn		52	0	0	0						0	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.42	0.27	0.96	0.68						0.80	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 130 (93%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Future Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						1.00	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1555	1765	1863						5015	
Flt Permitted		1.00	1.00	0.45	1.00						0.99	
Satd. Flow (perm)		1863	1555	845	1863						5015	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	299	176	337	365	0	0	0	0	345	1724	59
RTOR Reduction (vph)	0	0	15	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	299	161	337	365	0	0	0	0	0	2126	0
Confl. Peds. (#/hr)			3	3						2		2
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		57.7	57.7	56.0	56.0						71.6	
Effective Green, g (s)		58.0	58.0	58.0	58.0						74.0	
Actuated g/C Ratio		0.41	0.41	0.41	0.41						0.53	
Clearance Time (s)		4.3	4.3	6.0	6.0						6.4	
Lane Grp Cap (vph)		771	644	350	771						2650	
v/s Ratio Prot		0.16			0.20							
v/s Ratio Perm			0.10	0.40							0.42	
v/c Ratio		0.39	0.25	0.96	0.47						0.80	
Uniform Delay, d1		28.6	26.8	40.0	29.9						27.0	
Progression Factor		1.00	1.00	0.58	0.62						1.00	
Incremental Delay, d2		1.5	0.9	30.8	1.4						2.7	
Delay (s)		30.1	27.7	53.8	19.9						29.7	
Level of Service		C	C	D	B						C	
Approach Delay (s)		29.2			36.2			0.0			29.7	
Approach LOS		C			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			31.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.87									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			89.7%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Build 2040
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Future Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		360			350			247			1921	
Travel Time (s)		8.2			8.0			4.8			37.4	
Confl. Peds. (#/hr)				1								1
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)				11%								
Lane Group Flow (vph)	0	0	0	16	2593	0	0	0	0	0	2038	0
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Minimum Split (s)				26.7	26.7						31.0	
Total Split (s)				76.0	76.0						64.0	
Total Split (%)				54.3%	54.3%						45.7%	
Yellow Time (s)				3.7	3.7						4.0	
All-Red Time (s)				2.0	2.0						2.0	
Lost Time Adjust (s)				-1.7	-1.7						-2.0	
Total Lost Time (s)				4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.02	1.48						0.98	
Control Delay				4.3	246.9						39.2	
Queue Delay				0.0	0.0						40.7	
Total Delay				4.3	246.9						79.8	
Queue Length 50th (ft)				0	~1787						684	
Queue Length 95th (ft)				9	#1917						m#787	
Internal Link Dist (ft)		280			270			167			1841	
Turn Bay Length (ft)												
Base Capacity (vph)				839	1754						2073	
Starvation Cap Reductn				0	0						0	
Spillback Cap Reductn				1	0						373	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.02	1.48						1.20	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 38 (27%), Referenced to phase 2:SBT, Start of Green												
Natural Cycle: 140												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 2: Tampa St & Kay St												
												

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Future Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						0.91	
Frpb, ped/bikes				1.00	1.00						1.00	
Flpb, ped/bikes				1.00	1.00						1.00	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1610	3390						4836	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1610	3390						4836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	18	2591	0	0	0	0	0	1426	612
RTOR Reduction (vph)	0	0	0	8	11	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	0	0	8	2582	0	0	0	0	0	2037	0
Confl. Peds. (#/hr)				1								1
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Actuated Green, G (s)				70.3	70.3						58.0	
Effective Green, g (s)				72.0	72.0						60.0	
Actuated g/C Ratio				0.51	0.51						0.43	
Clearance Time (s)				5.7	5.7						6.0	
Lane Grp Cap (vph)				828	1743						2072	
v/s Ratio Prot				0.01	c0.76						c0.42	
v/s Ratio Perm												
v/c Ratio				0.01	1.48						0.98	
Uniform Delay, d1				16.6	34.0						39.5	
Progression Factor				1.00	1.00						0.68	
Incremental Delay, d2				0.0	219.7						11.8	
Delay (s)				16.6	253.7						38.6	
Level of Service				B	F						D	
Approach Delay (s)		0.0			252.2			0.0			38.6	
Approach LOS		A			F			A			D	
Intersection Summary												
HCM 2000 Control Delay			158.6			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			96.0%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

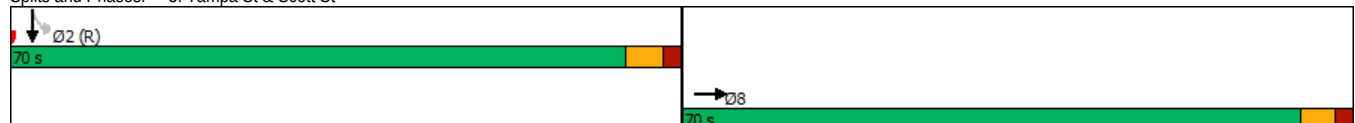
Build 2040
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑↑	
Traffic Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Future Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		386			62			346			247	
Travel Time (s)		8.8			1.4			6.7			4.8	
Confl. Peds. (#/hr)										3		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1317	0	0	0	0	0	0	0	0	1249	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		-1.7									-2.0	
Total Lost Time (s)		4.0									4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.80									0.52	
Control Delay		35.6									8.3	
Queue Delay		49.7									49.7	
Total Delay		85.4									58.0	
Queue Length 50th (ft)		520									235	
Queue Length 95th (ft)		617									m234	
Internal Link Dist (ft)		306			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1647									2392	
Starvation Cap Reductn		0									1312	
Spillback Cap Reductn		776									140	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		1.51									1.16	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 62 (44%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Future Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3478									5028	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3478									5028	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	1166	151	0	0	0	0	0	0	239	1010	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	21	0
Lane Group Flow (vph)	0	1310	0	0	0	0	0	0	0	0	1228	0
Confl. Peds. (#/hr)											3	
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		64.3									64.0	
Effective Green, g (s)		66.0									66.0	
Actuated g/C Ratio		0.47									0.47	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1639									2370	
v/s Ratio Prot		c0.38										
v/s Ratio Perm											0.24	
v/c Ratio		0.80									0.52	
Uniform Delay, d1		31.4									25.9	
Progression Factor		1.00									0.32	
Incremental Delay, d2		4.2									0.2	
Delay (s)		35.5									8.5	
Level of Service		D									A	
Approach Delay (s)		35.5			0.0			0.0			8.5	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		22.4				HCM 2000 Level of Service		C				
HCM 2000 Volume to Capacity ratio		0.66										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		63.7%				ICU Level of Service		B				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2040
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Future Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			5.9			2.5	
Confl. Peds. (#/hr)			9	9						73		35
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	310	0	124	335	0	0	0	0	0	3199	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					102.8	102.8	
Total Split (s)		39.0		39.0	39.0					101.0	101.0	
Total Split (%)		27.9%		27.9%	27.9%					72.1%	72.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.75		0.96	0.72						0.92	
Control Delay		60.9		100.7	43.3						20.5	
Queue Delay		59.6		52.7	0.0						20.5	
Total Delay		120.5		153.4	43.3						41.0	
Queue Length 50th (ft)		261		120	322						654	
Queue Length 95th (ft)		375		m#182	m392						740	
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		412		129	465						3479	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		184		57	0						406	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		1.36		1.72	0.72						1.04	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 140

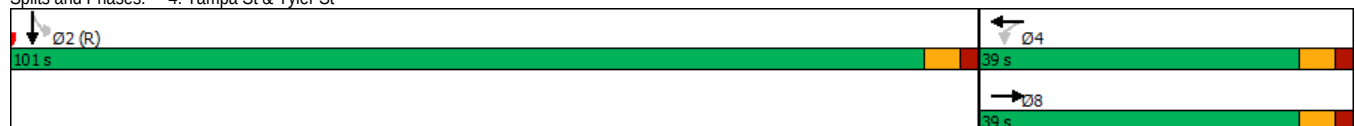
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Future Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.99	1.00						1.00	
Frt		0.90		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1646		1758	1863						5020	
Flt Permitted		1.00		0.28	1.00						1.00	
Satd. Flow (perm)		1646		518	1863						5020	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	88	222	124	335	0	0	0	0	34	3055	110
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	309	0	124	335	0	0	0	0	0	3196	0
Confl. Peds. (#/hr)			9	9						73		35
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		33.2		33.2	33.2						95.2	
Effective Green, g (s)		35.0		35.0	35.0						97.0	
Actuated g/C Ratio		0.25		0.25	0.25						0.69	
Clearance Time (s)		5.8		5.8	5.8						5.8	
Lane Grp Cap (vph)		411		129	465						3478	
v/s Ratio Prot		0.19			0.18							
v/s Ratio Perm				0.24							0.64	
v/c Ratio		0.75		0.96	0.72						0.92	
Uniform Delay, d1		48.5		51.8	48.0						18.2	
Progression Factor		1.00		0.75	0.74						0.82	
Incremental Delay, d2		11.9		59.4	7.1						5.1	
Delay (s)		60.4		98.3	42.8						20.1	
Level of Service		E		F	D						C	
Approach Delay (s)		60.4			57.8			0.0			20.1	
Approach LOS		E			E			A			C	
Intersection Summary												
HCM 2000 Control Delay			27.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.93									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			115.2%			ICU Level of Service			H			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2040
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Future Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		322			553			286			301	
Travel Time (s)		7.3			12.6			5.6			5.9	
Confl. Peds. (#/hr)			12	12						87		29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	625	0	66	355	0	0	0	0	0	3164	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		47.0		47.0	47.0					93.0	93.0	
Total Split (%)		33.6%		33.6%	33.6%					66.4%	66.4%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.15		1.25	0.62						0.99	
Control Delay		130.0		226.9	24.5						25.2	
Queue Delay		10.8		40.5	0.4						39.9	
Total Delay		140.8		267.5	25.0						65.2	
Queue Length 50th (ft)		~668		~47	160						932	
Queue Length 95th (ft)		#910		m#122	236						#1152	
Internal Link Dist (ft)		242			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		544		53	572						3186	
Starvation Cap Reductn		0		0	38						282	
Spillback Cap Reductn		337		32	0						645	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		3.02		3.14	0.66						1.25	
Intersection Summary												
Area Type: Other												
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 31 (22%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 110												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 5: Tampa St & Cass St												
												

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Future Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1771		1770	1863						5011	
Flt Permitted		1.00		0.09	1.00						1.00	
Satd. Flow (perm)		1771		173	1863						5011	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	445	180	66	355	0	0	0	0	103	3032	29
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	624	0	66	355	0	0	0	0	0	3163	0
Confl. Peds. (#/hr)			12	12						87		29
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		41.3		41.3	41.3						87.3	
Effective Green, g (s)		43.0		43.0	43.0						89.0	
Actuated g/C Ratio		0.31		0.31	0.31						0.64	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		543		53	572						3185	
v/s Ratio Prot		0.35			0.19							
v/s Ratio Perm				0.38							0.63	
v/c Ratio		1.15		1.25	0.62						0.99	
Uniform Delay, d1		48.5		48.5	41.5						25.2	
Progression Factor		1.00		0.54	0.48						0.63	
Incremental Delay, d2		87.1		196.9	4.5						8.6	
Delay (s)		135.6		223.1	24.2						24.6	
Level of Service		F		F	C						C	
Approach Delay (s)		135.6			55.4			0.0			24.6	
Approach LOS		F			E			A			C	
Intersection Summary												
HCM 2000 Control Delay		44.1			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		1.07										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		106.8%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Future Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			5.9			5.6	
Confl. Peds. (#/hr)			39	39						185		66
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	192	0	0	284	0	0	0	0	0	3065	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		46.0		46.0	46.0					94.0	94.0	
Total Split (%)		32.9%		32.9%	32.9%					67.1%	67.1%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		-1.8			-1.8						-1.9	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.37			0.54						0.95	
Control Delay		40.9			63.1						20.8	
Queue Delay		0.0			0.0						44.4	
Total Delay		40.9			63.1						65.2	
Queue Length 50th (ft)		137			243						491	
Queue Length 95th (ft)		210			344						m493	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		519			525						3217	
Starvation Cap Reductn		0			0						847	
Spillback Cap Reductn		0			0						165	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.37			0.54						1.29	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 139 (99%), Referenced to phase 2:SBTL, Start of Green
 Natural Cycle: 80
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Future Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.97			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.96			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1731			1841						5004	
Flt Permitted		1.00			0.95						1.00	
Satd. Flow (perm)		1731			1750						5004	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	131	61	33	251	0	0	0	0	75	2973	17
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	191	0	0	284	0	0	0	0	0	3065	0
Confl. Peds. (#/hr)			39	39						185		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.2			40.2						88.1	
Effective Green, g (s)		42.0			42.0						90.0	
Actuated g/C Ratio		0.30			0.30						0.64	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		519			525						3216	
v/s Ratio Prot		0.11										
v/s Ratio Perm					0.16						0.61	
v/c Ratio		0.37			0.54						0.95	
Uniform Delay, d1		38.6			40.9						23.0	
Progression Factor		1.00			1.42						0.84	
Incremental Delay, d2		2.0			3.9						1.0	
Delay (s)		40.6			62.2						20.4	
Level of Service		D			E						C	
Approach Delay (s)		40.6			62.2			0.0			20.4	
Approach LOS		D			E			A			C	
Intersection Summary												
HCM 2000 Control Delay			24.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			97.3%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2040
Timing Plan: AM PEAK

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↖						↖↗↘	
Traffic Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Future Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		344			539			272			302	
Travel Time (s)		7.8			12.3			5.3			5.9	
Confl. Peds. (#/hr)			8	8						38		24
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	444	0	0	300	0	0	0	0	0	3098	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		48.0		48.0	48.0					92.0	92.0	
Total Split (%)		34.3%		34.3%	34.3%					65.7%	65.7%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7			-1.7						-1.7	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.81			1.38						0.98	
Control Delay		56.6			210.9						11.8	
Queue Delay		0.0			0.0						15.9	
Total Delay		56.6			210.9						27.7	
Queue Length 50th (ft)		371			~356						69	
Queue Length 95th (ft)		#521			m#338						#86	
Internal Link Dist (ft)		264			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		551			217						3171	
Starvation Cap Reductn		0			0						80	
Spillback Cap Reductn		0			0						184	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.81			1.38						1.04	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Future Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.99			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1751			1839						5043	
Flt Permitted		1.00			0.37						1.00	
Satd. Flow (perm)		1751			692						5043	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	280	164	77	223	0	0	0	0	129	2959	10
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	443	0	0	300	0	0	0	0	0	3098	0
Confl. Peds. (#/hr)			8	8						38		24
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		42.3			42.3						86.3	
Effective Green, g (s)		44.0			44.0						88.0	
Actuated g/C Ratio		0.31			0.31						0.63	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		550			217						3169	
v/s Ratio Prot		0.25										
v/s Ratio Perm					0.43						0.61	
v/c Ratio		0.81			1.38						0.98	
Uniform Delay, d1		44.1			48.0						25.0	
Progression Factor		1.00			0.96						0.20	
Incremental Delay, d2		12.0			174.8						5.8	
Delay (s)		56.0			221.0						10.7	
Level of Service		E			F						B	
Approach Delay (s)		56.0			221.0			0.0			10.7	
Approach LOS		E			F			A			B	
Intersection Summary												
HCM 2000 Control Delay			32.4			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			105.0%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2040
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Future Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		258			543			313			272	
Travel Time (s)		5.9			12.3			6.1			5.3	
Confl. Peds. (#/hr)			30	30						30		54
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	526	0	141	639	0	0	0	0	0	3064	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		51.0		51.0	51.0					89.0	89.0	
Total Split (%)		36.4%		36.4%	36.4%					63.6%	63.6%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.90		1.81	1.02						1.00	
Control Delay		63.6		432.0	73.7						17.9	
Queue Delay		0.0		0.0	1.0						35.2	
Total Delay		63.6		432.0	74.6						53.1	
Queue Length 50th (ft)		454		~194	~622						115	
Queue Length 95th (ft)		#666		m#309	m#780						m#251	
Internal Link Dist (ft)		178			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		586		78	625						3069	
Starvation Cap Reductn		0		0	2						218	
Spillback Cap Reductn		0		0	0						264	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.90		1.81	1.03						1.09	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 9 (6%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 120												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 8: Tampa St & Twiggs St												
												

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Future Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1745		1770	1863						5050	
Flt Permitted		1.00		0.13	1.00						1.00	
Satd. Flow (perm)		1745		234	1863						5050	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	364	162	141	639	0	0	0	0	76	2939	49
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	525	0	141	639	0	0	0	0	0	3063	0
Confl. Peds. (#/hr)			30	30						30		54
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		45.3		45.3	45.3						83.1	
Effective Green, g (s)		47.0		47.0	47.0						85.0	
Actuated g/C Ratio		0.34		0.34	0.34						0.61	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		585		78	625						3066	
v/s Ratio Prot		0.30			0.34							
v/s Ratio Perm				0.60							0.61	
v/c Ratio		0.90		1.81	1.02						1.00	
Uniform Delay, d1		44.2		46.5	46.5						27.5	
Progression Factor		1.00		0.69	0.69						0.31	
Incremental Delay, d2		19.1		407.3	40.9						8.2	
Delay (s)		63.3		439.3	72.7						16.7	
Level of Service		E		F	E						B	
Approach Delay (s)		63.3			139.0			0.0			16.7	
Approach LOS		E			F			A			B	
Intersection Summary												
HCM 2000 Control Delay			44.2			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.28									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			103.3%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2040
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Future Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		311			548			309			313	
Travel Time (s)		7.1			12.5			6.0			6.1	
Confl. Peds. (#/hr)			53	53						29		66
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	339	0	194	35	0	0	0	0	0	3034	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		50.0		50.0	50.0					90.0	90.0	
Total Split (%)		35.7%		35.7%	35.7%					64.3%	64.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.65		0.97	0.06						0.98	
Control Delay		47.2		79.8	25.1						9.8	
Queue Delay		1.2		35.5	0.0						42.2	
Total Delay		48.4		115.4	25.1						52.0	
Queue Length 50th (ft)		263		182	17						317	
Queue Length 95th (ft)		377		m#242	m23						m274	
Internal Link Dist (ft)		231			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		518		200	612						3100	
Starvation Cap Reductn		0		0	0						271	
Spillback Cap Reductn		57		22	0						781	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.74		1.09	0.06						1.31	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 15 (11%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 100

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Future Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.92		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.96	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1575		1701	1863						5048	
Flt Permitted		1.00		0.34	1.00						1.00	
Satd. Flow (perm)		1575		611	1863						5048	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	126	212	194	35	0	0	0	0	92	2919	23
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	338	0	194	35	0	0	0	0	0	3034	0
Confl. Peds. (#/hr)			53	53						29		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		44.1		44.1	44.1						84.2	
Effective Green, g (s)		46.0		46.0	46.0						86.0	
Actuated g/C Ratio		0.33		0.33	0.33						0.61	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		517		200	612						3100	
v/s Ratio Prot		0.21			0.02							
v/s Ratio Perm				0.32							0.60	
v/c Ratio		0.65		0.97	0.06						0.98	
Uniform Delay, d1		40.2		46.3	32.2						26.1	
Progression Factor		1.00		0.76	0.77						0.26	
Incremental Delay, d2		6.3		42.8	0.1						2.0	
Delay (s)		46.5		77.9	24.8						8.6	
Level of Service		D		E	C						A	
Approach Delay (s)		46.5			69.8			0.0			8.6	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			16.1			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			111.8%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Build 2040
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Future Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		314			546			274			309	
Travel Time (s)		7.1			12.4			5.3			6.0	
Confl. Peds. (#/hr)				26								42
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	382	2531	0	0	0	0	0	3130	0
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Minimum Split (s)				25.8	25.8						26.8	
Total Split (s)				63.0	63.0						77.0	
Total Split (%)				45.0%	45.0%						55.0%	
Yellow Time (s)				3.7	3.7						3.7	
All-Red Time (s)				2.1	2.1						2.1	
Lost Time Adjust (s)				-1.8	-1.8						-1.8	
Total Lost Time (s)				4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.62	1.24						1.23	
Control Delay				17.1	138.3						124.3	
Queue Delay				88.6	1.1						0.5	
Total Delay				105.7	139.4						124.8	
Queue Length 50th (ft)				247	~1124						~1276	
Queue Length 95th (ft)				m279	#1215						m#1327	
Internal Link Dist (ft)		234			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				619	2034						2552	
Starvation Cap Reductn				116	322						124	
Spillback Cap Reductn				553	613						502	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				5.79	1.78						1.53	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 23 (16%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 140

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  						  	
Traffic Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Future Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.86	0.86						0.91	
Frpb, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				0.95	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1439	4798						4893	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1439	4798						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	424	2489	0	0	0	0	0	2640	490
RTOR Reduction (vph)	0	0	0	13	13	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	369	2518	0	0	0	0	0	3130	0
Confl. Peds. (#/hr)				26								42
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				57.2	57.2						71.2	
Effective Green, g (s)				59.0	59.0						73.0	
Actuated g/C Ratio				0.42	0.42						0.52	
Clearance Time (s)				5.8	5.8						5.8	
Lane Grp Cap (vph)				606	2022						2551	
v/s Ratio Prot											c0.64	
v/s Ratio Perm				0.26	0.52							
v/c Ratio				0.61	1.25						1.23	
Uniform Delay, d1				31.5	40.5						33.5	
Progression Factor				0.47	0.62						0.55	
Incremental Delay, d2				2.9	113.2						103.3	
Delay (s)				17.6	138.4						121.6	
Level of Service				B	F						F	
Approach Delay (s)		0.0			122.6			0.0			121.6	
Approach LOS		A			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			122.1			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.24									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			104.4%			ICU Level of Service			G			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

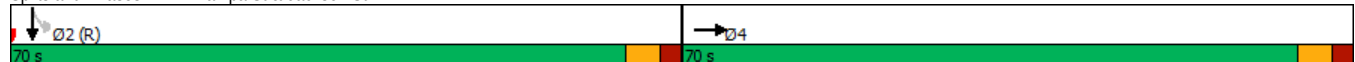
Build 2040
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↓	↑↑↑	
Traffic Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Future Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		275			260			589			274	
Travel Time (s)		6.3			5.9			11.5			5.3	
Confl. Peds. (#/hr)			71							39		
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1582	0	0	0	0	0	0	0	520	2610	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		70.0								70.0	70.0	
Total Split (%)		50.0%								50.0%	50.0%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		-2.0								-2.0	-2.0	
Total Lost Time (s)		4.0								4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.09dr								0.63	1.09	
Control Delay		33.8								23.7	74.6	
Queue Delay		0.2								54.3	5.8	
Total Delay		34.1								78.0	80.4	
Queue Length 50th (ft)		429								197	~961	
Queue Length 95th (ft)		493								m164	m432	
Internal Link Dist (ft)		195			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		2059								828	2397	
Starvation Cap Reductn		0								363	754	
Spillback Cap Reductn		88								2	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.80								1.12	1.59	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↘	↑↑↑	
Traffic Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Future Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								1.00	0.91	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								0.92	1.00	
Frt		0.93								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4368								1632	5085	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4368								1632	5085	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	813	769	0	0	0	0	0	0	520	2610	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	59	0	0
Lane Group Flow (vph)	0	1582	0	0	0	0	0	0	0	461	2610	0
Confl. Peds. (#/hr)			71							39		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		64.0								64.0	64.0	
Effective Green, g (s)		66.0								66.0	66.0	
Actuated g/C Ratio		0.47								0.47	0.47	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		2059								769	2397	
v/s Ratio Prot		c0.36									c0.51	
v/s Ratio Perm										0.28		
v/c Ratio		1.09dr								0.60	1.09	
Uniform Delay, d1		30.7								27.3	37.0	
Progression Factor		1.00								1.08	0.94	
Incremental Delay, d2		2.8								0.3	40.8	
Delay (s)		33.5								29.7	75.6	
Level of Service		C								C	E	
Approach Delay (s)		33.5			0.0			0.0			68.0	
Approach LOS		C			A			A			E	
Intersection Summary												
HCM 2000 Control Delay		56.4									E	
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		140.0								8.0		
Intersection Capacity Utilization		104.4%								G		
Analysis Period (min)		15										
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2040
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Future Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		404			553			171			589	
Travel Time (s)		9.2			12.6			3.3			11.5	
Confl. Peds. (#/hr)			94	94						30		43
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	478	0	166	157	0	0	0	0	0	241	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		57.0		57.0	57.0					83.0	83.0	
Total Split (%)		40.7%		40.7%	40.7%					59.3%	59.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.39		0.65	0.22						0.09	
Control Delay		27.0		27.7	11.3						16.2	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		27.0		27.7	11.3						16.2	
Queue Length 50th (ft)		136		40	24						34	
Queue Length 95th (ft)		185		98	34						m32	
Internal Link Dist (ft)		324			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		1240		254	705						2818	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.39		0.65	0.22						0.09	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 120 (86%), Referenced to phase 2:SBTL, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 12: Tampa St & Whiting St												
												

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2040
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 	 						 	
Traffic Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Future Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.93	1.00						1.00	
Frt		0.95		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.98	
Satd. Flow (prot)		3143		1648	1863						4993	
Flt Permitted		1.00		0.39	1.00						0.98	
Satd. Flow (perm)		3143		672	1863						4993	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	311	167	166	157	0	0	0	0	89	152	0
RTOR Reduction (vph)	0	50	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	428	0	166	157	0	0	0	0	0	241	0
Confl. Peds. (#/hr)			94	94						30		43
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Actuated Green, G (s)		51.2		51.2	51.2						77.3	
Effective Green, g (s)		53.0		53.0	53.0						79.0	
Actuated g/C Ratio		0.38		0.38	0.38						0.56	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1189		254	705						2817	
v/s Ratio Prot		0.14			0.08						c0.05	
v/s Ratio Perm				c0.25								
v/c Ratio		0.36		0.65	0.22						0.09	
Uniform Delay, d1		31.3		35.9	29.5						14.0	
Progression Factor		1.00		0.42	0.35						1.16	
Incremental Delay, d2		0.8		11.7	0.7						0.0	
Delay (s)		32.1		26.9	11.2						16.2	
Level of Service		C		C	B						B	
Approach Delay (s)		32.1			19.2			0.0			16.2	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			24.5			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.31									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			55.6%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Future Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	16					16	6		5			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	40	415	0	0	672	0	0	1875	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.0	22.0			22.1		30.1	30.1				
Total Split (s)	59.0	59.0			59.0		81.0	81.0				
Total Split (%)	42.1%	42.1%			42.1%		57.9%	57.9%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	0.5	0.5			2.1		2.1	2.1				
Lost Time Adjust (s)	-0.5	-0.5			-2.1		-2.1	-2.1				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.75	0.57			0.96		0.69					
Control Delay	96.3	33.8			65.7		15.6					
Queue Delay	0.0	1.8			0.0		0.0					
Total Delay	96.3	35.6			65.7		15.6					
Queue Length 50th (ft)	36	314			579		366					
Queue Length 95th (ft)	m#76	m442			#839		399					
Internal Link Dist (ft)		379			809		935			162		
Turn Bay Length (ft)	100											
Base Capacity (vph)	53	731			701		2716					
Starvation Cap Reductn	0	175			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.75	0.75			0.96		0.69					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 129 (92%), Referenced to phase 6:NBTL, Start of Green

Natural Cycle: 60

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Future Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.98			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1756			4895				
Flt Permitted	0.07	1.00			1.00			1.00				
Satd. Flow (perm)	135	1863			1756			4895				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	415	0	0	465	207	105	1425	345	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	26	0	0	0	0
Lane Group Flow (vph)	40	415	0	0	660	0	0	1849	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		5			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	54.5	54.5			52.9			74.9				
Effective Green, g (s)	55.0	55.0			55.0			77.0				
Actuated g/C Ratio	0.39	0.39			0.39			0.55				
Clearance Time (s)	4.5	4.5			6.1			6.1				
Lane Grp Cap (vph)	53	731			689			2692				
v/s Ratio Prot		0.22			0.38							
v/s Ratio Perm	0.30							0.38				
v/c Ratio	0.75	0.57			0.96			0.69				
Uniform Delay, d1	36.7	33.2			41.4			22.8				
Progression Factor	0.95	0.93			1.00			0.65				
Incremental Delay, d2	55.3	2.5			25.5			1.1				
Delay (s)	90.1	33.3			66.9			16.0				
Level of Service	F	C			E			B				
Approach Delay (s)		38.3			66.9			16.0			0.0	
Approach LOS		D			E			B			A	
Intersection Summary												
HCM 2000 Control Delay			30.8			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.80									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			89.7%			ICU Level of Service			E			
Analysis Period (min)			15									

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Future Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		25			25			35			35	
Link Distance (ft)		183			376			1146			1015	
Travel Time (s)		5.0			10.3			22.3			19.8	
Confl. Peds. (#/hr)	3					3	4		11			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	96	125	0	0	325	0	0	1936	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.4	22.4			22.4		24.0	24.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	-2.4	-2.4			-2.4		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.45	0.22			0.62		0.65					
Control Delay	28.2	19.7			26.2		10.2					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	28.2	19.7			26.2		10.2					
Queue Length 50th (ft)	33	40			113		263					
Queue Length 95th (ft)	78	79			194		m168					
Internal Link Dist (ft)		103			296		1066			935		
Turn Bay Length (ft)	50											
Base Capacity (vph)	212	558			520		2962					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.45	0.22			0.63		0.65					

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 17 (24%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 50
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations									  			
Traffic Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Future Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1766	1863			1696			5056				
Flt Permitted	0.38	1.00			1.00			1.00				
Satd. Flow (perm)	709	1863			1696			5056				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	125	0	0	130	195	149	1773	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	1	0	0	0	0
Lane Group Flow (vph)	96	125	0	0	313	0	0	1935	0	0	0	0
Confl. Peds. (#/hr)	3					3	4		11			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	21.0	21.0			21.0			41.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.59				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	212	558			508			2961				
v/s Ratio Prot		0.07			0.18							
v/s Ratio Perm	0.14							0.38				
v/c Ratio	0.45	0.22			0.62			0.65				
Uniform Delay, d1	19.8	18.4			21.0			9.7				
Progression Factor	1.00	1.00			1.00			1.03				
Incremental Delay, d2	6.8	0.9			5.5			0.1				
Delay (s)	26.7	19.3			26.6			10.1				
Level of Service	C	B			C			B				
Approach Delay (s)		22.5			26.6			10.1			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		13.4			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.64										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		70.4%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

Build 2040
Timing Plan: AM PEAK

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↕↕↕				
Traffic Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Future Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			377			701			1146	
Travel Time (s)		8.4			8.6			13.7			22.3	
Confl. Peds. (#/hr)	4								8			
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2235	0	0	0	0	0	3831	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	60.0	60.0						80.0				
Total Split (%)	42.9%	42.9%						57.1%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		-1.7						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.59						1.46				
Control Delay		295.5						231.8				
Queue Delay		0.0						0.0				
Total Delay		295.5						231.8				
Queue Length 50th (ft)		~1533						~1747				
Queue Length 95th (ft)		#1643						m#1764				
Internal Link Dist (ft)		291			297			621			1066	
Turn Bay Length (ft)												
Base Capacity (vph)		1403						2623				
Starvation Cap Reductn		0						20				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.59						1.47				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 64 (46%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						 				
Traffic Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Future Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.96				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3475						4828				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3475						4828				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	668	1567	0	0	0	0	0	2777	1054	0	0	0
RTOR Reduction (vph)	0	14	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	2221	0	0	0	0	0	3829	0	0	0	0
Confl. Peds. (#/hr)	4								8			
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		54.3						74.0				
Effective Green, g (s)		56.0						76.0				
Actuated g/C Ratio		0.40						0.54				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1390						2620				
v/s Ratio Prot								c0.79				
v/s Ratio Perm		0.64										
v/c Ratio		1.60						1.46				
Uniform Delay, d1		42.0						32.0				
Progression Factor		0.71						0.74				
Incremental Delay, d2		272.2						208.2				
Delay (s)		302.1						231.7				
Level of Service		F						F				
Approach Delay (s)		302.1			0.0			231.7			0.0	
Approach LOS		F			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		257.6						HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio		1.52										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		142.6%						ICU Level of Service		H		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Future Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		216			251			478			701	
Travel Time (s)		4.9			5.7			10.9			15.9	
Confl. Peds. (#/hr)	13					13	5		7			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	142	0	0	0	0	0	4040	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Minimum Split (s)	23.4	23.4					24.0	24.0				
Total Split (s)	24.0	24.0					116.0	116.0				
Total Split (%)	17.1%	17.1%					82.9%	82.9%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		-1.4						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.57						0.99				
Control Delay		65.7						15.0				
Queue Delay		0.0						40.2				
Total Delay		65.7						55.2				
Queue Length 50th (ft)		122						618				
Queue Length 95th (ft)		196						m#905				
Internal Link Dist (ft)		136			171			398		621		
Turn Bay Length (ft)												
Base Capacity (vph)		250						4062				
Starvation Cap Reductn		0						191				
Spillback Cap Reductn		0						947				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.57						1.30				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 41 (29%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 120

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Future Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.97						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1752						5077				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1752						5077				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	41	0	0	0	0	57	3970	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	142	0	0	0	0	0	4040	0	0	0	0
Confl. Peds. (#/hr)	13					13	5		7			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		18.6						110.0				
Effective Green, g (s)		20.0						112.0				
Actuated g/C Ratio		0.14						0.80				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		250						4061				
v/s Ratio Prot												
v/s Ratio Perm		0.08						0.80				
v/c Ratio		0.57						0.99				
Uniform Delay, d1		56.0						13.7				
Progression Factor		1.00						0.57				
Incremental Delay, d2		9.0						6.4				
Delay (s)		65.0						14.2				
Level of Service		E						B				
Approach Delay (s)		65.0			0.0			14.2			0.0	
Approach LOS		E			A			B			A	
Intersection Summary												
HCM 2000 Control Delay		15.9						HCM 2000 Level of Service		B		
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		92.4%						ICU Level of Service		F		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Future Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		301			316			285			478	
Travel Time (s)		6.8			7.2			6.5			9.3	
Confl. Peds. (#/hr)	8					8	7		12			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	133	0	0	4207	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	18.0	18.0			18.0		122.0	122.0				
Total Split (%)	12.9%	12.9%			12.9%		87.1%	87.1%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-2.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.93			0.83			0.98				
Control Delay		135.0			97.6			28.3				
Queue Delay		0.0			0.0			42.6				
Total Delay		135.0			97.6			70.9				
Queue Length 50th (ft)		83			120			1240				
Queue Length 95th (ft)		#195			#237			m917				
Internal Link Dist (ft)		221			236			205			398	
Turn Bay Length (ft)												
Base Capacity (vph)		97			161			4279				
Starvation Cap Reductn		0			0			1643				
Spillback Cap Reductn		0			0			288				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.93			0.83			1.60				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 36 (26%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

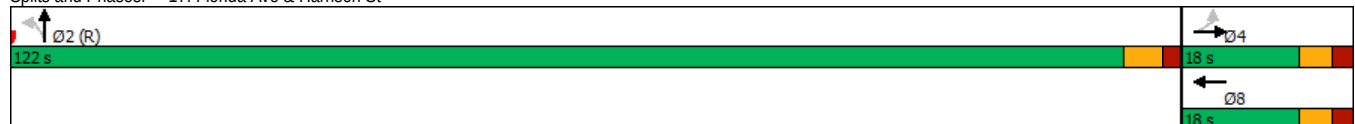
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Future Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.88			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1825			1606			5075				
Flt Permitted		0.53			1.00			1.00				
Satd. Flow (perm)		979			1606			5075				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	60	0	0	18	115	26	4153	28	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	132	0	0	4207	0	0	0	0
Confl. Peds. (#/hr)	8					8	7		12			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		12.2			12.2			116.0				
Effective Green, g (s)		14.0			14.0			118.0				
Actuated g/C Ratio		0.10			0.10			0.84				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		97			160			4277				
v/s Ratio Prot					0.08							
v/s Ratio Perm		0.09						0.83				
v/c Ratio		0.93			0.83			0.98				
Uniform Delay, d1		62.5			61.8			10.1				
Progression Factor		1.00			1.00			2.71				
Incremental Delay, d2		73.3			36.4			1.8				
Delay (s)		135.8			98.2			29.2				
Level of Service		F			F			C				
Approach Delay (s)		135.8			98.2			29.2			0.0	
Approach LOS		F			F			C			A	
Intersection Summary												
HCM 2000 Control Delay		33.4			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.98										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		106.8%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

Build 2040
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Future Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			288			286			285	
Travel Time (s)		13.0			6.5			5.6			5.6	
Confl. Peds. (#/hr)	11					11	4		21			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	145	155	0	0	444	0	49	4069	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	45.0	45.0			45.0		95.0	95.0				
Total Split (%)	32.1%	32.1%			32.1%		67.9%	67.9%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	1.73	0.28			0.85		0.04	1.23				
Control Delay	404.1	47.7			62.5		13.3	130.7				
Queue Delay	0.0	0.0			0.0		0.0	0.7				
Total Delay	404.1	47.7			62.5		13.3	131.4				
Queue Length 50th (ft)	~197	121			381		19	~1655				
Queue Length 95th (ft)	m#314	m173			#558		m14	m458				
Internal Link Dist (ft)		490			208		206			205		
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	84	545			525		1134	3301				
Starvation Cap Reductn	0	0			0		0	930				
Spillback Cap Reductn	0	0			0		0	996				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	1.73	0.28			0.85		0.04	1.77				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 128 (91%), Referenced to phase 6:NBTL, Start of Green

Natural Cycle: 140

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Future Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Frpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1770	1863			1796		1745	5081				
Flt Permitted	0.16	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	289	1863			1796		1745	5081				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	145	155	0	0	350	94	49	4055	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	145	155	0	0	444	0	49	4069	0	0	0	0
Confl. Peds. (#/hr)	11					11	4		21			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	39.2	39.2			39.2		89.0	89.0				
Effective Green, g (s)	41.0	41.0			41.0		91.0	91.0				
Actuated g/C Ratio	0.29	0.29			0.29		0.65	0.65				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	84	545			525		1134	3302				
v/s Ratio Prot		0.08			0.25			c0.80				
v/s Ratio Perm	c0.50						0.03					
v/c Ratio	1.73	0.28			0.85		0.04	1.23				
Uniform Delay, d1	49.5	38.2			46.5		8.8	24.5				
Progression Factor	1.19	1.20			1.00		1.49	1.03				
Incremental Delay, d2	370.1	1.3			15.4		0.0	104.7				
Delay (s)	428.9	47.1			61.9		13.2	129.9				
Level of Service	F	D			E		B	F				
Approach Delay (s)		231.7			61.9			128.5			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		128.8			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.38										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		115.2%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Future Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			311			283			286	
Travel Time (s)		12.6			7.1			5.5			5.6	
Confl. Peds. (#/hr)	4					4	5		74			
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	598	0	0	404	0	85	3947	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	56.0	56.0			56.0		84.0	84.0				
Total Split (%)	40.0%	40.0%			40.0%		60.0%	60.0%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.84			0.60		0.09	1.37				
Control Delay		405.2			40.3		11.0	188.8				
Queue Delay		12.4			59.1		0.0	0.6				
Total Delay		417.6			99.4		11.0	189.4				
Queue Length 50th (ft)		-807			297		19	-1731				
Queue Length 95th (ft)		m#721			411		m17	m#481				
Internal Link Dist (ft)		473			231			203			206	
Turn Bay Length (ft)							60					
Base Capacity (vph)		325			668		992	2883				
Starvation Cap Reductn		0			0		0	201				
Spillback Cap Reductn		183			378		0	724				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		4.21			1.39		0.09	1.83				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 26 (19%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 140
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Future Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			1.00		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.98	1.00				
Frt		1.00			0.97		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1840			1802		1737	5045				
Flt Permitted		0.47			1.00		0.95	1.00				
Satd. Flow (perm)		875			1802		1737	5045				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	140	458	0	0	318	86	85	3875	72	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	598	0	0	404	0	85	3946	0	0	0	0
Confl. Peds. (#/hr)	4					4	5		74			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		50.0			50.0		78.0	78.0				
Effective Green, g (s)		52.0			52.0		80.0	80.0				
Actuated g/C Ratio		0.37			0.37		0.57	0.57				
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		325			669		992	2882				
v/s Ratio Prot					0.22			c0.78				
v/s Ratio Perm		c0.68					0.05					
v/c Ratio		1.84			0.60		0.09	1.37				
Uniform Delay, d1		44.0			35.7		13.5	30.0				
Progression Factor		0.86			1.00		0.80	0.67				
Incremental Delay, d2		379.1			4.0		0.0	166.3				
Delay (s)		417.0			39.7		10.9	186.3				
Level of Service		F			D		B	F				
Approach Delay (s)		417.0			39.7			182.6			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		199.0							F			
HCM 2000 Volume to Capacity ratio		1.55										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		135.3%							H			
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Future Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			394			300			283	
Travel Time (s)		12.2			9.0			5.8			5.5	
Confl. Peds. (#/hr)	33					33	6		68			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	297	0	0	200	0	69	4184	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	36.0	36.0			36.0		104.0	104.0				
Total Split (%)	25.7%	25.7%			25.7%		74.3%	74.3%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.09			0.52		0.06	1.16				
Control Delay		122.3			53.1		1.6	83.4				
Queue Delay		12.8			16.3		0.0	0.2				
Total Delay		135.1			69.4		1.6	83.6				
Queue Length 50th (ft)		~307			161		5	~1678				
Queue Length 95th (ft)		m#460			244		m4	m84				
Internal Link Dist (ft)		457			314			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		273			382		1240	3622				
Starvation Cap Reductn		0			0		0	475				
Spillback Cap Reductn		116			163		0	483				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		1.89			0.91		0.06	1.33				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 140

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Future Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Flpb, ped/bikes		1.00			0.96		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.98	1.00				
Frt		1.00			0.94		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1821			1675		1736	5068				
Flt Permitted		0.65			1.00		0.95	1.00				
Satd. Flow (perm)		1194			1675		1736	5068				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	75	222	0	0	104	96	69	4147	37	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	297	0	0	200	0	69	4183	0	0	0	0
Confl. Peds. (#/hr)	33					33	6		68			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		30.2			30.2		98.0	98.0				
Effective Green, g (s)		32.0			32.0		100.0	100.0				
Actuated g/C Ratio		0.23			0.23		0.71	0.71				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		272			382		1240	3620				
v/s Ratio Prot					0.12			c0.83				
v/s Ratio Perm		c0.25					0.04					
v/c Ratio		1.09			0.52		0.06	1.16				
Uniform Delay, d1		54.0			47.3		6.0	20.0				
Progression Factor		0.87			1.00		0.26	0.42				
Incremental Delay, d2		79.5			5.1		0.0	70.4				
Delay (s)		126.2			52.4		1.6	78.7				
Level of Service		F			D		A	E				
Approach Delay (s)		126.2			52.4			77.5			0.0	
Approach LOS		F			D			E			A	
Intersection Summary												
HCM 2000 Control Delay		79.5			HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio		1.14										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		114.8%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Future Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			418			283			300	
Travel Time (s)		12.3			9.5			5.5			5.8	
Confl. Peds. (#/hr)	24					24	10		15			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	0	444	0	0	4118	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	46.0	46.0			46.0		94.0	94.0				
Total Split (%)	32.9%	32.9%			32.9%		67.1%	67.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.46			0.90			1.27				
Control Delay		243.3			68.6			138.9				
Queue Delay		0.0			0.0			0.2				
Total Delay		243.3			68.6			139.1				
Queue Length 50th (ft)		~230			388			~1723				
Queue Length 95th (ft)		m#282			#586			m#1235				
Internal Link Dist (ft)		459			338			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		206			496			3245				
Starvation Cap Reductn		0			0			305				
Spillback Cap Reductn		0			0			244				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		1.46			0.90			1.40				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 140

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Future Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.97			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		1842			1654			5047				
Flt Permitted		0.37			1.00			1.00				
Satd. Flow (perm)		688			1654			5047				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	66	234	0	0	181	263	148	3888	82	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	300	0	0	444	0	0	4117	0	0	0	0
Confl. Peds. (#/hr)	24					24	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		40.1			40.1			88.3				
Effective Green, g (s)		42.0			42.0			90.0				
Actuated g/C Ratio		0.30			0.30			0.64				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		206			496			3244				
v/s Ratio Prot					0.27							
v/s Ratio Perm		0.44						0.82				
v/c Ratio		1.46			0.90			1.27				
Uniform Delay, d1		49.0			46.9			25.0				
Progression Factor		0.53			1.00			0.49				
Incremental Delay, d2		218.0			21.3			121.3				
Delay (s)		244.0			68.2			133.5				
Level of Service		F			E			F				
Approach Delay (s)		244.0			68.2			133.5			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		134.4			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.33										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		125.6%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↑	↑		↔↔↔				
Traffic Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Future Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			396			298			283	
Travel Time (s)		12.3			9.0			5.8			5.5	
Confl. Peds. (#/hr)	16					16	6		13			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	533	0	0	285	503	0	4118	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	41.0	41.0			41.0	41.0	99.0	99.0				
Total Split (%)	29.3%	29.3%			29.3%	29.3%	70.7%	70.7%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.69			0.58	1.21		1.21				
Control Delay		30.5			50.3	155.2		108.0				
Queue Delay		0.0			1.4	2.0		0.3				
Total Delay		30.5			51.7	157.2		108.3				
Queue Length 50th (ft)		123			227	~542		~1663				
Queue Length 95th (ft)		m178			325	#768		m#1328				
Internal Link Dist (ft)		463			316			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		774			492	417		3414				
Starvation Cap Reductn		0			0	0		215				
Spillback Cap Reductn		0			81	74		596				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		0.69			0.69	1.47		1.46				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Future Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.91				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		0.99				
Flt Protected		1.00			1.00	1.00		1.00				
Satd. Flow (prot)		3526			1863	1517		5026				
Flt Permitted		0.83			1.00	1.00		1.00				
Satd. Flow (perm)		2931			1863	1517		5026				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	501	0	0	285	503	95	3807	216	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	17	0	4	0	0	0	0
Lane Group Flow (vph)	0	533	0	0	285	486	0	4114	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		13			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		35.1			35.1	35.1		93.0				
Effective Green, g (s)		37.0			37.0	37.0		95.0				
Actuated g/C Ratio		0.26			0.26	0.26		0.68				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		774			492	400		3410				
v/s Ratio Prot					0.15							
v/s Ratio Perm		0.18				c0.32		0.82				
v/c Ratio		0.69			0.58	1.22		1.21				
Uniform Delay, d1		46.3			44.7	51.5		22.5				
Progression Factor		0.58			1.00	1.00		0.42				
Incremental Delay, d2		3.2			4.9	117.7		93.2				
Delay (s)		30.2			49.6	169.2		102.5				
Level of Service		C			D	F		F				
Approach Delay (s)		30.2			126.0			102.5			0.0	
Approach LOS		C			F			F			A	
Intersection Summary												
HCM 2000 Control Delay		98.8				HCM 2000 Level of Service		F				
HCM 2000 Volume to Capacity ratio		1.21										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		8.0				
Intersection Capacity Utilization		130.3%				ICU Level of Service		H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
23: Florida Ave & Madison St

Build 2040
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Future Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			408			314			298	
Travel Time (s)		12.5			9.3			6.1			5.8	
Confl. Peds. (#/hr)	21					21	8		15			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	156	194	0	0	237	0	0	4162	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	35.0	35.0			35.0		105.0	105.0				
Total Split (%)	25.0%	25.0%			25.0%		75.0%	75.0%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	-1.9	-1.9			-1.9		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	1.06	0.47			0.65		1.14					
Control Delay	132.6	45.7			59.2		90.1					
Queue Delay	0.0	0.0			0.0		0.2					
Total Delay	132.6	45.7			59.2		90.3					
Queue Length 50th (ft)	~152	126			198		~1629					
Queue Length 95th (ft)	m#265	m187			294		#1678					
Internal Link Dist (ft)		468			328		234			218		
Turn Bay Length (ft)	75											
Base Capacity (vph)	147	412			363		3648					
Starvation Cap Reductn	0	0			0		465					
Spillback Cap Reductn	0	0			0		324					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	1.06	0.47			0.65		1.31					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 3 (2%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 120
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								   				
Traffic Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Future Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.98	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1733	1863			1641			5055				
Flt Permitted	0.36	1.00			1.00			1.00				
Satd. Flow (perm)	664	1863			1641			5055				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	156	194	0	0	82	155	108	3978	76	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	156	194	0	0	237	0	0	4161	0	0	0	0
Confl. Peds. (#/hr)	21					21	8		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	29.1	29.1			29.1			99.0				
Effective Green, g (s)	31.0	31.0			31.0			101.0				
Actuated g/C Ratio	0.22	0.22			0.22			0.72				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	147	412			363			3646				
v/s Ratio Prot		0.10			0.14							
v/s Ratio Perm	0.23							0.82				
v/c Ratio	1.06	0.47			0.65			1.14				
Uniform Delay, d1	54.5	47.4			49.6			19.5				
Progression Factor	0.86	0.88			1.00			1.11				
Incremental Delay, d2	87.0	3.4			8.8			67.1				
Delay (s)	133.9	45.1			58.4			88.8				
Level of Service	F	D			E			F				
Approach Delay (s)		84.7			58.4			88.8			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		86.9			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.12										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		111.8%			ICU Level of Service			H				
Analysis Period (min)		15										

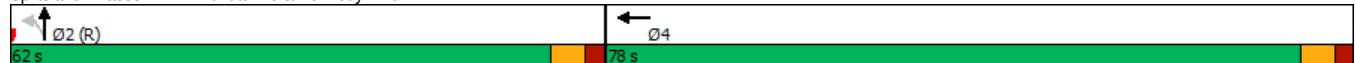
c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Future Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			427			259			314	
Travel Time (s)		12.4			9.7			5.0			6.1	
Confl. Peds. (#/hr)						33	10					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3033	0	188	1393	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					78.0		62.0	62.0				
Total Split (%)					55.7%		44.3%	44.3%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					-1.7		-1.8	-1.8				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.95		0.26	0.66				
Control Delay					38.7		9.2	16.5				
Queue Delay					44.9		1.4	3.0				
Total Delay					83.6		10.6	19.5				
Queue Length 50th (ft)					732		27	247				
Queue Length 95th (ft)					788		m43	258				
Internal Link Dist (ft)		466			347			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					3208		730	2106				
Starvation Cap Reductn					0		371	418				
Spillback Cap Reductn					993		3	584				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					1.37		0.52	0.92				

Intersection Summary

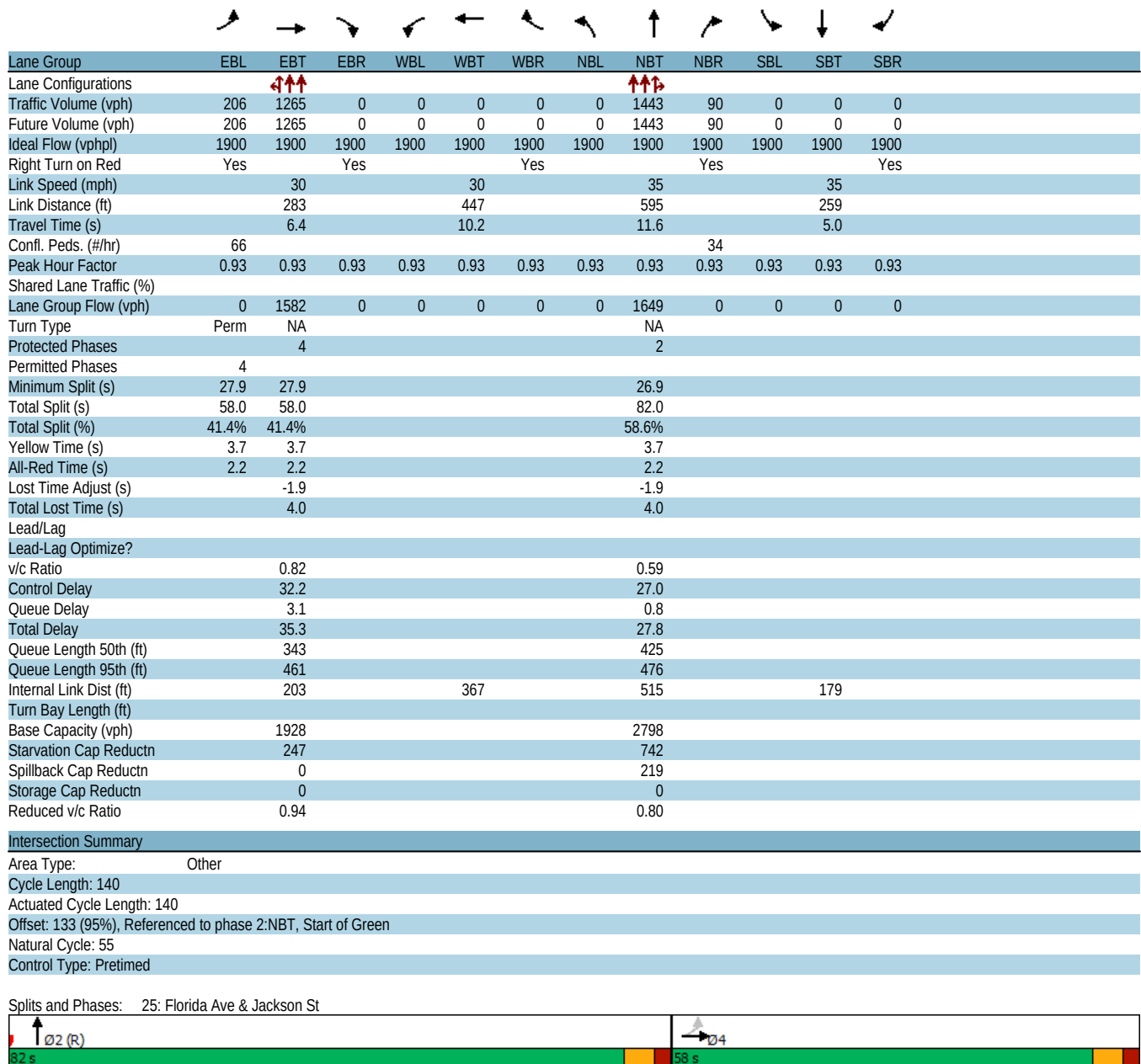
Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 65
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Florida Ave & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↘	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Future Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Frpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.98	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6062		1734	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6062		1734	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	2292	741	188	1393	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	5	0	12	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3028	0	176	1393	0	0	0	0
Confl. Peds. (#/hr)					33		10					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					72.3		56.2	56.2				
Effective Green, g (s)					74.0		58.0	58.0				
Actuated g/C Ratio					0.53		0.41	0.41				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					3204		718	2106				
v/s Ratio Prot					c0.50			c0.27				
v/s Ratio Perm							0.10					
v/c Ratio					0.95		0.24	0.66				
Uniform Delay, d1					31.1		26.7	33.1				
Progression Factor					1.00		0.36	0.46				
Incremental Delay, d2					7.4		0.6	1.3				
Delay (s)					38.5		10.1	16.4				
Level of Service					D		B	B				
Approach Delay (s)		0.0			38.5			15.7			0.0	
Approach LOS		A			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			30.7				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			140.0				Sum of lost time (s)			8.0		
Intersection Capacity Utilization			104.4%				ICU Level of Service			G		
Analysis Period (min)			15									

c Critical Lane Group



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0
Future Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4961						5017				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4961						5017				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	222	1360	0	0	0	0	0	1552	97	0	0	0
RTOR Reduction (vph)	0	15	0	0	0	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	1567	0	0	0	0	0	1645	0	0	0	0
Confl. Peds. (#/hr)	66								34			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						76.1				
Effective Green, g (s)		54.0						78.0				
Actuated g/C Ratio		0.39						0.56				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1913						2795				
v/s Ratio Prot								0.33				
v/s Ratio Perm		0.32										
v/c Ratio		0.82						0.59				
Uniform Delay, d1		38.6						20.4				
Progression Factor		0.75						1.27				
Incremental Delay, d2		3.3						0.9				
Delay (s)		32.4						27.0				
Level of Service		C						C				
Approach Delay (s)		32.4			0.0			27.0			0.0	
Approach LOS		C			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		29.6										C
HCM 2000 Volume to Capacity ratio		0.68										
Actuated Cycle Length (s)		140.0							8.0			
Intersection Capacity Utilization		77.7%										D
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
26: Florida Ave & Whiting St

Build 2040
Timing Plan: AM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Future Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			299			397			595	
Travel Time (s)		12.6			6.8			7.7			11.6	
Confl. Peds. (#/hr)	130					130	45		103			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	337	0	0	497	0	0	277	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	29.0	29.0			29.0		24.7	24.7				
Total Split (s)	60.0	60.0			60.0		80.0	80.0				
Total Split (%)	42.9%	42.9%			42.9%		57.1%	57.1%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)		-2.0			-2.0		-1.7	-1.7				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.42			0.38		0.10					
Control Delay		18.9			28.4		25.4					
Queue Delay		0.0			0.0		0.0					
Total Delay		18.9			28.4		25.4					
Queue Length 50th (ft)		57			154		61					
Queue Length 95th (ft)		73			203		97					
Internal Link Dist (ft)		473			219		317			515		
Turn Bay Length (ft)												
Base Capacity (vph)		811			1306		2711					
Starvation Cap Reductn		0			0		0					
Spillback Cap Reductn		0			0		9					
Storage Cap Reductn		0			0		0					
Reduced v/c Ratio		0.42			0.38		0.10					
Intersection Summary												
Area Type:	Other											
Cycle Length:	140											
Actuated Cycle Length:	140											
Offset:	121 (86%), Referenced to phase 2:NBTL, Start of Green											
Natural Cycle:	55											
Control Type:	Pretimed											

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Future Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			0.91				
Frpb, ped/bikes		1.00			0.94			0.99				
Flpb, ped/bikes		0.96			1.00			0.99				
Frt		1.00			0.96			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		3334			3212			4990				
Flt Permitted		0.60			1.00			1.00				
Satd. Flow (perm)		2029			3212			4990				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	140	197	0	0	378	119	10	259	8	0	0	0
RTOR Reduction (vph)	0	0	0	0	22	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	337	0	0	475	0	0	275	0	0	0	0
Confl. Peds. (#/hr)	130					130	45		103			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		54.0			54.0			74.3				
Effective Green, g (s)		56.0			56.0			76.0				
Actuated g/C Ratio		0.40			0.40			0.54				
Clearance Time (s)		6.0			6.0			5.7				
Lane Grp Cap (vph)		811			1284			2708				
v/s Ratio Prot					0.15							
v/s Ratio Perm		0.17						0.06				
v/c Ratio		0.42			0.37			0.10				
Uniform Delay, d1		30.2			29.6			15.5				
Progression Factor		0.57			1.00			1.66				
Incremental Delay, d2		1.5			0.8			0.1				
Delay (s)		18.7			30.4			25.7				
Level of Service		B			C			C				
Approach Delay (s)		18.7			30.4			25.7			0.0	
Approach LOS		B			C			C			A	
Intersection Summary												
HCM 2000 Control Delay		25.7			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.23										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		53.8%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					  		  					
Traffic Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0
Future Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		35			35			35			35	
Link Distance (ft)		266			442			510			230	
Travel Time (s)		5.2			8.6			9.9			4.5	
Confl. Peds. (#/hr)						29	22					
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1757	0	15	248	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Minimum Split (s)					29.8		36.1	36.1				
Total Split (s)					60.0		80.0	80.0				
Total Split (%)					42.9%		57.1%	57.1%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.1		2.4	2.4				
Lost Time Adjust (s)					-1.8		-2.1	-2.1				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.71		0.02	0.09				
Control Delay					35.9		3.7	15.5				
Queue Delay					0.0		0.0	0.0				
Total Delay					35.9		3.7	15.5				
Queue Length 50th (ft)					375		0	38				
Queue Length 95th (ft)					419		8	53				
Internal Link Dist (ft)		186			362			430			150	
Turn Bay Length (ft)												
Base Capacity (vph)					2489		941	2760				
Starvation Cap Reductn					0		0	0				
Spillback Cap Reductn					0		0	0				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.71		0.02	0.09				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 46 (33%), Referenced to phase 2:WBT, Start of Green												
Natural Cycle: 70												
Control Type: Pretimed												
Splits and Phases: 27: Florida Ave & Brorein St												
 Ø2 (R)  Ø4 60 s 60 s												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↱	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0
Future Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		0.97	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6150		1715	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6150		1715	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	1420	337	15	248	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	31	0	7	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1726	0	8	248	0	0	0	0
Confl. Peds. (#/hr)					29		22					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					54.2		73.9	73.9				
Effective Green, g (s)					56.0		76.0	76.0				
Actuated g/C Ratio					0.40		0.54	0.54				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2460		931	2760				
v/s Ratio Prot					c0.28			c0.05				
v/s Ratio Perm							0.00					
v/c Ratio					0.70		0.01	0.09				
Uniform Delay, d1					35.0		14.7	15.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					1.7		0.0	0.1				
Delay (s)					36.7		14.7	15.4				
Level of Service					D		B	B				
Approach Delay (s)		0.0			36.7			15.4			0.0	
Approach LOS		A			D			B			A	
Intersection Summary												
HCM 2000 Control Delay			34.0									
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			140.0									
Intersection Capacity Utilization			40.9%									
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	176	0	0	453	0
Future Volume (vph)	0	176	0	0	453	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	191	0	0	492	0
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1612	0	0	1299	0
Future Volume (vph)	0	1612	0	0	1299	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1752	0	0	1412	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations						
Traffic Volume (vph)	0	0	0	416	0	0
Future Volume (vph)	0	0	0	416	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	292			171	309	
Travel Time (s)	6.6			3.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	452	0	0
Sign Control	Stop			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Build 2040 PM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

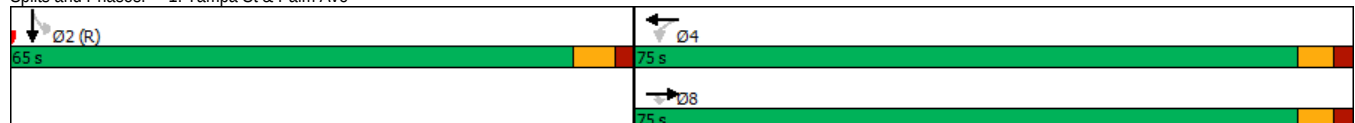
Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑					↑↑↑	↑↑↑	
Traffic Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Future Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	0		0	0		0
Storage Lanes	0		1	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		656			459			1921			246	
Travel Time (s)		14.9			10.4			37.4			4.8	
Confl. Peds. (#/hr)										1		1
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	466	186	172	268	0	0	0	0	0	1362	0
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	
Total Split (s)		75.0	75.0	75.0	75.0					65.0	65.0	
Total Split (%)		53.6%	53.6%	53.6%	53.6%					46.4%	46.4%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0						-2.4	
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.49	0.21	0.51	0.28						0.64	
Control Delay		24.9	2.9	18.4	9.3						30.3	
Queue Delay		0.0	0.0	0.0	0.7						0.1	
Total Delay		25.0	2.9	18.4	9.9						30.4	
Queue Length 50th (ft)		272	0	120	79						328	
Queue Length 95th (ft)		369	39	m205	m111						381	
Internal Link Dist (ft)		576			379			1841			166	
Turn Bay Length (ft)				150								
Base Capacity (vph)		944	894	335	944						2124	
Starvation Cap Reductn		0	0	0	386						0	
Spillback Cap Reductn		7	0	0	0						83	
Storage Cap Reductn		0	0	0	0						0	
Reduced v/c Ratio		0.50	0.21	0.51	0.48						0.67	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 18 (13%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Future Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Frpb, ped/bikes		1.00	1.00	1.00	1.00						0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						0.96	
Flt Protected		1.00	1.00	0.95	1.00						0.98	
Satd. Flow (prot)		1863	1583	1770	1863						4759	
Flt Permitted		1.00	1.00	0.36	1.00						0.98	
Satd. Flow (perm)		1863	1583	662	1863						4759	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	466	186	172	268	0	0	0	0	417	556	389
RTOR Reduction (vph)	0	0	92	0	0	0	0	0	0	0	51	0
Lane Group Flow (vph)	0	466	94	172	268	0	0	0	0	0	1311	0
Confl. Peds. (#/hr)										1		1
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		69.0	69.0	69.0	69.0						58.6	
Effective Green, g (s)		71.0	71.0	71.0	71.0						61.0	
Actuated g/C Ratio		0.51	0.51	0.51	0.51						0.44	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		944	802	335	944						2073	
v/s Ratio Prot		0.25			0.14							
v/s Ratio Perm			0.06	0.26							0.28	
v/c Ratio		0.49	0.12	0.51	0.28						0.63	
Uniform Delay, d1		22.7	18.1	23.0	19.9						30.8	
Progression Factor		1.00	1.00	0.55	0.43						1.00	
Incremental Delay, d2		1.8	0.3	5.0	0.7						1.5	
Delay (s)		24.5	18.4	17.7	9.2						32.2	
Level of Service		C	B	B	A						C	
Approach Delay (s)		22.8			12.5			0.0			32.2	
Approach LOS		C			B			A			C	
Intersection Summary												
HCM 2000 Control Delay		26.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.57										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		106.9%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street/Kay St

Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Future Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	0		475
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		391			229			247			1921	
Travel Time (s)		8.9			5.2			4.8			37.4	
Confl. Peds. (#/hr)												1
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)				11%								
Lane Group Flow (vph)	0	0	0	50	2530	0	0	0	0	0	2015	0
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Minimum Split (s)				26.7	26.7						31.0	
Total Split (s)				87.0	87.0						53.0	
Total Split (%)				62.1%	62.1%						37.9%	
Yellow Time (s)				3.7	3.7						4.0	
All-Red Time (s)				2.0	2.0						2.0	
Lost Time Adjust (s)				-1.7	-1.7						-2.0	
Total Lost Time (s)				4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.05	1.25						1.48dr	
Control Delay				7.5	145.7						138.7	
Queue Delay				0.0	0.0						0.0	
Total Delay				7.5	145.7						138.7	
Queue Length 50th (ft)				10	~1581						~822	
Queue Length 95th (ft)				30	#1713						#920	
Internal Link Dist (ft)		311			149			167			1841	
Turn Bay Length (ft)												
Base Capacity (vph)				963	2019						1662	
Starvation Cap Reductn				0	0						0	
Spillback Cap Reductn				0	0						0	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.05	1.25						1.21	
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 80 (57%), Referenced to phase 2:SBT, Start of Green												
Natural Cycle: 150												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.												
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
Splits and Phases: 2: Tampa St & Kay Street/Kay St												
 Ø2 (R)					 Ø4							
53 s					87 s							

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street/Kay St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Future Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						0.91	
Frpb, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				1.00	1.00						1.00	
Frt				1.00	1.00						0.94	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1610	3390						4744	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1610	3390						4744	
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	56	2524	0	0	0	0	0	1185	830
RTOR Reduction (vph)	0	0	0	9	9	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	0	0	41	2521	0	0	0	0	0	2013	0
Confl. Peds. (#/hr)												1
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Actuated Green, G (s)				81.3	81.3						47.0	
Effective Green, g (s)				83.0	83.0						49.0	
Actuated g/C Ratio				0.59	0.59						0.35	
Clearance Time (s)				5.7	5.7						6.0	
Lane Grp Cap (vph)				954	2009						1660	
v/s Ratio Prot				0.03	c0.74						c0.42	
v/s Ratio Perm												
v/c Ratio				0.04	1.25						1.48dr	
Uniform Delay, d1				11.9	28.5						45.5	
Progression Factor				1.00	1.00						0.93	
Incremental Delay, d2				0.1	118.9						101.4	
Delay (s)				12.0	147.4						143.7	
Level of Service				B	F						F	
Approach Delay (s)		0.0			144.7			0.0			143.7	
Approach LOS		A			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			144.3			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.24									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			96.7%			ICU Level of Service			F			
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

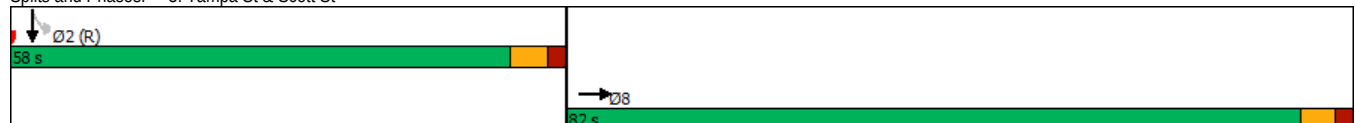
Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑									↑↑↑	
Traffic Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Future Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		385			62			346			247	
Travel Time (s)		8.8			1.4			6.7			4.8	
Confl. Peds. (#/hr)			2									
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1275	0	0	0	0	0	0	0	0	1210	0
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Minimum Split (s)		24.7								24.0	24.0	
Total Split (s)		82.0								58.0	58.0	
Total Split (%)		58.6%								41.4%	41.4%	
Yellow Time (s)		3.7								4.0	4.0	
All-Red Time (s)		2.0								2.0	2.0	
Lost Time Adjust (s)		-1.7									-2.0	
Total Lost Time (s)		4.0									4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.65									0.61	
Control Delay		23.4									0.9	
Queue Delay		9.4									5.3	
Total Delay		32.8									6.2	
Queue Length 50th (ft)		407									4	
Queue Length 95th (ft)		483									m0	
Internal Link Dist (ft)		305			1			266			167	
Turn Bay Length (ft)												
Base Capacity (vph)		1953									1974	
Starvation Cap Reductn		0									692	
Spillback Cap Reductn		653									234	
Storage Cap Reductn		0									0	
Reduced v/c Ratio		0.98									0.94	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 81 (58%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 55
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									  	
Traffic Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Future Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.99									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3501									5033	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3501									5033	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	1192	83	0	0	0	0	0	0	250	960	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	33	0
Lane Group Flow (vph)	0	1271	0	0	0	0	0	0	0	0	1177	0
Confl. Peds. (#/hr)			2									
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		76.3									52.0	
Effective Green, g (s)		78.0									54.0	
Actuated g/C Ratio		0.56									0.39	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1950									1941	
v/s Ratio Prot		c0.36										
v/s Ratio Perm											0.23	
v/c Ratio		0.65									0.61	
Uniform Delay, d1		21.6									34.5	
Progression Factor		1.00									0.02	
Incremental Delay, d2		1.7									0.1	
Delay (s)		23.3									0.9	
Level of Service		C									A	
Approach Delay (s)		23.3			0.0			0.0			0.9	
Approach LOS		C			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		12.4									B	
HCM 2000 Volume to Capacity ratio		0.63										
Actuated Cycle Length (s)		140.0								8.0		
Intersection Capacity Utilization		63.5%								B		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

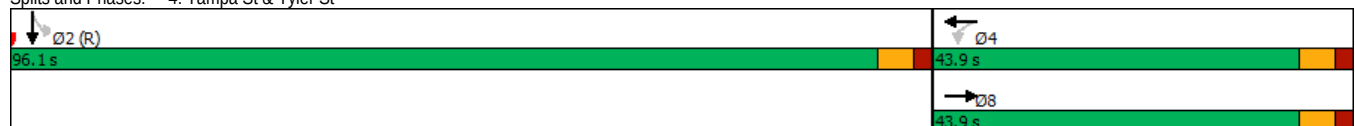
Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139
Future Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		354			570			301			129	
Travel Time (s)		8.0			13.0			5.9			2.5	
Confl. Peds. (#/hr)			24	24						53		25
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	141	302	0	0	0	0	0	3096	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					26.8	26.8	
Total Split (s)		43.9		43.9	43.9					96.1	96.1	
Total Split (%)		31.4%		31.4%	31.4%					68.6%	68.6%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.62		0.79	0.57						0.94	
Control Delay		49.7		91.1	66.1						31.6	
Queue Delay		0.0		0.0	0.0						44.9	
Total Delay		49.7		91.1	66.1						76.4	
Queue Length 50th (ft)		236		118	242						967	
Queue Length 95th (ft)		340		m#197	345						1031	
Internal Link Dist (ft)		274			490			221			49	
Turn Bay Length (ft)				75								
Base Capacity (vph)		484		179	530						3298	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						710	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.62		0.79	0.57						1.20	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139
Future Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.97		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.98	1.00						1.00	
Frt		0.94		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1694		1734	1863						5009	
Flt Permitted		1.00		0.35	1.00						1.00	
Satd. Flow (perm)		1694		630	1863						5009	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	159	141	141	302	0	0	0	0	41	2907	148
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	299	0	141	302	0	0	0	0	0	3092	0
Confl. Peds. (#/hr)			24	24						53		25
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		38.1		38.1	38.1						90.3	
Effective Green, g (s)		39.9		39.9	39.9						92.1	
Actuated g/C Ratio		0.28		0.28	0.28						0.66	
Clearance Time (s)		5.8		5.8	5.8						5.8	
Lane Grp Cap (vph)		482		179	530						3295	
v/s Ratio Prot		0.18			0.16							
v/s Ratio Perm				0.22							0.62	
v/c Ratio		0.62		0.79	0.57						0.94	
Uniform Delay, d1		43.5		46.1	42.7						21.4	
Progression Factor		1.00		1.41	1.44						1.15	
Incremental Delay, d2		5.9		25.5	3.8						6.7	
Delay (s)		49.3		90.4	65.3						31.2	
Level of Service		D		F	E						C	
Approach Delay (s)		49.3			73.3			0.0			31.2	
Approach LOS		D			E			A			C	
Intersection Summary												
HCM 2000 Control Delay			37.5			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.89									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			116.5%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Future Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		302			553			286			301	
Travel Time (s)		6.9			12.6			5.6			5.9	
Confl. Peds. (#/hr)			31	31						63		43
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	604	0	112	297	0	0	0	0	0	3064	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7	
Total Split (s)		59.0		59.0	59.0					81.0	81.0	
Total Split (%)		42.1%		42.1%	42.1%					57.9%	57.9%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.86		1.20	0.41						1.12	
Control Delay		52.1		186.6	24.3						74.6	
Queue Delay		9.8		3.2	0.0						0.2	
Total Delay		61.9		189.8	24.3						74.7	
Queue Length 50th (ft)		498		~120	90						~1185	
Queue Length 95th (ft)		#708		#248	180						#1241	
Internal Link Dist (ft)		222			473			206			221	
Turn Bay Length (ft)				75								
Base Capacity (vph)		706		93	731						2738	
Starvation Cap Reductn		0		0	0						194	
Spillback Cap Reductn		84		11	0						23	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.97		1.37	0.41						1.20	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 14 (10%), Referenced to phase 2:SBTL, Start of Green
 Natural Cycle: 70
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Future Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.98		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1797		1770	1863						4976	
Flt Permitted		1.00		0.13	1.00						1.00	
Satd. Flow (perm)		1797		237	1863						4976	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	504	100	112	297	0	0	0	0	179	2836	49
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	603	0	112	297	0	0	0	0	0	3063	0
Confl. Peds. (#/hr)			31	31						63		43
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		53.3		53.3	53.3						75.3	
Effective Green, g (s)		55.0		55.0	55.0						77.0	
Actuated g/C Ratio		0.39		0.39	0.39						0.55	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		705		93	731						2736	
v/s Ratio Prot		0.34			0.16							
v/s Ratio Perm				0.47							0.62	
v/c Ratio		0.86		1.20	0.41						1.12	
Uniform Delay, d1		38.9		42.5	30.7						31.5	
Progression Factor		1.00		0.82	0.73						0.52	
Incremental Delay, d2		12.7		152.8	1.5						56.0	
Delay (s)		51.6		187.6	24.0						72.3	
Level of Service		D		F	C						E	
Approach Delay (s)		51.6			68.8			0.0			72.3	
Approach LOS		D			E			A			E	
Intersection Summary												
HCM 2000 Control Delay			68.8			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.15									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			106.4%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Future Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		325			537			302			286	
Travel Time (s)		7.4			12.2			5.9			5.6	
Confl. Peds. (#/hr)			53	53						168		62
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	190	0	0	281	0	0	0	0	0	3033	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9	
Total Split (s)		43.6		43.6	43.6					96.4	96.4	
Total Split (%)		31.1%		31.1%	31.1%					68.9%	68.9%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2	
Lost Time Adjust (s)		-1.8			-1.8						-1.9	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.40			0.82						0.94	
Control Delay		43.1			62.9						7.3	
Queue Delay		0.0			0.0						40.8	
Total Delay		43.1			62.9						48.2	
Queue Length 50th (ft)		139			207						114	
Queue Length 95th (ft)		214			#385						m53	
Internal Link Dist (ft)		245			457			222			206	
Turn Bay Length (ft)												
Base Capacity (vph)		479			343						3235	
Starvation Cap Reductn		0			0						168	
Spillback Cap Reductn		0			0						455	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.40			0.82						1.09	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 4 (3%), Referenced to phase 2:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Future Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.96			1.00						1.00	
Flpb, ped/bikes		1.00			0.98						0.97	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1691			1785						4901	
Flt Permitted		1.00			0.67						1.00	
Satd. Flow (perm)		1691			1214						4901	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	120	70	101	180	0	0	0	0	169	2818	46
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	189	0	0	281	0	0	0	0	0	3032	0
Confl. Peds. (#/hr)			53	53						168		62
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.8			37.8						90.5	
Effective Green, g (s)		39.6			39.6						92.4	
Actuated g/C Ratio		0.28			0.28						0.66	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		478			343						3234	
v/s Ratio Prot		0.11										
v/s Ratio Perm					0.23						0.62	
v/c Ratio		0.39			0.82						0.94	
Uniform Delay, d1		40.5			46.9						21.2	
Progression Factor		1.00			0.92						0.28	
Incremental Delay, d2		2.4			19.0						0.7	
Delay (s)		43.0			62.0						6.8	
Level of Service		D			E						A	
Approach Delay (s)		43.0			62.0			0.0			6.8	
Approach LOS		D			E			A			A	
Intersection Summary												
HCM 2000 Control Delay			13.2			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.90									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			97.7%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Future Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		286			539			272			302	
Travel Time (s)		6.5			12.3			5.3			5.9	
Confl. Peds. (#/hr)			19	19						54		36
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	300	0	0	443	0	0	0	0	0	3097	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7	
Total Split (s)		55.0		55.0	55.0					85.0	85.0	
Total Split (%)		39.3%		39.3%	39.3%					60.7%	60.7%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0	
Lost Time Adjust (s)		-1.7			-1.7						-1.7	
Total Lost Time (s)		4.0			4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.48			1.07						1.07	
Control Delay		37.2			98.0						46.2	
Queue Delay		0.0			0.0						14.4	
Total Delay		37.2			98.0						60.6	
Queue Length 50th (ft)		209			~449						~1126	
Queue Length 95th (ft)		299			m#602						#1204	
Internal Link Dist (ft)		206			459			192			222	
Turn Bay Length (ft)												
Base Capacity (vph)		629			414						2898	
Starvation Cap Reductn		0			0						155	
Spillback Cap Reductn		0			0						1041	
Storage Cap Reductn		0			0						0	
Reduced v/c Ratio		0.48			1.07						1.67	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 21 (15%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 100

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Future Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.98			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1725			1830						5010	
Flt Permitted		1.00			0.61						1.00	
Satd. Flow (perm)		1725			1136						5010	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	179	121	119	324	0	0	0	0	99	2922	76
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	299	0	0	443	0	0	0	0	0	3095	0
Confl. Peds. (#/hr)			19	19						54		36
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		49.3			49.3						79.3	
Effective Green, g (s)		51.0			51.0						81.0	
Actuated g/C Ratio		0.36			0.36						0.58	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		628			413						2898	
v/s Ratio Prot		0.17										
v/s Ratio Perm					0.39						0.62	
v/c Ratio		0.48			1.07						1.07	
Uniform Delay, d1		34.2			44.5						29.5	
Progression Factor		1.00			0.78						0.29	
Incremental Delay, d2		2.6			64.1						34.4	
Delay (s)		36.8			98.9						43.0	
Level of Service		D			F						D	
Approach Delay (s)		36.8			98.9			0.0			43.0	
Approach LOS		D			F			A			D	
Intersection Summary												
HCM 2000 Control Delay			49.0			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)					8.0	
Intersection Capacity Utilization			105.5%			ICU Level of Service					G	
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Future Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		284			543			313			272	
Travel Time (s)		6.5			12.3			6.1			5.3	
Confl. Peds. (#/hr)			8	8						31		74
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	788	0	215	317	0	0	0	0	0	3097	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9	
Total Split (s)		77.0		77.0	77.0					63.0	63.0	
Total Split (%)		55.0%		55.0%	55.0%					45.0%	45.0%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2	
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.84		1.78	0.33						1.47	
Control Delay		38.8		402.9	12.9						235.6	
Queue Delay		0.0		0.0	0.0						0.1	
Total Delay		38.8		402.9	12.9						235.7	
Queue Length 50th (ft)		596		~297	100						~1408	
Queue Length 95th (ft)		801		m#451	m134						m#1278	
Internal Link Dist (ft)		204			463			233			192	
Turn Bay Length (ft)				75								
Base Capacity (vph)		933		121	971						2101	
Starvation Cap Reductn		0		0	0						112	
Spillback Cap Reductn		0		0	0						106	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.84		1.78	0.33						1.56	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 44 (31%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

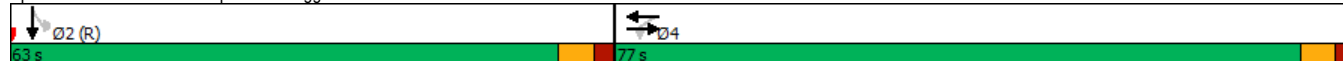
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 8: Tampa St & Twiggs St



Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Future Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1791		1770	1863						4987	
Flt Permitted		1.00		0.12	1.00						0.99	
Satd. Flow (perm)		1791		233	1863						4987	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	600	188	215	317	0	0	0	0	440	2620	37
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	788	0	215	317	0	0	0	0	0	3096	0
Confl. Peds. (#/hr)			8	8						31		74
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		71.3		71.3	71.3						57.1	
Effective Green, g (s)		73.0		73.0	73.0						59.0	
Actuated g/C Ratio		0.52		0.52	0.52						0.42	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		933		121	971						2101	
v/s Ratio Prot		0.44			0.17							
v/s Ratio Perm				0.92							0.62	
v/c Ratio		0.84		1.78	0.33						1.47	
Uniform Delay, d1		28.6		33.5	19.3						40.5	
Progression Factor		1.00		0.77	0.61						0.48	
Incremental Delay, d2		9.3		380.0	0.9						213.4	
Delay (s)		37.9		405.8	12.7						232.8	
Level of Service		D		F	B						F	
Approach Delay (s)		37.9			171.6			0.0			232.8	
Approach LOS		D			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			190.6			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.64									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				8.0		
Intersection Capacity Utilization			118.7%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Future Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	75		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		397			548			309			313	
Travel Time (s)		9.0			12.5			6.0			6.1	
Confl. Peds. (#/hr)			43	43						36		75
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	360	0	141	103	0	0	0	0	0	3236	0
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8	
Total Split (s)		44.0		44.0	44.0					96.0	96.0	
Total Split (%)		31.4%		31.4%	31.4%					68.6%	68.6%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1	
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.78		1.03	0.19						0.98	
Control Delay		58.7		69.8	24.3						13.4	
Queue Delay		64.8		50.6	0.0						42.4	
Total Delay		123.5		120.5	24.3						55.8	
Queue Length 50th (ft)		301		~127	74						1126	
Queue Length 95th (ft)		#431		m107	m67						m87	
Internal Link Dist (ft)		317			468			229			233	
Turn Bay Length (ft)				75								
Base Capacity (vph)		463		137	532						3296	
Starvation Cap Reductn		0		0	0						905	
Spillback Cap Reductn		299		89	0						1256	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		2.20		2.94	0.19						1.59	

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 40 (29%), Referenced to phase 2:SBTL, Start of Green
 Natural Cycle: 100
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Future Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1619		1770	1863						5018	
Flt Permitted		1.00		0.26	1.00						1.00	
Satd. Flow (perm)		1619		483	1863						5018	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	153	207	141	103	0	0	0	0	108	3068	60
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	359	0	141	103	0	0	0	0	0	3235	0
Confl. Peds. (#/hr)			43	43						36		75
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		38.1		38.1	38.1						90.2	
Effective Green, g (s)		40.0		40.0	40.0						92.0	
Actuated g/C Ratio		0.29		0.29	0.29						0.66	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		462		138	532						3297	
v/s Ratio Prot		0.22			0.06							
v/s Ratio Perm				0.29							0.64	
v/c Ratio		0.78		1.02	0.19						0.98	
Uniform Delay, d1		45.9		50.0	37.8						23.2	
Progression Factor		1.00		0.75	0.63						0.45	
Incremental Delay, d2		12.2		28.6	0.1						2.1	
Delay (s)		58.1		66.0	24.0						12.4	
Level of Service		E		E	C						B	
Approach Delay (s)		58.1			48.2			0.0			12.4	
Approach LOS		E			D			A			B	
Intersection Summary												
HCM 2000 Control Delay			19.0		HCM 2000 Level of Service				B			
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)				8.0			
Intersection Capacity Utilization			114.5%		ICU Level of Service				H			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Future Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes	Yes		Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		358			546			274			309	
Travel Time (s)		8.1			12.4			5.3			6.0	
Confl. Peds. (#/hr)				46								79
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Shared Lane Traffic (%)				10%								
Lane Group Flow (vph)	0	0	0	424	2459	0	0	0	0	0	3096	0
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Minimum Split (s)				25.8	25.8						26.8	
Total Split (s)				63.0	63.0						77.0	
Total Split (%)				45.0%	45.0%						55.0%	
Yellow Time (s)				3.7	3.7						3.7	
All-Red Time (s)				2.1	2.1						2.1	
Lost Time Adjust (s)				-1.8	-1.8						-1.8	
Total Lost Time (s)				4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio				0.72	1.21						1.21	
Control Delay				24.0	123.2						131.5	
Queue Delay				1.2	0.1						0.7	
Total Delay				25.2	123.3						132.2	
Queue Length 50th (ft)				180	~1039						~1254	
Queue Length 95th (ft)				m325	#1135						m#1293	
Internal Link Dist (ft)		278			466			194			229	
Turn Bay Length (ft)												
Base Capacity (vph)				592	2032						2551	
Starvation Cap Reductn				51	75						657	
Spillback Cap Reductn				0	0						175	
Storage Cap Reductn				0	0						0	
Reduced v/c Ratio				0.78	1.26						1.63	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 8 (6%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 130

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Future Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.86	0.86						0.91	
Frpb, ped/bikes				1.00	1.00						0.98	
Flpb, ped/bikes				0.90	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1375	4792						4893	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1375	4792						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	471	2412	0	0	0	0	0	2722	374
RTOR Reduction (vph)	0	0	0	13	13	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	411	2446	0	0	0	0	0	3096	0
Confl. Peds. (#/hr)				46								79
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				57.2	57.2						71.2	
Effective Green, g (s)				59.0	59.0						73.0	
Actuated g/C Ratio				0.42	0.42						0.52	
Clearance Time (s)				5.8	5.8						5.8	
Lane Grp Cap (vph)				579	2019						2551	
v/s Ratio Prot											c0.63	
v/s Ratio Perm				0.30	0.51							
v/c Ratio				0.71	1.21						1.21	
Uniform Delay, d1				33.4	40.5						33.5	
Progression Factor				0.58	0.61						1.12	
Incremental Delay, d2				4.9	98.5						97.3	
Delay (s)				24.4	123.3						134.8	
Level of Service				C	F						F	
Approach Delay (s)		0.0			108.8			0.0			134.8	
Approach LOS		A			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			122.3			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			8.0			
Intersection Capacity Utilization			104.2%			ICU Level of Service			G			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↓	↑↑↑	
Traffic Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Future Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		0	100		0
Storage Lanes	0		0	0		0	0		0	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes	Yes		Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		291			260			589			274	
Travel Time (s)		6.6			5.9			11.5			5.3	
Confl. Peds. (#/hr)			106							87		
Peak Hour Factor	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1711	0	0	0	0	0	0	0	834	2551	0
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Minimum Split (s)		27.0								27.0	27.0	
Total Split (s)		56.0								84.0	84.0	
Total Split (%)		40.0%								60.0%	60.0%	
Yellow Time (s)		3.7								3.7	3.7	
All-Red Time (s)		2.3								2.3	2.3	
Lost Time Adjust (s)		-2.0								-2.0	-2.0	
Total Lost Time (s)		4.0								4.0	4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.98								0.99	0.88	
Control Delay		60.7								17.1	7.5	
Queue Delay		0.0								38.1	46.3	
Total Delay		60.7								55.2	53.8	
Queue Length 50th (ft)		560								122	147	
Queue Length 95th (ft)		#604								m106	m126	
Internal Link Dist (ft)		211			180			509			194	
Turn Bay Length (ft)										100		
Base Capacity (vph)		1745								845	2905	
Starvation Cap Reductn		0								145	790	
Spillback Cap Reductn		0								0	0	
Storage Cap Reductn		0								0	0	
Reduced v/c Ratio		0.98								1.19	1.21	

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 7 (5%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 70

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑								↘	↑↑↑	
Traffic Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Future Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								1.00	0.91	
Frpb, ped/bikes		0.95								1.00	1.00	
Flpb, ped/bikes		1.00								0.83	1.00	
Frt		0.97								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4697								1462	5085	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4697								1462	5085	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	1351	360	0	0	0	0	0	0	834	2551	0
RTOR Reduction (vph)	0	1	0	0	0	0	0	0	0	10	0	0
Lane Group Flow (vph)	0	1710	0	0	0	0	0	0	0	824	2551	0
Confl. Peds. (#/hr)			106							87		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		50.0								78.0	78.0	
Effective Green, g (s)		52.0								80.0	80.0	
Actuated g/C Ratio		0.37								0.57	0.57	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		1744								835	2905	
v/s Ratio Prot		c0.36									0.50	
v/s Ratio Perm										c0.56		
v/c Ratio		0.98								0.99	0.88	
Uniform Delay, d1		43.5								29.5	25.8	
Progression Factor		1.00								0.27	0.27	
Incremental Delay, d2		17.4								6.8	0.4	
Delay (s)		60.9								14.7	7.4	
Level of Service		E								B	A	
Approach Delay (s)		60.9			0.0			0.0			9.2	
Approach LOS		E			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		26.5									C	
HCM 2000 Volume to Capacity ratio		0.98										
Actuated Cycle Length (s)		140.0								8.0		
Intersection Capacity Utilization		104.2%								G		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕						↕↕↕	
Traffic Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Future Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	100		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		243			553			171			589	
Travel Time (s)		5.5			12.6			3.3			11.5	
Confl. Peds. (#/hr)			182	182						42		132
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	351	0	251	271	0	0	0	0	0	262	0
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7	
Total Split (s)		106.0		106.0	106.0					34.0	34.0	
Total Split (%)		75.7%		75.7%	75.7%					24.3%	24.3%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7	
Total Lost Time (s)		4.0		4.0	4.0						4.0	
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.15		0.42	0.20						0.24	
Control Delay		5.2		9.9	6.3						26.8	
Queue Delay		0.0		0.0	0.0						0.0	
Total Delay		5.2		9.9	6.3						26.8	
Queue Length 50th (ft)		40		79	69						64	
Queue Length 95th (ft)		54		127	99						m69	
Internal Link Dist (ft)		163			473			91			509	
Turn Bay Length (ft)				100								
Base Capacity (vph)		2339		595	1357						1083	
Starvation Cap Reductn		0		0	0						0	
Spillback Cap Reductn		0		0	0						0	
Storage Cap Reductn		0		0	0						0	
Reduced v/c Ratio		0.15		0.42	0.20						0.24	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 68 (49%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 60
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Tampa St & Whiting St



Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2040
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 		 							 	
Traffic Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Future Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.93		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.81	1.00						1.00	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3193		1439	1863						5057	
Flt Permitted		1.00		0.54	1.00						0.99	
Satd. Flow (perm)		3193		817	1863						5057	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	275	76	251	271	0	0	0	0	29	233	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	339	0	251	271	0	0	0	0	0	262	0
Confl. Peds. (#/hr)			182	182						42		132
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2		2
Permitted Phases				4								
Actuated Green, G (s)		100.2		100.2	100.2						28.3	
Effective Green, g (s)		102.0		102.0	102.0						30.0	
Actuated g/C Ratio		0.73		0.73	0.73						0.21	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		2326		595	1357						1083	
v/s Ratio Prot		0.11			0.15						c0.05	
v/s Ratio Perm				c0.31								
v/c Ratio		0.15		0.42	0.20						0.24	
Uniform Delay, d1		5.8		7.4	6.0						45.6	
Progression Factor		1.00		0.98	0.98						0.58	
Incremental Delay, d2		0.1		2.2	0.3						0.2	
Delay (s)		5.9		9.5	6.3						26.7	
Level of Service		A		A	A						C	
Approach Delay (s)		5.9			7.8			0.0			26.7	
Approach LOS		A			A			A			C	
Intersection Summary												
HCM 2000 Control Delay			11.6			HCM 2000 Level of Service					B	
HCM 2000 Volume to Capacity ratio			0.38									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)					8.0	
Intersection Capacity Utilization			59.0%			ICU Level of Service					B	
Analysis Period (min)			15									

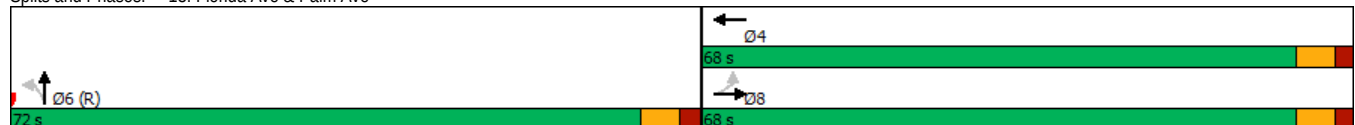
c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Future Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		459			889			1015			242	
Travel Time (s)		10.4			20.2			19.8			4.7	
Confl. Peds. (#/hr)	26					26	12		7			
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Shared Lane Traffic (%)												
Lane Group Flow (vph)	95	585	0	0	459	0	0	1896	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	22.1	22.1			22.1		30.3	30.3				
Total Split (s)	68.0	68.0			68.0		72.0	72.0				
Total Split (%)	48.6%	48.6%			48.6%		51.4%	51.4%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.3	2.3				
Lost Time Adjust (s)	-2.1	-2.1			-2.1		-2.3	-2.3				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.34	0.69			0.58		0.78					
Control Delay	22.6	27.0			31.1		19.3					
Queue Delay	0.0	2.6			0.0		0.0					
Total Delay	22.6	29.7			31.1		19.3					
Queue Length 50th (ft)	49	330			299		340					
Queue Length 95th (ft)	m84	410			412		370					
Internal Link Dist (ft)		379			809		935			162		
Turn Bay Length (ft)	100											
Base Capacity (vph)	278	851			796		2442					
Starvation Cap Reductn	0	158			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.34	0.84			0.58		0.78					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 134 (96%), Referenced to phase 6:NBTL, Start of Green
 Natural Cycle: 55
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								 				
Traffic Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Future Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.99				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1736			5018				
Flt Permitted	0.33	1.00			1.00			1.00				
Satd. Flow (perm)	609	1863			1736			5018				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	95	585	0	0	310	149	33	1745	118	0	0	0
RTOR Reduction (vph)	0	0	0	0	4	0	0	5	0	0	0	0
Lane Group Flow (vph)	95	585	0	0	455	0	0	1891	0	0	0	0
Confl. Peds. (#/hr)	26					26	12		7			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	61.9	61.9			61.9			65.7				
Effective Green, g (s)	64.0	64.0			64.0			68.0				
Actuated g/C Ratio	0.46	0.46			0.46			0.49				
Clearance Time (s)	6.1	6.1			6.1			6.3				
Lane Grp Cap (vph)	278	851			793			2437				
v/s Ratio Prot		c0.31			0.26							
v/s Ratio Perm	0.16							0.38				
v/c Ratio	0.34	0.69			0.57			0.78				
Uniform Delay, d1	24.4	30.1			28.0			29.7				
Progression Factor	0.77	0.76			1.00			0.58				
Incremental Delay, d2	2.8	3.8			3.0			1.9				
Delay (s)	21.7	26.5			31.0			19.3				
Level of Service	C	C			C			B				
Approach Delay (s)		25.9			31.0			19.3			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		22.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		106.9%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Future Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		183			365			1146			1015	
Travel Time (s)		4.2			8.3			22.3			19.8	
Confl. Peds. (#/hr)	7					7	14		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	220	105	0	0	220	0	0	1935	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (s)	25.0	25.0			25.0		45.0	45.0				
Total Split (%)	35.7%	35.7%			35.7%		64.3%	64.3%				
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)	-2.4	-2.4			-2.4		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	0.74	0.19			0.43		0.65					
Control Delay	39.7	19.3			21.6		12.2					
Queue Delay	0.0	0.0			0.0		0.0					
Total Delay	39.7	19.3			21.6		12.2					
Queue Length 50th (ft)	84	33			71		365					
Queue Length 95th (ft)	#190	68			129		m184					
Internal Link Dist (ft)		103			285		1066			935		
Turn Bay Length (ft)	50											
Base Capacity (vph)	298	558			515		2970					
Starvation Cap Reductn	0	0			0		0					
Spillback Cap Reductn	0	0			0		0					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	0.74	0.19			0.43		0.65					

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 6 (9%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 70

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Future Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	0.99	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1759	1863			1689			5068				
Flt Permitted	0.54	1.00			1.00			1.00				
Satd. Flow (perm)	995	1863			1689			5068				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	105	0	0	87	133	41	1876	18	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	1	0	0	0	0
Lane Group Flow (vph)	220	105	0	0	211	0	0	1934	0	0	0	0
Confl. Peds. (#/hr)	7					7	14		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	18.6	18.6			18.6			39.0				
Effective Green, g (s)	21.0	21.0			21.0			41.0				
Actuated g/C Ratio	0.30	0.30			0.30			0.59				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	298	558			506			2968				
v/s Ratio Prot		0.06			0.12							
v/s Ratio Perm	0.22							0.38				
v/c Ratio	0.74	0.19			0.42			0.65				
Uniform Delay, d1	22.0	18.2			19.6			9.7				
Progression Factor	1.00	1.00			1.00			1.24				
Incremental Delay, d2	15.1	0.7			2.5			0.1				
Delay (s)	37.1	18.9			22.1			12.2				
Level of Service	D	B			C			B				
Approach Delay (s)		31.2			22.1			12.2			0.0	
Approach LOS		C			C			B			A	
Intersection Summary												
HCM 2000 Control Delay		15.6			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.68										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		69.0%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

Build 2040
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔						↔↔↔				
Traffic Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Future Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		371			481			701			1146	
Travel Time (s)		8.4			10.9			13.7			22.3	
Confl. Peds. (#/hr)									5			
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	2306	0	0	0	0	0	3952	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Minimum Split (s)	23.7	23.7						24.0				
Total Split (s)	64.0	64.0						76.0				
Total Split (%)	45.7%	45.7%						54.3%				
Yellow Time (s)	3.7	3.7						4.0				
All-Red Time (s)	2.0	2.0						2.0				
Lost Time Adjust (s)		-1.7						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.53						1.57				
Control Delay		269.1						282.8				
Queue Delay		0.0						0.0				
Total Delay		269.1						282.8				
Queue Length 50th (ft)		~1553						~1871				
Queue Length 95th (ft)		#1685						m#1886				
Internal Link Dist (ft)		291			401			621		1066		
Turn Bay Length (ft)												
Base Capacity (vph)		1505						2514				
Starvation Cap Reductn		0						3				
Spillback Cap Reductn		0						0				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		1.53						1.57				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 70 (50%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Future Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3484						4885				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3484						4885				
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	732	1574	0	0	0	0	0	3066	886	0	0	0
RTOR Reduction (vph)	0	13	0	0	0	0	0	3	0	0	0	0
Lane Group Flow (vph)	0	2293	0	0	0	0	0	3949	0	0	0	0
Confl. Peds. (#/hr)								5				
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		58.3						70.0				
Effective Green, g (s)		60.0						72.0				
Actuated g/C Ratio		0.43						0.51				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1493						2512				
v/s Ratio Prot								0.81				
v/s Ratio Perm		0.66										
v/c Ratio		1.54						1.57				
Uniform Delay, d1		40.0						34.0				
Progression Factor		0.76						0.80				
Incremental Delay, d2		244.3						257.9				
Delay (s)		274.8						285.1				
Level of Service		F						F				
Approach Delay (s)		274.8			0.0			285.1			0.0	
Approach LOS		F			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		281.3						HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio		1.56										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		142.0%						ICU Level of Service		H		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
16: Florida Ave & Fortune St

Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Future Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		200			263			481			701	
Travel Time (s)		4.5			6.0			10.9			15.9	
Confl. Peds. (#/hr)	11					11	9		8			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	144	0	0	0	0	0	4041	0	0	0	0
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Minimum Split (s)	23.4	23.4					24.0	24.0				
Total Split (s)	24.1	24.1					115.9	115.9				
Total Split (%)	17.2%	17.2%					82.8%	82.8%				
Yellow Time (s)	3.4	3.4					4.0	4.0				
All-Red Time (s)	2.0	2.0					2.0	2.0				
Lost Time Adjust (s)		-1.4						-2.0				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.57						0.99				
Control Delay		65.6						6.1				
Queue Delay		0.0						19.9				
Total Delay		65.6						26.0				
Queue Length 50th (ft)		124						66				
Queue Length 95th (ft)		199						m63				
Internal Link Dist (ft)		120			183			401			621	
Turn Bay Length (ft)												
Base Capacity (vph)		253						4062				
Starvation Cap Reductn		0						226				
Spillback Cap Reductn		0						77				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.57						1.05				

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 43 (31%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 120
Control Type: Pretimed
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Future Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1767						5079				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1767						5079				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	49	0	0	0	0	34	3997	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	144	0	0	0	0	0	4041	0	0	0	0
Confl. Peds. (#/hr)	11						11	9	8			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		18.7						109.9				
Effective Green, g (s)		20.1						111.9				
Actuated g/C Ratio		0.14						0.80				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		253						4059				
v/s Ratio Prot												
v/s Ratio Perm		0.08						0.80				
v/c Ratio		0.57						1.00				
Uniform Delay, d1		55.9						13.8				
Progression Factor		1.00						0.10				
Incremental Delay, d2		9.0						3.3				
Delay (s)		64.9						4.8				
Level of Service		E						A				
Approach Delay (s)		64.9			0.0			4.8			0.0	
Approach LOS		E			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		6.8										
HCM 2000 Volume to Capacity ratio		0.93										
Actuated Cycle Length (s)		140.0										
Intersection Capacity Utilization		92.4%										
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group												
Lane Configurations		↔			↔			↔↔↔				
Traffic Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Future Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			35	
Link Distance (ft)		288			298			284			481	
Travel Time (s)		6.5			6.8			6.5			9.4	
Confl. Peds. (#/hr)	5					5	10		15			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	90	0	0	133	0	0	4208	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0				
Total Split (s)	27.4	27.4			27.4		112.6	112.6				
Total Split (%)	19.6%	19.6%			19.6%		80.4%	80.4%				
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0				
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-2.0				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.52			0.49			1.07				
Control Delay		65.1			60.0			46.1				
Queue Delay		0.0			0.0			14.0				
Total Delay		65.1			60.0			60.1				
Queue Length 50th (ft)		76			111			~1584				
Queue Length 95th (ft)		137			181			m45				
Internal Link Dist (ft)		208			218			204		401		
Turn Bay Length (ft)												
Base Capacity (vph)		173			270			3938				
Starvation Cap Reductn		0			0			878				
Spillback Cap Reductn		0			0			67				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.52			0.49			1.38				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 36 (26%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Florida Ave & Harrison St

 Ø2 (L) 112.6 s	 Ø4 27.4 s
	 Ø8 27.4 s

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Future Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		0.99			1.00			1.00				
Frt		1.00			0.89			1.00				
Flt Protected		0.96			1.00			1.00				
Satd. Flow (prot)		1786			1621			5074				
Flt Permitted		0.56			1.00			1.00				
Satd. Flow (perm)		1038			1621			5074				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	23	0	0	21	112	18	4157	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	133	0	0	4207	0	0	0	0
Confl. Peds. (#/hr)	5					5	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		21.6			21.6			106.6				
Effective Green, g (s)		23.4			23.4			108.6				
Actuated g/C Ratio		0.17			0.17			0.78				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		173			270			3935				
v/s Ratio Prot					0.08							
v/s Ratio Perm		0.09						0.83				
v/c Ratio		0.52			0.49			1.07				
Uniform Delay, d1		53.2			52.9			15.7				
Progression Factor		1.00			1.00			0.80				
Incremental Delay, d2		10.7			6.3			31.8				
Delay (s)		63.9			59.2			44.3				
Level of Service		E			E			D				
Approach Delay (s)		63.9			59.2			44.3			0.0	
Approach LOS		E			E			D			A	
Intersection Summary												
HCM 2000 Control Delay		45.1			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.97										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		106.9%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Future Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	60		0	0		0
Storage Lanes	1		0	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		570			573			286			284	
Travel Time (s)		13.0			13.0			5.6			5.5	
Confl. Peds. (#/hr)	16					16	3		28			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	190	113	0	0	449	0	101	4060	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0				
Total Split (s)	52.0	52.0			52.0		88.0	88.0				
Total Split (%)	37.1%	37.1%			37.1%		62.9%	62.9%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	1.33	0.18			0.75		0.10	1.33				
Control Delay	215.7	19.4			49.8		1.9	162.1				
Queue Delay	0.0	0.0			0.0		0.0	0.2				
Total Delay	215.7	19.4			49.8		1.9	162.3				
Queue Length 50th (ft)	~190	50			361		5	~1761				
Queue Length 95th (ft)	m#300	m78			496		m4	m58				
Internal Link Dist (ft)		490			493			206			204	
Turn Bay Length (ft)	75						60					
Base Capacity (vph)	143	638			600		1050	3050				
Starvation Cap Reductn	0	0			0		0	296				
Spillback Cap Reductn	0	0			0		0	131				
Storage Cap Reductn	0	0			0		0	0				
Reduced v/c Ratio	1.33	0.18			0.75		0.10	1.47				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 29 (21%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 140
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Future Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.98		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.95		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1770	1863			1750		1751	5081				
Flt Permitted	0.22	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	418	1863			1750		1751	5081				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	190	113	0	0	296	153	101	4047	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	190	113	0	0	449	0	101	4060	0	0	0	0
Confl. Peds. (#/hr)	16					16	3		28			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	46.2	46.2			46.2		82.0	82.0				
Effective Green, g (s)	48.0	48.0			48.0		84.0	84.0				
Actuated g/C Ratio	0.34	0.34			0.34		0.60	0.60				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	143	638			600		1050	3048				
v/s Ratio Prot		0.06			0.26			0.80				
v/s Ratio Perm	0.45						0.06					
v/c Ratio	1.33	0.18			0.75		0.10	1.33				
Uniform Delay, d1	46.0	32.2			40.7		11.9	28.0				
Progression Factor	0.74	0.58			1.00		0.15	0.11				
Incremental Delay, d2	184.9	0.6			8.3		0.0	149.6				
Delay (s)	218.8	19.1			49.0		1.9	152.6				
Level of Service	F	B			D		A	F				
Approach Delay (s)		144.4			49.0			148.9			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		139.5			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.33										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		116.5%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

Build 2040
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Future Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	60		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			550			283			286	
Travel Time (s)		12.6			12.5			5.5			5.6	
Confl. Peds. (#/hr)	5					5	3		100			
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	631	0	0	428	0	63	4191	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0				
Total Split (s)	59.0	59.0			59.0		81.0	81.0				
Total Split (%)	42.1%	42.1%			42.1%		57.9%	57.9%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0				
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.91			0.61		0.07	1.52				
Control Delay		433.5			38.5		9.5	254.7				
Queue Delay		0.0			0.0		0.0	0.1				
Total Delay		433.5			38.5		9.5	254.8				
Queue Length 50th (ft)		~664			309		12	~1944				
Queue Length 95th (ft)		m#713			426		m11	m#1435				
Internal Link Dist (ft)		473			470			203			206	
Turn Bay Length (ft)							60					
Base Capacity (vph)		331			703		962	2762				
Starvation Cap Reductn		0			0		0	145				
Spillback Cap Reductn		0			0		0	160				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		1.91			0.61		0.07	1.61				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 29 (21%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 150												
Control Type: Pretimed												
~ Volume exceeds capacity, queue is theoretically infinite.												
Queue shown is maximum after two cycles.												
# 95th percentile volume exceeds capacity, queue may be longer.												
Queue shown is maximum after two cycles.												
m Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 19: Florida Ave & Cass St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Future Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.99		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.99	1.00				
Frt		1.00			0.97		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1838			1790		1750	5022				
Flt Permitted		0.45			1.00		0.95	1.00				
Satd. Flow (perm)		844			1790		1750	5022				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	168	463	0	0	321	107	63	4092	99	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	631	0	0	428	0	63	4189	0	0	0	0
Confl. Peds. (#/hr)	5					5	3		100			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		53.0			53.0		75.0	75.0				
Effective Green, g (s)		55.0			55.0		77.0	77.0				
Actuated g/C Ratio		0.39			0.39		0.55	0.55				
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		331			703		962	2762				
v/s Ratio Prot					0.24			c0.83				
v/s Ratio Perm		c0.75					0.04					
v/c Ratio		1.91			0.61		0.07	1.52				
Uniform Delay, d1		42.5			33.9		14.7	31.5				
Progression Factor		0.56			1.00		0.63	0.60				
Incremental Delay, d2		412.1			3.9		0.0	232.7				
Delay (s)		435.7			37.8		9.3	251.6				
Level of Service		F			D		A	F				
Approach Delay (s)		435.7			37.8			248.0			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		253.3							F			
HCM 2000 Volume to Capacity ratio		1.68										
Actuated Cycle Length (s)		140.0						8.0				
Intersection Capacity Utilization		136.1%						H				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Future Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		537			559			300			283	
Travel Time (s)		12.2			12.7			5.8			5.5	
Confl. Peds. (#/hr)	34					34	26		55			
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	309	0	0	210	0	120	4330	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0				
Total Split (s)	38.0	38.0			38.0		102.0	102.0				
Total Split (%)	27.1%	27.1%			27.1%		72.9%	72.9%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0				
Total Lost Time (s)		4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.16			0.53		0.11	1.22				
Control Delay		139.6			51.7		2.0	109.5				
Queue Delay		13.8			66.0		1.2	0.2				
Total Delay		153.4			117.7		3.2	109.6				
Queue Length 50th (ft)		~337			167		10	~1760				
Queue Length 95th (ft)		m#436			243		m8	m116				
Internal Link Dist (ft)		457			479			220			203	
Turn Bay Length (ft)												
Base Capacity (vph)		267			398		1136	3552				
Starvation Cap Reductn		0			0		842	144				
Spillback Cap Reductn		149			222		0	359				
Storage Cap Reductn		0			0		0	0				
Reduced v/c Ratio		2.62			1.19		0.41	1.36				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 16 (11%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 130

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Future Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Flpb, ped/bikes		1.00			0.95		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.92	1.00				
Frt		1.00			0.92		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1813			1639		1623	5074				
Flt Permitted		0.60			1.00		0.95	1.00				
Satd. Flow (perm)		1100			1639		1623	5074				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	94	215	0	0	90	120	120	4301	29	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	309	0	0	210	0	120	4329	0	0	0	0
Confl. Peds. (#/hr)	34					34	26		55			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		32.2			32.2		96.0	96.0				
Effective Green, g (s)		34.0			34.0		98.0	98.0				
Actuated g/C Ratio		0.24			0.24		0.70	0.70				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		267			398		1136	3551				
v/s Ratio Prot					0.13			c0.85				
v/s Ratio Perm		c0.28					0.07					
v/c Ratio		1.16			0.53		0.11	1.22				
Uniform Delay, d1		53.0			46.0		6.8	21.0				
Progression Factor		0.89			1.00		0.29	0.13				
Incremental Delay, d2		97.4			4.9		0.0	98.9				
Delay (s)		144.3			51.0		2.0	101.6				
Level of Service		F			D		A	F				
Approach Delay (s)		144.3			51.0			98.9			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		99.7			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.20										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		113.9%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

	↖	→	↗	↖	←	↖	↗	↑	↘	↙	↓	↘
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖			↗			↖↗↑				
Traffic Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Future Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		539			576			283			300	
Travel Time (s)		12.3			13.1			5.5			5.8	
Confl. Peds. (#/hr)	36					36	9		22			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	440	0	0	297	0	0	4074	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7				
Total Split (s)	48.0	48.0			48.0		92.0	92.0				
Total Split (%)	34.3%	34.3%			34.3%		65.7%	65.7%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.78			0.58			1.28				
Control Delay		392.7			45.8			147.0				
Queue Delay		0.0			0.0			0.2				
Total Delay		392.7			45.8			147.2				
Queue Length 50th (ft)		~607			227			~1719				
Queue Length 95th (ft)		m#765			328			m#1508				
Internal Link Dist (ft)		459			496			203			220	
Turn Bay Length (ft)												
Base Capacity (vph)		247			511			3186				
Starvation Cap Reductn		0			0			293				
Spillback Cap Reductn		0			0			100				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		1.78			0.58			1.41				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 20 (14%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Future Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.95			1.00				
Flpb, ped/bikes		0.98			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1774			1627			5070				
Flt Permitted		0.43			1.00			1.00				
Satd. Flow (perm)		785			1627			5070				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	171	0	0	119	178	62	3983	29	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	440	0	0	297	0	0	4074	0	0	0	0
Confl. Peds. (#/hr)	36					36	9		22			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		42.1			42.1			86.3				
Effective Green, g (s)		44.0			44.0			88.0				
Actuated g/C Ratio		0.31			0.31			0.63				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		246			511			3186				
v/s Ratio Prot					0.18							
v/s Ratio Perm		0.56						0.80				
v/c Ratio		1.79			0.58			1.28				
Uniform Delay, d1		48.0			40.3			26.0				
Progression Factor		0.77			1.00			0.70				
Incremental Delay, d2		369.5			4.8			125.6				
Delay (s)		406.5			45.0			143.8				
Level of Service		F			D			F				
Approach Delay (s)		406.5			45.0			143.8			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		161.8			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.45										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		125.8%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Future Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		543			597			298			283	
Travel Time (s)		12.3			13.6			5.8			5.5	
Confl. Peds. (#/hr)	15					15	9		30			
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	780	0	0	193	335	0	4075	0	0	0	0
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0				
Total Split (s)	29.0	29.0			29.0	29.0	111.0	111.0				
Total Split (%)	20.7%	20.7%			20.7%	20.7%	79.3%	79.3%				
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0				
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0				
Total Lost Time (s)		4.0			4.0	4.0		4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		1.87			0.58	1.16		1.05				
Control Delay		422.0			60.6	148.0		37.8				
Queue Delay		0.8			0.0	2.4		19.9				
Total Delay		422.8			60.6	150.4		57.7				
Queue Length 50th (ft)		~570			163	~342		~1081				
Queue Length 95th (ft)		m#542			247	#541		m#623				
Internal Link Dist (ft)		463			517			218			203	
Turn Bay Length (ft)												
Base Capacity (vph)		418			332	290		3863				
Starvation Cap Reductn		0			0	0		280				
Spillback Cap Reductn		33			0	49		1065				
Storage Cap Reductn		0			0	0		0				
Reduced v/c Ratio		2.03			0.58	1.39		1.46				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 2 (1%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 130

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			  				
Traffic Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Future Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.91				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		1.00				
Flt Protected		0.99			1.00	1.00		1.00				
Satd. Flow (prot)		3487			1863	1520		5052				
Flt Permitted		0.67			1.00	1.00		1.00				
Satd. Flow (perm)		2346			1863	1520		5052				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	175	605	0	0	193	335	40	3932	103	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	19	0	2	0	0	0	0
Lane Group Flow (vph)	0	780	0	0	193	316	0	4073	0	0	0	0
Confl. Peds. (#/hr)	15					15	9		30			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		23.1			23.1	23.1		105.0				
Effective Green, g (s)		25.0			25.0	25.0		107.0				
Actuated g/C Ratio		0.18			0.18	0.18		0.76				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		418			332	271		3861				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.33				0.21		0.81				
v/c Ratio		1.87			0.58	1.17		1.05				
Uniform Delay, d1		57.5			52.7	57.5		16.5				
Progression Factor		1.00			1.00	1.00		0.62				
Incremental Delay, d2		390.5			7.2	107.4		25.5				
Delay (s)		448.1			60.0	164.9		35.7				
Level of Service		F			E	F		D				
Approach Delay (s)		448.1			126.5			35.7			0.0	
Approach LOS		F			F			D			A	
Intersection Summary												
HCM 2000 Control Delay		104.4						HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio		1.21										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		8.0		
Intersection Capacity Utilization		127.1%						ICU Level of Service		H		
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Future Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	75		0	0		0	0		0	0		0
Storage Lanes	1		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		548			607			314			298	
Travel Time (s)		12.5			13.8			6.1			5.8	
Confl. Peds. (#/hr)	45					45	21		9			
Peak Hour Factor	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Shared Lane Traffic (%)												
Lane Group Flow (vph)	86	149	0	0	350	0	0	4163	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0				
Total Split (s)	20.0	20.0			20.0		120.0	120.0				
Total Split (%)	14.3%	14.3%			14.3%		85.7%	85.7%				
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0				
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0				
Lost Time Adjust (s)	-1.9	-1.9			-1.9		-2.0	-2.0				
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio	1.69	0.70			1.91		0.99					
Control Delay	385.8	80.5			462.1		21.6					
Queue Delay	0.0	0.0			0.0		40.7					
Total Delay	385.8	80.5			462.1		62.4					
Queue Length 50th (ft)	~116	138			~492		1286					
Queue Length 95th (ft)	m#145	m163			#693		#1410					
Internal Link Dist (ft)		468			527		234			218		
Turn Bay Length (ft)	75											
Base Capacity (vph)	51	212			183		4200					
Starvation Cap Reductn	0	0			0		598					
Spillback Cap Reductn	0	0			0		242					
Storage Cap Reductn	0	0			0		0					
Reduced v/c Ratio	1.69	0.70			1.91		1.16					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 131 (94%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 110
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Future Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.94			1.00				
Flpb, ped/bikes	0.97	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1710	1863			1599			5070				
Flt Permitted	0.25	1.00			1.00			1.00				
Satd. Flow (perm)	450	1863			1599			5070				
Peak-hour factor, PHF	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	86	149	0	0	128	222	45	4084	34	0	0	0
RTOR Reduction (vph)	0	0	0	0	1	0	0	1	0	0	0	0
Lane Group Flow (vph)	86	149	0	0	349	0	0	4162	0	0	0	0
Confl. Peds. (#/hr)	45					45	21		9			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	14.1	14.1			14.1			114.0				
Effective Green, g (s)	16.0	16.0			16.0			116.0				
Actuated g/C Ratio	0.11	0.11			0.11			0.83				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	51	212			182			4200				
v/s Ratio Prot		0.08			0.22							
v/s Ratio Perm	0.19							0.82				
v/c Ratio	1.69	0.70			1.92			0.99				
Uniform Delay, d1	62.0	59.7			62.0			11.5				
Progression Factor	1.20	1.19			1.00			0.83				
Incremental Delay, d2	345.9	9.0			432.9			11.4				
Delay (s)	420.1	80.2			494.9			21.0				
Level of Service	F	F			F			C				
Approach Delay (s)		204.6			494.9			21.0			0.0	
Approach LOS		F			F			C			A	
Intersection Summary												
HCM 2000 Control Delay		65.0			HCM 2000 Level of Service			E				
HCM 2000 Volume to Capacity ratio		1.10										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		114.5%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

	↖	→	↗	↖	←	↖	↗	↑	↗	↖	↓	↖
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↖	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Future Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		546			580			259			314	
Travel Time (s)		12.4			13.2			5.0			6.1	
Confl. Peds. (#/hr)						42	22					
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
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	3097	0	200	1414	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Minimum Split (s)					27.7		26.8	26.8				
Total Split (s)					86.0		54.0	54.0				
Total Split (%)					61.4%		38.6%	38.6%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.0		2.1	2.1				
Lost Time Adjust (s)					-1.7		-1.8	-1.8				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.88		0.32	0.78				
Control Delay					28.4		14.3	20.1				
Queue Delay					34.9		2.1	8.6				
Total Delay					63.2		16.4	28.8				
Queue Length 50th (ft)					667		34	125				
Queue Length 95th (ft)					717		m72	215				
Internal Link Dist (ft)		466			500			179			234	
Turn Bay Length (ft)												
Base Capacity (vph)					3535		617	1816				
Starvation Cap Reductn					0		287	378				
Spillback Cap Reductn					652		1	0				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					1.07		0.61	0.98				

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 17 (12%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 65

Control Type: Pretimed

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Florida Ave & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↘	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Future Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6033		1692	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6033		1692	5085				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2334	763	200	1414	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	2	0	14	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3095	0	187	1414	0	0	0	0
Confl. Peds. (#/hr)					42		22					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					80.3		48.2	48.2				
Effective Green, g (s)					82.0		50.0	50.0				
Actuated g/C Ratio					0.59		0.36	0.36				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					3533		604	1816				
v/s Ratio Prot					c0.51			c0.28				
v/s Ratio Perm							0.11					
v/c Ratio					0.88		0.31	0.78				
Uniform Delay, d1					24.7		32.5	40.1				
Progression Factor					1.00		0.45	0.44				
Incremental Delay, d2					3.4		0.9	2.3				
Delay (s)					28.1		15.7	20.0				
Level of Service					C		B	C				
Approach Delay (s)		0.0			28.1			19.5			0.0	
Approach LOS		A			C			B			A	
Intersection Summary												
HCM 2000 Control Delay			25.1		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			104.2%		ICU Level of Service					G		
Analysis Period (min)			15									

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Future Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red	Yes		Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		283			526			595			259	
Travel Time (s)		6.4			12.0			11.6			5.0	
Confl. Peds. (#/hr)	53								36			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1672	0	0	0	0	0	1742	0	0	0	0
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Minimum Split (s)	27.9	27.9						26.9				
Total Split (s)	68.0	68.0						72.0				
Total Split (%)	48.6%	48.6%						51.4%				
Yellow Time (s)	3.7	3.7						3.7				
All-Red Time (s)	2.2	2.2						2.2				
Lost Time Adjust (s)		-1.9						-1.9				
Total Lost Time (s)		4.0						4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.73						0.72				
Control Delay		16.9						26.9				
Queue Delay		1.3						1.6				
Total Delay		18.2						28.4				
Queue Length 50th (ft)		224						429				
Queue Length 95th (ft)		m233						457				
Internal Link Dist (ft)		203			446			515			179	
Turn Bay Length (ft)												
Base Capacity (vph)		2289						2428				
Starvation Cap Reductn		380						470				
Spillback Cap Reductn		0						97				
Storage Cap Reductn		0						0				
Reduced v/c Ratio		0.88						0.89				

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 18 (13%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 55
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Florida Ave & Jackson St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Future Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		0.99						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4985						4985				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4985						4985				
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	220	1452	0	0	0	0	0	1594	148	0	0	0
RTOR Reduction (vph)	0	12	0	0	0	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	1660	0	0	0	0	0	1735	0	0	0	0
Confl. Peds. (#/hr)	53								36			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		62.1						66.1				
Effective Green, g (s)		64.0						68.0				
Actuated g/C Ratio		0.46						0.49				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		2278						2421				
v/s Ratio Prot								0.35				
v/s Ratio Perm		0.33										
v/c Ratio		0.73						0.72				
Uniform Delay, d1		30.9						28.4				
Progression Factor		0.53						0.88				
Incremental Delay, d2		0.5						1.9				
Delay (s)		17.0						26.9				
Level of Service		B						C				
Approach Delay (s)		17.0			0.0			26.9			0.0	
Approach LOS		B			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		22.0										C
HCM 2000 Volume to Capacity ratio		0.72										
Actuated Cycle Length (s)		140.0							8.0			
Intersection Capacity Utilization		77.7%										D
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
26: Florida Ave & Whiting St

Build 2040
Timing Plan: PM PEAK

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Future Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	0		50	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		553			557			397			595	
Travel Time (s)		12.6			12.7			7.7			11.6	
Confl. Peds. (#/hr)	106					106	71		94			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	498	0	0	337	0	0	277	0	0	0	0
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Minimum Split (s)	29.0	29.0			29.0		26.7	26.7				
Total Split (s)	99.0	99.0			99.0		41.0	41.0				
Total Split (%)	70.7%	70.7%			70.7%		29.3%	29.3%				
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7				
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0				
Lost Time Adjust (s)		-1.8			-1.8			-1.7				
Total Lost Time (s)		4.0			4.0			4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio		0.33			0.17			0.21				
Control Delay		9.5			5.5			25.8				
Queue Delay		0.0			0.0			0.0				
Total Delay		9.5			5.5			25.8				
Queue Length 50th (ft)		85			34			41				
Queue Length 95th (ft)		112			52			56				
Internal Link Dist (ft)		473			477			317			515	
Turn Bay Length (ft)												
Base Capacity (vph)		1496			2004			1313				
Starvation Cap Reductn		0			0			0				
Spillback Cap Reductn		20			27			0				
Storage Cap Reductn		0			0			0				
Reduced v/c Ratio		0.34			0.17			0.21				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 136 (97%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle: 60												
Control Type: Pretimed												

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Future Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			0.91				
Flpb, ped/bikes		1.00			0.89			0.99				
Flpb, ped/bikes		0.94			1.00			0.99				
Frt		1.00			0.92			0.99				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		3250			2902			4955				
Flt Permitted		0.66			1.00			1.00				
Satd. Flow (perm)		2204			2902			4955				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	247	251	0	0	156	181	8	255	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	36	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	498	0	0	301	0	0	273	0	0	0	0
Confl. Peds. (#/hr)	106					106	71		94			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		93.2			93.2			35.3				
Effective Green, g (s)		95.0			95.0			37.0				
Actuated g/C Ratio		0.68			0.68			0.26				
Clearance Time (s)		5.8			5.8			5.7				
Lane Grp Cap (vph)		1495			1969			1309				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.23						0.06				
v/c Ratio		0.33			0.15			0.21				
Uniform Delay, d1		9.3			8.1			40.1				
Progression Factor		0.94			1.00			0.65				
Incremental Delay, d2		0.6			0.2			0.4				
Delay (s)		9.4			8.2			26.3				
Level of Service		A			A			C				
Approach Delay (s)		9.4			8.2			26.3			0.0	
Approach LOS		A			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		13.2			HCM 2000 Level of Service			B				
HCM 2000 Volume to Capacity ratio		0.30										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			8.0				
Intersection Capacity Utilization		59.8%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0
Future Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Right Turn on Red			Yes			Yes	Yes		Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		240			537			462			230	
Travel Time (s)		5.5			12.2			9.0			4.5	
Confl. Peds. (#/hr)						21	28					
Peak Hour Factor	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	0	0	0	1873	0	20	263	0	0	0	0
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Minimum Split (s)					29.8		36.1	36.1				
Total Split (s)					97.0		43.0	43.0				
Total Split (%)					69.3%		30.7%	30.7%				
Yellow Time (s)					3.7		3.7	3.7				
All-Red Time (s)					2.1		2.4	2.4				
Lost Time Adjust (s)					-1.8		-2.1	-2.1				
Total Lost Time (s)					4.0		4.0	4.0				
Lead/Lag												
Lead-Lag Optimize?												
v/c Ratio					0.45		0.04	0.19				
Control Delay					11.4		12.7	38.9				
Queue Delay					0.0		0.0	0.0				
Total Delay					11.4		12.7	38.9				
Queue Length 50th (ft)					216		0	67				
Queue Length 95th (ft)					240		19	93				
Internal Link Dist (ft)		160			457			382			150	
Turn Bay Length (ft)												
Base Capacity (vph)					4198		489	1416				
Starvation Cap Reductn					0		0	0				
Spillback Cap Reductn					0		0	0				
Storage Cap Reductn					0		0	0				
Reduced v/c Ratio					0.45		0.04	0.19				
Intersection Summary												
Area Type:	Other											
Cycle Length: 140												
Actuated Cycle Length: 140												
Offset: 55 (39%), Referenced to phase 2:WBT, Start of Green												
Natural Cycle: 70												
Control Type: Pretimed												
Splits and Phases: 27: Florida Ave & Brorein St												
												

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0
Future Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6306		1700	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6306		1700	5085				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1722	151	20	263	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	14	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1863	0	6	263	0	0	0	0
Confl. Peds. (#/hr)					21		28					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					91.2		36.9	36.9				
Effective Green, g (s)					93.0		39.0	39.0				
Actuated g/C Ratio					0.66		0.28	0.28				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					4188		473	1416				
v/s Ratio Prot					c0.30			c0.05				
v/s Ratio Perm							0.00					
v/c Ratio					0.44		0.01	0.19				
Uniform Delay, d1					11.2		36.6	38.4				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.3		0.0	0.3				
Delay (s)					11.5		36.6	38.7				
Level of Service					B		D	D				
Approach Delay (s)		0.0			11.5			38.6			0.0	
Approach LOS		A			B			D			A	
Intersection Summary												
HCM 2000 Control Delay			15.1		HCM 2000 Level of Service					B		
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					8.0		
Intersection Capacity Utilization			40.2%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
28: Tampa St & Laurel St

Build 2040
Timing Plan: PM PEAK

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	365	0	0	1036	126
Future Volume (vph)	0	365	0	0	1036	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	397	0	0	1263	0
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1657	0	0	1254	0
Future Volume (vph)	0	1657	0	0	1254	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1801	0	0	1363	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						  
Traffic Volume (vph)	0	0	0	0	416	900
Future Volume (vph)	0	0	0	0	416	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	195		337			171
Travel Time (s)	4.4		7.7			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	452	978
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Build 2040 – Streetcar Phase AM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↑	↗	↖	↑						↕↗↖		
Traffic Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54	
Future Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	0		0	0		0	
Storage Lanes	0		1	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		656			459			1921			311		
Travel Time (s)		14.9			10.4			37.4			6.1		
Confl. Peds. (#/hr)			3	3						2		2	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	299	176	337	365	0	0	0	0	0	2128	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		8			4						2		9
Permitted Phases			8	4						2			
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	20.0	
Total Split (s)		55.0	55.0	55.0	55.0					65.0	65.0	20.0	
Total Split (%)		39.3%	39.3%	39.3%	39.3%					46.4%	46.4%	14%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	2.0	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	0.0	
Lost Time Adjust (s)		-0.3	-0.3	-2.0	-2.0						-2.4		
Total Lost Time (s)		5.7	5.7	4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.46	0.27	1.14	0.54						0.97		
Control Delay		37.8	5.2	111.5	22.7						52.5		
Queue Delay		0.1	0.0	0.0	1.9						0.0		
Total Delay		37.9	5.2	111.5	24.6						52.5		
Queue Length 50th (ft)		210	0	~349	141						685		
Queue Length 95th (ft)		299	51	m#407	m160						#808		
Internal Link Dist (ft)		576			379			1841			231		
Turn Bay Length (ft)				150									
Base Capacity (vph)		656	661	296	678						2187		
Starvation Cap Reductn		0	0	0	178						0		
Spillback Cap Reductn		29	0	0	0						0		
Storage Cap Reductn		0	0	0	0						0		
Reduced v/c Ratio		0.48	0.27	1.14	0.73						0.97		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 150													
Control Type: Pretimed													
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.													
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.													
m Volume for 95th percentile queue is metered by upstream signal.													
Splits and Phases: 1: Tampa St & Palm Ave													
													
65 s				55 s				20 s					
													
65 s													

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Future Volume (vph)	0	272	160	307	332	0	0	0	0	314	1569	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7	5.7	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	0.98	1.00	1.00						1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						1.00	
Flt Protected		1.00	1.00	0.95	1.00						0.99	
Satd. Flow (prot)		1863	1555	1765	1863						5015	
Flt Permitted		1.00	1.00	0.44	1.00						0.99	
Satd. Flow (perm)		1863	1555	813	1863						5015	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	299	176	337	365	0	0	0	0	345	1724	59
RTOR Reduction (vph)	0	0	114	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	299	62	337	365	0	0	0	0	0	2126	0
Confl. Peds. (#/hr)			3	3						2		2
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4						2		
Actuated Green, G (s)		49.0	49.0	49.0	49.0						58.6	
Effective Green, g (s)		49.3	49.3	51.0	51.0						61.0	
Actuated g/C Ratio		0.35	0.35	0.36	0.36						0.44	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		656	547	296	678						2185	
v/s Ratio Prot		0.16			0.20							
v/s Ratio Perm			0.04	0.41							0.42	
v/c Ratio		0.46	0.11	1.14	0.54						0.97	
Uniform Delay, d1		35.0	30.6	44.5	35.2						38.7	
Progression Factor		1.00	1.00	0.57	0.58						1.00	
Incremental Delay, d2		2.3	0.4	84.4	1.8						13.8	
Delay (s)		37.3	31.0	109.8	22.4						52.5	
Level of Service		D	C	F	C						D	
Approach Delay (s)		35.0			64.4			0.0			52.5	
Approach LOS		C			E			A			D	
Intersection Summary												
HCM 2000 Control Delay			52.5			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				11.7		
Intersection Capacity Utilization			91.0%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581	
Future Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		475	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes	Yes		Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		360			350			247			1921		
Travel Time (s)		8.2			8.0			4.8			37.4		
Confl. Peds. (#/hr)				1								1	
Peak Hour Factor	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	
Shared Lane Traffic (%)				11%									
Lane Group Flow (vph)	0	0	0	16	2593	0	0	0	0	0	2038	0	
Turn Type				Split	NA						NA		
Protected Phases				4	4						2		9
Permitted Phases													
Minimum Split (s)				26.7	26.7						31.0		20.0
Total Split (s)				74.0	74.0						46.0		20.0
Total Split (%)				52.9%	52.9%						32.9%		14%
Yellow Time (s)				3.7	3.7						4.0		2.0
All-Red Time (s)				2.0	2.0						2.0		0.0
Lost Time Adjust (s)				-1.7	-1.7						-2.0		
Total Lost Time (s)				4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio				0.02	1.51						1.35		
Control Delay				0.6	262.2						210.7		
Queue Delay				0.0	0.0						0.0		
Total Delay				0.6	262.2						210.7		
Queue Length 50th (ft)				0	~1804						~857		
Queue Length 95th (ft)				2	#1934						m#872		
Internal Link Dist (ft)		280			270			167			1841		
Turn Bay Length (ft)													
Base Capacity (vph)				824	1714						1506		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.02	1.51						1.35		
Intersection Summary													
Area Type: Other													
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBT, Start of Green													
Natural Cycle: 150													
Control Type: Pretimed													
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.													
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.													
m Volume for 95th percentile queue is metered by upstream signal.													
Splits and Phases: 2: Tampa St & Kay St													
 Ø2 (R)				 Ø4								 Ø9	
#6 s				74 s								20 s	

Tampa Streetcar Feasibility Study
2: Tampa St & Kay St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Future Volume (vph)	0	0	0	17	2461	0	0	0	0	0	1355	581
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						0.91	
Frpb, ped/bikes				1.00	1.00						1.00	
Flpb, ped/bikes				1.00	1.00						1.00	
Frt				1.00	1.00						0.95	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1610	3390						4836	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1610	3390						4836	
Peak-hour factor, PHF	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	18	2591	0	0	0	0	0	1426	612
RTOR Reduction (vph)	0	0	0	8	20	0	0	0	0	0	55	0
Lane Group Flow (vph)	0	0	0	8	2574	0	0	0	0	0	1983	0
Confl. Peds. (#/hr)				1								1
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Actuated Green, G (s)				68.3	68.3						40.0	
Effective Green, g (s)				70.0	70.0						42.0	
Actuated g/C Ratio				0.50	0.50						0.30	
Clearance Time (s)				5.7	5.7						6.0	
Lane Grp Cap (vph)				805	1695						1450	
v/s Ratio Prot				0.00	c0.76						c0.41	
v/s Ratio Perm												
v/c Ratio				0.01	1.52						1.37	
Uniform Delay, d1				17.6	35.0						49.0	
Progression Factor				1.00	1.00						1.52	
Incremental Delay, d2				0.0	236.3						166.9	
Delay (s)				17.6	271.3						241.5	
Level of Service				B	F						F	
Approach Delay (s)		0.0			269.7			0.0			241.5	
Approach LOS		A			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			257.4			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.26									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			96.0%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

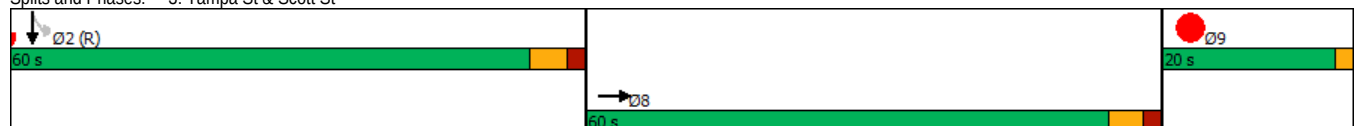
Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↕↕									↕↕↕		
Traffic Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0	
Future Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes	Yes		Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		386			62			346			247		
Travel Time (s)		8.8			1.4			6.7			4.8		
Confl. Peds. (#/hr)										3			
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1317	0	0	0	0	0	0	0	0	1249	0	
Turn Type		NA								Perm	NA		
Protected Phases		8									2		9
Permitted Phases										2			
Minimum Split (s)		24.7								24.0	24.0		20.0
Total Split (s)		60.0								60.0	60.0		20.0
Total Split (%)		42.9%								42.9%	42.9%		14%
Yellow Time (s)		3.7								4.0	4.0		2.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.7									-2.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.94									0.61		
Control Delay		54.0									0.8		
Queue Delay		46.7									21.8		
Total Delay		100.6									22.6		
Queue Length 50th (ft)		598									6		
Queue Length 95th (ft)		#751									m2		
Internal Link Dist (ft)		306			1			266			167		
Turn Bay Length (ft)													
Base Capacity (vph)		1398									2040		
Starvation Cap Reductn		0									826		
Spillback Cap Reductn		652									276		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		1.77									1.03		

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									 	
Traffic Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Future Volume (vph)	0	1084	140	0	0	0	0	0	0	222	939	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.98									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3478									5028	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3478									5028	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	1166	151	0	0	0	0	0	0	239	1010	0
RTOR Reduction (vph)	0	7	0	0	0	0	0	0	0	0	28	0
Lane Group Flow (vph)	0	1310	0	0	0	0	0	0	0	0	1221	0
Confl. Peds. (#/hr)											3	
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		54.3									54.0	
Effective Green, g (s)		56.0									56.0	
Actuated g/C Ratio		0.40									0.40	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1391									2011	
v/s Ratio Prot		c0.38										
v/s Ratio Perm											0.24	
v/c Ratio		0.94									0.61	
Uniform Delay, d1		40.4									33.3	
Progression Factor		1.00									0.02	
Incremental Delay, d2		13.7									0.1	
Delay (s)		54.1									0.8	
Level of Service		D									A	
Approach Delay (s)		54.1			0.0			0.0			0.8	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay		28.2			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.67										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		63.7%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100	
Future Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		354			570			301			129		
Travel Time (s)		8.0			13.0			5.9			2.5		
Confl. Peds. (#/hr)			9	9						73		35	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	310	0	124	335	0	0	0	0	0	3199	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		8			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.8		25.8	25.8					26.8	26.8		20.0
Total Split (s)		35.0		35.0	35.0					85.0	85.0		20.0
Total Split (%)		25.0%		25.0%	25.0%					60.7%	60.7%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1		0.0
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.72		1.33	0.81						1.10		
Control Delay		47.4		225.1	44.2						76.7		
Queue Delay		0.1		0.0	0.0						0.2		
Total Delay		47.5		225.1	44.2						76.8		
Queue Length 50th (ft)		196		~140	125						~1202		
Queue Length 95th (ft)		308		m#204	m265						#1275		
Internal Link Dist (ft)		274			490			221			49		
Turn Bay Length (ft)				75									
Base Capacity (vph)		428		93	412						2905		
Starvation Cap Reductn		0		0	0						0		
Spillback Cap Reductn		3		0	0						242		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.73		1.33	0.81						1.20		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

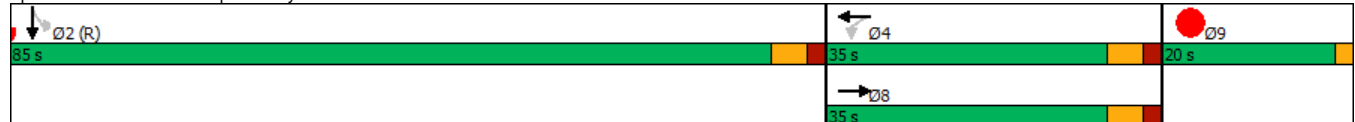
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Future Volume (vph)	0	80	202	113	305	0	0	0	0	31	2780	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.99	1.00						1.00	
Frt		0.90		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1646		1758	1863						5020	
Flt Permitted		1.00		0.23	1.00						1.00	
Satd. Flow (perm)		1646		421	1863						5020	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.91	0.91	0.91
Adj. Flow (vph)	0	88	222	124	335	0	0	0	0	34	3055	110
RTOR Reduction (vph)	0	65	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	245	0	124	335	0	0	0	0	0	3196	0
Confl. Peds. (#/hr)			9	9						73		35
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		29.2		29.2	29.2						79.2	
Effective Green, g (s)		31.0		31.0	31.0						81.0	
Actuated g/C Ratio		0.22		0.22	0.22						0.58	
Clearance Time (s)		5.8		5.8	5.8						5.8	
Lane Grp Cap (vph)		364		93	412						2904	
v/s Ratio Prot		0.15			0.18							
v/s Ratio Perm				0.29							0.64	
v/c Ratio		0.67		1.33	0.81						1.10	
Uniform Delay, d1		49.9		54.5	51.7						29.5	
Progression Factor		1.00		0.59	0.60						0.83	
Incremental Delay, d2		9.6		194.6	12.4						51.3	
Delay (s)		59.5		226.8	43.3						75.8	
Level of Service		E		F	D						E	
Approach Delay (s)		59.5			92.8			0.0			75.8	
Approach LOS		E			F			A			E	
Intersection Summary												
HCM 2000 Control Delay			76.5			HCM 2000 Level of Service					E	
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			115.2%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27	
Future Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		322			553			286			301		
Travel Time (s)		7.3			12.6			5.6			5.9		
Confl. Peds. (#/hr)			12	12						87		29	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	625	0	66	355	0	0	0	0	0	3164	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7		20.0
Total Split (s)		33.0		33.0	33.0					87.0	87.0		20.0
Total Split (%)		23.6%		23.6%	23.6%					62.1%	62.1%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0		0.0
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.66		1.25	0.92						1.06		
Control Delay		341.4		228.8	58.6						41.4		
Queue Delay		0.0		0.0	0.0						15.1		
Total Delay		341.4		228.8	58.6						56.5		
Queue Length 50th (ft)		~821		~76	327						~1146		
Queue Length 95th (ft)		#1063		m#115	#500						m142		
Internal Link Dist (ft)		242			473			206			221		
Turn Bay Length (ft)				75									
Base Capacity (vph)		377		53	385						2971		
Starvation Cap Reductn		0		0	0						235		
Spillback Cap Reductn		0		0	0						90		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		1.66		1.25	0.92						1.16		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 130

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 5: Tampa St & Cass St



Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Future Volume (vph)	0	409	166	61	327	0	0	0	0	95	2789	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1771		1770	1863						5011	
Flt Permitted		1.00		0.14	1.00						1.00	
Satd. Flow (perm)		1771		257	1863						5011	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	445	180	66	355	0	0	0	0	103	3032	29
RTOR Reduction (vph)	0	10	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	615	0	66	355	0	0	0	0	0	3163	0
Confl. Peds. (#/hr)			12	12						87		29
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		27.3		27.3	27.3						81.3	
Effective Green, g (s)		29.0		29.0	29.0						83.0	
Actuated g/C Ratio		0.21		0.21	0.21						0.59	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		366		53	385						2970	
v/s Ratio Prot		c0.35			0.19							
v/s Ratio Perm				0.26							0.63	
v/c Ratio		1.68		1.25	0.92						1.07	
Uniform Delay, d1		55.5		55.5	54.4						28.5	
Progression Factor		1.00		0.55	0.54						0.30	
Incremental Delay, d2		317.5		196.5	27.6						30.1	
Delay (s)		373.0		226.8	56.9						38.6	
Level of Service		F		F	E						D	
Approach Delay (s)		373.0			83.6			0.0			38.6	
Approach LOS		F			F			A			D	
Intersection Summary												
HCM 2000 Control Delay			92.7			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.05									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			106.8%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16	
Future Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		325			537			302			286		
Travel Time (s)		7.4			12.2			5.9			5.6		
Confl. Peds. (#/hr)			39	39						185		66	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	192	0	0	284	0	0	0	0	0	3065	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9		20.0
Total Split (s)		29.0		29.0	29.0					91.0	91.0		20.0
Total Split (%)		20.7%		20.7%	20.7%					65.0%	65.0%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2		0.0
Lost Time Adjust (s)		-1.8			-1.8						-1.9		
Total Lost Time (s)		4.0			4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.60			1.15						0.99		
Control Delay		57.3			144.2						8.4		
Queue Delay		204.2			612.6						41.1		
Total Delay		261.5			756.8						49.6		
Queue Length 50th (ft)		150			~307						100		
Queue Length 95th (ft)		236			#481						m91		
Internal Link Dist (ft)		245			457			222			206		
Turn Bay Length (ft)													
Base Capacity (vph)		321			246						3110		
Starvation Cap Reductn		0			0						254		
Spillback Cap Reductn		313			246						586		
Storage Cap Reductn		0			0						0		
Reduced v/c Ratio		24.00			284.00						1.21		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Future Volume (vph)	0	124	58	31	238	0	0	0	0	71	2824	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.97			1.00						1.00	
Flpb, ped/bikes		1.00			0.99						0.99	
Frt		0.96			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1731			1842						5004	
Flt Permitted		1.00			0.75						1.00	
Satd. Flow (perm)		1731			1380						5004	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	131	61	33	251	0	0	0	0	75	2973	17
RTOR Reduction (vph)	0	12	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	180	0	0	284	0	0	0	0	0	3065	0
Confl. Peds. (#/hr)			39	39						185		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		23.2			23.2						85.1	
Effective Green, g (s)		25.0			25.0						87.0	
Actuated g/C Ratio		0.18			0.18						0.62	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		309			246						3109	
v/s Ratio Prot		0.10										
v/s Ratio Perm					0.21						0.61	
v/c Ratio		0.58			1.15						0.99	
Uniform Delay, d1		52.7			57.5						25.9	
Progression Factor		1.00			0.73						0.17	
Incremental Delay, d2		7.8			105.3						2.6	
Delay (s)		60.5			147.1						7.1	
Level of Service		E			F						A	
Approach Delay (s)		60.5			147.1			0.0			7.1	
Approach LOS		E			F			A			A	
Intersection Summary												
HCM 2000 Control Delay			21.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			97.3%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9	
Future Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		344			539			272			302		
Travel Time (s)		7.8			12.3			5.3			5.9		
Confl. Peds. (#/hr)			8	8						38		24	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	444	0	0	300	0	0	0	0	0	3098	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7		20.0
Total Split (s)		46.0		46.0	46.0					74.0	74.0		20.0
Total Split (%)		32.9%		32.9%	32.9%					52.9%	52.9%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0		0.0
Lost Time Adjust (s)		-1.7			-1.7						-1.7		
Total Lost Time (s)		4.0			4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.82			1.62						1.23		
Control Delay		57.0			308.7						128.6		
Queue Delay		59.1			18.9						0.3		
Total Delay		116.1			327.6						129.0		
Queue Length 50th (ft)		360			~386						~1261		
Queue Length 95th (ft)		#529			m#338						m#1290		
Internal Link Dist (ft)		264			459			192			222		
Turn Bay Length (ft)													
Base Capacity (vph)		540			185						2522		
Starvation Cap Reductn		0			0						58		
Spillback Cap Reductn		312			108						349		
Storage Cap Reductn		0			0						0		
Reduced v/c Ratio		1.95			3.90						1.43		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

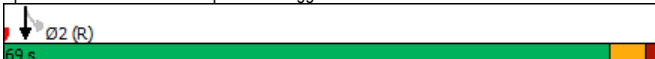
Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Future Volume (vph)	0	263	154	72	210	0	0	0	0	121	2781	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.99			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1751			1839						5043	
Flt Permitted		1.00			0.33						1.00	
Satd. Flow (perm)		1751			618						5043	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	280	164	77	223	0	0	0	0	129	2959	10
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	429	0	0	300	0	0	0	0	0	3098	0
Confl. Peds. (#/hr)			8	8						38		24
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		40.3			40.3						68.3	
Effective Green, g (s)		42.0			42.0						70.0	
Actuated g/C Ratio		0.30			0.30						0.50	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		525			185						2521	
v/s Ratio Prot		0.24										
v/s Ratio Perm					0.49						0.61	
v/c Ratio		0.82			1.62						1.23	
Uniform Delay, d1		45.4			49.0						35.0	
Progression Factor		1.00			0.67						0.68	
Incremental Delay, d2		13.2			282.0						104.1	
Delay (s)		58.6			315.0						127.7	
Level of Service		E			F						F	
Approach Delay (s)		58.6			315.0			0.0			127.7	
Approach LOS		E			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			134.4			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			105.0%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations											  		
Traffic Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47	
Future Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		258			543			313			272		
Travel Time (s)		5.9			12.3			6.1			5.3		
Confl. Peds. (#/hr)			30	30						30		54	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	526	0	141	639	0	0	0	0	0	3064	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9		20.0
Total Split (s)		51.0		51.0	51.0					69.0	69.0		20.0
Total Split (%)		36.4%		36.4%	36.4%					49.3%	49.3%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2		0.0
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.88		1.81	1.02						1.31		
Control Delay		60.1		437.3	92.8						158.7		
Queue Delay		0.0		0.0	28.3						0.2		
Total Delay		60.1		437.3	121.1						158.9		
Queue Length 50th (ft)		440		~186	~551						~1290		
Queue Length 95th (ft)		#645		m#288	m#765						m#908		
Internal Link Dist (ft)		178			463			233			192		
Turn Bay Length (ft)				75									
Base Capacity (vph)		596		78	625						2347		
Starvation Cap Reductn		0		0	69						153		
Spillback Cap Reductn		0		0	0						136		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.88		1.81	1.15						1.40		
Intersection Summary													
Area Type: Other													
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 150													
Control Type: Pretimed													
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.													
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.													
m Volume for 95th percentile queue is metered by upstream signal.													
Splits and Phases: 8: Tampa St & Twiggs St													
													

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Future Volume (vph)	0	346	154	134	607	0	0	0	0	72	2792	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.98		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.96		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1745		1770	1863						5050	
Flt Permitted		1.00		0.13	1.00						1.00	
Satd. Flow (perm)		1745		234	1863						5050	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	364	162	141	639	0	0	0	0	76	2939	49
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	515	0	141	639	0	0	0	0	0	3063	0
Confl. Peds. (#/hr)			30	30						30		54
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		45.3		45.3	45.3						63.1	
Effective Green, g (s)		47.0		47.0	47.0						65.0	
Actuated g/C Ratio		0.34		0.34	0.34						0.46	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		585		78	625						2344	
v/s Ratio Prot		0.30			0.34							
v/s Ratio Perm				0.60							0.61	
v/c Ratio		0.88		1.81	1.02						1.31	
Uniform Delay, d1		43.8		46.5	46.5						37.5	
Progression Factor		1.00		1.19	1.17						0.46	
Incremental Delay, d2		17.1		405.9	40.3						138.3	
Delay (s)		61.0		461.0	94.9						155.7	
Level of Service		E		F	F						F	
Approach Delay (s)		61.0			161.1			0.0			155.7	
Approach LOS		E			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			145.2			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.30									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			103.3%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22	
Future Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		311			548			309			313		
Travel Time (s)		7.1			12.5			6.0			6.1		
Confl. Peds. (#/hr)			53	53						29		66	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	339	0	194	35	0	0	0	0	0	3034	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8		20.0
Total Split (s)		39.0		39.0	39.0					81.0	81.0		20.0
Total Split (%)		27.9%		27.9%	27.9%					57.9%	57.9%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1		0.0
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.78		1.80	0.08						1.09		
Control Delay		53.5		402.2	32.6						53.3		
Queue Delay		72.2		57.9	0.0						3.5		
Total Delay		125.7		460.1	32.6						56.7		
Queue Length 50th (ft)		243		~258	20						~1168		
Queue Length 95th (ft)		#384		m#306	m28						m74		
Internal Link Dist (ft)		231			468			229			233		
Turn Bay Length (ft)				75									
Base Capacity (vph)		437		108	465						2775		
Starvation Cap Reductn		0		0	0						390		
Spillback Cap Reductn		325		86	0						638		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		3.03		8.82	0.08						1.42		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 150													
Control Type: Pretimed													
~ Volume exceeds capacity, queue is theoretically infinite.													
Queue shown is maximum after two cycles.													
# 95th percentile volume exceeds capacity, queue may be longer.													
Queue shown is maximum after two cycles.													
m Volume for 95th percentile queue is metered by upstream signal.													
Splits and Phases: 9: Tampa St & Madison St													
 Ø2 (R)								 Ø4				 Ø9	
81 s								39 s				20 s	

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Future Volume (vph)	0	121	204	186	34	0	0	0	0	88	2802	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.92		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1575		1770	1863						5048	
Flt Permitted		1.00		0.23	1.00						1.00	
Satd. Flow (perm)		1575		434	1863						5048	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	126	212	194	35	0	0	0	0	92	2919	23
RTOR Reduction (vph)	0	44	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	296	0	194	35	0	0	0	0	0	3034	0
Confl. Peds. (#/hr)			53	53						29		66
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		33.1		33.1	33.1						75.2	
Effective Green, g (s)		35.0		35.0	35.0						77.0	
Actuated g/C Ratio		0.25		0.25	0.25						0.55	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		393		108	465						2776	
v/s Ratio Prot		0.19			0.02							
v/s Ratio Perm				0.45							0.60	
v/c Ratio		0.75		1.80	0.08						1.09	
Uniform Delay, d1		48.5		52.5	40.1						31.5	
Progression Factor		1.00		0.75	0.80						0.21	
Incremental Delay, d2		12.5		375.2	0.1						42.4	
Delay (s)		61.0		414.6	32.2						49.1	
Level of Service		E		F	C						D	
Approach Delay (s)		61.0			356.2			0.0			49.1	
Approach LOS		E			F			A			D	
Intersection Summary												
HCM 2000 Control Delay			69.8			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.13									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			111.8%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456	
Future Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes	Yes		Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		314			546			274			309		
Travel Time (s)		7.1			12.4			5.3			6.0		
Confl. Peds. (#/hr)				26								42	
Peak Hour Factor	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93	
Shared Lane Traffic (%)				10%									
Lane Group Flow (vph)	0	0	0	382	2531	0	0	0	0	0	3130	0	
Turn Type				Perm	NA						NA		
Protected Phases					4						2		9
Permitted Phases				4									
Minimum Split (s)				25.8	25.8						26.8		20.0
Total Split (s)				59.0	59.0						61.0		20.0
Total Split (%)				42.1%	42.1%						43.6%		14%
Yellow Time (s)				3.7	3.7						3.7		2.0
All-Red Time (s)				2.1	2.1						2.1		0.0
Lost Time Adjust (s)				-1.8	-1.8						-1.8		
Total Lost Time (s)				4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio				0.56	1.33						1.56		
Control Delay				6.0	173.2						278.5		
Queue Delay				0.5	0.1						0.5		
Total Delay				6.5	173.2						279.0		
Queue Length 50th (ft)				37	~1134						~1457		
Queue Length 95th (ft)				m41	m#1172						m#704		
Internal Link Dist (ft)		234			466			194			229		
Turn Bay Length (ft)													
Base Capacity (vph)				680	1907						2011		
Starvation Cap Reductn				73	35						78		
Spillback Cap Reductn				13	0						298		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.63	1.35						1.83		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

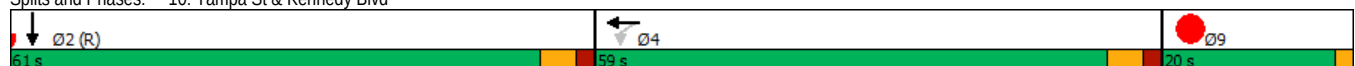
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Future Volume (vph)	0	0	0	394	2315	0	0	0	0	0	2455	456
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.86	0.86						0.91	
Frpb, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				0.95	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1439	4798						4893	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1439	4798						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	0	0	424	2489	0	0	0	0	0	2640	490
RTOR Reduction (vph)	0	0	0	115	22	0	0	0	0	0	19	0
Lane Group Flow (vph)	0	0	0	267	2509	0	0	0	0	0	3111	0
Confl. Peds. (#/hr)				26								42
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				53.2	53.2						55.2	
Effective Green, g (s)				55.0	55.0						57.0	
Actuated g/C Ratio				0.39	0.39						0.41	
Clearance Time (s)				5.8	5.8						5.8	
Lane Grp Cap (vph)				565	1884						1992	
v/s Ratio Prot											c0.64	
v/s Ratio Perm				0.19	0.52							
v/c Ratio				0.47	1.33						1.56	
Uniform Delay, d1				31.7	42.5						41.5	
Progression Factor				0.26	0.53						0.84	
Incremental Delay, d2				1.6	151.4						253.0	
Delay (s)				9.7	174.0						287.8	
Level of Service				A	F						F	
Approach Delay (s)		0.0			152.5			0.0			287.8	
Approach LOS		A			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			222.6			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)			10.0			
Intersection Capacity Utilization			104.4%			ICU Level of Service			G			
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

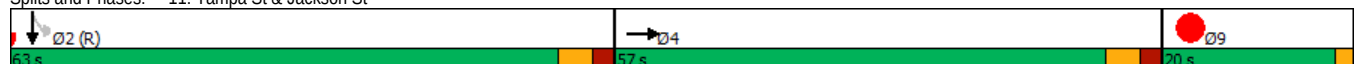
Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↑↑↑								↘	↑↑↑		
Traffic Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0	
Future Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	100		0	
Storage Lanes	0		0	0		0	0		0	1		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes	Yes		Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		275			260			589			274		
Travel Time (s)		6.3			5.9			11.5			5.3		
Confl. Peds. (#/hr)			71							39			
Peak Hour Factor	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1582	0	0	0	0	0	0	0	520	2610	0	
Turn Type		NA								Perm	NA		
Protected Phases		4									2		9
Permitted Phases										2			
Minimum Split (s)		27.0								27.0	27.0		20.0
Total Split (s)		57.0								63.0	63.0		20.0
Total Split (%)		40.7%								45.0%	45.0%		14%
Yellow Time (s)		3.7								3.7	3.7		2.0
All-Red Time (s)		2.3								2.3	2.3		0.0
Lost Time Adjust (s)		-2.0								-2.0	-2.0		
Total Lost Time (s)		4.0								4.0	4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.12dr								0.69	1.22		
Control Delay		43.0								5.0	116.5		
Queue Delay		11.4								51.6	0.6		
Total Delay		54.5								56.6	117.1		
Queue Length 50th (ft)		443								31	~1041		
Queue Length 95th (ft)		515								m9	m121		
Internal Link Dist (ft)		195			180			509			194		
Turn Bay Length (ft)										100			
Base Capacity (vph)		1775								757	2142		
Starvation Cap Reductn		0								282	447		
Spillback Cap Reductn		202								5	0		
Storage Cap Reductn		0								0	0		
Reduced v/c Ratio		1.01								1.09	1.54		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.
dr Defacto Right Lane. Recode with 1 though lane as a right lane.

Splits and Phases: 11: Tampa St & Jackson St



Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Future Volume (vph)	0	756	715	0	0	0	0	0	0	484	2427	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								1.00	0.91	
Frpb, ped/bikes		0.93								1.00	1.00	
Flpb, ped/bikes		1.00								0.92	1.00	
Frt		0.93								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4368								1632	5085	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4368								1632	5085	
Peak-hour factor, PHF	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93
Adj. Flow (vph)	0	813	769	0	0	0	0	0	0	520	2610	0
RTOR Reduction (vph)	0	122	0	0	0	0	0	0	0	70	0	0
Lane Group Flow (vph)	0	1460	0	0	0	0	0	0	0	450	2610	0
Confl. Peds. (#/hr)			71							39		
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases										2		
Actuated Green, G (s)		51.0								57.0	57.0	
Effective Green, g (s)		53.0								59.0	59.0	
Actuated g/C Ratio		0.38								0.42	0.42	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		1653								687	2142	
v/s Ratio Prot		c0.33									c0.51	
v/s Ratio Perm										0.28		
v/c Ratio		1.12dr								0.66	1.22	
Uniform Delay, d1		40.6								32.4	40.5	
Progression Factor		1.00								0.18	0.33	
Incremental Delay, d2		7.2								0.4	98.7	
Delay (s)		47.9								6.2	111.9	
Level of Service		D								A	F	
Approach Delay (s)		47.9			0.0			0.0			94.4	
Approach LOS		D			A			A			F	
Intersection Summary												
HCM 2000 Control Delay		78.8									E	
HCM 2000 Volume to Capacity ratio		0.91										
Actuated Cycle Length (s)		140.0								10.0		
Intersection Capacity Utilization		104.4%								G		
Analysis Period (min)		15										
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0	
Future Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	100		0	0			0		0	
Storage Lanes	0		0	1		0	0			0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		404			553			171			589		
Travel Time (s)		9.2			12.6			3.3			11.5		
Confl. Peds. (#/hr)			94	94						30		43	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	478	0	166	157	0	0	0	0	0	241	0	
Turn Type		NA		Perm	NA					Split	NA		
Protected Phases		4			4					2	2		9
Permitted Phases				4									
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7		21.5
Total Split (s)		67.0		67.0	67.0					53.0	53.0		20.0
Total Split (%)		47.9%		47.9%	47.9%					37.9%	37.9%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0		0.0
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.33		0.52	0.19						0.14		
Control Delay		20.4		21.8	8.3						32.7		
Queue Delay		0.0		0.0	0.0						0.0		
Total Delay		20.4		21.8	8.3						32.7		
Queue Length 50th (ft)		115		39	21						42		
Queue Length 95th (ft)		157		98	29						m38		
Internal Link Dist (ft)		324			473			91			509		
Turn Bay Length (ft)				100									
Base Capacity (vph)		1465		322	838						1747		
Starvation Cap Reductn		0		0	0						0		
Spillback Cap Reductn		0		0	0						0		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.33		0.52	0.19						0.14		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 80													
Control Type: Pretimed													
m	Volume for 95th percentile queue is metered by upstream signal.												
Splits and Phases: 12: Tampa St & Whiting St													
 Ø2 (R)				 Ø4				 Ø9					
53 s				67 s				20 s					

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Future Volume (vph)	0	302	162	161	152	0	0	0	0	86	147	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.93	1.00						1.00	
Frt		0.95		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.98	
Satd. Flow (prot)		3143		1642	1863						4993	
Flt Permitted		1.00		0.41	1.00						0.98	
Satd. Flow (perm)		3143		716	1863						4993	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.92	0.92	0.92	0.97	0.97	0.97
Adj. Flow (vph)	0	311	167	166	157	0	0	0	0	89	152	0
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	427	0	166	157	0	0	0	0	0	241	0
Confl. Peds. (#/hr)			94	94						30		43
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Actuated Green, G (s)		61.2		61.2	61.2						47.3	
Effective Green, g (s)		63.0		63.0	63.0						49.0	
Actuated g/C Ratio		0.45		0.45	0.45						0.35	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1414		322	838						1747	
v/s Ratio Prot		0.14			0.08						c0.05	
v/s Ratio Perm				c0.23								
v/c Ratio		0.30		0.52	0.19						0.14	
Uniform Delay, d1		24.5		27.6	23.1						31.1	
Progression Factor		1.00		0.57	0.34						1.05	
Incremental Delay, d2		0.6		5.3	0.4						0.0	
Delay (s)		25.1		21.0	8.2						32.5	
Level of Service		C		C	A						C	
Approach Delay (s)		25.1			14.8			0.0			32.5	
Approach LOS		C			B			A			C	
Intersection Summary												
HCM 2000 Control Delay			23.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.30									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			55.6%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0	
Future Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		459			889			1015			242		
Travel Time (s)		10.4			20.2			19.8			4.7		
Confl. Peds. (#/hr)	16					16	6		5				
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	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	40	415	0	0	672	0	0	1875	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	22.1	22.1			22.1		30.1	30.1					20.0
Total Split (s)	58.0	58.0			58.0		62.0	62.0					20.0
Total Split (%)	41.4%	41.4%			41.4%		44.3%	44.3%					14%
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.1	2.1					0.0
Lost Time Adjust (s)	-0.5	-0.5			-2.1			-2.1					
Total Lost Time (s)	5.6	5.6			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.75	0.60			0.98			0.91					
Control Delay	79.8	23.5			70.3			30.3					
Queue Delay	0.0	1.4			0.0			0.0					
Total Delay	79.8	24.9			70.3			30.3					
Queue Length 50th (ft)	36	230			587			624					
Queue Length 95th (ft)	m#66	m276			#851			m296					
Internal Link Dist (ft)		379			809			935			162		
Turn Bay Length (ft)	100												
Base Capacity (vph)	53	697			688			2052					
Starvation Cap Reductn	0	131			0			0					
Spillback Cap Reductn	0	0			0			0					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.75	0.73			0.98			0.91					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 120

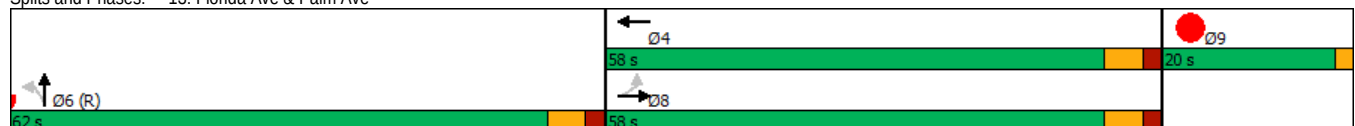
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Future Volume (vph)	38	394	0	0	442	197	100	1354	328	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.6	5.6			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Flpb, ped/bikes	1.00	1.00			0.98			0.99				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.97				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1756			4895				
Flt Permitted	0.08	1.00			1.00			1.00				
Satd. Flow (perm)	142	1863			1756			4895				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	40	415	0	0	465	207	105	1425	345	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	26	0	0	0	0
Lane Group Flow (vph)	40	415	0	0	660	0	0	1849	0	0	0	0
Confl. Peds. (#/hr)	16					16	6		5			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	51.9	51.9			51.9			55.9				
Effective Green, g (s)	52.4	52.4			54.0			58.0				
Actuated g/C Ratio	0.37	0.37			0.39			0.41				
Clearance Time (s)	6.1	6.1			6.1			6.1				
Lane Grp Cap (vph)	53	697			677			2027				
v/s Ratio Prot		0.22			0.38							
v/s Ratio Perm	0.28							0.38				
v/c Ratio	0.75	0.60			0.98			0.91				
Uniform Delay, d1	38.2	35.3			42.3			38.6				
Progression Factor	0.64	0.58			1.00			0.77				
Incremental Delay, d2	48.2	2.5			29.1			0.8				
Delay (s)	72.7	23.1			71.4			30.7				
Level of Service	E	C			E			C				
Approach Delay (s)		27.5			71.4			30.7			0.0	
Approach LOS		C			E			C			A	
Intersection Summary												
HCM 2000 Control Delay		39.3			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.82										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			11.6				
Intersection Capacity Utilization		91.0%			ICU Level of Service			F				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
14: Florida Ave & Henderson Ave

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0	
Future Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		25			25			35			35		
Link Distance (ft)		183			376			1146			1015		
Travel Time (s)		5.0			10.3			22.3			19.8		
Confl. Peds. (#/hr)	3					3	4		11				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	96	125	0	0	325	0	0	1936	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	22.4	22.4			22.4		24.0	24.0					20.0
Total Split (s)	23.0	23.0			23.0		27.0	27.0					20.0
Total Split (%)	32.9%	32.9%			32.9%		38.6%	38.6%					29%
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0					2.0
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0					0.0
Lost Time Adjust (s)	-2.4	-2.4			-2.4			-2.0					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.55	0.25			0.61			1.16					
Control Delay	35.8	21.6			20.2			118.1					
Queue Delay	0.0	0.0			0.0			0.0					
Total Delay	35.8	21.6			20.2			118.1					
Queue Length 50th (ft)	35	42			79			~726					
Queue Length 95th (ft)	#94	83			159			m310					
Internal Link Dist (ft)		103			296			1066			935		
Turn Bay Length (ft)	50												
Base Capacity (vph)	176	505			537			1662					
Starvation Cap Reductn	0	0			0			0					
Spillback Cap Reductn	0	0			0			0					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.55	0.25			0.61			1.16					

Intersection Summary

Area Type: Other

Cycle Length: 70

Actuated Cycle Length: 70

Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 80

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Future Volume (vph)	88	115	0	0	120	179	137	1631	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frb, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1766	1863			1696			5056				
Flt Permitted	0.35	1.00			1.00			1.00				
Satd. Flow (perm)	649	1863			1696			5056				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	96	125	0	0	130	195	149	1773	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	77	0	0	1	0	0	0	0
Lane Group Flow (vph)	96	125	0	0	248	0	0	1935	0	0	0	0
Confl. Peds. (#/hr)	3					3	4		11			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	16.6	16.6			16.6			21.0				
Effective Green, g (s)	19.0	19.0			19.0			23.0				
Actuated g/C Ratio	0.27	0.27			0.27			0.33				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	176	505			460			1661				
v/s Ratio Prot		0.07			0.15							
v/s Ratio Perm	0.15							0.38				
v/c Ratio	0.55	0.25			0.54			1.16				
Uniform Delay, d1	21.8	19.9			21.8			23.5				
Progression Factor	1.00	1.00			1.00			2.08				
Incremental Delay, d2	11.6	1.2			4.5			74.8				
Delay (s)	33.4	21.1			26.2			123.7				
Level of Service	C	C			C			F				
Approach Delay (s)		26.4			26.2			123.7			0.0	
Approach LOS		C			C			F			A	
Intersection Summary												
HCM 2000 Control Delay		102.2			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		70.4%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

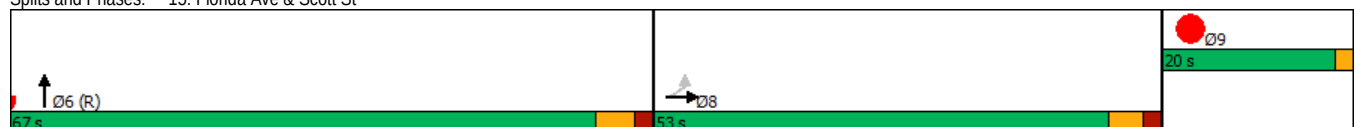
Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↕↕						↕↕↕					
Traffic Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0	
Future Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red	Yes		Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		371			377			701			1146		
Travel Time (s)		8.4			8.6			13.7			22.3		
Confl. Peds. (#/hr)	4								8				
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	2235	0	0	0	0	0	3831	0	0	0	0	
Turn Type	Perm	NA						NA					
Protected Phases		8						6					9
Permitted Phases	8												
Minimum Split (s)	23.7	23.7						24.0					20.0
Total Split (s)	53.0	53.0						67.0					20.0
Total Split (%)	37.9%	37.9%						47.9%					14%
Yellow Time (s)	3.7	3.7						4.0					2.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)		-1.7						-2.0					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.79						1.72					
Control Delay		381.5						352.2					
Queue Delay		0.0						0.0					
Total Delay		381.5						352.2					
Queue Length 50th (ft)		~1574						~1869					
Queue Length 95th (ft)		#1708						m#1324					
Internal Link Dist (ft)		291			297			621			1066		
Turn Bay Length (ft)													
Base Capacity (vph)		1249						2222					
Starvation Cap Reductn		0						17					
Spillback Cap Reductn		0						0					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		1.79						1.74					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Future Volume (vph)	648	1520	0	0	0	0	0	2694	1022	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.96				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		3475						4828				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		3475						4828				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	668	1567	0	0	0	0	0	2777	1054	0	0	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	49	0	0	0	0
Lane Group Flow (vph)	0	2201	0	0	0	0	0	3782	0	0	0	0
Confl. Peds. (#/hr)	4								8			
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		47.3						61.0				
Effective Green, g (s)		49.0						63.0				
Actuated g/C Ratio		0.35						0.45				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1216						2172				
v/s Ratio Prot								0.78				
v/s Ratio Perm		0.63										
v/c Ratio		1.81						1.74				
Uniform Delay, d1		45.5						38.5				
Progression Factor		0.64						0.93				
Incremental Delay, d2		367.3						333.7				
Delay (s)		396.5						369.6				
Level of Service		F						F				
Approach Delay (s)		396.5			0.0			369.6			0.0	
Approach LOS		F			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		379.5							F			
HCM 2000 Volume to Capacity ratio		1.53										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		142.6%							H			
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
16: Florida Ave & Fortune St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↕						↕↕↕					
Traffic Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0	
Future Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		216			251			478			701		
Travel Time (s)		4.9			5.7			10.9			15.9		
Confl. Peds. (#/hr)	13					13	5		7				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	142	0	0	0	0	0	4040	0	0	0	0	
Turn Type	Perm	NA					Perm	NA					
Protected Phases		4						2					9
Permitted Phases	4						2						
Minimum Split (s)	23.4	23.4					24.0	24.0					20.0
Total Split (s)	28.0	28.0					92.0	92.0					20.0
Total Split (%)	20.0%	20.0%					65.7%	65.7%					14%
Yellow Time (s)	3.4	3.4					4.0	4.0					2.0
All-Red Time (s)	2.0	2.0					2.0	2.0					0.0
Lost Time Adjust (s)		-1.4						-2.0					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.47						1.27					
Control Delay		58.2						133.8					
Queue Delay		1.5						0.1					
Total Delay		59.7						133.8					
Queue Length 50th (ft)		118						~1677					
Queue Length 95th (ft)		189						m142					
Internal Link Dist (ft)		136			171			398		621			
Turn Bay Length (ft)													
Base Capacity (vph)		300						3192					
Starvation Cap Reductn		0						111					
Spillback Cap Reductn		58						20					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		0.59						1.31					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Future Volume (vph)	93	38	0	0	0	0	52	3652	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.97						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1752						5077				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1752						5077				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	101	41	0	0	0	0	57	3970	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	142	0	0	0	0	0	4040	0	0	0	0
Confl. Peds. (#/hr)	13					13	5		7			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		22.6						86.0				
Effective Green, g (s)		24.0						88.0				
Actuated g/C Ratio		0.17						0.63				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		300						3191				
v/s Ratio Prot												
v/s Ratio Perm		0.08						0.80				
v/c Ratio		0.47						1.27				
Uniform Delay, d1		52.3						26.0				
Progression Factor		1.00						0.25				
Incremental Delay, d2		5.3						119.9				
Delay (s)		57.6						126.4				
Level of Service		E						F				
Approach Delay (s)		57.6			0.0			126.4			0.0	
Approach LOS		E			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		124.0							F			
HCM 2000 Volume to Capacity ratio		0.94										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		92.4%							F			
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0	
Future Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			35		
Link Distance (ft)		301			316			285			478		
Travel Time (s)		6.8			7.2			6.5			9.3		
Confl. Peds. (#/hr)	8					8	7		12				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	90	0	0	133	0	0	4207	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			8			2					9
Permitted Phases	4						2						
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0					20.0
Total Split (s)	29.0	29.0			29.0		91.0	91.0					20.0
Total Split (%)	20.7%	20.7%			20.7%		65.0%	65.0%					14%
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0					2.0
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8			-2.0					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.31			0.35			1.33					
Control Delay		53.6			14.5			166.1					
Queue Delay		0.0			0.0			0.2					
Total Delay		53.6			14.5			166.3					
Queue Length 50th (ft)		72			14			~1865					
Queue Length 95th (ft)		127			73			m47					
Internal Link Dist (ft)		221			236			205			398		
Turn Bay Length (ft)													
Base Capacity (vph)		286			381			3155					
Starvation Cap Reductn		0			0			340					
Spillback Cap Reductn		0			5			282					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.31			0.35			1.49					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Florida Ave & Harrison St

 Ø2 (R) 91 s	 Ø4 29 s	 Ø9 20 s
	 Ø8 29 s	

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Future Volume (vph)	28	55	0	0	17	106	24	3821	26	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.88			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		1825			1606			5075				
Flt Permitted		0.86			1.00			1.00				
Satd. Flow (perm)		1602			1606			5075				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	60	0	0	18	115	26	4153	28	0	0	0
RTOR Reduction (vph)	0	0	0	0	94	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	39	0	0	4207	0	0	0	0
Confl. Peds. (#/hr)	8					8	7		12			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		23.2			23.2			85.0				
Effective Green, g (s)		25.0			25.0			87.0				
Actuated g/C Ratio		0.18			0.18			0.62				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		286			286			3153				
v/s Ratio Prot					0.02							
v/s Ratio Perm		0.06						0.83				
v/c Ratio		0.31			0.13			1.33				
Uniform Delay, d1		50.0			48.4			26.5				
Progression Factor		1.00			1.00			0.31				
Incremental Delay, d2		2.9			1.0			150.6				
Delay (s)		52.9			49.4			158.7				
Level of Service		D			D			F				
Approach Delay (s)		52.9			49.4			158.7			0.0	
Approach LOS		D			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		153.3			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		0.95										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		106.8%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0	
Future Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		0	60		0	0		0	
Storage Lanes	1		0	0		0	1		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		570			288			286			285		
Travel Time (s)		13.0			6.5			5.6			5.6		
Confl. Peds. (#/hr)	11					11	4		21				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	145	155	0	0	444	0	49	4069	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0					20.0
Total Split (s)	44.0	44.0			44.0		76.0	76.0					20.0
Total Split (%)	31.4%	31.4%			31.4%		54.3%	54.3%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0					
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	1.93	0.29			0.85		0.05	1.56					
Control Delay	489.4	36.0			62.9		2.5	268.1					
Queue Delay	3.2	0.0			9.4		0.0	0.5					
Total Delay	492.7	36.0			72.3		2.5	268.5					
Queue Length 50th (ft)	~199	90			376		3	~1965					
Queue Length 95th (ft)	m#316	m143			#557		m2	m45					
Internal Link Dist (ft)		490			208			206			205		
Turn Bay Length (ft)	75						60						
Base Capacity (vph)	75	532			520		897	2612					
Starvation Cap Reductn	0	0			0		0	249					
Spillback Cap Reductn	8	0			57		0	484					
Storage Cap Reductn	0	0			0		0	0					
Reduced v/c Ratio	2.16	0.29			0.96		0.05	1.91					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Future Volume (vph)	136	146	0	0	329	88	46	3812	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.99		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.97		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1770	1863			1796		1745	5081				
Flt Permitted	0.14	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	265	1863			1796		1745	5081				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	145	155	0	0	350	94	49	4055	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	145	155	0	0	437	0	49	4069	0	0	0	0
Confl. Peds. (#/hr)	11					11	4		21			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	38.2	38.2			38.2		70.0	70.0				
Effective Green, g (s)	40.0	40.0			40.0		72.0	72.0				
Actuated g/C Ratio	0.29	0.29			0.29		0.51	0.51				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	75	532			513		897	2613				
v/s Ratio Prot		0.08			0.24			0.80				
v/s Ratio Perm	0.55						0.03					
v/c Ratio	1.93	0.29			0.85		0.05	1.56				
Uniform Delay, d1	50.0	39.0			47.2		17.0	34.0				
Progression Factor	0.84	0.88			1.00		0.14	0.22				
Incremental Delay, d2	463.2	1.3			16.2		0.0	250.8				
Delay (s)	505.3	35.5			63.4		2.5	258.3				
Level of Service	F	D			E		A	F				
Approach Delay (s)		262.6			63.4			255.3			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		238.2			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.45										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		115.2%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

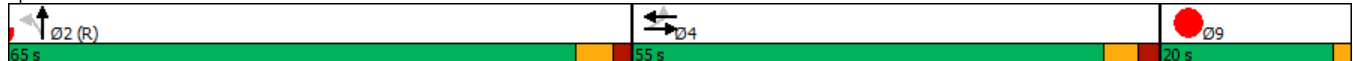
Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔			↔		↔	↔↔↔					
Traffic Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0	
Future Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	60		0	0		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		553			311			283			286		
Travel Time (s)		12.6			7.1			5.5			5.6		
Confl. Peds. (#/hr)	4					4	5		74				
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	598	0	0	404	0	85	3947	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0					20.0
Total Split (s)	55.0	55.0			55.0		65.0	65.0					20.0
Total Split (%)	39.3%	39.3%			39.3%		46.4%	46.4%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0					0.0
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0					
Total Lost Time (s)		4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.93			0.61		0.11	1.80					
Control Delay		448.0			40.1		21.8	382.1					
Queue Delay		0.0			0.0		0.0	0.2					
Total Delay		448.0			40.1		21.8	382.4					
Queue Length 50th (ft)		-802			292		27	-1962					
Queue Length 95th (ft)		m#483			406		m20	m#1148					
Internal Link Dist (ft)		473			231			203			206		
Turn Bay Length (ft)							60						
Base Capacity (vph)		310			663		756	2198					
Starvation Cap Reductn		0			0		0	136					
Spillback Cap Reductn		0			0		0	197					
Storage Cap Reductn		0			0		0	0					
Reduced v/c Ratio		1.93			0.61		0.11	1.97					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Future Volume (vph)	134	440	0	0	305	83	82	3720	69	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			1.00		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.98	1.00				
Frt		1.00			0.97		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1840			1802		1737	5045				
Flt Permitted		0.46			1.00		0.95	1.00				
Satd. Flow (perm)		852			1802		1737	5045				
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	140	458	0	0	318	86	85	3875	72	0	0	0
RTOR Reduction (vph)	0	0	0	0	7	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	598	0	0	397	0	85	3946	0	0	0	0
Confl. Peds. (#/hr)	4					4	5		74			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		49.0			49.0		59.0	59.0				
Effective Green, g (s)		51.0			51.0		61.0	61.0				
Actuated g/C Ratio		0.36			0.36		0.44	0.44				
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		310			656		756	2198				
v/s Ratio Prot					0.22			c0.78				
v/s Ratio Perm		c0.70					0.05					
v/c Ratio		1.93			0.61		0.11	1.80				
Uniform Delay, d1		44.5			36.3		23.4	39.5				
Progression Factor		1.16			1.00		0.92	0.74				
Incremental Delay, d2		419.1			4.1		0.0	358.0				
Delay (s)		470.8			40.4		21.5	387.4				
Level of Service		F			D		C	F				
Approach Delay (s)		470.8			40.4			379.7			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		363.3							F			
HCM 2000 Volume to Capacity ratio		1.60										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		135.3%							H			
Analysis Period (min)		15										

c Critical Lane Group

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations								  					
Traffic Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0	
Future Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		537			394			300			283		
Travel Time (s)		12.2			9.0			5.8			5.5		
Confl. Peds. (#/hr)	33					33	6		68				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	297	0	0	200	0	69	4184	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0					20.0
Total Split (s)	36.0	36.0			36.0		84.0	84.0					20.0
Total Split (%)	25.7%	25.7%			25.7%		60.0%	60.0%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0					
Total Lost Time (s)		4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.09			0.49		0.07	1.44					
Control Delay		113.2			44.1		3.0	214.7					
Queue Delay		32.0			74.8		0.0	0.5					
Total Delay		145.2			118.9		3.0	215.3					
Queue Length 50th (ft)		~277			134		5	~1893					
Queue Length 95th (ft)		m#430			216		m4	m77					
Internal Link Dist (ft)		457			314			220			203		
Turn Bay Length (ft)													
Base Capacity (vph)		273			406		992	2897					
Starvation Cap Reductn		0			0		0	176					
Spillback Cap Reductn		204			293		0	638					
Storage Cap Reductn		0			0		0	0					
Reduced v/c Ratio		4.30			1.77		0.07	1.85					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Future Volume (vph)	68	202	0	0	95	87	63	3774	34	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Flpb, ped/bikes		1.00			0.96		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.98	1.00				
Frt		1.00			0.94		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1821			1675		1736	5068				
Flt Permitted		0.65			1.00		0.95	1.00				
Satd. Flow (perm)		1194			1675		1736	5068				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	75	222	0	0	104	96	69	4147	37	0	0	0
RTOR Reduction (vph)	0	0	0	0	24	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	297	0	0	176	0	69	4184	0	0	0	0
Confl. Peds. (#/hr)	33					33	6		68			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		30.2			30.2		78.0	78.0				
Effective Green, g (s)		32.0			32.0		80.0	80.0				
Actuated g/C Ratio		0.23			0.23		0.57	0.57				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		272			382		992	2896				
v/s Ratio Prot					0.11			0.83				
v/s Ratio Perm		0.25					0.04					
v/c Ratio		1.09			0.46		0.07	1.44				
Uniform Delay, d1		54.0			46.6		13.4	30.0				
Progression Factor		0.69			1.00		0.22	0.13				
Incremental Delay, d2		77.8			4.0		0.0	200.3				
Delay (s)		114.8			50.5		3.0	204.1				
Level of Service		F			D		A	F				
Approach Delay (s)		114.8			50.5			200.9			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		189.2							F			
HCM 2000 Volume to Capacity ratio		1.16										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		114.8%						H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0	
Future Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		539			418			283			300		
Travel Time (s)		12.3			9.5			5.5			5.8		
Confl. Peds. (#/hr)	24					24	10		15				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	300	0	0	444	0	0	4118	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7					20.0
Total Split (s)	43.0	43.0			43.0		77.0	77.0					20.0
Total Split (%)	30.7%	30.7%			30.7%		55.0%	55.0%					14%
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5					2.0
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0					0.0
Lost Time Adjust (s)		-1.9			-1.9			-1.7					
Total Lost Time (s)		3.8			3.8			3.8					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.89			0.89			1.56					
Control Delay		429.4			63.2			276.9					
Queue Delay		0.0			0.1			0.1					
Total Delay		429.4			63.4			277.1					
Queue Length 50th (ft)		~406			350			~1929					
Queue Length 95th (ft)		m#461			#547			m#1227					
Internal Link Dist (ft)		459			338			203			220		
Turn Bay Length (ft)													
Base Capacity (vph)		159			500			2639					
Starvation Cap Reductn		0			0			172					
Spillback Cap Reductn		0			1			163					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		1.89			0.89			1.67					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Florida Ave & Zack St



Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Future Volume (vph)	62	220	0	0	170	247	139	3655	77	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.8			3.8			3.8				
Lane Util. Factor		1.00			1.00			0.91				
Flpb, ped/bikes		1.00			0.97			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.99			1.00			1.00				
Satd. Flow (prot)		1842			1654			5047				
Flt Permitted		0.31			1.00			1.00				
Satd. Flow (perm)		571			1654			5047				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	66	234	0	0	181	263	148	3888	82	0	0	0
RTOR Reduction (vph)	0	0	0	0	37	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	300	0	0	407	0	0	4117	0	0	0	0
Confl. Peds. (#/hr)	24				24	10		15				
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		37.3			37.3			71.5				
Effective Green, g (s)		39.2			39.2			73.2				
Actuated g/C Ratio		0.28			0.28			0.52				
Clearance Time (s)		5.7			5.7			5.5				
Lane Grp Cap (vph)		159			463			2638				
v/s Ratio Prot					0.25							
v/s Ratio Perm		0.53						0.82				
v/c Ratio		1.89			0.88			1.56				
Uniform Delay, d1		50.4			48.1			33.4				
Progression Factor		0.55			1.00			0.79				
Incremental Delay, d2		406.7			20.4			252.4				
Delay (s)		434.4			68.5			278.6				
Level of Service		F			E			F				
Approach Delay (s)		434.4			68.5			278.6			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		269.1			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.44										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			9.6				
Intersection Capacity Utilization		125.6%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
22: Florida Ave & Twiggs St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔↔			↑	↑		↔↔↔					
Traffic Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0	
Future Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		543			396			298			283		
Travel Time (s)		12.3			9.0			5.8			5.5		
Confl. Peds. (#/hr)	16					16	6		13				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	533	0	0	285	503	0	4118	0	0	0	0	
Turn Type	Perm	NA			NA	Perm	Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4					4	2						
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0					20.0
Total Split (s)	33.0	33.0			33.0	33.0	87.0	87.0					20.0
Total Split (%)	23.6%	23.6%			23.6%	23.6%	62.1%	62.1%					14%
Yellow Time (s)	3.5	3.5			3.5	3.5	3.5	3.5					2.0
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0					0.0
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0					
Total Lost Time (s)		3.8			3.8	3.8		3.5					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.98			0.73	1.07		1.37					
Control Delay		54.6			64.2	91.7		184.2					
Queue Delay		0.0			0.0	36.7		0.4					
Total Delay		54.6			64.2	128.3		184.5					
Queue Length 50th (ft)		254			245	~354		~1835					
Queue Length 95th (ft)		m#301			351	#580		m#1128					
Internal Link Dist (ft)		463			316			218			203		
Turn Bay Length (ft)													
Base Capacity (vph)		545			388	472		3002					
Starvation Cap Reductn		0			0	0		239					
Spillback Cap Reductn		0			0	373		507					
Storage Cap Reductn		0			0	0		0					
Reduced v/c Ratio		0.98			0.73	5.08		1.65					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 11 (8%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Future Volume (vph)	30	471	0	0	268	473	89	3579	203	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		3.8			3.8	3.8		3.5				
Lane Util. Factor		0.95			1.00	1.00		0.91				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		0.99				
Flt Protected		1.00			1.00	1.00		1.00				
Satd. Flow (prot)		3526			1863	1517		5026				
Flt Permitted		0.74			1.00	1.00		1.00				
Satd. Flow (perm)		2614			1863	1517		5026				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	32	501	0	0	285	503	95	3807	216	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	156	0	4	0	0	0	0
Lane Group Flow (vph)	0	533	0	0	285	347	0	4114	0	0	0	0
Confl. Peds. (#/hr)	16				16	6		13				
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		27.3			27.3	27.3		81.5				
Effective Green, g (s)		29.2			29.2	29.2		83.5				
Actuated g/C Ratio		0.21			0.21	0.21		0.60				
Clearance Time (s)		5.7			5.7	5.7		5.5				
Lane Grp Cap (vph)		545			388	316		2997				
v/s Ratio Prot					0.15							
v/s Ratio Perm		0.20				c0.23		0.82				
v/c Ratio		0.98			0.73	1.10		1.37				
Uniform Delay, d1		55.1			51.8	55.4		28.2				
Progression Factor		0.51			1.00	1.00		0.32				
Incremental Delay, d2		24.7			11.7	79.6		167.9				
Delay (s)		52.7			63.5	135.0		176.9				
Level of Service		D			E	F		F				
Approach Delay (s)		52.7			109.1			176.9			0.0	
Approach LOS		D			F			F			A	
Intersection Summary												
HCM 2000 Control Delay		154.9				HCM 2000 Level of Service		F				
HCM 2000 Volume to Capacity ratio		1.12										
Actuated Cycle Length (s)		140.0				Sum of lost time (s)		9.3				
Intersection Capacity Utilization		130.3%				ICU Level of Service		H				
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0	
Future Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		548			408			314			298		
Travel Time (s)		12.5			9.3			6.1			5.8		
Confl. Peds. (#/hr)	21					21	8		15				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	156	194	0	0	237	0	0	4162	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0					20.0
Total Split (s)	30.0	30.0			30.0		90.0	90.0					20.0
Total Split (%)	21.4%	21.4%			21.4%		64.3%	64.3%					14%
Yellow Time (s)	3.5	3.5			3.5		3.5	3.5					2.0
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0					0.0
Lost Time Adjust (s)	-1.9	-1.9			-1.9			-2.0					
Total Lost Time (s)	3.8	3.8			3.8			3.5					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	1.54	0.56			0.67			1.33					
Control Delay	314.5	47.4			49.2			176.0					
Queue Delay	0.0	0.0			0.2			0.4					
Total Delay	314.5	47.4			49.4			176.4					
Queue Length 50th (ft)	~197	127			152			~1816					
Queue Length 95th (ft)	m#278	m185			249			m#1862					
Internal Link Dist (ft)		468			328			234			218		
Turn Bay Length (ft)	75												
Base Capacity (vph)	101	348			356			3124					
Starvation Cap Reductn	0	0			0			449					
Spillback Cap Reductn	0	0			6			545					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	1.54	0.56			0.68			1.61					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Future Volume (vph)	145	180	0	0	76	144	100	3700	71	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.8	3.8			3.8			3.5				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	0.98	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1734	1863			1641			5055				
Flt Permitted	0.30	1.00			1.00			1.00				
Satd. Flow (perm)	543	1863			1641			5055				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	156	194	0	0	82	155	108	3978	76	0	0	0
RTOR Reduction (vph)	0	0	0	0	49	0	0	2	0	0	0	0
Lane Group Flow (vph)	156	194	0	0	188	0	0	4160	0	0	0	0
Confl. Peds. (#/hr)	21					21	8		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	24.3	24.3			24.3			84.5				
Effective Green, g (s)	26.2	26.2			26.2			86.5				
Actuated g/C Ratio	0.19	0.19			0.19			0.62				
Clearance Time (s)	5.7	5.7			5.7			5.5				
Lane Grp Cap (vph)	101	348			307			3123				
v/s Ratio Prot		0.10			0.11							
v/s Ratio Perm	0.29							0.82				
v/c Ratio	1.54	0.56			0.61			1.33				
Uniform Delay, d1	56.9	51.6			52.2			26.8				
Progression Factor	0.80	0.81			1.00			0.88				
Incremental Delay, d2	281.6	5.3			8.8			151.5				
Delay (s)	327.2	46.9			61.1			175.1				
Level of Service	F	D			E			F				
Approach Delay (s)		171.8			61.1			175.1			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		169.1			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.19										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			9.3				
Intersection Capacity Utilization		111.8%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
24: Florida Ave & Kennedy Blvd

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations					↑↑↑		↗	↑↑↑					
Traffic Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0	
Future Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes	Yes		Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		546			427			259			314		
Travel Time (s)		12.4			9.7			5.0			6.1		
Confl. Peds. (#/hr)						33	10						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	3033	0	188	1393	0	0	0	0	
Turn Type					NA		Perm	NA					
Protected Phases					4			2					9
Permitted Phases							2						
Minimum Split (s)					27.7		26.8	26.8					20.0
Total Split (s)					74.0		46.0	46.0					20.0
Total Split (%)					52.9%		32.9%	32.9%					14%
Yellow Time (s)					3.7		3.7	3.7					2.0
All-Red Time (s)					2.0		2.1	2.1					0.0
Lost Time Adjust (s)					-1.7		-1.8	-1.8					
Total Lost Time (s)					4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio					0.99		0.30	0.91					
Control Delay					47.2		4.6	34.1					
Queue Delay					40.9		1.5	46.6					
Total Delay					88.1		6.1	80.7					
Queue Length 50th (ft)					761		2	161					
Queue Length 95th (ft)					#871		m37	m371					
Internal Link Dist (ft)		466			347			179			234		
Turn Bay Length (ft)													
Base Capacity (vph)					3071		624	1525					
Starvation Cap Reductn					0		279	263					
Spillback Cap Reductn					739		17	475					
Storage Cap Reductn					0		0	0					
Reduced v/c Ratio					1.30		0.54	1.33					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 120

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Florida Ave & Kennedy Blvd



Tampa Streetcar Feasibility Study
24: Florida Ave & Kennedy Blvd

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↘	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Future Volume (vph)	0	0	0	0	2223	719	182	1351	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.98	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6062		1734	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6062		1734	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	2292	741	188	1393	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	42	0	104	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	2992	0	84	1393	0	0	0	0
Confl. Peds. (#/hr)					33		10					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					68.3		40.2	40.2				
Effective Green, g (s)					70.0		42.0	42.0				
Actuated g/C Ratio					0.50		0.30	0.30				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					3031		520	1525				
v/s Ratio Prot					c0.49			c0.27				
v/s Ratio Perm							0.05					
v/c Ratio					0.99		0.16	0.91				
Uniform Delay, d1					34.5		36.0	47.2				
Progression Factor					1.00		0.39	0.56				
Incremental Delay, d2					13.6		0.4	7.0				
Delay (s)					48.1		14.7	33.6				
Level of Service					D		B	C				
Approach Delay (s)		0.0			48.1			31.3			0.0	
Approach LOS		A			D			C			A	
Intersection Summary												
HCM 2000 Control Delay			42.4		HCM 2000 Level of Service					D		
HCM 2000 Volume to Capacity ratio			0.83									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					10.0		
Intersection Capacity Utilization			104.4%		ICU Level of Service					G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
25: Florida Ave & Jackson St

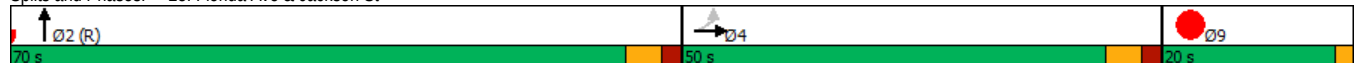
Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		  						  					
Traffic Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0	
Future Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red	Yes		Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		283			447			595			259		
Travel Time (s)		6.4			10.2			11.6			5.0		
Confl. Peds. (#/hr)	66								34				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1582	0	0	0	0	0	1649	0	0	0	0	
Turn Type	Perm	NA						NA					
Protected Phases		4						2					9
Permitted Phases	4												
Minimum Split (s)	27.9	27.9						26.9					20.0
Total Split (s)	50.0	50.0						70.0					20.0
Total Split (%)	35.7%	35.7%						50.0%					14%
Yellow Time (s)	3.7	3.7						3.7					2.0
All-Red Time (s)	2.2	2.2						2.2					0.0
Lost Time Adjust (s)		-1.9						-1.9					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.96						0.70					
Control Delay		42.5						32.6					
Queue Delay		14.3						1.2					
Total Delay		56.8						33.8					
Queue Length 50th (ft)		441						439					
Queue Length 95th (ft)		#602						494					
Internal Link Dist (ft)		203			367			515			179		
Turn Bay Length (ft)													
Base Capacity (vph)		1655						2369					
Starvation Cap Reductn		113						455					
Spillback Cap Reductn		90						180					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		1.03						0.86					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 90
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 25: Florida Ave & Jackson St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0
Future Volume (vph)	206	1265	0	0	0	0	0	1443	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.98						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4961						5017				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4961						5017				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	222	1360	0	0	0	0	0	1552	97	0	0	0
RTOR Reduction (vph)	0	26	0	0	0	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	1556	0	0	0	0	0	1644	0	0	0	0
Confl. Peds. (#/hr)	66								34			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		44.1						64.1				
Effective Green, g (s)		46.0						66.0				
Actuated g/C Ratio		0.33						0.47				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1630						2365				
v/s Ratio Prot								0.33				
v/s Ratio Perm		0.31										
v/c Ratio		0.95						0.70				
Uniform Delay, d1		46.0						29.1				
Progression Factor		0.69						1.06				
Incremental Delay, d2		10.9						1.7				
Delay (s)		42.8						32.5				
Level of Service		D						C				
Approach Delay (s)		42.8			0.0			32.5			0.0	
Approach LOS		D			A			C			A	
Intersection Summary												
HCM 2000 Control Delay		37.5						HCM 2000 Level of Service		D		
HCM 2000 Volume to Capacity ratio		0.69										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		10.0		
Intersection Capacity Utilization		77.7%						ICU Level of Service		D		
Analysis Period (min)		15										

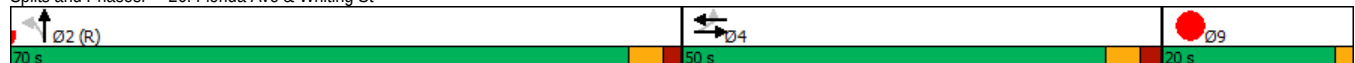
c Critical Lane Group

Tampa Streetcar Feasibility Study
26: Florida Ave & Whiting St

Build 2040 + Streetcar Phase
Timing Plan: AM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0	
Future Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		50	0		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		553			299			397			595		
Travel Time (s)		12.6			6.8			7.7			11.6		
Confl. Peds. (#/hr)	130					130	45		103				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	337	0	0	497	0	0	277	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	29.0	29.0			29.0		24.7	24.7					20.0
Total Split (s)	50.0	50.0			50.0		70.0	70.0					20.0
Total Split (%)	35.7%	35.7%			35.7%		50.0%	50.0%					14%
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7					2.0
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0					0.0
Lost Time Adjust (s)		-2.0			-2.0			-1.7					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.52			0.46			0.12					
Control Delay		29.4			36.3			24.9					
Queue Delay		0.0			0.0			0.0					
Total Delay		29.4			36.3			24.9					
Queue Length 50th (ft)		141			175			47					
Queue Length 95th (ft)		194			231			63					
Internal Link Dist (ft)		473			219			317			515		
Turn Bay Length (ft)													
Base Capacity (vph)		650			1076			2354					
Starvation Cap Reductn		0			0			0					
Spillback Cap Reductn		0			0			70					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.52			0.46			0.12					
Intersection Summary													
Area Type:	Other												
Cycle Length:	140												
Actuated Cycle Length:	140												
Offset:	0 (0%), Referenced to phase 2:NBT, Start of Green												
Natural Cycle:	75												
Control Type:	Pretimed												

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Future Volume (vph)	130	183	0	0	352	111	9	241	7	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			0.91				
Frpb, ped/bikes		1.00			0.94			0.99				
Flpb, ped/bikes		0.96			1.00			0.99				
Frt		1.00			0.96			1.00				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		3340			3212			4990				
Flt Permitted		0.58			1.00			1.00				
Satd. Flow (perm)		1980			3212			4990				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	140	197	0	0	378	119	10	259	8	0	0	0
RTOR Reduction (vph)	0	0	0	0	21	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	337	0	0	476	0	0	275	0	0	0	0
Confl. Peds. (#/hr)	130				130	45		103				
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		44.0			44.0			64.3				
Effective Green, g (s)		46.0			46.0			66.0				
Actuated g/C Ratio		0.33			0.33			0.47				
Clearance Time (s)		6.0			6.0			5.7				
Lane Grp Cap (vph)		650			1055			2352				
v/s Ratio Prot					0.15							
v/s Ratio Perm		0.17						0.06				
v/c Ratio		0.52			0.45			0.12				
Uniform Delay, d1		38.0			37.0			20.7				
Progression Factor		0.69			1.00			1.21				
Incremental Delay, d2		2.9			1.4			0.1				
Delay (s)		29.1			38.4			25.1				
Level of Service		C			D			C				
Approach Delay (s)		29.1			38.4			25.1			0.0	
Approach LOS		C			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		32.3			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.24										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		53.8%			ICU Level of Service			A				
Analysis Period (min)		15										

c Critical Lane Group

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0	
Future Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes	Yes		Yes			Yes	
Link Speed (mph)		35			35			35			35		
Link Distance (ft)		266			442			510			230		
Travel Time (s)		5.2			8.6			9.9			4.5		
Confl. Peds. (#/hr)						29	22						
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1757	0	15	248	0	0	0	0	
Turn Type					NA		Perm	NA					
Protected Phases					2			4					9
Permitted Phases							4						
Minimum Split (s)					29.8		36.1	36.1					20.0
Total Split (s)					70.0		50.0	50.0					20.0
Total Split (%)					50.0%		35.7%	35.7%					14%
Yellow Time (s)					3.7		3.7	3.7					2.0
All-Red Time (s)					2.1		2.4	2.4					0.0
Lost Time Adjust (s)					-1.8		-2.1	-2.1					
Total Lost Time (s)					4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio					0.60		0.03	0.15					
Control Delay					27.3		1.2	33.5					
Queue Delay					0.0		0.0	0.0					
Total Delay					27.3		1.2	33.5					
Queue Length 50th (ft)					325		0	58					
Queue Length 95th (ft)					363		3	81					
Internal Link Dist (ft)		186			362			430			150		
Turn Bay Length (ft)													
Base Capacity (vph)					2929		588	1670					
Starvation Cap Reductn					0		0	0					
Spillback Cap Reductn					0		0	0					
Storage Cap Reductn					0		0	0					
Reduced v/c Ratio					0.60		0.03	0.15					
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green													
Natural Cycle: 90													
Control Type: Pretimed													
Splits and Phases: 27: Florida Ave & Brorein St													
 Ø2 (R)							 Ø4					 Ø9	
70 s							50 s					20 s	

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0
Future Volume (vph)	0	0	0	0	1377	327	15	241	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					0.99		1.00	1.00				
Flpb, ped/bikes					1.00		0.97	1.00				
Frt					0.97		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6150		1715	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6150		1715	5085				
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	0	1420	337	15	248	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	31	0	10	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1726	0	5	248	0	0	0	0
Confl. Peds. (#/hr)					29		22					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					64.2		43.9	43.9				
Effective Green, g (s)					66.0		46.0	46.0				
Actuated g/C Ratio					0.47		0.33	0.33				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					2899		563	1670				
v/s Ratio Prot					c0.28			c0.05				
v/s Ratio Perm							0.00					
v/c Ratio					0.60		0.01	0.15				
Uniform Delay, d1					27.2		31.6	33.2				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.9		0.0	0.2				
Delay (s)					28.1		31.7	33.4				
Level of Service					C		C	C				
Approach Delay (s)		0.0			28.1			33.3			0.0	
Approach LOS		A			C			C			A	
Intersection Summary												
HCM 2000 Control Delay			28.8		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.35									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					10.0		
Intersection Capacity Utilization			40.9%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					  	
Traffic Volume (vph)	0	176	0	0	453	0
Future Volume (vph)	0	176	0	0	453	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Confl. Peds. (#/hr)						1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	191	0	0	492	0
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1612	0	0	1299	0
Future Volume (vph)	0	1612	0	0	1299	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1752	0	0	1412	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations				  		
Traffic Volume (vph)	0	0	0	416	0	0
Future Volume (vph)	0	0	0	416	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	282			171	309	
Travel Time (s)	6.4			3.9	7.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	452	0	0
Sign Control	Stop			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Build 2040 – Streetcar Phase PM Peak-Hour

Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↑	↑	↑	↑						↑↑↑		
Traffic Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381	
Future Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	150		0	0		0	0		0	
Storage Lanes	0		1	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		656			459			1921			246		
Travel Time (s)		14.9			10.4			37.4			4.8		
Confl. Peds. (#/hr)										1		1	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	466	186	172	268	0	0	0	0	0	1362	0	
Turn Type		NA	Perm	Perm	NA					Perm	NA		
Protected Phases		8			4						2		9
Permitted Phases			8	4						2			
Minimum Split (s)		27.0	27.0	27.0	27.0					31.4	31.4	20.0	
Total Split (s)		58.0	58.0	58.0	58.0					62.0	62.0	20.0	
Total Split (%)		41.4%	41.4%	41.4%	41.4%					44.3%	44.3%	14%	
Yellow Time (s)		3.8	3.8	3.8	3.8					4.4	4.4	2.0	
All-Red Time (s)		2.2	2.2	2.2	2.2					2.0	2.0	0.0	
Lost Time Adjust (s)		-2.0	-2.0	-2.0	-2.0						-2.4		
Total Lost Time (s)		4.0	4.0	4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.65	0.26	0.93	0.37						0.67		
Control Delay		40.4	4.8	67.0	17.8						33.0		
Queue Delay		24.3	0.0	0.0	0.6						0.0		
Total Delay		64.6	4.8	67.0	18.4						33.0		
Queue Length 50th (ft)		345	1	49	71						343		
Queue Length 95th (ft)		469	51	m#246	m127						398		
Internal Link Dist (ft)		576			379			1841			166		
Turn Bay Length (ft)				150									
Base Capacity (vph)		718	723	184	718						2022		
Starvation Cap Reductn		0	0	0	189						0		
Spillback Cap Reductn		257	0	0	0						3		
Storage Cap Reductn		0	0	0	0						0		
Reduced v/c Ratio		1.01	0.26	0.93	0.51						0.67		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 90

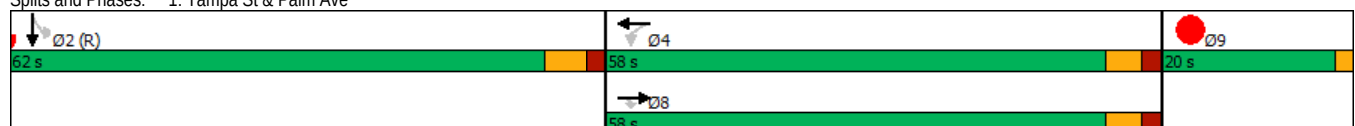
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 1: Tampa St & Palm Ave



Tampa Streetcar Feasibility Study
1: Tampa St & Palm Ave

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Future Volume (vph)	0	457	182	169	263	0	0	0	0	409	545	381
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	4.0	4.0	4.0						4.0	
Lane Util. Factor		1.00	1.00	1.00	1.00						0.91	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						0.99	
Flpb, ped/bikes		1.00	1.00	1.00	1.00						1.00	
Frt		1.00	0.85	1.00	1.00						0.96	
Flt Protected		1.00	1.00	0.95	1.00						0.98	
Satd. Flow (prot)		1863	1583	1770	1863						4759	
Flt Permitted		1.00	1.00	0.26	1.00						0.98	
Satd. Flow (perm)		1863	1583	478	1863						4759	
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.92	0.92	0.92	0.92	0.98	0.98	0.98
Adj. Flow (vph)	0	466	186	172	268	0	0	0	0	417	556	389
RTOR Reduction (vph)	0	0	113	0	0	0	0	0	0	0	52	0
Lane Group Flow (vph)	0	466	73	172	268	0	0	0	0	0	1310	0
Confl. Peds. (#/hr)										1		1
Turn Type		NA	Perm	Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases			8	4							2	
Actuated Green, G (s)		52.0	52.0	52.0	52.0						55.6	
Effective Green, g (s)		54.0	54.0	54.0	54.0						58.0	
Actuated g/C Ratio		0.39	0.39	0.39	0.39						0.41	
Clearance Time (s)		6.0	6.0	6.0	6.0						6.4	
Lane Grp Cap (vph)		718	610	184	718						1971	
v/s Ratio Prot		0.25			0.14							
v/s Ratio Perm			0.05	0.36							0.28	
v/c Ratio		0.65	0.12	0.93	0.37						0.66	
Uniform Delay, d1		35.2	27.7	41.3	30.9						33.1	
Progression Factor		1.00	1.00	0.45	0.53						1.00	
Incremental Delay, d2		4.5	0.4	44.1	1.2						1.8	
Delay (s)		39.7	28.1	62.8	17.6						34.9	
Level of Service		D	C	E	B						C	
Approach Delay (s)		36.4			35.2			0.0			34.9	
Approach LOS		D			D			A			C	
Intersection Summary												
HCM 2000 Control Delay			35.4			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			106.9%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street/Kay St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797	
Future Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		0	0		475	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes	Yes		Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		391			229			247			1921		
Travel Time (s)		8.9			5.2			4.8			37.4		
Confl. Peds. (#/hr)													1
Peak Hour Factor	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	
Shared Lane Traffic (%)				11%									
Lane Group Flow (vph)	0	0	0	50	2530	0	0	0	0	0	2015	0	
Turn Type				Split	NA						NA		
Protected Phases				4	4						2		9
Permitted Phases													
Minimum Split (s)				26.7	26.7						31.0		20.0
Total Split (s)				77.0	77.0						43.0		20.0
Total Split (%)				55.0%	55.0%						30.7%		14%
Yellow Time (s)				3.7	3.7						4.0		2.0
All-Red Time (s)				2.0	2.0						2.0		0.0
Lost Time Adjust (s)				-1.7	-1.7						-2.0		
Total Lost Time (s)				4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio				0.06	1.42						1.55dr		
Control Delay				6.6	219.6						236.8		
Queue Delay				0.0	0.0						0.0		
Total Delay				6.6	219.6						236.8		
Queue Length 50th (ft)				5	~1700						~880		
Queue Length 95th (ft)				28	#1832						#976		
Internal Link Dist (ft)		311			149			167			1841		
Turn Bay Length (ft)													
Base Capacity (vph)				858	1786						1411		
Starvation Cap Reductn				0	0						0		
Spillback Cap Reductn				0	0						0		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.06	1.42						1.43		
Intersection Summary													
Area Type: Other													
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBT, Start of Green													
Natural Cycle: 150													
Control Type: Pretimed													
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.													
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.													
dr Defacto Right Lane. Recode with 1 though lane as a right lane.													
Splits and Phases: 2: Tampa St & Kay Street/Kay St													
 Ø2 (R)				 Ø4								 Ø9	
#43 s				#77 s								#20 s	

Tampa Streetcar Feasibility Study
2: Tampa St & Kay Street/Kay St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Future Volume (vph)	0	0	0	54	2423	0	0	0	0	0	1138	797
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.91	0.91						0.91	
Frbp, ped/bikes				1.00	1.00						0.99	
Flpb, ped/bikes				1.00	1.00						1.00	
Frt				1.00	1.00						0.94	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1610	3390						4744	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1610	3390						4744	
Peak-hour factor, PHF	0.92	0.92	0.92	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	0	0	56	2524	0	0	0	0	0	1185	830
RTOR Reduction (vph)	0	0	0	19	19	0	0	0	0	0	90	0
Lane Group Flow (vph)	0	0	0	31	2511	0	0	0	0	0	1925	0
Confl. Peds. (#/hr)												1
Turn Type				Split	NA						NA	
Protected Phases				4	4						2	
Permitted Phases												
Actuated Green, G (s)				71.3	71.3						37.0	
Effective Green, g (s)				73.0	73.0						39.0	
Actuated g/C Ratio				0.52	0.52						0.28	
Clearance Time (s)				5.7	5.7						6.0	
Lane Grp Cap (vph)				839	1767						1321	
v/s Ratio Prot				0.02	c0.74						c0.41	
v/s Ratio Perm												
v/c Ratio				0.04	1.42						1.55dr	
Uniform Delay, d1				16.4	33.5						50.5	
Progression Factor				1.00	1.00						1.22	
Incremental Delay, d2				0.1	192.9						209.8	
Delay (s)				16.4	226.4						271.4	
Level of Service				B	F						F	
Approach Delay (s)		0.0			222.4			0.0			271.4	
Approach LOS		A			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			243.9			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.23									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			96.7%			ICU Level of Service				F		
Analysis Period (min)			15									
dr Defacto Right Lane. Recode with 1 though lane as a right lane.												
c Critical Lane Group												

Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

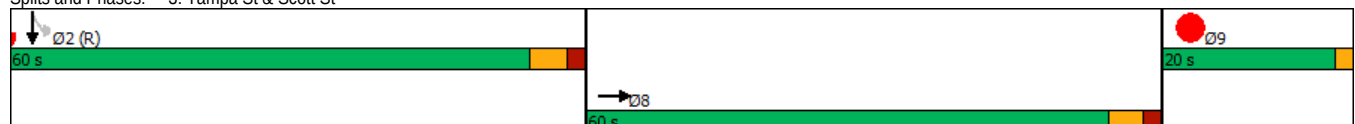
Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↕↕									↕↕↕		
Traffic Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0	
Future Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes	Yes		Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		385			62			346			247		
Travel Time (s)		8.8			1.4			6.7			4.8		
Confl. Peds. (#/hr)			2										
Peak Hour Factor	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1275	0	0	0	0	0	0	0	0	1210	0	
Turn Type		NA								Perm	NA		
Protected Phases		8									2		9
Permitted Phases										2			
Minimum Split (s)		24.7								24.0	24.0		20.0
Total Split (s)		60.0								60.0	60.0		20.0
Total Split (%)		42.9%								42.9%	42.9%		14%
Yellow Time (s)		3.7								4.0	4.0		2.0
All-Red Time (s)		2.0								2.0	2.0		0.0
Lost Time Adjust (s)		-1.7									-2.0		
Total Lost Time (s)		4.0									4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.91									0.59		
Control Delay		49.9									2.2		
Queue Delay		48.1									39.8		
Total Delay		98.1									42.1		
Queue Length 50th (ft)		569									20		
Queue Length 95th (ft)		#685									m10		
Internal Link Dist (ft)		305			1			266			167		
Turn Bay Length (ft)													
Base Capacity (vph)		1403									2047		
Starvation Cap Reductn		0									923		
Spillback Cap Reductn		628									281		
Storage Cap Reductn		0									0		
Reduced v/c Ratio		1.65									1.08		

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle: 80
Control Type: Pretimed
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: Tampa St & Scott St



Tampa Streetcar Feasibility Study
3: Tampa St & Scott St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 									 	
Traffic Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Future Volume (vph)	0	1144	80	0	0	0	0	0	0	240	922	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0									4.0	
Lane Util. Factor		0.95									0.91	
Frpb, ped/bikes		1.00									1.00	
Flpb, ped/bikes		1.00									1.00	
Frt		0.99									1.00	
Flt Protected		1.00									0.99	
Satd. Flow (prot)		3501									5033	
Flt Permitted		1.00									0.99	
Satd. Flow (perm)		3501									5033	
Peak-hour factor, PHF	0.96	0.96	0.96	0.92	0.92	0.92	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	1192	83	0	0	0	0	0	0	250	960	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	0	0	34	0
Lane Group Flow (vph)	0	1271	0	0	0	0	0	0	0	0	1176	0
Confl. Peds. (#/hr)			2									
Turn Type		NA								Perm	NA	
Protected Phases		8									2	
Permitted Phases										2		
Actuated Green, G (s)		54.3									54.0	
Effective Green, g (s)		56.0									56.0	
Actuated g/C Ratio		0.40									0.40	
Clearance Time (s)		5.7									6.0	
Lane Grp Cap (vph)		1400									2013	
v/s Ratio Prot		c0.36										
v/s Ratio Perm											0.23	
v/c Ratio		0.91									0.58	
Uniform Delay, d1		39.6									32.9	
Progression Factor		1.00									0.07	
Incremental Delay, d2		10.2									0.1	
Delay (s)		49.8									2.3	
Level of Service		D									A	
Approach Delay (s)		49.8			0.0			0.0			2.3	
Approach LOS		D			A			A			A	
Intersection Summary												
HCM 2000 Control Delay			26.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			63.5%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139	
Future Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		354			570			301			129		
Travel Time (s)		8.0			13.0			5.9			2.5		
Confl. Peds. (#/hr)			24	24						53		25	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	300	0	141	302	0	0	0	0	0	3096	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		8			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.8		25.8	25.8					26.8	26.8	20.0	
Total Split (s)		34.0		34.0	34.0					86.0	86.0	20.0	
Total Split (%)		24.3%		24.3%	24.3%					61.4%	61.4%	14%	
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7	2.0	
All-Red Time (s)		2.1		2.1	2.1					2.1	2.1	0.0	
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.8		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.78		1.57	0.76						1.05		
Control Delay		61.5		322.8	42.5						53.3		
Queue Delay		157.8		593.5	0.0						19.9		
Total Delay		219.4		916.3	42.5						73.2		
Queue Length 50th (ft)		236		~177	160						~1120		
Queue Length 95th (ft)		#369		m#269	m303						#1195		
Internal Link Dist (ft)		274			490			221			49		
Turn Bay Length (ft)				75									
Base Capacity (vph)		386		90	399						2936		
Starvation Cap Reductn		0		0	0						0		
Spillback Cap Reductn		372		90	0						787		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		21.43		141.00	0.76						1.44		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

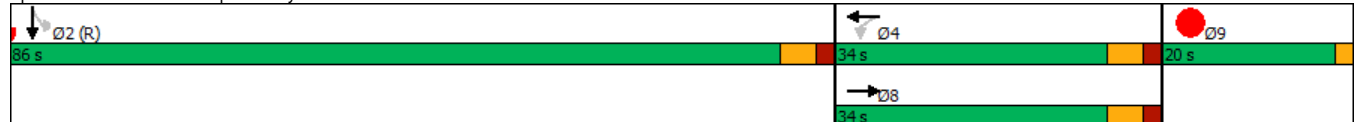
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 4: Tampa St & Tyler St



Tampa Streetcar Feasibility Study
4: Tampa St & Tyler St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139
Future Volume (vph)	0	149	133	133	284	0	0	0	0	39	2733	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.97		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.98	1.00						1.00	
Frt		0.94		1.00	1.00						0.99	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1694		1737	1863						5009	
Flt Permitted		1.00		0.23	1.00						1.00	
Satd. Flow (perm)		1694		422	1863						5009	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	159	141	141	302	0	0	0	0	41	2907	148
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	277	0	141	302	0	0	0	0	0	3092	0
Confl. Peds. (#/hr)			24	24						53		25
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		8			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		28.2		28.2	28.2						80.2	
Effective Green, g (s)		30.0		30.0	30.0						82.0	
Actuated g/C Ratio		0.21		0.21	0.21						0.59	
Clearance Time (s)		5.8		5.8	5.8						5.8	
Lane Grp Cap (vph)		363		90	399						2933	
v/s Ratio Prot		0.16			0.16							
v/s Ratio Perm				0.33							0.62	
v/c Ratio		0.76		1.57	0.76						1.05	
Uniform Delay, d1		51.7		55.0	51.6						29.0	
Progression Factor		1.00		0.60	0.60						0.65	
Incremental Delay, d2		14.1		295.0	10.7						33.2	
Delay (s)		65.8		328.1	41.9						52.0	
Level of Service		E		F	D						D	
Approach Delay (s)		65.8			133.0			0.0			52.0	
Approach LOS		E			F			A			D	
Intersection Summary												
HCM 2000 Control Delay			62.4			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			116.5%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
5: Tampa St & Cass St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations											 		
Traffic Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47	
Future Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		302			553			286			301		
Travel Time (s)		6.9			12.6			5.6			5.9		
Confl. Peds. (#/hr)			31	31						63		43	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	604	0	112	297	0	0	0	0	0	3064	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		24.7		24.7	24.7					24.7	24.7		20.0
Total Split (s)		56.0		56.0	56.0					64.0	64.0		20.0
Total Split (%)		40.0%		40.0%	40.0%					45.7%	45.7%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0		0.0
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.7		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.90		1.67	0.43						1.44		
Control Delay		58.7		374.1	15.4						225.0		
Queue Delay		48.5		9.5	0.0						0.2		
Total Delay		107.2		383.5	15.4						225.2		
Queue Length 50th (ft)		511		~151	76						~1375		
Queue Length 95th (ft)		#737		m#267	102						m#1243		
Internal Link Dist (ft)		222			473			206			221		
Turn Bay Length (ft)				75									
Base Capacity (vph)		672		67	691						2134		
Starvation Cap Reductn		0		0	0						136		
Spillback Cap Reductn		173		17	0						154		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		1.21		2.24	0.43						1.55		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 150													
Control Type: Pretimed													
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.													
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.													
m Volume for 95th percentile queue is metered by upstream signal.													
Splits and Phases: 5: Tampa St & Cass St													
 Ø2 (R) 64 s							 Ø4 56 s					 Ø9 20 s	

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Future Volume (vph)	0	479	95	106	282	0	0	0	0	170	2694	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.98		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1797		1770	1863						4976	
Flt Permitted		1.00		0.10	1.00						1.00	
Satd. Flow (perm)		1797		181	1863						4976	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	0	504	100	112	297	0	0	0	0	179	2836	49
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	599	0	112	297	0	0	0	0	0	3063	0
Confl. Peds. (#/hr)			31	31						63		43
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		50.3		50.3	50.3						58.3	
Effective Green, g (s)		52.0		52.0	52.0						60.0	
Actuated g/C Ratio		0.37		0.37	0.37						0.43	
Clearance Time (s)		5.7		5.7	5.7						5.7	
Lane Grp Cap (vph)		667		67	691						2132	
v/s Ratio Prot		0.33			0.16							
v/s Ratio Perm				0.62							0.62	
v/c Ratio		0.90		1.67	0.43						1.44	
Uniform Delay, d1		41.5		44.0	32.9						40.0	
Progression Factor		1.00		0.41	0.41						0.82	
Incremental Delay, d2		17.3		352.2	1.7						196.7	
Delay (s)		58.8		370.5	15.2						229.7	
Level of Service		E		F	B						F	
Approach Delay (s)		58.8			112.5			0.0			229.7	
Approach LOS		E			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			192.6			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.33									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			106.4%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
6: Tampa St & Polk St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

	↖	→	↗	↖	←	↖	↖	↑	↗	↘	↓	↙	
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↖			↖						↖↖↖		
Traffic Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44	
Future Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		325			537			302			286		
Travel Time (s)		7.4			12.2			5.9			5.6		
Confl. Peds. (#/hr)			53	53						168		62	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	190	0	0	281	0	0	0	0	0	3033	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.8		25.8	25.8					27.9	27.9		20.0
Total Split (s)		28.0		28.0	28.0					92.0	92.0		20.0
Total Split (%)		20.0%		20.0%	20.0%					65.7%	65.7%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.1		2.1	2.1					2.2	2.2		0.0
Lost Time Adjust (s)		-1.8			-1.8						-1.9		
Total Lost Time (s)		4.0			4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.62			1.89						0.98		
Control Delay		58.6			450.5						14.8		
Queue Delay		177.1			469.5						41.5		
Total Delay		235.7			920.0						56.3		
Queue Length 50th (ft)		147			~387						276		
Queue Length 95th (ft)		234			#572						m34		
Internal Link Dist (ft)		245			457			222			206		
Turn Bay Length (ft)													
Base Capacity (vph)		304			149						3081		
Starvation Cap Reductn		0			0						833		
Spillback Cap Reductn		293			148						503		
Storage Cap Reductn		0			0						0		
Reduced v/c Ratio		17.27			281.00						1.35		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 6: Tampa St & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Future Volume (vph)	0	115	67	97	173	0	0	0	0	162	2705	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.96			1.00						1.00	
Flpb, ped/bikes		1.00			0.98						0.97	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.98						1.00	
Satd. Flow (prot)		1691			1787						4901	
Flt Permitted		1.00			0.48						1.00	
Satd. Flow (perm)		1691			872						4901	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	0	120	70	101	180	0	0	0	0	169	2818	46
RTOR Reduction (vph)	0	15	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	175	0	0	281	0	0	0	0	0	3032	0
Confl. Peds. (#/hr)			53	53						168		62
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		22.2			22.2						86.1	
Effective Green, g (s)		24.0			24.0						88.0	
Actuated g/C Ratio		0.17			0.17						0.63	
Clearance Time (s)		5.8			5.8						5.9	
Lane Grp Cap (vph)		289			149						3080	
v/s Ratio Prot		0.10										
v/s Ratio Perm					0.32						0.62	
v/c Ratio		0.61			1.89						0.98	
Uniform Delay, d1		53.6			58.0						25.3	
Progression Factor		1.00			0.80						0.45	
Incremental Delay, d2		9.1			422.5						2.5	
Delay (s)		62.7			468.9						13.8	
Level of Service		E			F						B	
Approach Delay (s)		62.7			468.9			0.0			13.8	
Approach LOS		E			F			A			B	
Intersection Summary												
HCM 2000 Control Delay			53.0			HCM 2000 Level of Service				D		
HCM 2000 Volume to Capacity ratio			1.01									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			97.7%			ICU Level of Service				F		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71	
Future Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		286			539			272			302		
Travel Time (s)		6.5			12.3			5.3			5.9		
Confl. Peds. (#/hr)			19	19						54		36	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	300	0	0	443	0	0	0	0	0	3097	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.7		25.7	25.7					25.7	25.7		20.0
Total Split (s)		43.0		43.0	43.0					77.0	77.0		20.0
Total Split (%)		30.7%		30.7%	30.7%					55.0%	55.0%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.0	2.0		0.0
Lost Time Adjust (s)		-1.7			-1.7						-1.7		
Total Lost Time (s)		4.0			4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.60			1.82						1.19		
Control Delay		46.0			409.4						107.6		
Queue Delay		194.7			477.5						1.5		
Total Delay		240.7			886.9						109.0		
Queue Length 50th (ft)		219			~614						~1228		
Queue Length 95th (ft)		322			m#753						m#1231		
Internal Link Dist (ft)		206			459			192			222		
Turn Bay Length (ft)													
Base Capacity (vph)		498			244						2612		
Starvation Cap Reductn		0			0						133		
Spillback Cap Reductn		489			243						1106		
Storage Cap Reductn		0			0						0		
Reduced v/c Ratio		33.33			443.00						2.06		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 7: Tampa St & Zack St



Tampa Streetcar Feasibility Study
7: Tampa St & Zack St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Future Volume (vph)	0	168	114	112	305	0	0	0	0	93	2747	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0						4.0	
Lane Util. Factor		1.00			1.00						0.91	
Frpb, ped/bikes		0.98			1.00						1.00	
Flpb, ped/bikes		1.00			1.00						0.99	
Frt		0.95			1.00						1.00	
Flt Protected		1.00			0.99						1.00	
Satd. Flow (prot)		1725			1830						5010	
Flt Permitted		1.00			0.47						1.00	
Satd. Flow (perm)		1725			877						5010	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	179	121	119	324	0	0	0	0	99	2922	76
RTOR Reduction (vph)	0	17	0	0	0	0	0	0	0	0	2	0
Lane Group Flow (vph)	0	283	0	0	443	0	0	0	0	0	3095	0
Confl. Peds. (#/hr)			19	19						54		36
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		37.3			37.3						71.3	
Effective Green, g (s)		39.0			39.0						73.0	
Actuated g/C Ratio		0.28			0.28						0.52	
Clearance Time (s)		5.7			5.7						5.7	
Lane Grp Cap (vph)		480			244						2612	
v/s Ratio Prot		0.16										
v/s Ratio Perm					0.51						0.62	
v/c Ratio		0.59			1.82						1.18	
Uniform Delay, d1		43.6			50.5						33.5	
Progression Factor		1.00			0.83						0.62	
Incremental Delay, d2		5.2			381.9						84.5	
Delay (s)		48.8			423.8						105.4	
Level of Service		D			F						F	
Approach Delay (s)		48.8			423.8			0.0			105.4	
Approach LOS		D			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			137.7			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.21									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			105.5%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35	
Future Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		284			543			313			272		
Travel Time (s)		6.5			12.3			6.1			5.3		
Confl. Peds. (#/hr)			8	8						31		74	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	788	0	215	317	0	0	0	0	0	3097	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.7		25.7	25.7					26.9	26.9		20.0
Total Split (s)		72.0		72.0	72.0					48.0	48.0		20.0
Total Split (%)		51.4%		51.4%	51.4%					34.3%	34.3%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.0		2.0	2.0					2.2	2.2		0.0
Lost Time Adjust (s)		-1.7		-1.7	-1.7						-1.9		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.90		2.79	0.35						1.98		
Control Delay		46.7		859.4	17.4						466.7		
Queue Delay		0.0		0.0	0.0						0.8		
Total Delay		46.7		859.4	17.4						467.4		
Queue Length 50th (ft)		631		~332	113						~1593		
Queue Length 95th (ft)		#902		m#398	m179						m#1249		
Internal Link Dist (ft)		204			463			233			192		
Turn Bay Length (ft)				75									
Base Capacity (vph)		878		77	904						1567		
Starvation Cap Reductn		0		0	0						72		
Spillback Cap Reductn		0		0	0						296		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.90		2.79	0.35						2.44		
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green													
Natural Cycle: 150													
Control Type: Pretimed													
~ Volume exceeds capacity, queue is theoretically infinite.													
Queue shown is maximum after two cycles.													
# 95th percentile volume exceeds capacity, queue may be longer.													
Queue shown is maximum after two cycles.													
m Volume for 95th percentile queue is metered by upstream signal.													
Splits and Phases: 8: Tampa St & Twiggs St													
 Ø2 (R)				 Ø4				 Ø9					
48 s				72 s				20 s					

Tampa Streetcar Feasibility Study
8: Tampa St & Twiggs St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Future Volume (vph)	0	564	177	202	298	0	0	0	0	414	2463	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.99		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						0.99	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		1791		1770	1863						4987	
Flt Permitted		1.00		0.09	1.00						0.99	
Satd. Flow (perm)		1791		160	1863						4987	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	600	188	215	317	0	0	0	0	440	2620	37
RTOR Reduction (vph)	0	8	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	780	0	215	317	0	0	0	0	0	3096	0
Confl. Peds. (#/hr)			8	8						31		74
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		66.3		66.3	66.3						42.1	
Effective Green, g (s)		68.0		68.0	68.0						44.0	
Actuated g/C Ratio		0.49		0.49	0.49						0.31	
Clearance Time (s)		5.7		5.7	5.7						5.9	
Lane Grp Cap (vph)		869		77	904						1567	
v/s Ratio Prot		0.44			0.17							
v/s Ratio Perm				c1.34							0.62	
v/c Ratio		0.90		2.79	0.35						1.98	
Uniform Delay, d1		32.8		36.0	22.3						48.0	
Progression Factor		1.00		1.12	0.72						0.99	
Incremental Delay, d2		13.9		840.5	1.0						439.4	
Delay (s)		46.7		880.7	17.2						486.7	
Level of Service		D		F	B						F	
Approach Delay (s)		46.7			366.1			0.0			486.7	
Approach LOS		D			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			393.7			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			2.12									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			118.7%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54	
Future Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	75		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		397			548			309			313		
Travel Time (s)		9.0			12.5			6.0			6.1		
Confl. Peds. (#/hr)			43	43						36		75	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	360	0	141	103	0	0	0	0	0	3236	0	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			4						2		9
Permitted Phases				4						2			
Minimum Split (s)		25.9		25.9	25.9					26.8	26.8		20.0
Total Split (s)		39.0		39.0	39.0					81.0	81.0		20.0
Total Split (%)		27.9%		27.9%	27.9%					57.9%	57.9%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.2		2.2	2.2					2.1	2.1		0.0
Lost Time Adjust (s)		-1.9		-1.9	-1.9						-1.8		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.82		1.53	0.22						1.17		
Control Delay		59.2		303.1	42.0						97.1		
Queue Delay		108.7		307.9	0.0						1.0		
Total Delay		167.9		610.9	42.0						98.1		
Queue Length 50th (ft)		275		~173	64						~1312		
Queue Length 95th (ft)		#433		m#198	m72						m72		
Internal Link Dist (ft)		317			468			229			233		
Turn Bay Length (ft)				75									
Base Capacity (vph)		439		92	465						2759		
Starvation Cap Reductn		0		0	0						954		
Spillback Cap Reductn		405		90	0						657		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		10.59		70.50	0.22						1.79		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 9: Tampa St & Madison St



Tampa Streetcar Feasibility Study
9: Tampa St & Madison St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations											  	
Traffic Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Future Volume (vph)	0	138	186	127	93	0	0	0	0	97	2761	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		1.00		1.00	1.00						0.91	
Frpb, ped/bikes		0.94		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		1.00	1.00						1.00	
Frt		0.92		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						1.00	
Satd. Flow (prot)		1619		1770	1863						5018	
Flt Permitted		1.00		0.20	1.00						1.00	
Satd. Flow (perm)		1619		371	1863						5018	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.92	0.92	0.92	0.90	0.90	0.90
Adj. Flow (vph)	0	153	207	141	103	0	0	0	0	108	3068	60
RTOR Reduction (vph)	0	35	0	0	0	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	326	0	141	103	0	0	0	0	0	3235	0
Confl. Peds. (#/hr)			43	43						36		75
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			4						2	
Permitted Phases				4						2		
Actuated Green, G (s)		33.1		33.1	33.1						75.2	
Effective Green, g (s)		35.0		35.0	35.0						77.0	
Actuated g/C Ratio		0.25		0.25	0.25						0.55	
Clearance Time (s)		5.9		5.9	5.9						5.8	
Lane Grp Cap (vph)		404		92	465						2759	
v/s Ratio Prot		0.20			0.06							
v/s Ratio Perm				0.38							0.64	
v/c Ratio		0.81		1.53	0.22						1.17	
Uniform Delay, d1		49.3		52.5	41.7						31.5	
Progression Factor		1.00		0.89	0.98						0.50	
Incremental Delay, d2		15.7		269.5	0.7						78.0	
Delay (s)		65.0		316.3	41.6						93.6	
Level of Service		E		F	D						F	
Approach Delay (s)		65.0			200.3			0.0			93.6	
Approach LOS		E			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			97.7			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			114.5%			ICU Level of Service				H		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
10: Tampa St & Kennedy Blvd

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352	
Future Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes	Yes		Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		358			546			274			309		
Travel Time (s)		8.1			12.4			5.3			6.0		
Confl. Peds. (#/hr)				46								79	
Peak Hour Factor	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	
Shared Lane Traffic (%)				10%									
Lane Group Flow (vph)	0	0	0	424	2459	0	0	0	0	0	3096	0	
Turn Type				Perm	NA						NA		
Protected Phases					4						2		9
Permitted Phases				4									
Minimum Split (s)				25.8	25.8						26.8		20.0
Total Split (s)				56.0	56.0						64.0		20.0
Total Split (%)				40.0%	40.0%						45.7%		14%
Yellow Time (s)				3.7	3.7						3.7		2.0
All-Red Time (s)				2.1	2.1						2.1		0.0
Lost Time Adjust (s)				-1.8	-1.8						-1.8		
Total Lost Time (s)				4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio				0.66	1.36						1.47		
Control Delay				7.3	190.1						238.1		
Queue Delay				0.6	0.1						0.3		
Total Delay				7.8	190.2						238.4		
Queue Length 50th (ft)				41	~1120						~1399		
Queue Length 95th (ft)				m48	m#1160						m#531		
Internal Link Dist (ft)		278			466			194			229		
Turn Bay Length (ft)													
Base Capacity (vph)				643	1803						2109		
Starvation Cap Reductn				46	41						160		
Spillback Cap Reductn				24	63						213		
Storage Cap Reductn				0	0						0		
Reduced v/c Ratio				0.71	1.41						1.63		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

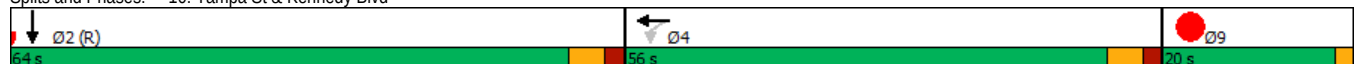
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 10: Tampa St & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Future Volume (vph)	0	0	0	443	2267	0	0	0	0	0	2559	352
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				4.0	4.0						4.0	
Lane Util. Factor				0.86	0.86						0.91	
Frbp, ped/bikes				1.00	1.00						0.98	
Flpb, ped/bikes				0.90	1.00						1.00	
Frt				1.00	1.00						0.98	
Flt Protected				0.95	1.00						1.00	
Satd. Flow (prot)				1375	4792						4893	
Flt Permitted				0.95	1.00						1.00	
Satd. Flow (perm)				1375	4792						4893	
Peak-hour factor, PHF	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	0	0	0	471	2412	0	0	0	0	0	2722	374
RTOR Reduction (vph)	0	0	0	133	23	0	0	0	0	0	13	0
Lane Group Flow (vph)	0	0	0	291	2436	0	0	0	0	0	3083	0
Confl. Peds. (#/hr)				46								79
Turn Type				Perm	NA						NA	
Protected Phases					4						2	
Permitted Phases				4								
Actuated Green, G (s)				50.2	50.2						58.2	
Effective Green, g (s)				52.0	52.0						60.0	
Actuated g/C Ratio				0.37	0.37						0.43	
Clearance Time (s)				5.8	5.8						5.8	
Lane Grp Cap (vph)				510	1779						2097	
v/s Ratio Prot											c0.63	
v/s Ratio Perm				0.21	0.51							
v/c Ratio				0.57	1.37						1.47	
Uniform Delay, d1				35.1	44.0						40.0	
Progression Factor				0.25	0.54						0.78	
Incremental Delay, d2				2.5	168.1						211.9	
Delay (s)				11.1	192.1						243.0	
Level of Service				B	F						F	
Approach Delay (s)		0.0			165.5			0.0			243.0	
Approach LOS		A			F			A			F	
Intersection Summary												
HCM 2000 Control Delay			205.6			HCM 2000 Level of Service				F		
HCM 2000 Volume to Capacity ratio			1.23									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			104.2%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Intersection Summary	
Area Type:	Other
Cycle Length:	140
Actuated Cycle Length:	140
Offset:	0 (0%), Referenced to phase 2:SBTL, Start of Green
Natural Cycle:	150
Control Type:	Pretimed
~	Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.
#	95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.
m	Volume for 95th percentile queue is metered by upstream signal.

 $\varnothing 2$ (R)	 $\varnothing 4$	 $\varnothing 9$
70 s	50 s	20 s

Tampa Streetcar Feasibility Study
11: Tampa St & Jackson St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  								  	  	
Traffic Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Future Volume (vph)	0	1162	310	0	0	0	0	0	0	717	2194	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0								4.0	4.0	
Lane Util. Factor		0.91								1.00	0.91	
Frpb, ped/bikes		0.95								1.00	1.00	
Flpb, ped/bikes		1.00								0.83	1.00	
Frt		0.97								1.00	1.00	
Flt Protected		1.00								0.95	1.00	
Satd. Flow (prot)		4697								1462	5085	
Flt Permitted		1.00								0.95	1.00	
Satd. Flow (perm)		4697								1462	5085	
Peak-hour factor, PHF	0.86	0.86	0.86	0.92	0.92	0.92	0.92	0.92	0.92	0.86	0.86	0.86
Adj. Flow (vph)	0	1351	360	0	0	0	0	0	0	834	2551	0
RTOR Reduction (vph)	0	34	0	0	0	0	0	0	0	115	0	0
Lane Group Flow (vph)	0	1677	0	0	0	0	0	0	0	719	2551	0
Confl. Peds. (#/hr)			106								87	
Turn Type		NA								Perm	NA	
Protected Phases		4									2	
Permitted Phases											2	
Actuated Green, G (s)		44.0								64.0	64.0	
Effective Green, g (s)		46.0								66.0	66.0	
Actuated g/C Ratio		0.33								0.47	0.47	
Clearance Time (s)		6.0								6.0	6.0	
Lane Grp Cap (vph)		1543								689	2397	
v/s Ratio Prot		c0.36									c0.50	
v/s Ratio Perm										0.49		
v/c Ratio		1.09								1.04	1.06	
Uniform Delay, d1		47.0								37.0	37.0	
Progression Factor		1.00								0.21	0.26	
Incremental Delay, d2		50.3								24.3	30.0	
Delay (s)		97.3								32.0	39.4	
Level of Service		F								C	D	
Approach Delay (s)		97.3			0.0			0.0			37.6	
Approach LOS		F			A			A			D	
Intersection Summary												
HCM 2000 Control Delay			57.7			HCM 2000 Level of Service				E		
HCM 2000 Volume to Capacity ratio			0.92									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			104.2%			ICU Level of Service				G		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔		↔	↔						↔		
Traffic Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0	
Future Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	100		0	0		0	0		0	
Storage Lanes	0		0	1		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		243			553			171			589		
Travel Time (s)		5.5			12.6			3.3			11.5		
Confl. Peds. (#/hr)			182	182						42		132	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	351	0	251	271	0	0	0	0	0	262	0	
Turn Type		NA		Perm	NA					Split	NA		
Protected Phases		4			4					2	2		9
Permitted Phases				4									
Minimum Split (s)		28.8		28.8	28.8					26.7	26.7		20.0
Total Split (s)		53.0		53.0	53.0					67.0	67.0		20.0
Total Split (%)		37.9%		37.9%	37.9%					47.9%	47.9%		14%
Yellow Time (s)		3.7		3.7	3.7					3.7	3.7		2.0
All-Red Time (s)		2.1		2.1	2.1					2.0	2.0		0.0
Lost Time Adjust (s)		-1.8		-1.8	-1.8						-1.7		
Total Lost Time (s)		4.0		4.0	4.0						4.0		
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.31		0.98	0.42						0.12		
Control Delay		31.2		94.3	35.4						18.0		
Queue Delay		0.0		0.0	0.0						0.0		
Total Delay		31.2		94.3	35.4						18.0		
Queue Length 50th (ft)		112		225	189						29		
Queue Length 95th (ft)		152		#404	269						m27		
Internal Link Dist (ft)		163			473			91			509		
Turn Bay Length (ft)				100									
Base Capacity (vph)		1136		257	652						2274		
Starvation Cap Reductn		0		0	0						0		
Spillback Cap Reductn		0		0	0						0		
Storage Cap Reductn		0		0	0						0		
Reduced v/c Ratio		0.31		0.98	0.42						0.12		

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:SBTL, Start of Green

Natural Cycle: 80

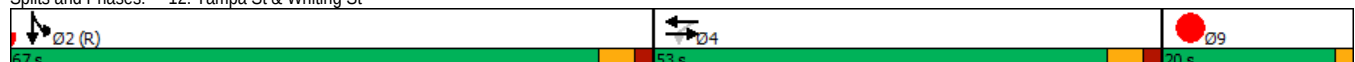
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 12: Tampa St & Whiting St



Tampa Streetcar Feasibility Study
12: Tampa St & Whiting St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↕	↕						↕↕↕	
Traffic Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Future Volume (vph)	0	245	68	223	241	0	0	0	0	26	207	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0		4.0	4.0						4.0	
Lane Util. Factor		0.95		1.00	1.00						0.91	
Frpb, ped/bikes		0.93		1.00	1.00						1.00	
Flpb, ped/bikes		1.00		0.84	1.00						1.00	
Frt		0.97		1.00	1.00						1.00	
Flt Protected		1.00		0.95	1.00						0.99	
Satd. Flow (prot)		3193		1483	1863						5057	
Flt Permitted		1.00		0.47	1.00						0.99	
Satd. Flow (perm)		3193		735	1863						5057	
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	0	275	76	251	271	0	0	0	0	29	233	0
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	333	0	251	271	0	0	0	0	0	262	0
Confl. Peds. (#/hr)			182	182						42		132
Turn Type		NA		Perm	NA					Split	NA	
Protected Phases		4			4					2	2	
Permitted Phases				4								
Actuated Green, G (s)		47.2		47.2	47.2						61.3	
Effective Green, g (s)		49.0		49.0	49.0						63.0	
Actuated g/C Ratio		0.35		0.35	0.35						0.45	
Clearance Time (s)		5.8		5.8	5.8						5.7	
Lane Grp Cap (vph)		1117		257	652						2275	
v/s Ratio Prot		0.10			0.15						c0.05	
v/s Ratio Perm				c0.34								
v/c Ratio		0.30		0.98	0.42						0.12	
Uniform Delay, d1		33.0		44.9	34.6						22.3	
Progression Factor		1.00		0.96	0.95						0.80	
Incremental Delay, d2		0.7		50.5	1.9						0.0	
Delay (s)		33.7		93.8	34.9						17.9	
Level of Service		C		F	C						B	
Approach Delay (s)		33.7			63.2			0.0			17.9	
Approach LOS		C			E			A			B	
Intersection Summary												
HCM 2000 Control Delay			43.6			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			140.0			Sum of lost time (s)				10.0		
Intersection Capacity Utilization			59.0%			ICU Level of Service				B		
Analysis Period (min)			15									

c Critical Lane Group

Tampa Streetcar Feasibility Study
13: Florida Ave & Palm Ave

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0	
Future Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	100		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		459			889			1015			242		
Travel Time (s)		10.4			20.2			19.8			4.7		
Confl. Peds. (#/hr)	26					26	12		7				
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	95	585	0	0	459	0	0	1896	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	22.1	22.1			22.1		30.3	30.3					20.0
Total Split (s)	50.0	50.0			50.0		70.0	70.0					20.0
Total Split (%)	35.7%	35.7%			35.7%		50.0%	50.0%					14%
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.3	2.3					0.0
Lost Time Adjust (s)	-2.1	-2.1			-2.1			-2.3					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.81	0.96			0.79			0.80					
Control Delay	67.4	56.6			52.0			28.4					
Queue Delay	0.0	38.1			0.0			0.0					
Total Delay	67.4	94.7			52.0			28.4					
Queue Length 50th (ft)	80	547			366			626					
Queue Length 95th (ft)	m#161	#761			507			m302					
Internal Link Dist (ft)		379			809			935			162		
Turn Bay Length (ft)	100												
Base Capacity (vph)	118	612			582			2371					
Starvation Cap Reductn	0	75			0			0					
Spillback Cap Reductn	0	0			0			0					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.81	1.09			0.79			0.80					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green

Natural Cycle: 90

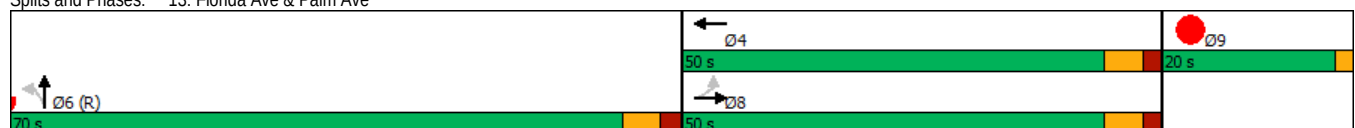
Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 13: Florida Ave & Palm Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Future Volume (vph)	89	550	0	0	291	140	31	1640	111	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.97			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.96			0.99				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1736			5018				
Flt Permitted	0.19	1.00			1.00			1.00				
Satd. Flow (perm)	360	1863			1736			5018				
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	95	585	0	0	310	149	33	1745	118	0	0	0
RTOR Reduction (vph)	0	0	0	0	12	0	0	5	0	0	0	0
Lane Group Flow (vph)	95	585	0	0	447	0	0	1891	0	0	0	0
Confl. Peds. (#/hr)	26					26	12		7			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	43.9	43.9			43.9			63.7				
Effective Green, g (s)	46.0	46.0			46.0			66.0				
Actuated g/C Ratio	0.33	0.33			0.33			0.47				
Clearance Time (s)	6.1	6.1			6.1			6.3				
Lane Grp Cap (vph)	118	612			570			2365				
v/s Ratio Prot		c0.31			0.26							
v/s Ratio Perm	0.26							0.38				
v/c Ratio	0.81	0.96			0.78			0.80				
Uniform Delay, d1	42.9	46.0			42.5			31.4				
Progression Factor	0.71	0.72			1.00			0.89				
Incremental Delay, d2	33.9	22.3			10.4			0.3				
Delay (s)	64.2	55.6			52.9			28.3				
Level of Service	E	E			D			C				
Approach Delay (s)		56.8			52.9			28.3			0.0	
Approach LOS		E			D			C			A	
Intersection Summary												
HCM 2000 Control Delay		38.4			HCM 2000 Level of Service			D				
HCM 2000 Volume to Capacity ratio		0.74										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		106.9%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0	
Future Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	50		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		183			365			1146			1015		
Travel Time (s)		4.2			8.3			22.3			19.8		
Confl. Peds. (#/hr)	7					7	14		15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	220	105	0	0	220	0	0	1935	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	22.4	22.4			22.4		24.0	24.0					20.0
Total Split (s)	23.0	23.0			23.0		27.0	27.0					20.0
Total Split (%)	32.9%	32.9%			32.9%		38.6%	38.6%					29%
Yellow Time (s)	4.0	4.0			4.0		4.0	4.0					2.0
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0					0.0
Lost Time Adjust (s)	-2.4	-2.4			-2.4			-2.0					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	0.85	0.21			0.41			1.16					
Control Delay	55.2	21.1			13.5			117.0					
Queue Delay	0.0	0.0			0.0			0.0					
Total Delay	55.2	21.1			13.5			117.0					
Queue Length 50th (ft)	89	35			37			~726					
Queue Length 95th (ft)	#207	71			92			m302					
Internal Link Dist (ft)		103			285			1066			935		
Turn Bay Length (ft)	50												
Base Capacity (vph)	260	505			536			1667					
Starvation Cap Reductn	0	0			0			0					
Spillback Cap Reductn	0	0			0			0					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	0.85	0.21			0.41			1.16					

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 14: Florida Ave & Henderson Ave



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Future Volume (vph)	202	97	0	0	80	122	38	1726	17	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.99			1.00				
Flpb, ped/bikes	0.99	1.00			1.00			1.00				
Frt	1.00	1.00			0.92			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1759	1863			1689			5068				
Flt Permitted	0.52	1.00			1.00			1.00				
Satd. Flow (perm)	962	1863			1689			5068				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	220	105	0	0	87	133	41	1876	18	0	0	0
RTOR Reduction (vph)	0	0	0	0	79	0	0	1	0	0	0	0
Lane Group Flow (vph)	220	105	0	0	141	0	0	1934	0	0	0	0
Confl. Peds. (#/hr)	7					7	14		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	16.6	16.6			16.6			21.0				
Effective Green, g (s)	19.0	19.0			19.0			23.0				
Actuated g/C Ratio	0.27	0.27			0.27			0.33				
Clearance Time (s)	6.4	6.4			6.4			6.0				
Lane Grp Cap (vph)	261	505			458			1665				
v/s Ratio Prot		0.06			0.08							
v/s Ratio Perm	0.23							0.38				
v/c Ratio	0.84	0.21			0.31			1.16				
Uniform Delay, d1	24.1	19.7			20.3			23.5				
Progression Factor	1.00	1.00			1.00			2.11				
Incremental Delay, d2	26.8	0.9			1.7			73.3				
Delay (s)	50.9	20.6			22.0			123.0				
Level of Service	D	C			C			F				
Approach Delay (s)		41.1			22.0			123.0			0.0	
Approach LOS		D			C			F			A	
Intersection Summary												
HCM 2000 Control Delay		103.3			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		0.71										
Actuated Cycle Length (s)		70.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		69.0%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
15: Florida Ave & Scott St

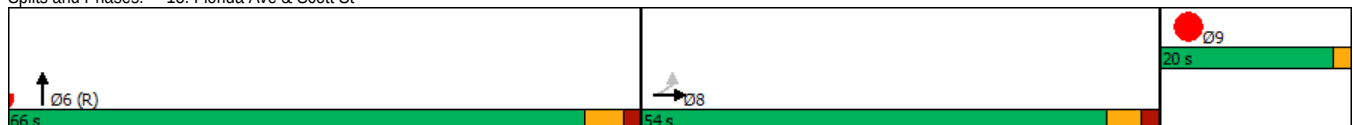
Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔↔						↔↔↔					
Traffic Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0	
Future Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red	Yes		Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		371			481			701			1146		
Travel Time (s)		8.4			10.9			13.7			22.3		
Confl. Peds. (#/hr)									5				
Peak Hour Factor	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	2306	0	0	0	0	0	3952	0	0	0	0	
Turn Type	Perm	NA						NA					
Protected Phases		8						6					9
Permitted Phases	8												
Minimum Split (s)	23.7	23.7						24.0					20.0
Total Split (s)	54.0	54.0						66.0					20.0
Total Split (%)	38.6%	38.6%						47.1%					14%
Yellow Time (s)	3.7	3.7						4.0					2.0
All-Red Time (s)	2.0	2.0						2.0					0.0
Lost Time Adjust (s)		-1.7						-2.0					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.80						1.80					
Control Delay		384.7						385.9					
Queue Delay		0.0						0.4					
Total Delay		384.7						386.3					
Queue Length 50th (ft)		~1624						~2023					
Queue Length 95th (ft)		#1757						m283					
Internal Link Dist (ft)		291			401			621		1066			
Turn Bay Length (ft)													
Base Capacity (vph)		1283						2199					
Starvation Cap Reductn		0						296					
Spillback Cap Reductn		0						0					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		1.80						2.08					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 15: Florida Ave & Scott St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 						  				
Traffic Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Future Volume (vph)	688	1480	0	0	0	0	0	2882	833	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.95						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		1.00						1.00				
Frt		1.00						0.97				
Flt Protected		0.98						1.00				
Satd. Flow (prot)		3484						4885				
Flt Permitted		0.98						1.00				
Satd. Flow (perm)		3484						4885				
Peak-hour factor, PHF	0.94	0.94	0.94	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	732	1574	0	0	0	0	0	3066	886	0	0	0
RTOR Reduction (vph)	0	39	0	0	0	0	0	37	0	0	0	0
Lane Group Flow (vph)	0	2267	0	0	0	0	0	3915	0	0	0	0
Confl. Peds. (#/hr)												
Turn Type	Perm	NA						NA				
Protected Phases		8						6				
Permitted Phases	8											
Actuated Green, G (s)		48.3						60.0				
Effective Green, g (s)		50.0						62.0				
Actuated g/C Ratio		0.36						0.44				
Clearance Time (s)		5.7						6.0				
Lane Grp Cap (vph)		1244						2163				
v/s Ratio Prot								c0.80				
v/s Ratio Perm		0.65										
v/c Ratio		1.82						1.81				
Uniform Delay, d1		45.0						39.0				
Progression Factor		0.63						1.05				
Incremental Delay, d2		372.7						364.6				
Delay (s)		401.1						405.4				
Level of Service		F						F				
Approach Delay (s)		401.1			0.0			405.4			0.0	
Approach LOS		F			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		403.8							F			
HCM 2000 Volume to Capacity ratio		1.56										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		142.0%							H			
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔						↔↔↔					
Traffic Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0	
Future Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		200			263			481			701		
Travel Time (s)		4.5			6.0			10.9			15.9		
Confl. Peds. (#/hr)	11					11	9		8				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	144	0	0	0	0	0	4041	0	0	0	0	
Turn Type	Perm	NA					Perm	NA					
Protected Phases		4						2					9
Permitted Phases	4						2						
Minimum Split (s)	23.4	23.4					24.0	24.0					20.0
Total Split (s)	24.0	24.0					26.0	26.0					20.0
Total Split (%)	34.3%	34.3%					37.1%	37.1%					29%
Yellow Time (s)	3.4	3.4					4.0	4.0					2.0
All-Red Time (s)	2.0	2.0					2.0	2.0					0.0
Lost Time Adjust (s)		-1.4						-2.0					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.28						2.53					
Control Delay		21.3						709.0					
Queue Delay		2.3						0.6					
Total Delay		23.6						709.5					
Queue Length 50th (ft)		48						~2247					
Queue Length 95th (ft)		92						m#1621					
Internal Link Dist (ft)		120			183			401			621		
Turn Bay Length (ft)													
Base Capacity (vph)		511						1598					
Starvation Cap Reductn		0						0					
Spillback Cap Reductn		255						238					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		0.56						2.97					

Intersection Summary

Area Type: Other
 Cycle Length: 70
 Actuated Cycle Length: 70
 Offset: 0.8 (1%), Referenced to phase 2:NBT and 6:, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 16: Florida Ave & Fortune St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Future Volume (vph)	87	45	0	0	0	0	31	3677	9	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		1.00						0.91				
Frpb, ped/bikes		1.00						1.00				
Flpb, ped/bikes		0.99						1.00				
Frt		1.00						1.00				
Flt Protected		0.97						1.00				
Satd. Flow (prot)		1790						5080				
Flt Permitted		0.97						1.00				
Satd. Flow (perm)		1790						5080				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	95	49	0	0	0	0	34	3997	10	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	144	0	0	0	0	0	4040	0	0	0	0
Confl. Peds. (#/hr)	11						11	9	8			
Turn Type	Perm	NA					Perm	NA				
Protected Phases		4						2				
Permitted Phases	4						2					
Actuated Green, G (s)		18.6						20.0				
Effective Green, g (s)		20.0						22.0				
Actuated g/C Ratio		0.29						0.31				
Clearance Time (s)		5.4						6.0				
Lane Grp Cap (vph)		511						1596				
v/s Ratio Prot												
v/s Ratio Perm		0.08						0.80				
v/c Ratio		0.28						2.53				
Uniform Delay, d1		19.4						24.0				
Progression Factor		1.00						1.74				
Incremental Delay, d2		1.4						689.4				
Delay (s)		20.8						731.0				
Level of Service		C						F				
Approach Delay (s)		20.8			0.0			731.0			0.0	
Approach LOS		C			A			F			A	
Intersection Summary												
HCM 2000 Control Delay		706.6						HCM 2000 Level of Service		F		
HCM 2000 Volume to Capacity ratio		1.02										
Actuated Cycle Length (s)		70.0						Sum of lost time (s)		10.0		
Intersection Capacity Utilization		92.4%						ICU Level of Service		F		
Analysis Period (min)		15										

c Critical Lane Group

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0	
Future Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			30			35		
Link Distance (ft)		288			298			284			481		
Travel Time (s)		6.5			6.8			6.5			9.4		
Confl. Peds. (#/hr)	5					5	10		15				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	90	0	0	133	0	0	4208	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			8			2					9
Permitted Phases	4						2						
Minimum Split (s)	26.8	26.8			26.8		24.0	24.0					20.0
Total Split (s)	27.0	27.0			27.0		93.0	93.0					20.0
Total Split (%)	19.3%	19.3%			19.3%		66.4%	66.4%					14%
Yellow Time (s)	3.4	3.4			3.4		4.0	4.0					2.0
All-Red Time (s)	2.4	2.4			2.4		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8			-2.0					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.54			0.37			1.30					
Control Delay		66.5			16.0			153.5					
Queue Delay		0.0			0.0			0.3					
Total Delay		66.5			16.0			153.8					
Queue Length 50th (ft)		76			16			~1837					
Queue Length 95th (ft)		138			78			m54					
Internal Link Dist (ft)		208			218			204			401		
Turn Bay Length (ft)													
Base Capacity (vph)		168			359			3227					
Starvation Cap Reductn		0			0			551					
Spillback Cap Reductn		0			0			0					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.54			0.37			1.57					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

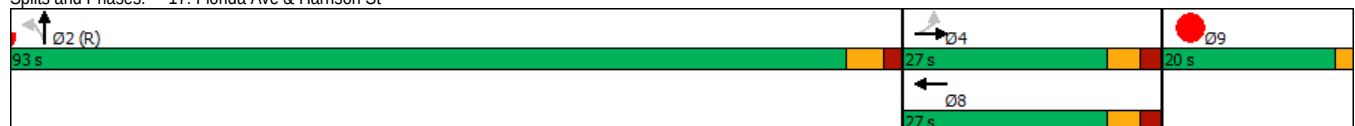
Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 17: Florida Ave & Harrison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Future Volume (vph)	62	21	0	0	19	103	17	3824	30	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Flpb, ped/bikes		1.00			0.98			1.00				
Flpb, ped/bikes		0.99			1.00			1.00				
Frt		1.00			0.89			1.00				
Flt Protected		0.96			1.00			1.00				
Satd. Flow (prot)		1786			1621			5074				
Flt Permitted		0.55			1.00			1.00				
Satd. Flow (perm)		1025			1621			5074				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	67	23	0	0	21	112	18	4157	33	0	0	0
RTOR Reduction (vph)	0	0	0	0	94	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	90	0	0	39	0	0	4207	0	0	0	0
Confl. Peds. (#/hr)	5					5	10		15			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		21.2			21.2			87.0				
Effective Green, g (s)		23.0			23.0			89.0				
Actuated g/C Ratio		0.16			0.16			0.64				
Clearance Time (s)		5.8			5.8			6.0				
Lane Grp Cap (vph)		168			266			3225				
v/s Ratio Prot					0.02							
v/s Ratio Perm		0.09						0.83				
v/c Ratio		0.54			0.15			1.30				
Uniform Delay, d1		53.6			50.1			25.5				
Progression Factor		1.00			1.00			0.38				
Incremental Delay, d2		11.7			1.2			137.3				
Delay (s)		65.3			51.3			147.0				
Level of Service		E			D			F				
Approach Delay (s)		65.3			51.3			147.0			0.0	
Approach LOS		E			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		142.5			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		0.99										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		106.9%			ICU Level of Service			G				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
18: Florida Ave & Tyler St

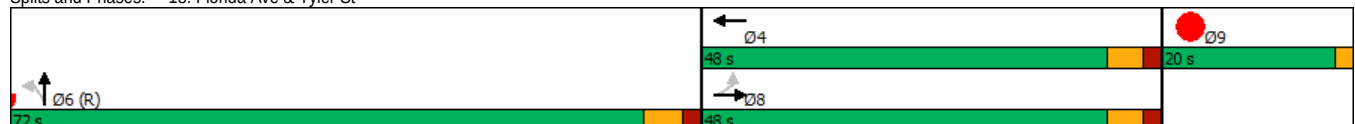
Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0	
Future Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		0	60		0	0		0	
Storage Lanes	1		0	0		0	1		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		570			573			286			284		
Travel Time (s)		13.0			13.0			5.6			5.5		
Confl. Peds. (#/hr)	16					16	3		28				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	190	113	0	0	449	0	101	4060	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		8			4			6					9
Permitted Phases	8						6						
Minimum Split (s)	25.8	25.8			25.8		26.0	26.0					20.0
Total Split (s)	48.0	48.0			48.0		72.0	72.0					20.0
Total Split (%)	34.3%	34.3%			34.3%		51.4%	51.4%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)	-1.8	-1.8			-1.8		-2.0	-2.0					
Total Lost Time (s)	4.0	4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	1.78	0.19			0.80		0.12	1.65					
Control Delay	405.6	31.0			53.9		3.0	307.1					
Queue Delay	0.0	0.0			0.0		0.0	0.3					
Total Delay	405.6	31.0			53.9		3.0	307.3					
Queue Length 50th (ft)	~249	52			360		6	~1978					
Queue Length 95th (ft)	m#354	m85			500		m3	m47					
Internal Link Dist (ft)		490			493			206			204		
Turn Bay Length (ft)	75						60						
Base Capacity (vph)	107	585			563		850	2468					
Starvation Cap Reductn	0	0			0		0	268					
Spillback Cap Reductn	0	0			0		0	154					
Storage Cap Reductn	0	0			0		0	0					
Reduced v/c Ratio	1.78	0.19			0.80		0.12	1.85					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 6:NBT, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 18: Florida Ave & Tyler St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Future Volume (vph)	177	105	0	0	275	142	94	3764	12	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0		4.0	4.0				
Lane Util. Factor	1.00	1.00			1.00		1.00	0.91				
Flpb, ped/bikes	1.00	1.00			0.98		1.00	1.00				
Flpb, ped/bikes	1.00	1.00			1.00		0.99	1.00				
Frt	1.00	1.00			0.95		1.00	1.00				
Flt Protected	0.95	1.00			1.00		0.95	1.00				
Satd. Flow (prot)	1770	1863			1750		1751	5081				
Flt Permitted	0.18	1.00			1.00		0.95	1.00				
Satd. Flow (perm)	343	1863			1750		1751	5081				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	190	113	0	0	296	153	101	4047	13	0	0	0
RTOR Reduction (vph)	0	0	0	0	13	0	0	0	0	0	0	0
Lane Group Flow (vph)	190	113	0	0	436	0	101	4060	0	0	0	0
Confl. Peds. (#/hr)	16					16	3		28			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		8			4			6				
Permitted Phases	8						6					
Actuated Green, G (s)	42.2	42.2			42.2		66.0	66.0				
Effective Green, g (s)	44.0	44.0			44.0		68.0	68.0				
Actuated g/C Ratio	0.31	0.31			0.31		0.49	0.49				
Clearance Time (s)	5.8	5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)	107	585			550		850	2467				
v/s Ratio Prot		0.06			0.25			0.80				
v/s Ratio Perm	0.55						0.06					
v/c Ratio	1.78	0.19			0.79		0.12	1.65				
Uniform Delay, d1	48.0	35.0			43.8		19.6	36.0				
Progression Factor	0.78	0.86			1.00		0.15	0.17				
Incremental Delay, d2	379.0	0.6			11.2		0.0	290.7				
Delay (s)	416.4	30.7			55.0		2.9	297.0				
Level of Service	F	C			E		A	F				
Approach Delay (s)		272.5			55.0			289.9			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		267.3			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.46										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		116.5%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
19: Florida Ave & Cass St

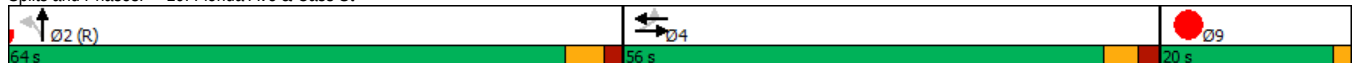
Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0	
Future Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	60		0	0		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		553			550			283			286		
Travel Time (s)		12.6			12.5			5.5			5.6		
Confl. Peds. (#/hr)	5					5	3		100				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	631	0	0	428	0	63	4191	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	28.0	28.0			28.0		25.0	25.0					20.0
Total Split (s)	56.0	56.0			56.0		64.0	64.0					20.0
Total Split (%)	40.0%	40.0%			40.0%		45.7%	45.7%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.3	2.3			2.3		2.0	2.0					0.0
Lost Time Adjust (s)		-2.0			-2.0		-2.0	-2.0					
Total Lost Time (s)		4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		2.17			0.64		0.08	1.95					
Control Delay		546.5			40.1		24.5	450.4					
Queue Delay		0.0			0.0		0.0	0.3					
Total Delay		546.5			40.1		24.5	450.6					
Queue Length 50th (ft)		-906			309		24	-2151					
Queue Length 95th (ft)		m#917			429		m18	m#1324					
Internal Link Dist (ft)		473			470			203			206		
Turn Bay Length (ft)							60						
Base Capacity (vph)		291			673		750	2152					
Starvation Cap Reductn		0			0		0	97					
Spillback Cap Reductn		0			0		0	214					
Storage Cap Reductn		0			0		0	0					
Reduced v/c Ratio		2.17			0.64		0.08	2.16					

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 140
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
Natural Cycle: 150
Control Type: Pretimed
~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 19: Florida Ave & Cass St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Future Volume (vph)	153	421	0	0	292	97	57	3724	90	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Frpb, ped/bikes		1.00			0.99		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.99	1.00				
Frt		1.00			0.97		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1838			1790		1750	5022				
Flt Permitted		0.42			1.00		0.95	1.00				
Satd. Flow (perm)		784			1790		1750	5022				
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	168	463	0	0	321	107	63	4092	99	0	0	0
RTOR Reduction (vph)	0	0	0	0	9	0	0	2	0	0	0	0
Lane Group Flow (vph)	0	631	0	0	419	0	63	4189	0	0	0	0
Confl. Peds. (#/hr)	5					5	3		100			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		50.0			50.0		58.0	58.0				
Effective Green, g (s)		52.0			52.0		60.0	60.0				
Actuated g/C Ratio		0.37			0.37		0.43	0.43				
Clearance Time (s)		6.0			6.0		6.0	6.0				
Lane Grp Cap (vph)		291			664		750	2152				
v/s Ratio Prot					0.23			c0.83				
v/s Ratio Perm		c0.80					0.04					
v/c Ratio		2.17			0.63		0.08	1.95				
Uniform Delay, d1		44.0			36.1		23.7	40.0				
Progression Factor		0.51			1.00		1.02	0.84				
Incremental Delay, d2		526.8			4.5		0.0	426.2				
Delay (s)		549.3			40.6		24.2	459.8				
Level of Service		F			D		C	F				
Approach Delay (s)		549.3			40.6			453.3			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		431.5							F			
HCM 2000 Volume to Capacity ratio		1.77										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		136.1%							H			
Analysis Period (min)		15										

c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↖			↗		↖	↗					
Traffic Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0	
Future Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		537			559			300			283		
Travel Time (s)		12.2			12.7			5.8			5.5		
Confl. Peds. (#/hr)	34					34	26		55				
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	309	0	0	210	0	120	4330	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	25.8	25.8			25.8		28.0	28.0					20.0
Total Split (s)	31.0	31.0			31.0		89.0	89.0					20.0
Total Split (%)	22.1%	22.1%			22.1%		63.6%	63.6%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8		-2.0	-2.0					
Total Lost Time (s)		4.0			4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.79			0.60		0.12	1.41					
Control Delay		394.7			49.0		3.1	198.8					
Queue Delay		35.8			76.3		1.5	0.6					
Total Delay		430.5			125.4		4.6	199.4					
Queue Length 50th (ft)		~401			141		10	~1969					
Queue Length 95th (ft)		m#493			220		m6	m80					
Internal Link Dist (ft)		457			479			220			203		
Turn Bay Length (ft)													
Base Capacity (vph)		173			349		985	3081					
Starvation Cap Reductn		0			0		715	393					
Spillback Cap Reductn		129			248		0	801					
Storage Cap Reductn		0			0		0	0					
Reduced v/c Ratio		7.02			2.08		0.44	1.90					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 20: Florida Ave & Polk St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  				
Traffic Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Future Volume (vph)	82	187	0	0	78	104	104	3742	25	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0		4.0	4.0				
Lane Util. Factor		1.00			1.00		1.00	0.91				
Flpb, ped/bikes		1.00			0.95		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.92	1.00				
Frt		1.00			0.92		1.00	1.00				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		1813			1639		1623	5074				
Flt Permitted		0.49			1.00		0.95	1.00				
Satd. Flow (perm)		900			1639		1623	5074				
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	94	215	0	0	90	120	120	4301	29	0	0	0
RTOR Reduction (vph)	0	0	0	0	34	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	309	0	0	176	0	120	4330	0	0	0	0
Confl. Peds. (#/hr)	34					34	26		55			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		25.2			25.2		83.0	83.0				
Effective Green, g (s)		27.0			27.0		85.0	85.0				
Actuated g/C Ratio		0.19			0.19		0.61	0.61				
Clearance Time (s)		5.8			5.8		6.0	6.0				
Lane Grp Cap (vph)		173			316		985	3080				
v/s Ratio Prot					0.11			0.85				
v/s Ratio Perm		0.34					0.07					
v/c Ratio		1.79			0.56		0.12	1.41				
Uniform Delay, d1		56.5			51.1		11.7	27.5				
Progression Factor		0.70			1.00		0.26	0.28				
Incremental Delay, d2		367.4			6.9		0.0	182.8				
Delay (s)		407.2			58.0		3.1	190.3				
Level of Service		F			E		A	F				
Approach Delay (s)		407.2			58.0			185.3			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		193.7							F			
HCM 2000 Volume to Capacity ratio		1.29										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		113.9%							H			
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
21: Florida Ave & Zack St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0	
Future Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		539			576			283			300		
Travel Time (s)		12.3			13.1			5.5			5.8		
Confl. Peds. (#/hr)	36					36	9		22				
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	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	440	0	0	297	0	0	4074	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	26.9	26.9			26.9		24.7	24.7					20.0
Total Split (s)	47.0	47.0			47.0		73.0	73.0					20.0
Total Split (%)	33.6%	33.6%			33.6%		52.1%	52.1%					14%
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7					2.0
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0					0.0
Lost Time Adjust (s)		-1.9			-1.9			-1.7					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.86			0.55			1.63					
Control Delay		427.1			36.9			307.7					
Queue Delay		0.0			0.0			0.2					
Total Delay		427.1			36.9			307.9					
Queue Length 50th (ft)		~616			184			~1950					
Queue Length 95th (ft)		m#738			282			m#1270					
Internal Link Dist (ft)		459			496			203			220		
Turn Bay Length (ft)													
Base Capacity (vph)		236			538			2498					
Starvation Cap Reductn		0			0			159					
Spillback Cap Reductn		0			1			185					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		1.86			0.55			1.76					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 21: Florida Ave & Zack St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Future Volume (vph)	256	162	0	0	113	169	59	3784	28	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		1.00			1.00			0.91				
Frpb, ped/bikes		1.00			0.95			1.00				
Flpb, ped/bikes		0.98			1.00			1.00				
Frt		1.00			0.92			1.00				
Flt Protected		0.97			1.00			1.00				
Satd. Flow (prot)		1774			1627			5070				
Flt Permitted		0.42			1.00			1.00				
Satd. Flow (perm)		771			1627			5070				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	269	171	0	0	119	178	62	3983	29	0	0	0
RTOR Reduction (vph)	0	0	0	0	39	0	0	1	0	0	0	0
Lane Group Flow (vph)	0	440	0	0	258	0	0	4073	0	0	0	0
Confl. Peds. (#/hr)	36					36	9		22			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		41.1			41.1			67.3				
Effective Green, g (s)		43.0			43.0			69.0				
Actuated g/C Ratio		0.31			0.31			0.49				
Clearance Time (s)		5.9			5.9			5.7				
Lane Grp Cap (vph)		236			499			2498				
v/s Ratio Prot					0.16							
v/s Ratio Perm		0.57						0.80				
v/c Ratio		1.86			0.52			1.63				
Uniform Delay, d1		48.5			40.0			35.5				
Progression Factor		0.67			1.00			0.71				
Incremental Delay, d2		402.8			3.8			284.0				
Delay (s)		435.3			43.8			309.1				
Level of Service		F			D			F				
Approach Delay (s)		435.3			43.8			309.1			0.0	
Approach LOS		F			D			F			A	
Intersection Summary												
HCM 2000 Control Delay		304.2			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.48										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		125.8%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
22: Florida Ave & Twiggs St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↕↕			↕	↕		↕↕↕					
Traffic Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0	
Future Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		543			597			298			283		
Travel Time (s)		12.3			13.6			5.8			5.5		
Confl. Peds. (#/hr)	15					15	9		30				
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	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	780	0	0	193	335	0	4075	0	0	0	0	
Turn Type	Perm	NA			NA	Perm	Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4					4	2						
Minimum Split (s)	27.9	27.9			27.9	27.9	25.0	25.0					20.0
Total Split (s)	32.0	32.0			32.0	32.0	88.0	88.0					20.0
Total Split (%)	22.9%	22.9%			22.9%	22.9%	62.9%	62.9%					14%
Yellow Time (s)	3.7	3.7			3.7	3.7	4.0	4.0					2.0
All-Red Time (s)	2.2	2.2			2.2	2.2	2.0	2.0					0.0
Lost Time Adjust (s)		-1.9			-1.9	-1.9		-2.0					
Total Lost Time (s)		4.0			4.0	4.0		4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		1.61			0.52	0.73		1.34					
Control Delay		309.1			55.7	31.4		171.9					
Queue Delay		7.6			0.0	77.8		0.5					
Total Delay		316.7			55.7	109.3		172.4					
Queue Length 50th (ft)		~536			159	121		~1760					
Queue Length 95th (ft)		m#425			241	240		m#622					
Internal Link Dist (ft)		463			517			218			203		
Turn Bay Length (ft)													
Base Capacity (vph)		483			372	460		3033					
Starvation Cap Reductn		0			0	0		194					
Spillback Cap Reductn		241			0	368		665					
Storage Cap Reductn		0			0	0		0					
Reduced v/c Ratio		3.22			0.52	3.64		1.72					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 150

Control Type: Pretimed

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 22: Florida Ave & Twiggs St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 			 				
Traffic Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Future Volume (vph)	166	575	0	0	183	318	38	3735	98	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0	4.0		4.0				
Lane Util. Factor		0.95			1.00	1.00		0.91				
Frpb, ped/bikes		1.00			1.00	0.96		1.00				
Flpb, ped/bikes		1.00			1.00	1.00		1.00				
Frt		1.00			1.00	0.85		1.00				
Flt Protected		0.99			1.00	1.00		1.00				
Satd. Flow (prot)		3486			1863	1520		5052				
Flt Permitted		0.69			1.00	1.00		1.00				
Satd. Flow (perm)		2417			1863	1520		5052				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	175	605	0	0	193	335	40	3932	103	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	157	0	2	0	0	0	0
Lane Group Flow (vph)	0	780	0	0	193	178	0	4073	0	0	0	0
Confl. Peds. (#/hr)	15					15	9		30			
Turn Type	Perm	NA			NA	Perm	Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4					4	2					
Actuated Green, G (s)		26.1			26.1	26.1		82.0				
Effective Green, g (s)		28.0			28.0	28.0		84.0				
Actuated g/C Ratio		0.20			0.20	0.20		0.60				
Clearance Time (s)		5.9			5.9	5.9		6.0				
Lane Grp Cap (vph)		483			372	304		3031				
v/s Ratio Prot					0.10							
v/s Ratio Perm		0.32				0.12		0.81				
v/c Ratio		1.61			0.52	0.59		1.34				
Uniform Delay, d1		56.0			50.0	50.7		28.0				
Progression Factor		0.81			1.00	1.00		0.37				
Incremental Delay, d2		277.6			5.1	8.0		154.9				
Delay (s)		322.9			55.1	58.8		165.2				
Level of Service		F			E	E		F				
Approach Delay (s)		322.9			57.4			165.2			0.0	
Approach LOS		F			E			F			A	
Intersection Summary												
HCM 2000 Control Delay		177.4							F			
HCM 2000 Volume to Capacity ratio		1.22										
Actuated Cycle Length (s)		140.0						10.0				
Intersection Capacity Utilization		127.1%						H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
23: Florida Ave & Madison St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0	
Future Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	75		0	0		0	0		0	0		0	
Storage Lanes	1		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		548			607			314			298		
Travel Time (s)		12.5			13.8			6.1			5.8		
Confl. Peds. (#/hr)	45					45	21		9				
Peak Hour Factor	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	86	149	0	0	350	0	0	4163	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	27.9	27.9			27.9		26.0	26.0					20.0
Total Split (s)	30.0	30.0			30.0		90.0	90.0					20.0
Total Split (%)	21.4%	21.4%			21.4%		64.3%	64.3%					14%
Yellow Time (s)	3.7	3.7			3.7		4.0	4.0					2.0
All-Red Time (s)	2.2	2.2			2.2		2.0	2.0					0.0
Lost Time Adjust (s)	-1.9	-1.9			-1.9			-2.0					
Total Lost Time (s)	4.0	4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio	1.62	0.43			1.03			1.34					
Control Delay	333.7	37.3			102.1			178.0					
Queue Delay	2.0	0.0			25.6			0.3					
Total Delay	335.7	37.3			127.7			178.4					
Queue Length 50th (ft)	~109	83			~295			~1821					
Queue Length 95th (ft)	m#122	m101			#496			m#1869					
Internal Link Dist (ft)		468			527			234			218		
Turn Bay Length (ft)	75												
Base Capacity (vph)	53	345			341			3114					
Starvation Cap Reductn	0	0			0			479					
Spillback Cap Reductn	3	0			24			403					
Storage Cap Reductn	0	0			0			0					
Reduced v/c Ratio	1.72	0.43			1.10			1.58					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 150
 Control Type: Pretimed
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 23: Florida Ave & Madison St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations									  			
Traffic Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Future Volume (vph)	80	139	0	0	119	206	42	3798	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0				
Lane Util. Factor	1.00	1.00			1.00			0.91				
Frbp, ped/bikes	1.00	1.00			0.94			1.00				
Flpb, ped/bikes	1.00	1.00			1.00			1.00				
Frt	1.00	1.00			0.91			1.00				
Flt Protected	0.95	1.00			1.00			1.00				
Satd. Flow (prot)	1770	1863			1599			5070				
Flt Permitted	0.15	1.00			1.00			1.00				
Satd. Flow (perm)	287	1863			1599			5070				
Peak-hour factor, PHF	0.93	0.93	0.96	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	86	149	0	0	128	222	45	4084	34	0	0	0
RTOR Reduction (vph)	0	0	0	0	45	0	0	1	0	0	0	0
Lane Group Flow (vph)	86	149	0	0	305	0	0	4162	0	0	0	0
Confl. Peds. (#/hr)	45					45	21		9			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)	24.1	24.1			24.1			84.0				
Effective Green, g (s)	26.0	26.0			26.0			86.0				
Actuated g/C Ratio	0.19	0.19			0.19			0.61				
Clearance Time (s)	5.9	5.9			5.9			6.0				
Lane Grp Cap (vph)	53	345			296			3114				
v/s Ratio Prot		0.08			0.19							
v/s Ratio Perm	0.30							0.82				
v/c Ratio	1.62	0.43			1.03			1.34				
Uniform Delay, d1	57.0	50.5			57.0			27.0				
Progression Factor	0.69	0.71			1.00			0.87				
Incremental Delay, d2	304.0	1.2			60.6			153.5				
Delay (s)	343.2	36.9			117.6			177.0				
Level of Service	F	D			F			F				
Approach Delay (s)		149.0			117.6			177.0			0.0	
Approach LOS		F			F			F			A	
Intersection Summary												
HCM 2000 Control Delay		171.2			HCM 2000 Level of Service			F				
HCM 2000 Volume to Capacity ratio		1.21										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		114.5%			ICU Level of Service			H				
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
24: Florida Ave & Kennedy Blvd

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations					↑↑↑		↖	↑↑↑					
Traffic Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0	
Future Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes	Yes		Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		546			580			259			314		
Travel Time (s)		12.4			13.2			5.0			6.1		
Confl. Peds. (#/hr)						42	22						
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	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	3097	0	200	1414	0	0	0	0	
Turn Type					NA		Perm	NA					
Protected Phases					4			2					9
Permitted Phases							2						
Minimum Split (s)					27.7		26.8	26.8					20.0
Total Split (s)					76.0		44.0	44.0					20.0
Total Split (%)					54.3%		31.4%	31.4%					14%
Yellow Time (s)					3.7		3.7	3.7					2.0
All-Red Time (s)					2.0		2.1	2.1					0.0
Lost Time Adjust (s)					-1.7		-1.8	-1.8					
Total Lost Time (s)					4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio					0.99		0.34	0.97					
Control Delay					45.4		8.7	46.2					
Queue Delay					41.4		1.9	42.3					
Total Delay					86.8		10.7	88.5					
Queue Length 50th (ft)					772		21	292					
Queue Length 95th (ft)					#885		m51	#556					
Internal Link Dist (ft)		466			500			179			234		
Turn Bay Length (ft)													
Base Capacity (vph)					3144		592	1452					
Starvation Cap Reductn					0		258	270					
Spillback Cap Reductn					800		19	475					
Storage Cap Reductn					0		0	0					
Reduced v/c Ratio					1.32		0.60	1.45					

Intersection Summary

Area Type: Other

Cycle Length: 140

Actuated Cycle Length: 140

Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green

Natural Cycle: 130

Control Type: Pretimed

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 24: Florida Ave & Kennedy Blvd



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↱	↑↑↑				
Traffic Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Future Volume (vph)	0	0	0	0	2217	725	190	1343	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Frpb, ped/bikes					0.98		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.96		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6033		1692	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6033		1692	5085				
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	0	0	0	0	2334	763	200	1414	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	42	0	109	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	3055	0	91	1414	0	0	0	0
Confl. Peds. (#/hr)					42		22					
Turn Type					NA		Perm	NA				
Protected Phases					4			2				
Permitted Phases							2					
Actuated Green, G (s)					70.3		38.2	38.2				
Effective Green, g (s)					72.0		40.0	40.0				
Actuated g/C Ratio					0.51		0.29	0.29				
Clearance Time (s)					5.7		5.8	5.8				
Lane Grp Cap (vph)					3102		483	1452				
v/s Ratio Prot					c0.51			c0.28				
v/s Ratio Perm							0.05					
v/c Ratio					0.98		0.19	0.97				
Uniform Delay, d1					33.5		37.7	49.5				
Progression Factor					1.00		0.74	0.68				
Incremental Delay, d2					13.0		0.4	11.7				
Delay (s)					46.4		28.4	45.6				
Level of Service					D		C	D				
Approach Delay (s)		0.0			46.4			43.5			0.0	
Approach LOS		A			D			D			A	
Intersection Summary												
HCM 2000 Control Delay			45.4		HCM 2000 Level of Service						D	
HCM 2000 Volume to Capacity ratio			0.84									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)						10.0	
Intersection Capacity Utilization			104.2%		ICU Level of Service						G	
Analysis Period (min)			15									

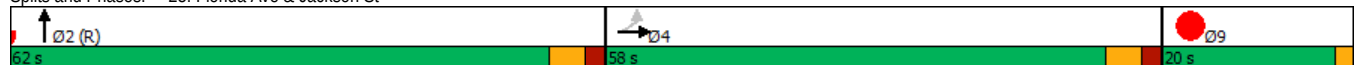
c Critical Lane Group

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Group													
Lane Configurations		↑↑↑						↑↑↑					
Traffic Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0	
Future Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red	Yes		Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		283			526			595			259		
Travel Time (s)		6.4			12.0			11.6			5.0		
Confl. Peds. (#/hr)	53								36				
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1672	0	0	0	0	0	1742	0	0	0	0	
Turn Type	Perm	NA						NA					
Protected Phases		4						2					9
Permitted Phases	4												
Minimum Split (s)	27.9	27.9						26.9					20.0
Total Split (s)	58.0	58.0						62.0					20.0
Total Split (%)	41.4%	41.4%						44.3%					14%
Yellow Time (s)	3.7	3.7						3.7					2.0
All-Red Time (s)	2.2	2.2						2.2					0.0
Lost Time Adjust (s)		-1.9						-1.9					
Total Lost Time (s)		4.0						4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.86						0.84					
Control Delay		26.5						37.4					
Queue Delay		4.7						5.8					
Total Delay		31.2						43.3					
Queue Length 50th (ft)		307						497					
Queue Length 95th (ft)		m287						541					
Internal Link Dist (ft)		203			446			515			179		
Turn Bay Length (ft)													
Base Capacity (vph)		1944						2072					
Starvation Cap Reductn		212						285					
Spillback Cap Reductn		214						262					
Storage Cap Reductn		0						0					
Reduced v/c Ratio		0.97						0.97					

Intersection Summary

Area Type: Other
 Cycle Length: 140
 Actuated Cycle Length: 140
 Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green
 Natural Cycle: 90
 Control Type: Pretimed
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 25: Florida Ave & Jackson St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		  						  				
Traffic Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Future Volume (vph)	194	1278	0	0	0	0	0	1403	130	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0						4.0				
Lane Util. Factor		0.91						0.91				
Frpb, ped/bikes		1.00						0.99				
Flpb, ped/bikes		0.99						1.00				
Frt		1.00						0.99				
Flt Protected		0.99						1.00				
Satd. Flow (prot)		4985						4985				
Flt Permitted		0.99						1.00				
Satd. Flow (perm)		4985						4985				
Peak-hour factor, PHF	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Adj. Flow (vph)	220	1452	0	0	0	0	0	1594	148	0	0	0
RTOR Reduction (vph)	0	23	0	0	0	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	1649	0	0	0	0	0	1734	0	0	0	0
Confl. Peds. (#/hr)	53								36			
Turn Type	Perm	NA						NA				
Protected Phases		4						2				
Permitted Phases	4											
Actuated Green, G (s)		52.1						56.1				
Effective Green, g (s)		54.0						58.0				
Actuated g/C Ratio		0.39						0.41				
Clearance Time (s)		5.9						5.9				
Lane Grp Cap (vph)		1922						2065				
v/s Ratio Prot								0.35				
v/s Ratio Perm		0.33										
v/c Ratio		0.86						0.84				
Uniform Delay, d1		39.5						36.8				
Progression Factor		0.67						0.90				
Incremental Delay, d2		0.5						4.3				
Delay (s)		26.9						37.4				
Level of Service		C						D				
Approach Delay (s)		26.9			0.0			37.4			0.0	
Approach LOS		C			A			D			A	
Intersection Summary												
HCM 2000 Control Delay		32.2						HCM 2000 Level of Service		C		
HCM 2000 Volume to Capacity ratio		0.73										
Actuated Cycle Length (s)		140.0						Sum of lost time (s)		10.0		
Intersection Capacity Utilization		77.7%						ICU Level of Service		D		
Analysis Period (min)		15										

c Critical Lane Group

Tampa Streetcar Feasibility Study
26: Florida Ave & Whiting St

Build 2040 + Streetcar Phase
Timing Plan: PM PEAK

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		 			 			  					
Traffic Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0	
Future Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0	0		50	0		0	
Storage Lanes	0		0	0		0	0		0	0		0	
Taper Length (ft)	25			25			25			25			
Right Turn on Red			Yes			Yes			Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		553			557			397			595		
Travel Time (s)		12.6			12.7			7.7			11.6		
Confl. Peds. (#/hr)	106					106	71		94				
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	498	0	0	337	0	0	277	0	0	0	0	
Turn Type	Perm	NA			NA		Perm	NA					
Protected Phases		4			4			2					9
Permitted Phases	4						2						
Minimum Split (s)	29.0	29.0			29.0		26.7	26.7					20.0
Total Split (s)	82.0	82.0			82.0		38.0	38.0					20.0
Total Split (%)	58.6%	58.6%			58.6%		27.1%	27.1%					14%
Yellow Time (s)	3.7	3.7			3.7		3.7	3.7					2.0
All-Red Time (s)	2.1	2.1			2.1		2.0	2.0					0.0
Lost Time Adjust (s)		-1.8			-1.8			-1.7					
Total Lost Time (s)		4.0			4.0			4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio		0.41			0.20			0.23					
Control Delay		11.9			7.1			43.2					
Queue Delay		0.0			0.0			0.1					
Total Delay		11.9			7.1			43.2					
Queue Length 50th (ft)		71			33			79					
Queue Length 95th (ft)		88			58			110					
Internal Link Dist (ft)		473			477			317			515		
Turn Bay Length (ft)													
Base Capacity (vph)		1220			1695			1207					
Starvation Cap Reductn		0			0			0					
Spillback Cap Reductn		0			3			202					
Storage Cap Reductn		0			0			0					
Reduced v/c Ratio		0.41			0.20			0.28					
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:NBT, Start of Green													
Natural Cycle: 80													
Control Type: Pretimed													

Splits and Phases: 26: Florida Ave & Whiting St



												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Future Volume (vph)	230	233	0	0	145	168	7	237	13	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0			4.0			4.0				
Lane Util. Factor		0.95			0.95			0.91				
Frpb, ped/bikes		1.00			0.89			0.99				
Flpb, ped/bikes		0.94			1.00			0.99				
Frt		1.00			0.92			0.99				
Flt Protected		0.98			1.00			1.00				
Satd. Flow (prot)		3258			2902			4955				
Flt Permitted		0.66			1.00			1.00				
Satd. Flow (perm)		2190			2902			4955				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	247	251	0	0	156	181	8	255	14	0	0	0
RTOR Reduction (vph)	0	0	0	0	80	0	0	4	0	0	0	0
Lane Group Flow (vph)	0	498	0	0	257	0	0	273	0	0	0	0
Confl. Peds. (#/hr)	106					106	71		94			
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			4			2				
Permitted Phases	4						2					
Actuated Green, G (s)		76.2			76.2			32.3				
Effective Green, g (s)		78.0			78.0			34.0				
Actuated g/C Ratio		0.56			0.56			0.24				
Clearance Time (s)		5.8			5.8			5.7				
Lane Grp Cap (vph)		1220			1616			1203				
v/s Ratio Prot					0.09							
v/s Ratio Perm		0.23						0.06				
v/c Ratio		0.41			0.16			0.23				
Uniform Delay, d1		17.8			15.1			42.5				
Progression Factor		0.61			1.00			1.02				
Incremental Delay, d2		1.0			0.2			0.4				
Delay (s)		11.8			15.3			43.8				
Level of Service		B			B			D				
Approach Delay (s)		11.8			15.3			43.8			0.0	
Approach LOS		B			B			D			A	
Intersection Summary												
HCM 2000 Control Delay		20.8			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.30										
Actuated Cycle Length (s)		140.0			Sum of lost time (s)			10.0				
Intersection Capacity Utilization		59.8%			ICU Level of Service			B				
Analysis Period (min)		15										

c Critical Lane Group

													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations					  			 					
Traffic Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0	
Future Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Right Turn on Red			Yes			Yes	Yes		Yes			Yes	
Link Speed (mph)		30			30			35			35		
Link Distance (ft)		240			537			151			230		
Travel Time (s)		5.5			12.2			2.9			4.5		
Confl. Peds. (#/hr)						21	28						
Peak Hour Factor	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	0	0	0	1873	0	20	263	0	0	0	0	
Turn Type					NA		Perm	NA					
Protected Phases					2			4					9
Permitted Phases							4						
Minimum Split (s)					29.8		36.1	36.1					20.0
Total Split (s)					80.0		40.0	40.0					20.0
Total Split (%)					57.1%		28.6%	28.6%					14%
Yellow Time (s)					3.7		3.7	3.7					2.0
All-Red Time (s)					2.1		2.4	2.4					0.0
Lost Time Adjust (s)					-1.8		-2.1	-2.1					
Total Lost Time (s)					4.0		4.0	4.0					
Lead/Lag													
Lead-Lag Optimize?													
v/c Ratio					0.55		0.04	0.20					
Control Delay					21.2		4.4	41.2					
Queue Delay					0.0		0.0	0.0					
Total Delay					21.2		4.4	41.2					
Queue Length 50th (ft)					308		0	69					
Queue Length 95th (ft)					341		10	95					
Internal Link Dist (ft)		160			457			71			150		
Turn Bay Length (ft)													
Base Capacity (vph)					3433		464	1307					
Starvation Cap Reductn					0		0	0					
Spillback Cap Reductn					0		0	0					
Storage Cap Reductn					0		0	0					
Reduced v/c Ratio					0.55		0.04	0.20					
Intersection Summary													
Area Type:	Other												
Cycle Length: 140													
Actuated Cycle Length: 140													
Offset: 0 (0%), Referenced to phase 2:WBT, Start of Green													
Natural Cycle: 90													
Control Type: Pretimed													
Splits and Phases: 27: Florida Ave & Brorein St													
 Ø2 (R)								  Ø4				 Ø9	
80 s								40 s				20 s	

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					↑↑↑		↵	↑↑↑				
Traffic Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0
Future Volume (vph)	0	0	0	0	1567	137	18	239	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					4.0		4.0	4.0				
Lane Util. Factor					0.86		1.00	0.91				
Flpb, ped/bikes					1.00		1.00	1.00				
Flpb, ped/bikes					1.00		0.96	1.00				
Frt					0.99		1.00	1.00				
Flt Protected					1.00		0.95	1.00				
Satd. Flow (prot)					6306		1700	5085				
Flt Permitted					1.00		0.95	1.00				
Satd. Flow (perm)					6306		1700	5085				
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.91	0.91	0.91	0.91	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	1722	151	20	263	0	0	0	0
RTOR Reduction (vph)	0	0	0	0	10	0	15	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	0	1863	0	5	263	0	0	0	0
Confl. Peds. (#/hr)					21		28					
Turn Type					NA		Perm	NA				
Protected Phases					2			4				
Permitted Phases							4					
Actuated Green, G (s)					74.2		33.9	33.9				
Effective Green, g (s)					76.0		36.0	36.0				
Actuated g/C Ratio					0.54		0.26	0.26				
Clearance Time (s)					5.8		6.1	6.1				
Lane Grp Cap (vph)					3423		437	1307				
v/s Ratio Prot					c0.30			c0.05				
v/s Ratio Perm							0.00					
v/c Ratio					0.54		0.01	0.20				
Uniform Delay, d1					20.8		38.7	40.7				
Progression Factor					1.00		1.00	1.00				
Incremental Delay, d2					0.6		0.0	0.3				
Delay (s)					21.4		38.8	41.1				
Level of Service					C		D	D				
Approach Delay (s)		0.0			21.4			40.9			0.0	
Approach LOS		A			C			D			A	
Intersection Summary												
HCM 2000 Control Delay			24.0		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.37									
Actuated Cycle Length (s)			140.0		Sum of lost time (s)					10.0		
Intersection Capacity Utilization			40.2%		ICU Level of Service					A		
Analysis Period (min)			15									

c Critical Lane Group

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	365	0	0	1036	126
Future Volume (vph)	0	365	0	0	1036	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	0			250
Storage Lanes	0	1	0			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	311			1096	346	
Travel Time (s)	7.1			24.9	7.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	397	0	0	1263	0
Sign Control	Free			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	1657	0	0	1254	0
Future Volume (vph)	0	1657	0	0	1254	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	1177			56	1096	
Travel Time (s)	26.8			1.3	24.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1801	0	0	1363	0
Sign Control	Yield			Stop	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						  
Traffic Volume (vph)	0	0	0	0	416	900
Future Volume (vph)	0	0	0	0	416	900
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	179		320			171
Travel Time (s)	4.1		7.3			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	452	978
Sign Control	Stop		Stop			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			  			
Traffic Volume (vph)	0	333	1081	0	0	0
Future Volume (vph)	0	333	1081	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	531		103			170
Travel Time (s)	12.1		2.3			3.9
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	362	1175	0	0	0
Sign Control	Free		Free			Stop
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Appendix E

AM Peak-Hour Queue Analysis Tampa Street

Intersection	AM Peak-Hour Scenario	95th Percentile Queue				
		Tampa Street	Minor Street			
			EB	EBR	WBL	WB
Tampa Street & Palm Avenue	<i>Storage</i>	550	800	400	200	400
	Existing 2018	266	172	40	92	96
	No Build 2024	308	196	72	123	107
	Build 2024	308	196	72	123	107
	Build 2024 + Streetcar Phase	367	223	48	221*	139*
Tampa Street & Kay Street	<i>Storage</i>	800	--	--	150	400
	Existing 2018	245	--	--	4	767
	No Build 2024	275	--	--	5	1043
	Build 2024	453	--	--	5	1017
	Build 2024 + Streetcar Phase	545	--	--	--	1022
Tampa Street & Scott Street	<i>Storage</i>	200	1000	--	--	--
	Existing 2018	254	302	--	--	--
	No Build 2024	293	354	--	--	--
	Build 2024	223	354	--	--	--
	Build 2024 + Streetcar Phase	1*	406	--	--	--
Tampa Street & Tyler Street	<i>Storage</i>	1550	200	--	100	200
	Existing 2018	184	200	--	123	268
	No Build 2024	206	242	--	135*	303
	Build 2024	209	242	--	134*	301
	Build 2024 + Streetcar Phase	312	200	--	121*	174*
Tampa Street & Cass Street	<i>Storage</i>	200	200	--	100	200
	Existing 2018	158	418	--	23	84
	No Build 2024	383	523	--	93*	91
	Build 2024	391	523	--	85*	294
	Build 2024 + Streetcar Phase	348	571	--	84*	154
Tampa Street & Polk Street	<i>Storage</i>	200	200	--	--	200
	Existing 2018	254	118	--	--	180
	No Build 2024	288	138	--	--	196
	Build 2024	289	138	--	--	187
	Build 2024 + Streetcar Phase	79	148	--	--	171

* Volume for 95th percentile queue is metered by upstream signal

Intersection	AM Peak-Hour Scenario	95th Percentile Queue				
		Tampa Street	Minor Street			
			EB	EBR	WBL	WB
Tampa Street & Zack Street	<i>Storage</i>	200	200	--	--	200
	Existing 2018	22	279	--	--	173
	No Build 2024	25	328	--	--	204
	Build 2024	25	328	--	--	186*
	Build 2024 + Streetcar Phase	57	344	--	--	252*
Tampa Street & Twiggs Street	<i>Storage</i>	200	200	--	100	200
	Existing 2018	61	332	--	116*	427
	No Build 2024	71	387	--	142*	498*
	Build 2024	63	387	--	140*	486*
	Build 2024 + Streetcar Phase	101	411	--	184*	531*
Tampa Street & Madison Street	<i>Storage</i>	200	200	--	100	200
	Existing 2018	66	207	--	163	26*
	No Build 2024	76	245	--	181*	26*
	Build 2024	72	245	--	161*	25*
	Build 2024 + Streetcar Phase	90	231	--	178*	24*
Tampa Street & Kennedy Blvd	<i>Storage</i>	200	--	--	200	200
	Existing 2018	364	--	--	102	484
	No Build 2024	438	--	--	110	582
	Build 2024	660	--	--	110	582
	Build 2024 + Streetcar Phase	294	--	--	33*	672
Tampa Street & Jackson Street	<i>Storage</i>	200	200	--	--	--
	Existing 2018	254	228	--	--	--
	No Build 2024	327	265	--	--	--
	Build 2024	339*	265	--	--	--
	Build 2024 + Streetcar Phase	417*	248	--	--	--
Tampa Street & Whiting Street	<i>Storage</i>	500	100	--	150	200
	Existing 2018	29*	98	--	25	24
	No Build 2024	29*	115	--	34	26
	Build 2024	26*	115	--	34	26
	Build 2024 + Streetcar Phase	27*	96	--	36	23

PM Peak-Hour Queue Analysis Tampa Street

Intersection	PM Peak-Hour Scenario	95th Percentile Queue				
		Tampa Street	Minor Street			
			EB	EBR	WBL	WB
Tampa Street & Palm Avenue	Storage	550	800	400	200	400
	Existing 2018	252	254	40	50	69
	No Build 2024	306	290	61	55	77
	Build 2024	306	290	61	55	77
	Build 2024 + Streetcar Phase	332	346	49	63	82
Tampa Street & Kay Street	Storage	800	--	--	150	400
	Existing 2018	695	--	--	14	457
	No Build 2024	863	--	--	15	578
	Build 2024	484	--	--	21	821
	Build 2024 + Streetcar Phase	455	--	--	18	1015
Tampa Street & Scott Street	Storage	200	1000	--	--	--
	Existing 2018	281	293	--	--	--
	No Build 2024	321	342	--	--	--
	Build 2024	191	342	--	--	--
	Build 2024 + Streetcar Phase	11*	392	--	--	--
Tampa Street & Tyler Street	Storage	1550	200	--	100	200
	Existing 2018	463	159	--	116	211
	No Build 2024	627	185	--	131*	242
	Build 2024	666	185	--	131*	242
	Build 2024 + Streetcar Phase	427	211	--	76*	147
Tampa Street & Cass Street	Storage	200	200	--	100	200
	Existing 2018	657	334	--	37	80
	No Build 2024	728	389	--	45	95
	Build 2024	730	389	--	45	95
	Build 2024 + Streetcar Phase	130	509	--	131*	132
Tampa Street & Polk Street	Storage	200	200	--	--	200
	Existing 2018	46	114	--	--	188
	No Build 2024	79	133	--	--	208
	Build 2024	76	133	--	--	201
	Build 2024 + Streetcar Phase	53	145	--	--	193

* Volume for 95th percentile queue is metered by upstream signal

Intersection	PM Peak-Hour Scenario	Tampa Street	95th Percentile Queue			
			Minor Street			
			EB	EBR	WBL	WB
Tampa Street & Zack Street	Storage	200	200	--	--	200
	Existing 2018	44	182	--	--	250
	No Build 2024	51	216	--	--	399
	Build 2024	51	216	--	--	385*
	Build 2024 + Streetcar Phase	104	214	--	--	416*
Tampa Street & Twiggs Street	Storage	200	200	--	100	200
	Existing 2018	124	584	--	306	214
	No Build 2024	316	709	--	337*	243
	Build 2024	433	540	--	263*	122*
	Build 2024 + Streetcar Phase	807	556	--	287*	129*
Tampa Street & Madison Street	Storage	200	200	--	100	200
	Existing 2018	103*	225	--	70*	43*
	No Build 2024	108*	263	--	93*	46*
	Build 2024	112	263	--	56*	39*
	Build 2024 + Streetcar Phase	105*	246	--	95*	63*
Tampa Street & Kennedy Blvd	Storage	200	--	--	200	200
	Existing 2018	286	--	--	27*	94
	No Build 2024	402	--	--	29*	140
	Build 2024	391	--	--	29*	140
	Build 2024 + Streetcar Phase	247	--	--	148	658
Tampa Street & Jackson Street	Storage	200	200	--	--	--
	Existing 2018	265	230	--	--	--
	No Build 2024	311	267	--	--	--
	Build 2024	316	267	--	--	--
	Build 2024 + Streetcar Phase	403*	294	--	--	--
Tampa Street & Whiting Street	Storage	500	100	--	150	200
	Existing 2018	32*	86	--	169	126
	No Build 2024	31*	96	--	198	142
	Build 2024	30*	96	--	198	142
	Build 2024 + Streetcar Phase	0*	105	--	214	187

AM Peak-Hour Queue Analysis Florida Avenue

Intersection	AM Peak-Hour Scenario	95th Percentile Queue				
		Florida Avenue	Minor Street			
			EBL	EB	WB	WBR
Florida Ave & Palm Ave	Storage	900	150	400	400	--
	Existing 2018	209	29*	186	389	--
	No Build 2024	243	31*	211	458	--
	Build 2024	243	31*	211	458	--
	Build 2024 + Streetcar Phase	243	31*	209	544	--
Florida Ave & Henderson Ave	Storage	350	100	150	400	--
	Existing 2018	161*	45	54	84	--
	No Build 2024	168*	50	57	105	--
	Build 2024	168*	50	57	105	--
	Build 2024 + Streetcar Phase	311*	50	57	87	--
Florida Ave & Scott Street	Storage	600	--	400	--	--
	Existing 2018	139	--	750	--	--
	No Build 2024	141	--	941	--	--
	Build 2024	157	--	941	--	--
	Build 2024 + Streetcar Phase	593	--	996	--	--
Florida Ave & Fortune Street	Storage	400	--	150	--	--
	Existing 2018	26	--	105	--	--
	No Build 2024	32	--	116	--	--
	Build 2024	36	--	116	--	--
	Build 2024 + Streetcar Phase	152	--	128	--	--
Florida Ave & Harrison Street	Storage	200	--	200	200	--
	Existing 2018	877	--	72	96	--
	No Build 2024	1022	--	80	108	--
	Build 2024	1023	--	80	108	--
	Build 2024 + Streetcar Phase	112*	--	89	57	--
Florida Ave & Tyler Street	Storage	200	100	200	200	--
	Existing 2018	342	124	120	288	--
	No Build 2024	450*	147	135	337	--
	Build 2024	211	148	136	337	--
	Build 2024 + Streetcar Phase	113	203*	122*	359	--
Florida Ave & Cass Street	Storage	200	100	200	200	--
	Existing 2018	33	--	486	253	--
	No Build 2024	37	--	576*	291	--
	Build 2024	296	113*	347*	295	--
	Build 2024 + Streetcar Phase	101*	57*	178*	322	--
Florida Ave & Polk Street	Storage	200	--	200	200	--
	Existing 2018	824	--	212	135	--
	No Build 2024	986	--	241	151	--
	Build 2024	86	--	241	151	--
	Build 2024 + Streetcar Phase	319*	--	159*	143	--

* Volume for 95th percentile queue is metered by upstream signal

Intersection	AM Peak-Hour Scenario	95th Percentile Queue				
		Florida Avenue	Minor Street			
			EBL	EB	WB	WBR
Florida Avenue & Zack Street	Storage	200	--	200	200	--
	Existing 2018	64	--	85	283	--
	No Build 2024	72	--	106	330	--
	Build 2024	131	--	112	334	--
	Build 2024 + Streetcar Phase	564	--	312*	325	--
Florida Avenue & Twiggs Street	Storage	200	--	250	200	200
	Existing 2018	105	--	61	156	271
	No Build 2024	117	--	77	175	317
	Build 2024	845	--	78	177	321
	Build 2024 + Streetcar Phase	188	--	130	241	244
Florida Avenue & Madison Street	Storage	200	100	200	200	--
	Existing 2018	499	98	115	154	--
	No Build 2024	598	111*	129	176	--
	Build 2024	864	111*	129	176	--
	Build 2024 + Streetcar Phase	889	144*	134*	153	--
Florida Ave & Kennedy Blvd	Storage	200	--	--	200	--
	Existing 2018	73	--	--	373	--
	No Build 2024	100	--	--	449	--
	Build 2024	101	--	--	449	--
	Build 2024 + Streetcar Phase	80	--	--	517	--
Florida Ave & Jackson Street	Storage	500	--	200	--	--
	Existing 2018	257	--	202	--	--
	No Build 2024	297	--	253	--	--
	Build 2024	297	--	251	--	--
	Build 2024 + Streetcar Phase	299	--	372	--	--
Florida Ave & Whiting Street	Storage	550	--	200	500	--
	Existing 2018	46	--	50	116	--
	No Build 2024	56	--	54	132	--
	Build 2024	56	--	54	132	--
	Build 2024 + Streetcar Phase	45	--	130	151	--
Florida Ave & Brorain Street	Storage	450	--	--	500	--
	Existing 2018	35	--	--	219	--
	No Build 2024	38	--	--	254	--
	Build 2024	38	--	--	254	--
	Build 2024 + Streetcar Phase	58	--	--	220	--

PM Peak-Hour Queue Analysis Florida Avenue

Intersection	PM Peak-Hour Scenario	95th Percentile Queue				
		Florida Avenue	Minor Street			
			EBL	EB	WB	WBR
Florida Ave & Palm Ave	Storage	900	150	400	400	--
	Existing 2018	234	52	385	249	--
	No Build 2024	261	68	446	287	--
	Build 2024	261	68	446	287	--
	Build 2024 + Streetcar Phase	309	57*	338	336	--
Florida Ave & Henderson Ave	Storage	350	100	150	400	--
	Existing 2018	168*	91	48	56	--
	No Build 2024	174*	100	51	71	--
	Build 2024	174*	100	51	71	--
	Build 2024 + Streetcar Phase	196	173	67	76	--
Florida Ave & Scott Street	Storage	600	--	400	--	--
	Existing 2018	169	--	816	--	--
	No Build 2024	81	--	1012	--	--
	Build 2024	82	--	1012	--	--
	Build 2024 + Streetcar Phase	1142	--	1036	--	--
Florida Ave & Fortune Street	Storage	400	--	150	--	--
	Existing 2018	60	--	103	--	--
	No Build 2024	86	--	116	--	--
	Build 2024	87	--	116	--	--
	Build 2024 + Streetcar Phase	1008	--	128	--	--
Florida Ave & Harrison Street	Storage	200	--	200	200	--
	Existing 2018	71	--	73	94	--
	No Build 2024	82	--	81	108	--
	Build 2024	82	--	81	108	--
	Build 2024 + Streetcar Phase	79*	--	94	61	--
Florida Ave & Tyler Street	Storage	200	100	200	200	--
	Existing 2018	55*	168*	99*	295	--
	No Build 2024	63	215*	106*	343	--
	Build 2024	63	212*	106*	343	--
	Build 2024 + Streetcar Phase	277*	244*	58*	343	--
Florida Ave & Cass Street	Storage	200	100	200	200	--
	Existing 2018	42	--	593	274	--
	No Build 2024	53	139*	288*	312	--
	Build 2024	52	139*	288*	312	--
	Build 2024 + Streetcar Phase	1024*	143*	225*	337	--
Florida Ave & Polk Street	Storage	200	--	200	200	--
	Existing 2018	786	--	223	134	--
	No Build 2024	947	--	249	152	--
	Build 2024	220	--	249	152	--
	Build 2024 + Streetcar Phase	99*	--	300	140	--

* Volume for 95th percentile queue is metered by upstream signal

Intersection	PM Peak-Hour Scenario	95th Percentile Queue				
		Florida Avenue	Minor Street			
			EBL	EB	WB	WBR
Florida Avenue & Zack Street	Storage	200	--	200	200	--
	Existing 2018	79	--	356	190	--
	No Build 2024	126	--	468	220	--
	Build 2024	257	--	468	220	--
	Build 2024 + Streetcar Phase	1027	--	508*	190	--
Florida Avenue & Twiggs Street	Storage	200	--	250	200	200
	Existing 2018	47	--	253*	130	204
	No Build 2024	55	--	267*	145	234
	Build 2024	70	--	267	145	234
	Build 2024 + Streetcar Phase	486	--	264*	161	87
Florida Avenue & Madison Street	Storage	200	100	200	200	--
	Existing 2018	530	54*	84*	226	--
	No Build 2024	628	56*	86*	260	--
	Build 2024	761	64*	95*	291	--
	Build 2024 + Streetcar Phase	842	64*	78*	254	--
Florida Ave & Kennedy Blvd	Storage	200	--	--	200	--
	Existing 2018	42	--	--	453	--
	No Build 2024	48	--	--	549	--
	Build 2024	48	--	--	549	--
	Build 2024 + Streetcar Phase	54	--	--	611	--
Florida Ave & Jackson Street	Storage	500	--	200	--	--
	Existing 2018	270	--	183	--	--
	No Build 2024	312	--	213	--	--
	Build 2024	312	--	213	--	--
	Build 2024 + Streetcar Phase	406	--	360	--	--
Florida Ave & Whiting Street	Storage	550	--	200	500	--
	Existing 2018	29	--	77	56	--
	No Build 2024	33	--	86	62	--
	Build 2024	32	--	86	62	--
	Build 2024 + Streetcar Phase	58	--	176	67	--
Florida Ave & Brorain Street	Storage	450	--	--	500	--
	Existing 2018	36	--	--	242	--
	No Build 2024	40	--	--	280	--
	Build 2024	40	--	--	280	--
	Build 2024 + Streetcar Phase	47	--	--	316	--