

# TRAFFIC IMPACT ASSESMENT

**FOR**

## **Yara Lakes Estates Subdivision**

Located at State Highway 146 and Wharton Weems Blvd,  
La Porte, Texas 77571

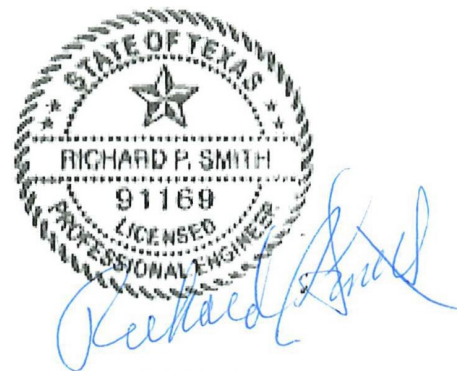
Submitted to:

M. Lanza Engineering, PLLC.

for

**TXDOT Houston District**  
Traffic Engineering Section

Prepared by:



**12/22/2025**

**Texas Traffic Studies**  
TRAFFIC ENGINEERS & PLANNERS  
TBPE Firm No. F-21426  
5447 Loch Lomond Drive  
Houston, Texas 77096

## **Introduction**

This traffic impact study summarizes the results of a traffic impact analysis conducted for M. Lanza Engineering, PLLC.; in connection with the design and development of the Yara Lakes Subdivision project at State Highway 146 (SH 146) and Wharton Weems Boulevard in La Porte, Texas.

This study includes a review and consideration of an eastbound left-turn lane on Wharton - Weems Boulevard, an evaluation of the level of service impact on the existing diamond intersection traffic signal, SH 146 at Wharton Weems Blvd, and the unsignalized intersections of Wharton Weems Blvd at S. Broadway and Fairmont Greens, as requested by the TxDOT Houston District's Traffic Engineering Section and the City of La Porte.

## **Proposed Use, Site Description and Study Area Roadways**

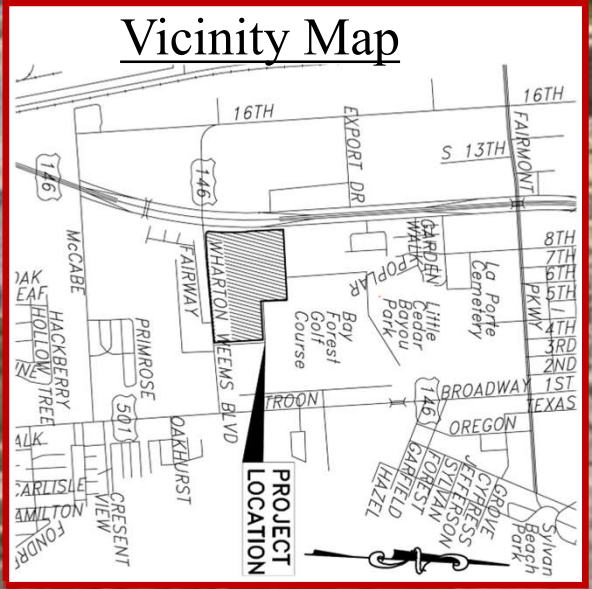
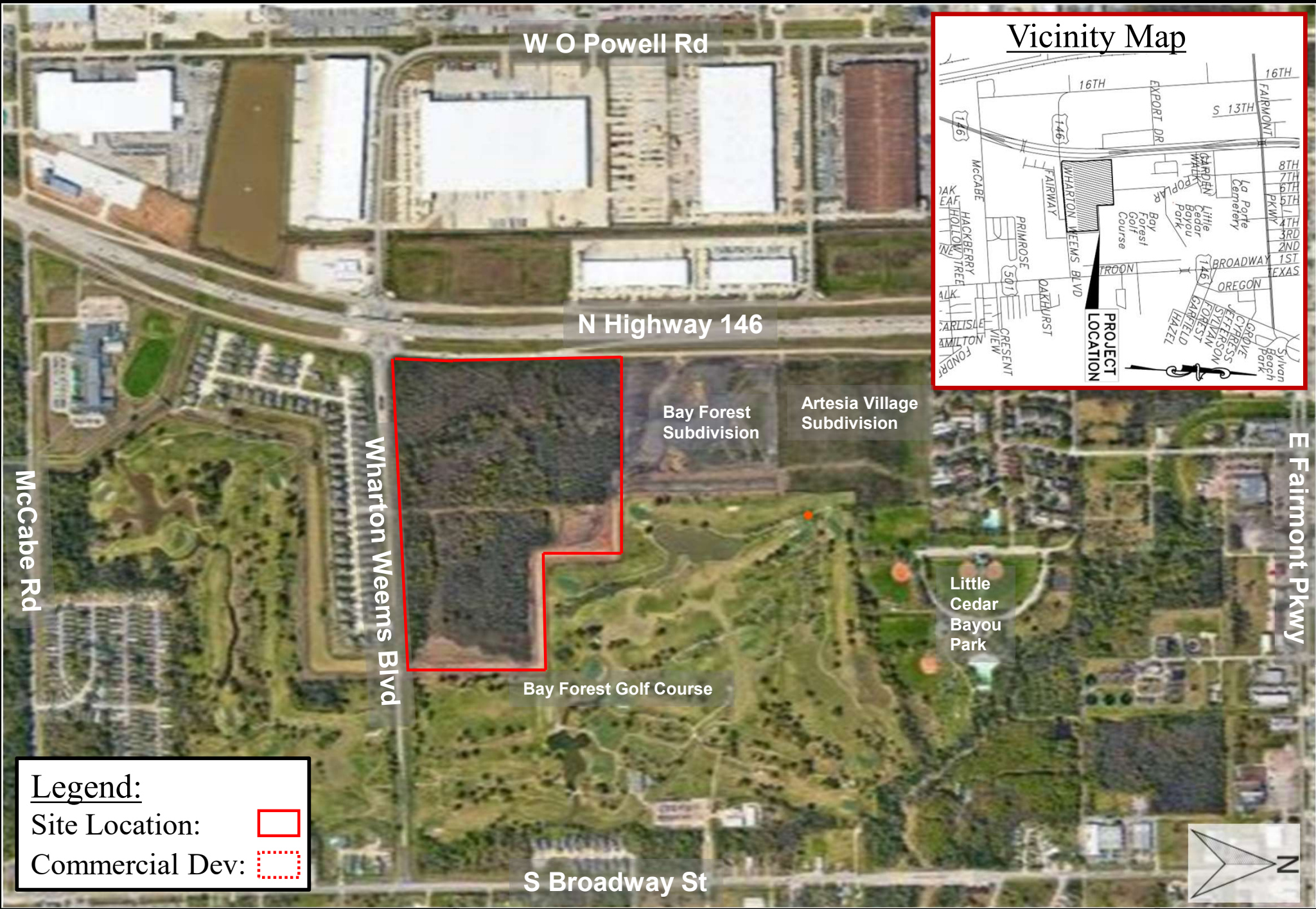
The development is on approximately 56.7-acres and will entail 204 single family detached homes, but the analysis is based on the original 274. The only difference between the original design and the current is the size of the park land and the lots. This report was for the original 274 lots and as such this report still encompasses the worse-case scenario of the 274 units. The residential subdivision will have two public road entrances, one off Wharton Weems Boulevard across from Fairmont Greens Parkway and one on SH 146 northbound frontage road. The Vicinity Map and Site Plan for the project are shown in Figures 1 and 2, respectively.

## **Traffic Count Data**


Turning movement counts (TMCs) were collected in September 2023 for the intersections of Wharton Weems and SH 146, Wharton Weems at Fairmont Greens Parkway and Wharton Weems at S. Broadway Street to determine the roadway traffic volumes at the proposed site and to analyze the project impact on the signal. The AM peak hour was evaluated to be 6:45 to 7:45 AM, while the PM peak hour was found to be 4:45 to 5:45 PM based on the roadway traffic counts for all three sites. The peak hour count data is presented in Figure 3 and the raw data in Appendix A.


## **Existing Conditions**

The study location on the south side of the City of La Porte, Texas. It is on the northeast corner of the intersection of State Highway 146 and Wharton Weems Boulevard, also known as Business State Highway 146. The intersection of SH 146 at Wharton Weems Blvd. is a signalized diamond intersection with Wharton Weems Blvd. passing under SH 146. All other intersections on Wharton Weems Blvd. are two-way stop controlled on the minor side streets. Wharton Weems Blvd. at SH 146 and to the west is a concrete curb and gutter roadway, with one lane each direction and a two-way left-turn lane. East of SH 146, Wharton Weems Blvd. is a two-lane asphalt roadway section with a raised center median running 630' from the intersection to the east. Wharton Weems Blvd. ends at S. Broadway Street. SH 146 northbound frontage road is a concrete curb and gutter roadway with 3 lanes north of the intersection for 1000' to the SH 146 entrance ramp where it drops a lane and continues as a two-lane curb and gutter roadway segment. The speed limit on SH 146 frontage roads is posted as 40-mph north and south of Wharton Weems Blvd. Wharton Weems Blvd. is posted as a 35-mph roadway west of the SH 146 southbound frontage road and 45-mph east of the northbound frontage road to S. Broadway Street. Wharton Weems Blvd. from SH 146 to S. Broadway Street is posted as a "No truck Route".






**Legend:**

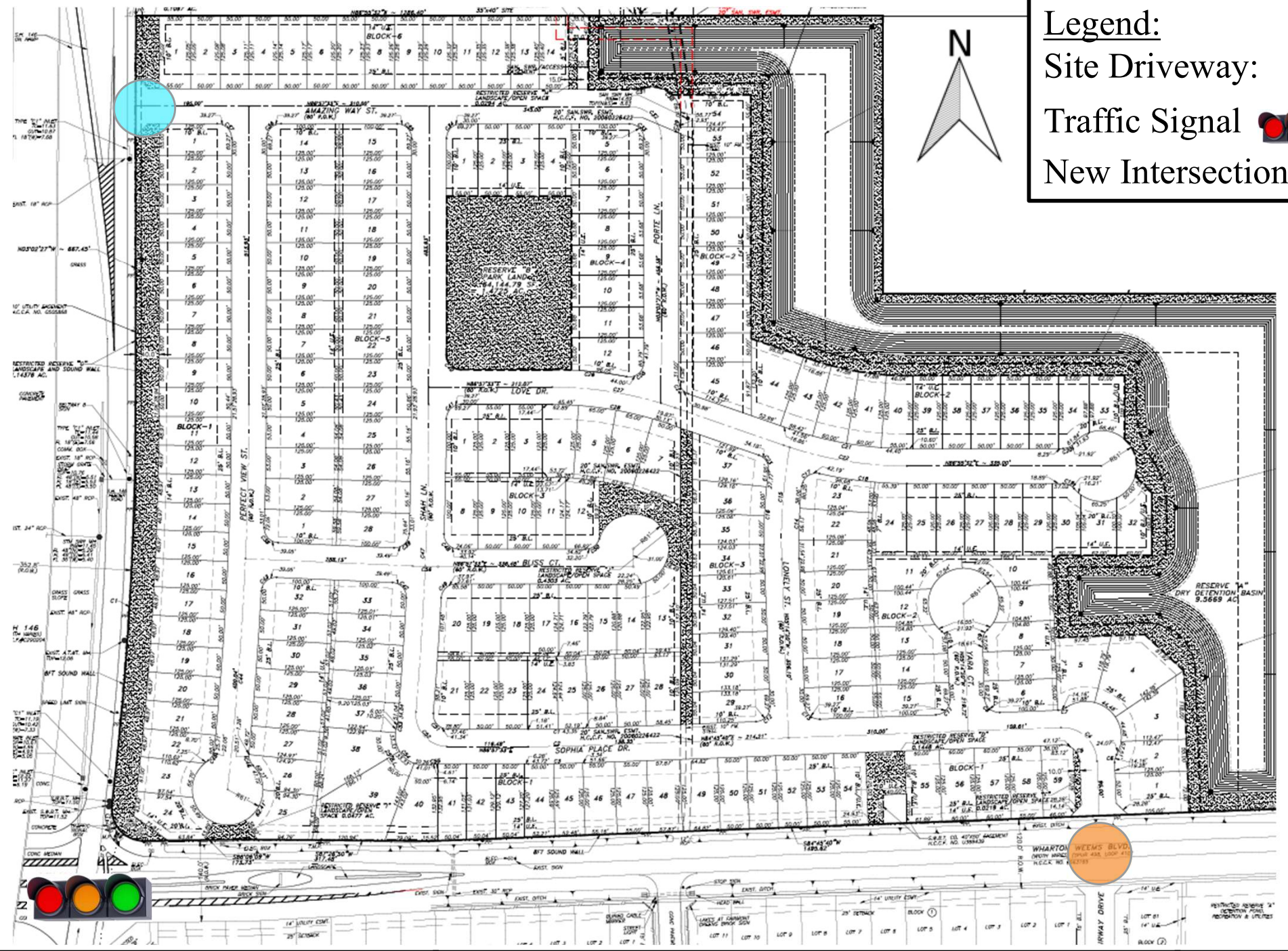
Site Location: 

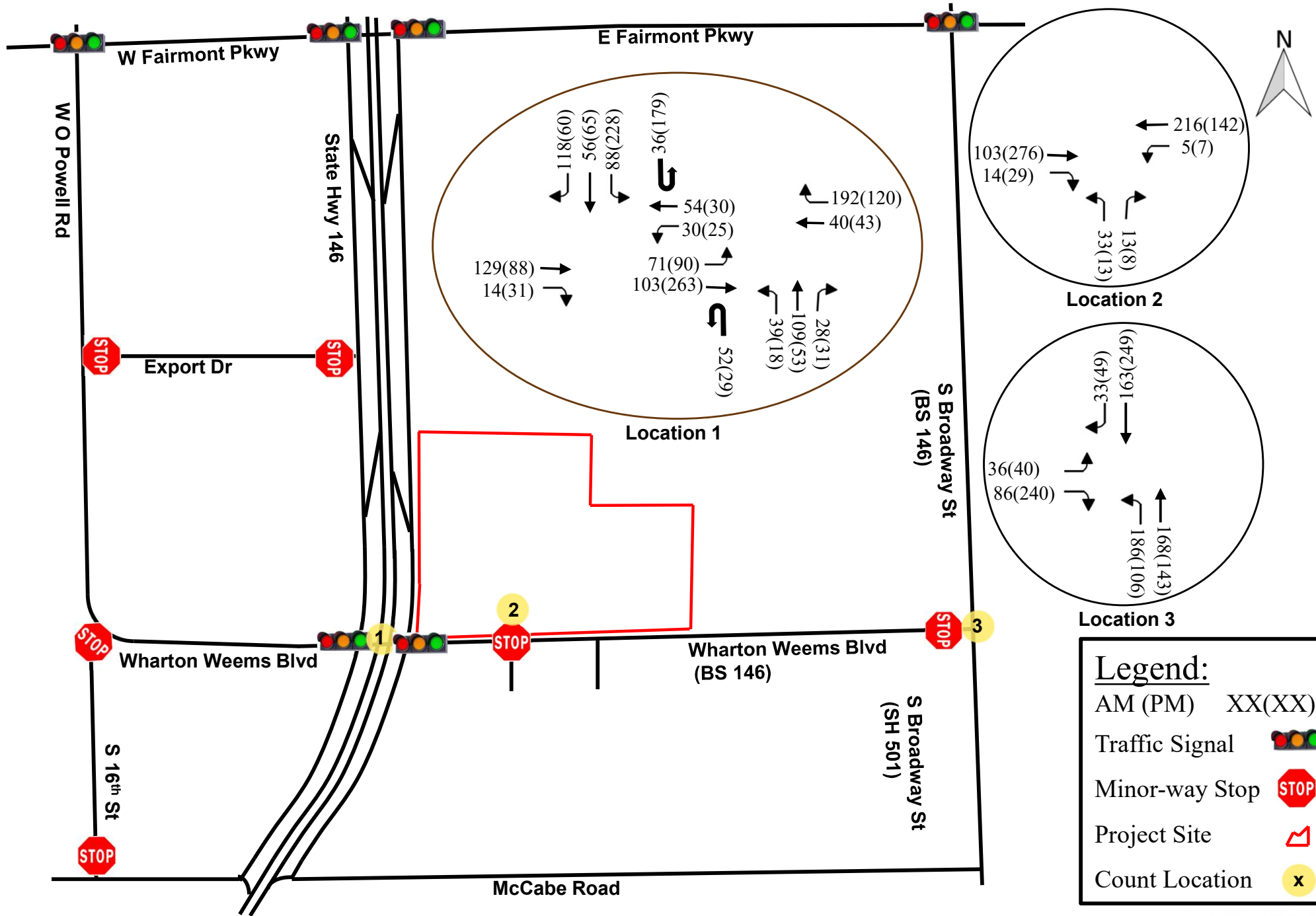
Commercial Dev: 



**Legend:**

- Site Driveway: 
- Traffic Signal: 
- New Intersection: 





The diamond interchange at SH 146 frontage roads and Wharton Weems Blvd has four approach lanes to the intersection and a dedicated U-turn lanes both northbound and southbound. The southbound approach is a dedicated left-turn lane, two through lanes and a dedicated right turn lane with three departure lanes. The northbound approach is three through lanes and a dedicated right turn lane with three departure lanes. Wharton Weems Blvd. eastbound approach to the intersection is two lanes with a through lane and dedicated right turn lane then changing to a dedicated left turn lane and through lane as it approaches the northbound frontage road. Wharton Weems Blvd. westbound approach to the intersection is two through lanes with an island channelized right-turn lane. The two through lanes continue through the intersection to the southbound frontage road.

Land use in the area is largely residential single-family east of SH 146 and industrial east of SH 146 and a gas station on the southwest corner of the diamond intersection.

**TRIP GENERATION AND DISTRIBUTION**

The ITE *Trip Generation Manual* (11th edition) was used to estimate the number of expected peak hour trips to and from the site. The analysis for the development was done for the worse case of the two proposed project scenarios. The development is a 274-unit single-family detached housing, Land Use Code (210). This land use was used to determine the trips generated by the development.

The analysis information used for the trip generation rates is shown below in Table 1. Results of the trip generation analysis are shown below in Table 2.

**Table 1**

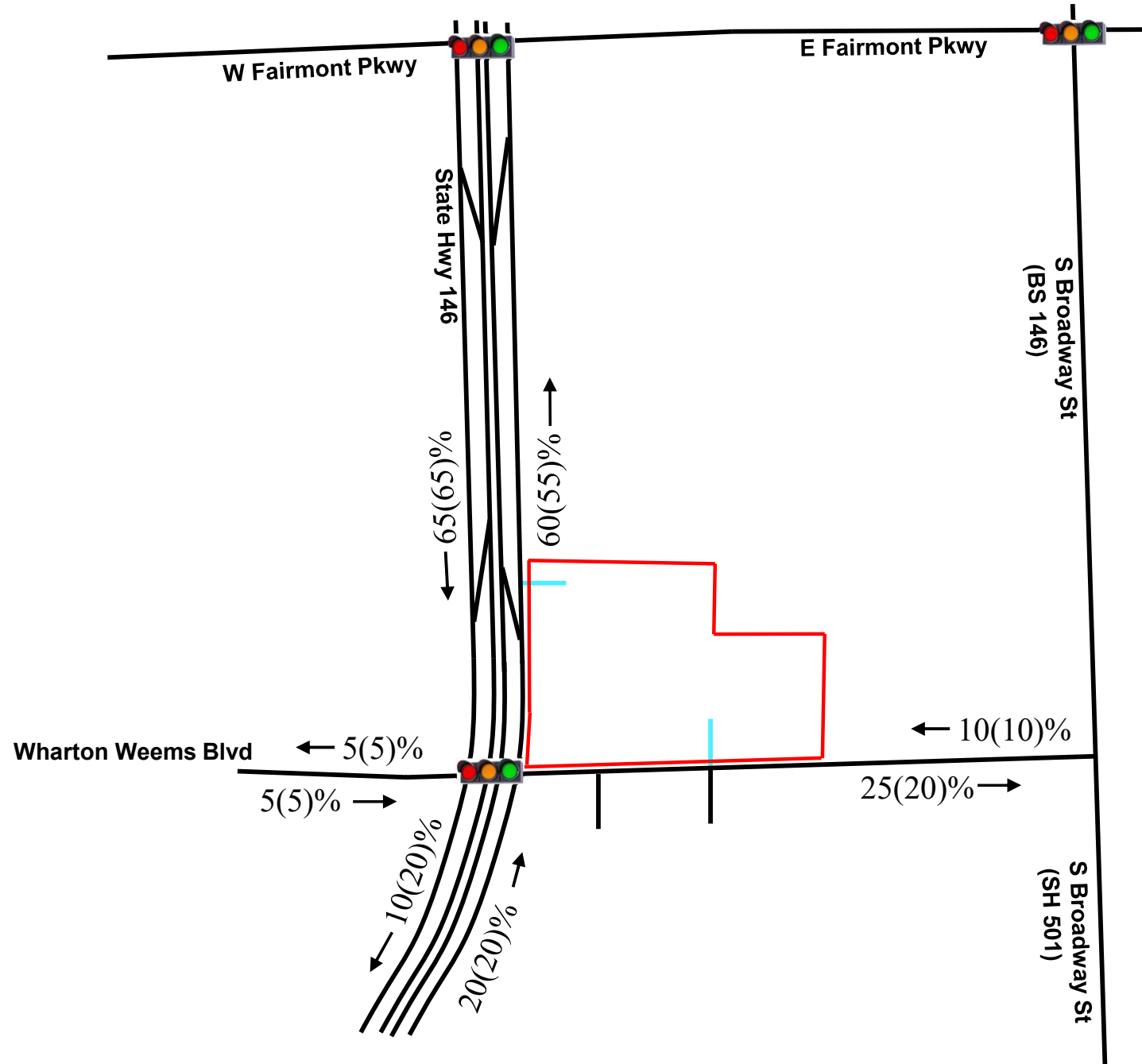
Trip Generation Rates								
Land Use / ITE Code		AM Peak			PM Peak			Daily
Single-Family detached Housing / 210	Trip Rate	0.7			0.94			9.43
	Direction	Entering	Exiting	Total	Entering	Exiting	Total	
	In/Out Split	26%	74%		63%	37%		
	In/Out Split	60%	50%		50%	50%		

**Table 2**

Project Peak Hour Trips									
Yara Lakes Subdivision Development									
	AM Peak				PM Peak				Daily
Use/ITE Code	Entering	Exiting	Pass-by	Total	Entering	Exiting	Pass-by	Total	Trips
Single-Family detached Housing / 210	50	142	0	192	162	96	0	258	2584

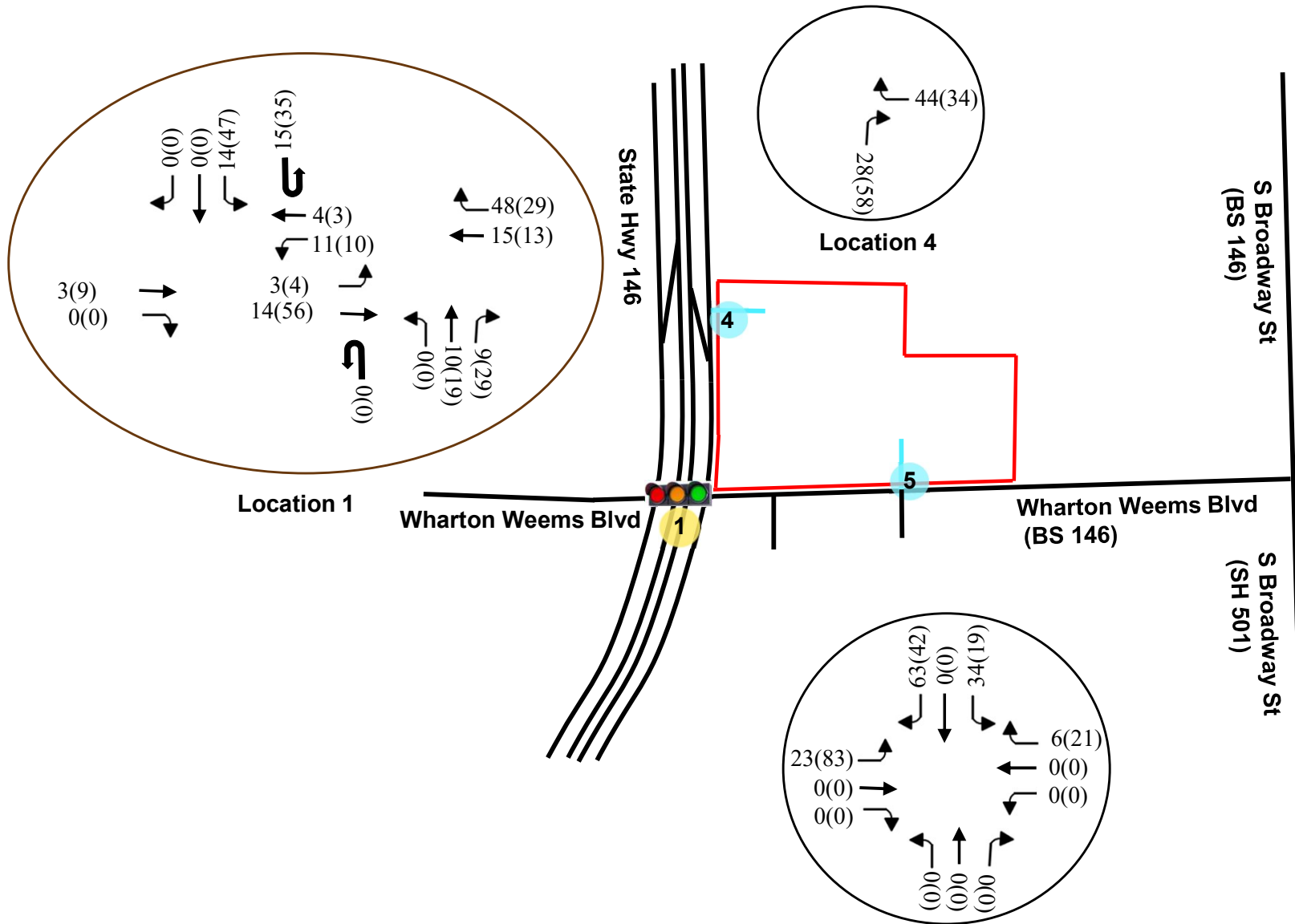
**Project Traffic Distribution and Volumes**

The projected trip distribution percentage for this development was determined based upon the existing traffic distribution, and the proposed site development access locations. Peak hour distributions were created for both the AM and PM peak hours and carried through the study intersection. Overall percentage distribution for vehicles approaching and leaving the development site during the site peak hours is shown in Figure 4. The site traffic for each driveway and proposed site intersection is shown in Figure 5. With the revised TIA the volumes from Fairmont Greens Parkway were moved to Fairway Drive to project worse case scenarios.



Legend:	
AM (PM)	X%
Project Site	
Site Entrances	





**Legend:**

- AM (PM) XX(XX)
- Traffic Signal
- Project Site
- Intersection
- Driveway

# TRAFFIC SIGNAL ANALYSIS

## 2024 Build Conditions

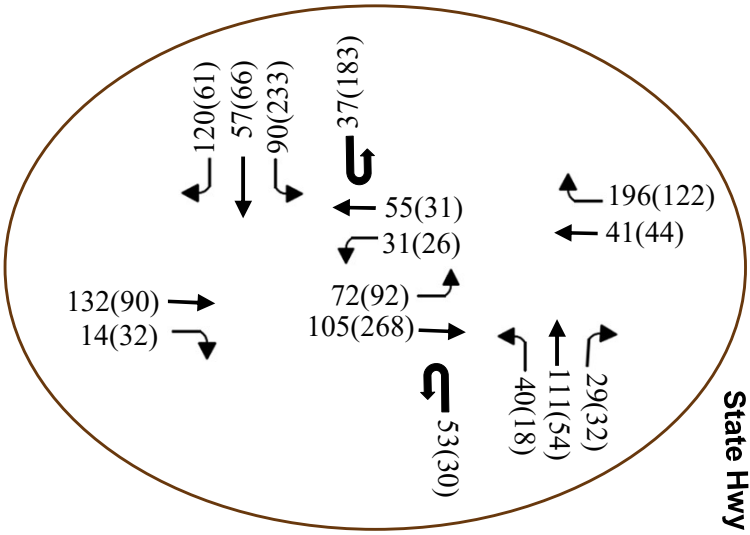
The development is planned to open in 2024. Future traffic projections were populated by applying a 2% growth rate to the existing traffic for 2024. The 2% background growth rate was determined for this area based on TxDOT traffic data counts, from TxDOT – Traffic County Database System, analyzed over a 5-year horizon from 2018 to 2022. Discussions with La Porte Staff were also used to verify the growth potential and growth rate used. The 2024 background traffic volumes use a 2% growth rate is shown in Figure 6. The traffic volumes for the site development traffic to the existing and background growth traffic is shown in Figure 7. These volumes were used to compare the level of service (LOS), using Synchro Version 12 traffic software. The impact for the existing, build, and no-build scenarios was analyzed. The analysis LOS results for the signalized intersections of SH 146 north and southbound frontage roads at Wharton Weems are shown below in Table 2. The LOS results for the stop-controlled intersections of Wharton Weems at Fairmont Greens Parkway and S. Broadway Street are shown in Table 3.

**Table 2: Signalized Intersections**

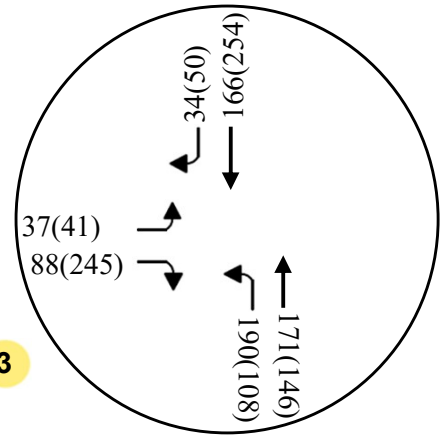
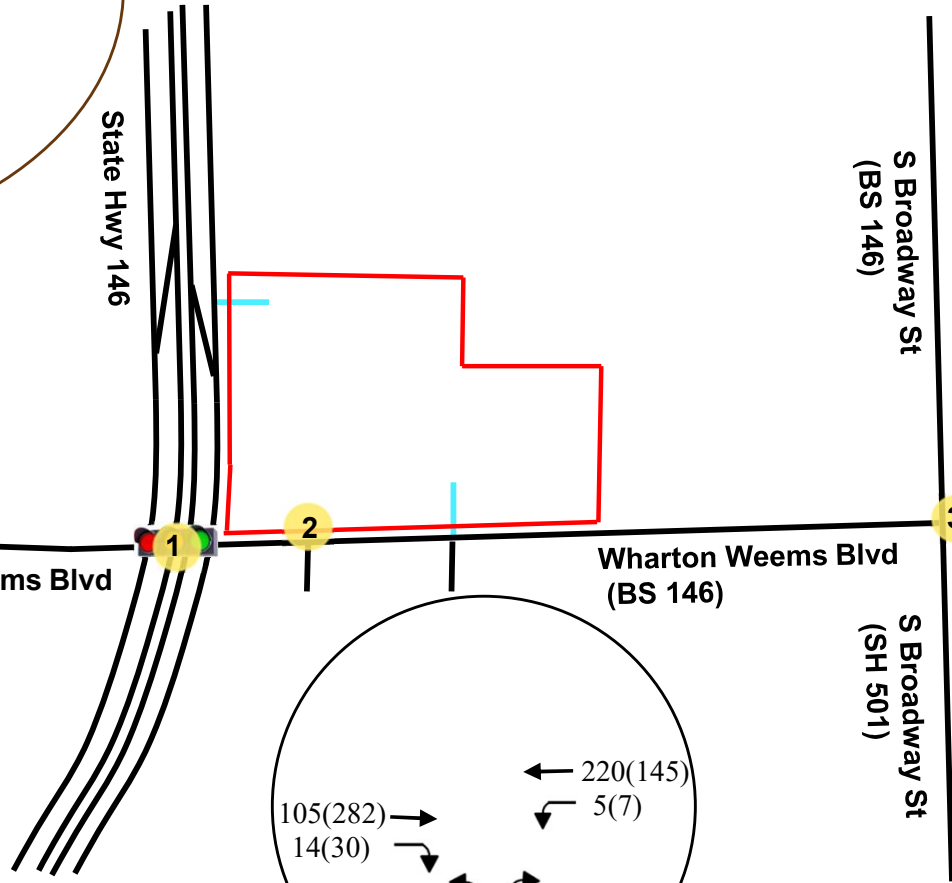
			2023 Existing				2024 No Build				2024 Build			
Intersection		Approach	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
SH 146 NB FR @ Wharton Weems Blvd.	SH 146 NB FR	NB Approach	5.3	A	7.9	A	5.4	A	7.9	A	6.0	A	8.6	A
	Wharton Weems Blvd.	EB Approach	81.1	F	50.3	D	81.9	F	57.7	D	75.4	E	46.2	D
		WB Approach	45.9	D	56.1	F	46.1	D	56.1	E	46.4	D	56.5	E
			<b>Intersection</b>	44.6	D	44.8	D	44.5	D	46.2	D	42.9	D	41.5
SH 146 SB FR @ Wharton Weems Blvd.	SH 146 SB FR	SB Approach	67.7	E	83.1	F	67.7	E	82.1	F	69.9	E	87.5	F
	Wharton Weems Blvd.	EB Approach	8.4	A	11.0	B	8.5	A	11.0	B	9.6	A	13.4	B
		WB Approach	30.1	C	27.4	C	29.9	C	26.9	C	32.1	C	29.7	C
			<b>Intersection</b>	43.9	D	61.0	E	43.9	D	59.7	E	46.0	D	64.8

**Table 3: Unsignalized Stop Control Intersections**

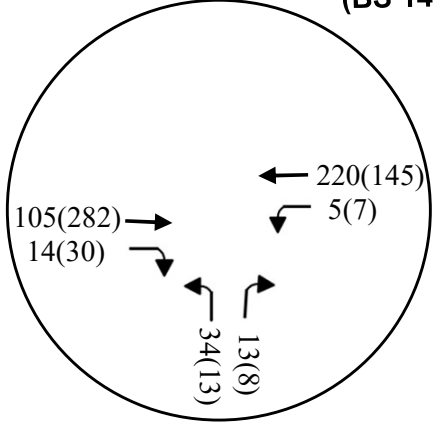
			2023 Existing				2024 No Build				2024 Build			
Intersection		Approach	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
			Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS	Delay (Sec/Veh)	LOS
Wharton Weems Blvd. @ Fairway Drive	Fairway Drive / Yara Lakes	NB Left Turn	10.6	B	11.3	B	10.6	B	11.4	B	12.1	B	14.3	B
		SB Approach	0.0	A	0.0	A	0.0	A	0.0	A	11.3	B	11.9	B
	Wharton Weems Blvd.	EB Left Turn	7.5	A	8.0	A	7.5	A	8.0	A	7.8	A	7.8	A
		WB Left Turn	---	---	---	---	---	---	---	---	7.5	A	8.0	A
Wharton Weems Blvd. @ S. Broadway Street	S. Broadway Street	NB Left Turn	8.1	A	8.2	A	8.1	A	8.2	A	8.2	A	8.4	A
		SB Approach	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A	0.0	A
	Wharton Weems Blvd.	EB Approach	13.4	B	15.3	C	13.7	B	15.7	C	15.0	C	17.5	C
NB Frontage Rd at Perfect View	Perfect View	WB Approach	---	---	---	---	---	---	---	---	9.3	A	9.5	A



Location 1



Location 3



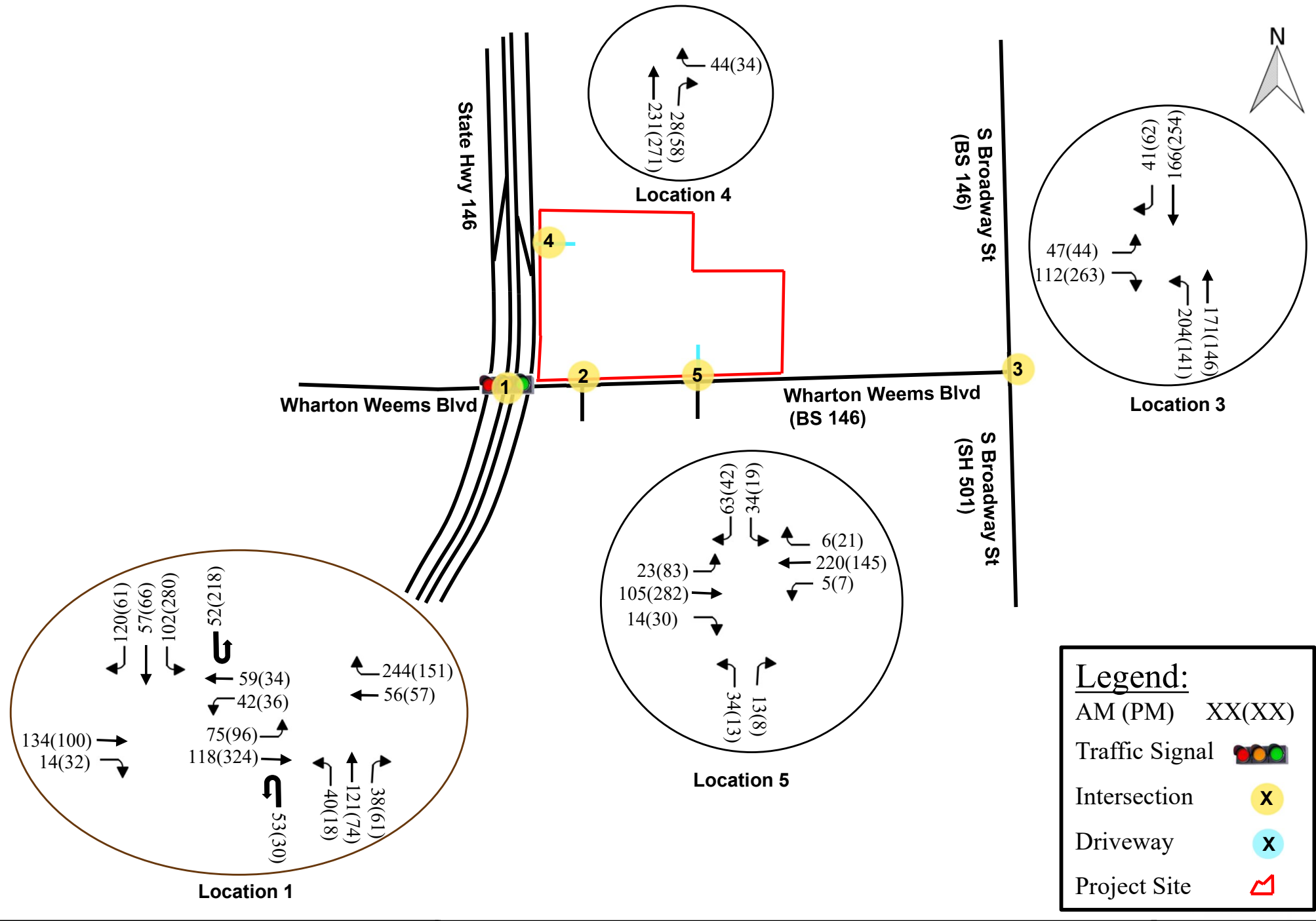
Location 2

**Legend:**

AM (PM) XX(XX)

Project Site

Intersection



**Legend:**

AM (PM) XX(XX)

Traffic Signal

Intersection

Driveway

Project Site



## **ANALYSIS AND FINDINGS REVIEW**

Synchro analysis was performed for traffic signalized intersections of SH 146 northbound frontage road at Wharton Weems Boulevard, SH 146 southbound frontage road at Wharton Weems Boulevard, and the unsignalized intersections of Wharton Weems Boulevard at Fairmont Greens Parkway/Yara Lakes, and Wharton Weems Boulevard at S. Broadway Road. Based on the analysis there was no significant differences seen in the intersection or approach LOS and negligible differences in the intersection or approach delays. The LOS results in some instances improve with the additional traffic added and redistributing the traffic load on the intersection. The proposed intersection of Site roadway Perfect View and SH 146 northbound frontage road should not need a right-turn deceleration lane since SH 146 northbound frontage road is already a two-lane roadway and the volume of right-turns into the roadway is projected to be under the 60 vehicles per hour (vph) for right turns, in the highest peak hour, the PM peak. This does not exceed the warrant requirement for a right-turn auxiliary lane, and the area will be completely built out with this development. Using a worse-case scenario the roadway volumes do not fully justify the need of the auxiliary lane based on site visits.

## **CONCLUSION**

After review of the existing roadways, proposed roadways, and site driveway connections; it is not anticipated that the proposed development traffic will not cause any significant additional impact on the roadway network or intersections beyond the recommended improvements of a left-turn lane on Wharton Weems Boulevard. The proposed intersection of Site roadway Perfect View and SH 146 northbound frontage road should not need a right-turn deceleration lane.

Installation of a standard left-turn lane is proposed on Wharton Weems Boulevard for the entrance to the new subdivision at the intersection of the existing Fairmont Greens Parkway roadway. As part of this left turn lane development, the turn lane will be extended to account for left turns into the existing residential development to the south. TxDOT should consider retiming the traffic signal at SH 146 and Wharton Weems Boulevard based on the existing traffic and signal operations, but it will need to be retimed once the development opens in late 2024, especially with the addition of the commercial center to improve the general balance of the delays and LOS on the approaches at the intersection.

## **APPENDIX LIST**

- A. **Existing Traffic Count Data**
- B. **Synchro Output, 2023 Existing AM & PM**
- C. **Synchro Output, 2024 No Build Conditions AM & PM**
- D. **Synchro Output, 2024 Build Conditions AM & PM**

**APPENDIX A:**  
Existing Traffic Count Data

1. SH 146 Southbound Frontage Road at Wharton Weems
2. SH 146 Northbound Frontage Road at Wharton Weems
3. Wharton Weems at Fairmont Greens Parkway
4. Wharton Weems at S. Broadway Street

Ally General Solutions, LLC  
 dba AGS Engineering & Construction LLC  
 DBE/SBE/MBE/HUB8(a)  
 7070 W. 43rd St., Ste 203  
 Houston, TX 77092  
 Ph: (281) 888-7882

Site ID Code: 2  
 Intersection Location: SB SH 146 at Wharton Weems  
 East / West Road : Wharton Weems  
 North / South Road : SB SH 146  
 Count Date: 9/14

AM Peak Hour  
 MD Peak Hour  
 PM Peak Hour

TIME	SOUTH BOUND													WEST BOUND																								
	CAR				TRUCKS				CYCLISTS					Peds	Total	CAR				TRUCKS				CYCLISTS					Peds	Total								
	L	T	R	UT	L	T	R	UT	L	T	R	UT	L			T	R	UT	L	T	R	UT	L	T	R	UT												
0000 - 0015	2	2	2	2	0	0	1	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0015 - 0030	6	0	1	4	0	0	4	1	0	0	0	0	0	0	16	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
0030 - 0045	6	1	0	1	0	0	0	0	0	0	0	0	0	0	8	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0		
0045 - 0100	0	1	0	0	1	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0100 - 0115	5	0	0	1	0	0	0	0	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0		
0115 - 0130	0	0	0	2	0	0	1	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0130 - 0145	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
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0200 - 0215	2	2	4	1	0	0	1	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0215 - 0230	1	1	2	1	0	0	0	0	0	0	0	0	0	0	5	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
0230 - 0245	3	0	2	3	0	0	2	0	0	0	0	0	0	0	10	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2		
0245 - 0300	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0300 - 0315	1	3	1	1	0	0	1	2	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0315 - 0330	1	0	1	0	0	1	1	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
0330 - 0345	2	1	5	0	0	0	0	0	0	0	0	0	0	0	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
0345 - 0400	2	2	2	0	0	0	0	0	0	0	0	0	0	0	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
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0500 - 0515	5	6	9	3	0	0	2	1	0	0	0	0	0	0	26	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0		
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0915 - 0930	19	5	4	2	1	7	12	4	0	0	0	0	0	0	54	5	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	4	13	0		
0930 - 0945	22	5	4	1	1	5	9	0	0	0	0	1	0	0	48	8	1	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0		
0945 - 1000	19	6	8	5	3	3	14	2	0	0	0	0	1	0	61	3	8	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0		
1000 - 1015	21	6	11	4	1	9	11	4	0	0	0	0	0	0	67	5	5	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0		
1015 - 1030	28	4	11	1	2	5	13	2	0	0	0	0	0	0	66	4	1	0	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0		
1030 - 1045	27	11	3	2	5	9	22	1	0	0	0	0	0	0	80	8	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0		
1045 - 1100	20	9	4	9	1	5	14	5	0	0	0	0	0	0	67	6	4	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0		
1100 - 1115	18	14	3	11	0	2	12	7	0	0	0	0	0	0	67	1	5	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0		
1115 - 1130	20	13	1	11	1	2	12	2	0	0	0	0	0	0	62	6	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0		
1130 - 1145	19	10	8	19	1	2	18	2	0	0	0	0	0	0	79	7	2	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0		
1145 - 1200	21	2	7	13	0	6	16	2	0	0	0	0	0	0	67	5	9	0	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	18	0		
1200 - 1215	26	7	8	13	0	9	10	1	0	0	0	0	0	0	74	6	8	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0		
1215 - 1230	24	4	6	15	0	4																																

NORTH BOUND														EAST BOUND													
CAR				TRUCKS				CYCLISTS				Peds	Total	CAR				TRUCKS				CYCLISTS				Peds	Total
L	T	R	UT	L	T	R	UT	L	T	R	UT			L	T	R	UT	L	T	R	UT	L	T	R	UT		
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	0	0	0	0	6
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	3
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	4	0	0	8	3	0	0	0	0	0	0	28
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	5	0	0	13	6	0	0	0	0	0	0	37
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	2	0	0	13	4	0	0	0	0	0	0	36
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	11	3	0	0	0	0	0	0	22
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	14	0	0	0	0	0	0	0	22
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2	0	0	13	2	0	0	0	0	0	0	30
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	1	0	0	11	3	0	0	0	0	0	0	25
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	4	0	0	10	5	0	0	0	0	0	0	26
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	0	0	12	7	0	0	0	0	0	0	29
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	2	0	0	12	4	0	0	0	0	0	0	37
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	3	0	0	9	2	0	0	0	0	0	0	24
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	2	0	0	14	3	0	0	0	0	0	0	32
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17	4	0	0	13	0	0	0	0	0	0	0	34
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0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	20	6	0	0	9	2	0	0	0	0	0	0	37
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0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	9	0	0	4	4	0	0	0	0	0	0	53
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	5	0	0	7	3	0	0	0	0	0	0	43



NORTH BOUND															EAST BOUND														
CAR				TRUCKS				CYCLISTS				Peds	Total	CAR				TRUCKS				CYCLISTS				Peds	Total		
L	T	R	UT	L	T	R	UT	L	T	R	UT			L	T	R	UT	L	T	R	UT	L	T	R	UT				
0	2	2	2	0	0	0	0	0	0	0	0	0	6	2	4	0	0	2	0	0	0	0	0	0	0	8			
0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	8	0	0	1	0	0	0	0	0	0	0	10			
0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	7	0	0	3	0	0	0	0	0	0	0	10			
0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	1	0	0	1	1	0	0	0	0	0	0	4			
0	1	2	0	0	0	0	0	0	0	0	0	0	3	0	6	0	0	2	0	0	0	0	0	0	0	8			
0	1	1	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	0	2			
0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	2			
0	1	0	1	0	6	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	1			
0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	2	0	0	0	0	0	0	0	6			
0	0	1	1	0	0	0	0	0	0	0	0	0	2	2	1	0	0	1	0	0	0	0	0	0	0	4			
1	1	0	3	0	0	0	1	0	0	0	0	0	6	1	2	0	0	2	0	0	0	0	0	0	0	5			
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5	5	3	2	0	0	0	1	0	0	0	0	0	16	2	3	0	0	5	0	0	0	0	0	0	0	10			
2	2	3	1	0	0	0	2	0	0	0	0	0	10	3	5	0	0	6	0	0	0	0	0	0	0	14			
2	4	3	2	0	0	0	0	0	0	0	0	0	11	4	4	0	0	2	0	0	0	0	0	0	0	10			
3	8	1	6	0	0	1	1	0	0	0	0	0	20	2	5	0	0	4	0	0	0	0	0	0	0	11			
5	10	1	6	0	0	0	0	0	0	0	0	0	22	11	5	0	0	5	1	0	0	0	0	0	0	22			
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10	7	2	9	0	0	0	2	0	0	0	0	0	30	8	12	0	0	2	0	0	0	0	0	0	0	22			
8	4	8	15	1	2	0	3	0	0	0	0	0	41	8	17	0	0	5	0	0	0	0	0	0	0	30			
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12	22	5	18	2	3	0	4	0	0	0	0	0	64	11	21	0	0	3	2	0	0	0	0	0	0	37			
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3	27	7	11	6	2	1	2	0	0	0	0	0	50	13	28	0	0	9	1	0	0	0	0	0	0	51			
15	8	3	7	2	1	0	4	0	0	0	0	0	40	1	20	0	0	13	1	0	0	0	0	0	0	35			
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3	14	1	1	2	1	0	4	0	0	0	0	0	26	9	18	0	0	13	2	0	0	0	0	0	0	42			
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3	4	1	4	10	0	0	6	0	0	0	0	0	28	8	9	0	0	14	0	0	0	0	0	0	0	31			
2	9	4	4	1	0	0	5	0	0	0	0	0	25	11	17	0	0	18	0	0	0	0	0	0	0	46			
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1	8	3	5	4	1	0	4	0	0	0	0	0	26	5	19	0	0	13	1	0	0	0	0	0	0	38			
2	8	4	7	3	1	0	1	0	0	0	0	0	28	16	17	0	0	16	0	0	0	0	0	0	0	49			
1	6	12	2	6	0	0	1	0	0	0	0	0	28	15	24	0	0	9	2	0	0	0	0	0	0	50			
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2	8	9	1	6	0	0	2	0	0	0	0	0	28	4	23	0	0	9	0	0	0	0	0	0	0	36			
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5	9	6	5	3	1	0	1	0	0	0	0	0	30	7	31	0	0	8	1	0	0	0	0	0	0	41			
2	9	8	2	3	2	0	3	0	0	0	0	0	29	9	23	0	0	7	2	0	0	0	0	0	0	31			
6	12	4	7	3	0	0	1	0	0	0	0	0	33	8	18	0	0	5	0	0	0	0	0	0	0	52			
7	10	4	4	2	0	0	3	0	0	0	0	0	30	8	31	0	0	13	0	0	0	0	0	0	0	52			
3	13	0	2	2	1	0	1	0	0	0	0	0	22	11	29	0	0	11	1	0	0	0	0	0	0	45			
3	8	4	2	2	1	0	4	0	0	0	0	0	24	7	30	0	0	7	0	0	0	0	0	0	0	44			
5	13	3	3	8	0	0	1	0	0	0	0	0	33	10	27	0	0	5	0	0	0	0	0	0	0	53			
2	11	2	5	5	0	0	1	0	0	0	0	0	26	9	31	0	0	13	0	0	0	0	0	0	0	48			
1	11	3	2	2	0	0	2	0	0	0	0	0	21	6	30	0	0	12	0	0	0	0	0	0	0	36			
2	6	7	4	7	1	0	4	0	0	0	0	0	31	6	20	0	0	10	0	0	0	0	0	0	0	39			
2	5	5	2	3	0	0	2	0	0	0	0	0	19	4	20	0	0	12	3	0	0	0	0	0	0	52			
2	6	4	3	5	0	0	1	0	0	0	0	0	21	8	32	0	0	12	0	0	0	0	0	0	0	54			
0	12	2	2	4	0	0	0	0	0	0	0	0	20	9	30	0	0	14	1	0	0	0	0	0	0	55			
1	9	5	0	2	1	0	1	0	0	0	0	0	19	17	25	0	0	13	0	0	0	0	0	0	0	52			
2	8	6	3	3	0	0	3	0	0	0	0	0	25	4	39	0	0	9	0	0	0	0	0	0	0	58			
3	13	4	4	3	1	0	1	0	0	0	0	0	28	12	30	0	0	13	3	0	0	0	0	0	0	64			
2	32	5	8	9	0	0	3	0	0	0	0	0	59	12	37	0	0	12	3	0	0	0	0	0	0	83			
2	18	5	6	3	0	0	2	0	0	0	0	0	36	13	47	0	0	2	1	0	0	0	0	0	0	66			
7	18	8	9	6	3	1	2	0	0	0	0	0	54	11	43	0	0	10	2	0	0	0	0	0	0	63			
1	7	5	4	4	1	0	0	0	0	0	0	0	22	12	45	0	0	5	1	0	0	0	0	0	0	80			
4	13	5	3	3	1	1	1	0	0	0	0	0	31	15	54	0	0	9	2	0	0	0	0	0	0	68			
2	17	4	5	5	1	1	3	0	0	0	0	0	38	8	51	0	0	8	1	0	0	0	0	0	0	71			
2	17	0	6	1	1	0	2	0	0	0	0	0	38	15	50	0	0	6	0	0	0	0	0	0	0	116			
3	10	5	7	4	0	0	2	0	0	0	0	0	31	25	84	0	0	7	0	0	0	0	0	0	0	98			
3	12	5	4	0	0	0	4	0	0	0	0	0	28	13	78	0	0	7	0	0	0	0	0	0	0	68			
1	13	12	4	4	0	0	0	0	0	0	0	0	34	0	51	0	0	8	0										









## **APPENDIX B:**

Synchro Output, 2023 Existing AM & PM

Lanes, Volumes, Timings  
 1: S Broadway & WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	36	86	186	168	163	33
Future Volume (vph)	36	86	186	168	163	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	200			0
Storage Lanes	0	0	1			0
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.977	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1660	0	1770	1863	1820	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1660	0	1770	1863	1820	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	1642			796	680	
Travel Time (s)	24.9			18.1	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	39	93	202	183	177	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	132	0	202	183	213	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 38.2%      ICU Level of Service A  
 Analysis Period (min) 15

**Intersection**

Int Delay, s/veh 4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	↑	↑	
Traffic Vol, veh/h	36	86	186	168	163	33
Future Vol, veh/h	36	86	186	168	163	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	39	93	202	183	177	36

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	782	195	213
Stage 1	195	-	-
Stage 2	587	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	363	846	1357
Stage 1	838	-	-
Stage 2	556	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	309	846	1357
Mov Cap-2 Maneuver	309	-	-
Stage 1	713	-	-
Stage 2	556	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	13.43	4.26	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1357	-	559	-	-
HCM Lane V/C Ratio	0.149	-	0.237	-	-
HCM Control Delay (s/veh)	8.1	-	13.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %ile Q(veh)	0.5	-	0.9	-	-

Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑			↑↑	↗		↕↑↑	↗			
Traffic Volume (vph)	71	103	0	0	40	192	39	106	28	0	0	0
Future Volume (vph)	71	103	0	0	40	192	39	106	28	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Fr						0.850			0.850			
Flt Protected	0.950							0.987				
Satd. Flow (prot)	1770	1863	0	0	3539	1583	0	5019	1583	0	0	0
Flt Permitted	0.950							0.987				
Satd. Flow (perm)	1770	1863	0	0	3539	1583	0	5019	1583	0	0	0
Right Turn on Red			Yes			Yes		Yes				Yes
Satd. Flow (RTOR)						209			102			
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		258			274			200			186	
Travel Time (s)		3.9			4.2			3.4			3.2	
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
Adj. Flow (vph)	77	112	0	0	43	209	42	115	30	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	77	112	0	0	43	209	0	157	30	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		28			20			36			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2			2	2	1	3	3			
Detector Template					TXLT	TXLT	Left	TX40	TX40			
Leading Detector (ft)	156	156			0	0	20	240	240			
Trailing Detector (ft)	5	5			0	0	0	-5	-5			
Detector 1 Position(ft)	5	5			-5	-5	0	-5	-5			
Detector 1 Size(ft)	6	6			20	20	20	20	20			
Detector 1 Type	CI+Ex	CI+Ex			Call	Call	CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	150	150			21	21		104	104			
Detector 2 Size(ft)	6	6			20	20		6	6			
Detector 2 Type	CI+Ex	CI+Ex			Call	Call		CI+Ex	CI+Ex			
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 3 Position(ft)								234	234			
Detector 3 Size(ft)								6	6			
Detector 3 Type								CI+Ex	CI+Ex			
Detector 3 Channel												
Detector 3 Extend (s)								0.0	0.0			
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Fr1						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

11/22/2023

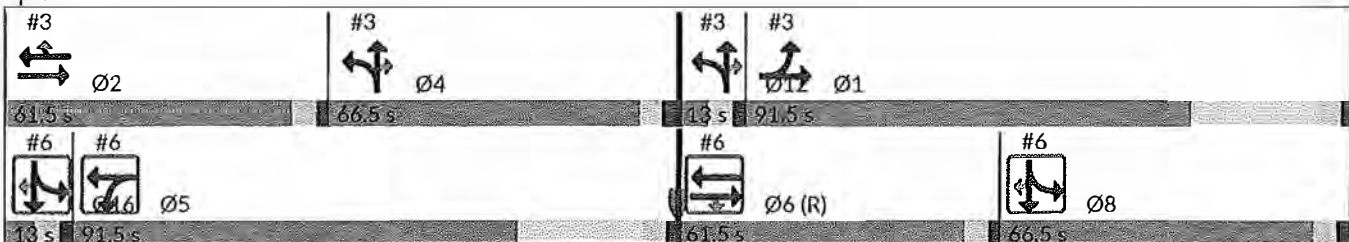


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	2 1			2		4 12	4 12				
Permitted Phases						2			4 12			
Detector Phase	1	2 1			2	2	4 12	4 12	4 12			
Switch Phase												
Minimum Initial (s)	5.0				10.0	10.0						
Minimum Split (s)	22.5				33.5	33.5						
Total Split (s)	91.5				61.5	61.5						
Total Split (%)	35.7%				24.0%	24.0%						
Maximum Green (s)	85.0				55.0	55.0						
Yellow Time (s)	4.5				4.5	4.5						
All-Red Time (s)	2.0				2.0	2.0						
Lost Time Adjust (s)	0.0				0.0	0.0						
Total Lost Time (s)	6.5				6.5	6.5						
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	2.0				2.0	2.0						
Recall Mode	None				Min	Min						
Walk Time (s)					7.0	7.0						
Flash Dont Walk (s)					13.0	13.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	21.7	39.7			11.5	11.5		202.8	202.8			
Actuated g/C Ratio	0.08	0.16			0.04	0.04		0.79	0.79			
v/c Ratio	0.51	0.39			0.27	0.77		0.04	0.02			
Control Delay (s/veh)	90.0	76.1			121.7	30.3		6.3	0.0			
Queue Delay	0.0	0.1			0.0	0.0		0.0	0.0			
Total Delay (s/veh)	90.0	76.1			121.7	30.3		6.3	0.0			
LOS	F	E			F	C		A	A			
Approach Delay (s/veh)		81.8			45.9			5.3				
Approach LOS		F			D			A				

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay (s/veh): 44.6  
 Intersection LOS: D  
 Intersection Capacity Utilization 39.4%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 3: WHARTON WEEMS & NB FRONTAGE



Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	4	5	6	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	26%	36%	24%	26%	5%	5%
Maximum Green (s)	59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Min	None	C-Min	Min	None	None
Walk Time (s)	7.0		7.0	7.0		
Flash Dont Walk (s)	34.0		12.0	25.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
<b>Intersection Summary</b>						

Phasings

3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	1	2 1	2		4 12		4	5	6	8	12	16
Permitted Phases				2		4 12						
Minimum Initial (s)	5.0		10.0	10.0			8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	22.5		33.5	33.5			55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	91.5		61.5	61.5			66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	35.7%		24.0%	24.0%			26%	36%	24%	26%	5%	5%
Maximum Green (s)	85.0		55.0	55.0			59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0		2.0	2.0			2.5	2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lag		Lead	Lead			Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None		Min	Min			Min	None	C-Min	Min	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0		
Flash Dont Walk (s)			13.0	13.0			34.0		12.0	25.0		
Pedestrian Calls (#/hr)			0	0			0		0	0		
90th %ile Green (s)	30.6		17.4	17.4			9.1	20.3	180.0	22.5	171.9	6.2
90th %ile Term Code	Hold		Gap	Gap			Gap	Hold	Coord	Gap	Coord	Gap
70th %ile Green (s)	23.9		10.0	10.0			8.0	13.0	192.3	18.7	187.1	5.0
70th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap
50th %ile Green (s)	20.6		10.0	10.0			8.0	13.0	194.4	16.6	190.4	5.0
50th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap
30th %ile Green (s)	18.4		10.0	10.0			8.0	13.1	196.6	14.4	192.6	4.9
30th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap
10th %ile Green (s)	15.2		10.0	10.0			8.0	13.3	200.0	11.0	195.8	4.7
10th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Queues

3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	77	112	43	209	157	30
v/c Ratio	0.51	0.39	0.27	0.77	0.04	0.02
Control Delay (s/veh)	90.0	76.1	121.7	30.3	6.3	0.0
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay (s/veh)	90.0	76.1	121.7	30.3	6.3	0.0
Queue Length 50th (ft)	85	119	38	0	18	0
Queue Length 95th (ft)	130	168	65	104	34	0
Internal Link Dist (ft)		178	194		120	
Turn Bay Length (ft)						
Base Capacity (vph)	750	789	760	504	3975	1275
Starvation Cap Reductn	48	138	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.17	0.06	0.41	0.04	0.02

Intersection Summary

Lanes, Volumes, Timings  
6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

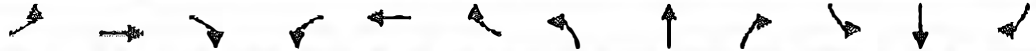


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑					↖	↑↑	↗
Traffic Volume (vph)	0	129	14	30	54	0	0	0	0	88	56	118
Future Volume (vph)	0	129	14	30	54	0	0	0	0	88	56	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104									128
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		400			258			161			232	
Travel Time (s)		7.8			3.9			2.7			4.0	
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
Adj. Flow (vph)	0	140	15	33	59	0	0	0	0	96	61	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	140	15	33	59	0	0	0	0	96	61	128
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	R NA
Median Width(ft)		14			24			12			12	
Link Offset(ft)		0			0			5			0	
Crosswalk Width(ft)		12			36			16			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1	2	2					3	3	3
Detector Template		TXLT	Right							TX40	TX40	TX40
Leading Detector (ft)		0	20	156	156					240	240	240
Trailing Detector (ft)		0	0	5	5					-5	-5	-5
Detector 1 Position(ft)		-5	0	5	5					-5	-5	-5
Detector 1 Size(ft)		20	20	6	6					20	20	20
Detector 1 Type		Call	CI+Ex	CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		21		150	150					104	104	104
Detector 2 Size(ft)		20		6	6					6	6	6
Detector 2 Type		Call		CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 3 Position(ft)										234	234	234
Detector 3 Size(ft)										6	6	6
Detector 3 Type										CI+Ex	CI+Ex	CI+Ex
Detector 3 Channel												
Detector 3 Extend (s)										0.0	0.0	0.0
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

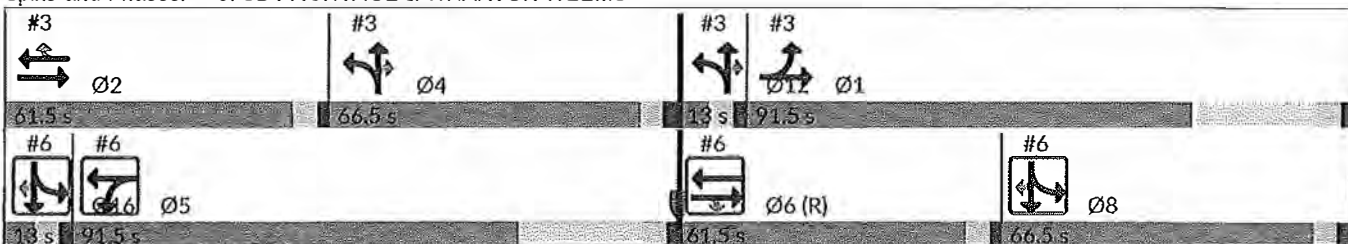


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	6	5				16	8	16
Permitted Phases			6									16
Detector Phase		6	6	5	6	5				16	8	16
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0								
Minimum Split (s)		32.5	32.5	11.5								
Total Split (s)		61.5	61.5	91.5								
Total Split (%)		24.0%	24.0%	35.7%								
Maximum Green (s)		55.0	55.0	85.0								
Yellow Time (s)		4.5	4.5	4.5								
All-Red Time (s)		2.0	2.0	2.0								
Lost Time Adjust (s)		0.0	0.0	0.0								
Total Lost Time (s)		6.5	6.5	6.5								
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		2.0	2.0	2.0								
Recall Mode		C-Min	C-Min	None								
Walk Time (s)		7.0	7.0									
Flash Dont Walk (s)		12.0	12.0									
Pedestrian Calls (#/hr)		0	0									
Act Effct Green (s)		192.7	192.7	14.5	213.7					28.8	28.8	28.8
Actuated g/C Ratio		0.75	0.75	0.06	0.83					0.11	0.11	0.11
v/c Ratio		0.10	0.01	0.33	0.04					0.48	0.15	0.44
Control Delay (s/veh)		9.3	0.0	73.1	4.5					114.1	102.1	16.5
Queue Delay		0.0	0.0	0.0	1.6					0.0	0.0	0.0
Total Delay (s/veh)		9.3	0.0	73.1	6.1					114.1	102.1	16.5
LOS		A	A	E	A					F	F	B
Approach Delay (s/veh)		8.4			30.1						67.7	
Approach LOS		A			C						E	

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.77  
 Intersection Signal Delay (s/veh): 43.9  
 Intersection Capacity Utilization 39.4%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service A

Splits and Phases: 6: SB FRONTAGE & WHARTON WEEMS



Exist AM 8:09 am 11/20/2023 Baseline

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Protected Phases	1	2	4	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	5.0	10.0	8.0	8.0	2.0	2.0
Minimum Split (s)	22.5	33.5	55.0	46.0	9.0	9.0
Total Split (s)	91.5	61.5	66.5	66.5	13.0	13.0
Total Split (%)	36%	24%	26%	26%	5%	5%
Maximum Green (s)	85.0	55.0	59.5	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0		
Flash Dont Walk (s)		13.0	34.0	25.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
<b>Intersection Summary</b>						

Phasings

6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	Ø1	Ø2	Ø4	Ø8	Ø12
Protected Phases	6		5	6 5	16 8	16 8		1	2	4	8	12
Permitted Phases		6					16 8					
Minimum Initial (s)	10.0	10.0	5.0					5.0	10.0	8.0	8.0	2.0
Minimum Split (s)	32.5	32.5	11.5					22.5	33.5	55.0	46.0	9.0
Total Split (s)	61.5	61.5	91.5					91.5	61.5	66.5	66.5	13.0
Total Split (%)	24.0%	24.0%	35.7%					36%	24%	26%	26%	5%
Maximum Green (s)	55.0	55.0	85.0					85.0	55.0	59.5	59.5	6.0
Yellow Time (s)	4.5	4.5	4.5					4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lead	Lead	Lag					Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Min	C-Min	None					None	Min	Min	Min	None
Walk Time (s)	7.0	7.0							7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0							13.0	34.0	25.0	
Pedestrian Calls (#/hr)	0	0							0	0	0	
90th %ile Green (s)	180.0	180.0	20.3					30.6	17.4	9.1	22.5	171.9
90th %ile Term Code	Coord	Coord	Hold					Hold	Gap	Gap	Gap	Coord
70th %ile Green (s)	192.3	192.3	13.0					23.9	10.0	8.0	18.7	187.1
70th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord
50th %ile Green (s)	194.4	194.4	13.0					20.6	10.0	8.0	16.6	190.4
50th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord
30th %ile Green (s)	196.6	196.6	13.1					18.4	10.0	8.0	14.4	192.6
30th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord
10th %ile Green (s)	200.0	200.0	13.3					15.2	10.0	8.0	11.0	195.8
10th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Lane Group	Ø16
Protected Phases	16
Permitted Phases	
Minimum Initial (s)	2.0
Minimum Split (s)	9.0
Total Split (s)	13.0
Total Split (%)	5%
Maximum Green (s)	6.0
Yellow Time (s)	4.5
All-Red Time (s)	2.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
90th %ile Green (s)	6.2
90th %ile Term Code	Gap
70th %ile Green (s)	5.0
70th %ile Term Code	Gap
50th %ile Green (s)	5.0
50th %ile Term Code	Gap
30th %ile Green (s)	4.9
30th %ile Term Code	Gap
10th %ile Green (s)	4.7
10th %ile Term Code	Gap
<b>Intersection Summary</b>	

Queues

6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	140	15	33	59	96	61	128
v/c Ratio	0.10	0.01	0.33	0.04	0.48	0.15	0.44
Control Delay (s/veh)	9.3	0.0	73.1	4.5	114.1	102.1	16.5
Queue Delay	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Total Delay (s/veh)	9.3	0.0	73.1	6.1	114.1	102.1	16.5
Queue Length 50th (ft)	58	0	53	50	156	50	0
Queue Length 95th (ft)	104	0	95	78	226	78	78
Internal Link Dist (ft)	320			178		152	
Turn Bay Length (ft)							
Base Capacity (vph)	1401	1216	750	1555	411	822	466
Starvation Cap Reductn	0	0	0	1381	0	0	0
Spillback Cap Reductn	0	0	0	0	1	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.01	0.04	0.34	0.23	0.07	0.27

Intersection Summary

Lanes, Volumes, Timings  
 9: Fairmond Greens & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Volume (vph)	103	14	5	216	33	13
Future Volume (vph)	103	14	5	216	33	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984				0.962	
Flt Protected				0.999	0.965	
Satd. Flow (prot)	1833	0	0	1861	1729	0
Flt Permitted				0.999	0.965	
Satd. Flow (perm)	1833	0	0	1861	1729	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	351			741	214	
Travel Time (s)	13.8			16.8	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	112	15	5	235	36	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	127	0	0	240	50	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 25.4% ICU Level of Service A  
 Analysis Period (min) 15

**Intersection**

Int Delay, s/veh 1.4

**Movement** EBT EBR WBL WBT NBL NBR

Lane Configurations	↑			↑	Y	
Traffic Vol, veh/h	103	14	5	216	33	13
Future Vol, veh/h	103	14	5	216	33	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	112	15	5	235	36	14

**Major/Minor** Major1 Major2 Minor1

Conflicting Flow All	0	0	127	0	365	120
Stage 1	-	-	-	-	120	-
Stage 2	-	-	-	-	246	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1459	-	634	932
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	795	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1459	-	632	932
Mov Cap-2 Maneuver	-	-	-	-	632	-
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	792	-

**Approach** EB WB NB

HCM Control Delay, s/v 0 0.17 10.58  
 HCM LOS B

**Minor Lane/Major Mvmt** NBLn1 EBT EBR WBL WBT

Capacity (veh/h)	695	-	-	41	-
HCM Lane V/C Ratio	0.072	-	-	0.004	-
HCM Control Delay (s/veh)	10.6	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lanes, Volumes, Timings  
 10: NB FRONTAGE/WHARTON WEEMS & NB UTURN

11/22/2023



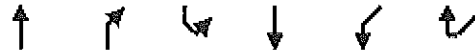
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations	↰	↑↑↑↑				
Traffic Volume (vph)	52	176	0	0	0	0
Future Volume (vph)	52	176	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1770	6408	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	6408	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		216	200		107	
Travel Time (s)		5.9	4.8		2.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	57	191	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	57	191	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
 17: SB FRONTAGE & NB UTURN

11/22/2023

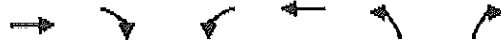


Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑↑	↘	
Traffic Volume (vph)	0	0	0	100	52	0
Future Volume (vph)	0	0	0	100	52	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
<b>Fr</b>						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	5085	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	5085	1770	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	359			161	88	
Travel Time (s)	11.1			3.5	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	109	57	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	109	57	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
19: WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Frt</b>						
Flt Protected						
Satd. Flow (prot)	1863	0	0	1863	1863	0
Flt Permitted						
Satd. Flow (perm)	1863	0	0	1863	1863	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	741			1642	162	
Travel Time (s)	16.8			13.1	3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

**Intersection**

Int Delay, s/veh 0

**Movement** EBT EBR WBL WBT NBL NBR

Lane Configurations	↶			↷	↷	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

**Major/Minor** Major1 Major2 Minor1

Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1020	1083
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	-	1020	1083
Mov Cap-2 Maneuver	-	-	-	-	1020	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

**Approach** EB WB NB

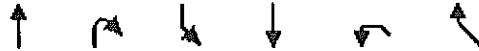
HCM Control Delay, s/v	0	0	0
HCM LOS			A

**Minor Lane/Major Mvmt** NBLn1 EBT EBR WBL WBT

Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings  
 20: SB FRONTAGE & SB UTURN

11/22/2023



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations			↵	↑↑↑		
Traffic Volume (vph)	0	0	36	262	0	0
Future Volume (vph)	0	0	36	262	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
<b>Frt</b>						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	5085	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	5085	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	232			276	158	
Travel Time (s)	8.3			11.2	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	39	285	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	39	285	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			12	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	8.4%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
 23: SB UTURN & NB FRONTAGE

11/22/2023



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑			↙	
Traffic Volume (vph)	0	372	0	0	36	0
Future Volume (vph)	0	372	0	0	36	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	1.00	1.00
<b>Flt</b>						
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	0	0	1770	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		186	297		119	
Travel Time (s)		4.0	6.8		3.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	404	0	0	39	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	404	0	0	39	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Yield	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.2%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 24: WHARTON WEEMS

11/22/2023



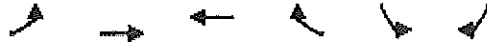
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Frt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	1863	1863	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	1863	1863	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		265	351		135	
Travel Time (s)		6.0	7.8		3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
26: WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	0	1863	1863	0	0	0
Fit Permitted						
Satd. Flow (perm)	0	1863	1863	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		274	136		169	
Travel Time (s)		5.8	2.9		3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	36		0	
Link Offset(ft)		0	6		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
28: NB FRONTAGE

11/22/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	0	5085	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	0	5085	0	0	0
Link Speed (mph)	30		40			40
Link Distance (ft)	152		257			216
Travel Time (s)	3.5		6.3			5.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Right	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		12			0
Crosswalk Width(ft)	16		16			16
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization:	15.8%
Analysis Period (min):	15
	ICU Level of Service A

Lanes, Volumes, Timings  
30: NB FRONTAGE

11/22/2023



Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	1863	3539	0	0	0	0
Fit Permitted						
Satd. Flow (perm)	1863	3539	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		489	481		247	
Travel Time (s)		11.1	10.9		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	65			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.2%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
32: WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
<b>Frt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	1863	3539	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	1863	3539	0	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		871	400		132	
Travel Time (s)		24.6	4.7		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings

34: SB FRONTAGE

11/22/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					↑↑↑	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	0	0	0	5085	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	0	0	0	5085	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	118			276	232	
Travel Time (s)	2.7			6.3	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 8.4% ICU Level of Service A  
 Analysis Period (min) 15

Lanes, Volumes, Timings  
 1: S Broadway & WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	40	240	106	143	249	49
Future Volume (vph)	40	240	106	143	249	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	200			0
Storage Lanes	0	0	1			0
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.978	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1635	0	1770	1863	1822	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1635	0	1770	1863	1822	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	1642			796	680	
Travel Time (s)	24.9			18.1	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	43	261	115	155	271	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	304	0	115	155	324	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.0%
	ICU Level of Service A
Analysis Period (min)	15

**Intersection**

Int Delay, s/veh 6.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	40	240	106	143	249	49
Future Vol, veh/h	40	240	106	143	249	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	261	115	155	271	53

**Major/Minor**

	Minor2	Major1	Major2			
Conflicting Flow All	683	297	324	0	-	0
Stage 1	297	-	-	-	-	-
Stage 2	386	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	415	742	1236	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	687	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	376	742	1236	-	-	-
Mov Cap-2 Maneuver	376	-	-	-	-	-
Stage 1	683	-	-	-	-	-
Stage 2	687	-	-	-	-	-

**Approach**

	EB	NB	SB
HCM Control Delay, s/v15.27		3.5	0
HCM LOS	C		

**Minor Lane/Major Mvmt**

	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1236	-	652	-	-
HCM Lane V/C Ratio	0.093	-	0.467	-	-
HCM Control Delay (s/veh)	8.2	-	15.3	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %ile Q(veh)	0.3	-	2.5	-	-

Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↙	↑			↑↑	↗		↑↑↑	↗			
Traffic Volume (vph)	90	263	0	0	43	120	18	53	31	0	0	0
Future Volume (vph)	90	263	0	0	43	120	18	53	31	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.987				
Satd. Flow (prot)	1770	1863	0	0	3539	1583	0	5019	1583	0	0	0
Flt Permitted	0.950							0.987				
Satd. Flow (perm)	1770	1863	0	0	3539	1583	0	5019	1583	0	0	0
Right Turn on Red			Yes			Yes		Yes		Yes		Yes
Satd. Flow (RTOR)						130			102			
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		258			274			200			186	
Travel Time (s)		3.9			4.2			3.4			3.2	
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
Adj. Flow (vph)	98	286	0	0	47	130	20	58	34	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	286	0	0	47	130	0	78	34	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		28			20			36			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15			9	15		9	15	9
Number of Detectors	2	2			2	2	1	3	3			
Detector Template					TXLT	TXLT	Left	TX40	TX40			
Leading Detector (ft)	156	156			0	0	20	240	240			
Trailing Detector (ft)	5	5			0	0	0	-5	-5			
Detector 1 Position(ft)	5	5			-5	-5	0	-5	-5			
Detector 1 Size(ft)	6	6			20	20	20	20	20			
Detector 1 Type	CI+Ex	CI+Ex			Call	Call	CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	150	150			21	21		104	104			
Detector 2 Size(ft)	6	6			20	20		6	6			
Detector 2 Type	CI+Ex	CI+Ex			Call	Call		CI+Ex	CI+Ex			
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 3 Position(ft)								234	234			
Detector 3 Size(ft)								6	6			
Detector 3 Type								CI+Ex	CI+Ex			
Detector 3 Channel												
Detector 3 Extend (s)								0.0	0.0			
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

11/22/2023

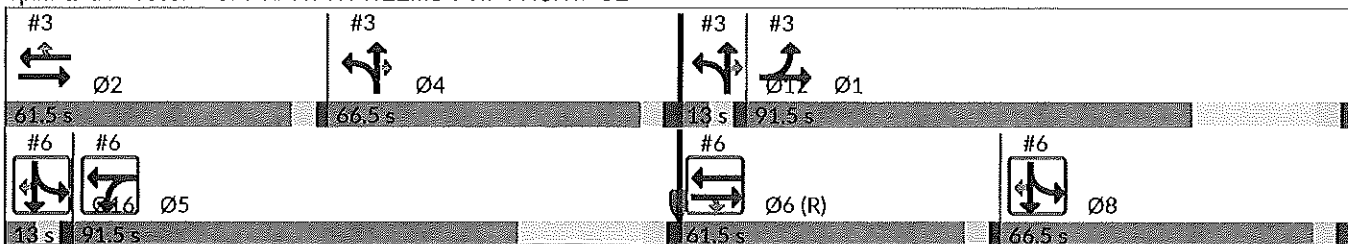


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	2 1			2		4 12	4 12				
Permitted Phases						2			4 12			
Detector Phase	1	2 1			2	2	4 12	4 12	4 12			
Switch Phase												
Minimum Initial (s)	5.0				10.0	10.0						
Minimum Split (s)	22.5				33.5	33.5						
Total Split (s)	91.5				61.5	61.5						
Total Split (%)	35.7%				24.0%	24.0%						
Maximum Green (s)	85.0				55.0	55.0						
Yellow Time (s)	4.5				4.5	4.5						
All-Red Time (s)	2.0				2.0	2.0						
Lost Time Adjust (s)	0.0				0.0	0.0						
Total Lost Time (s)	6.5				6.5	6.5						
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	2.0				2.0	2.0						
Recall Mode	None				Min	Min						
Walk Time (s)					7.0	7.0						
Flash Dont Walk (s)					13.0	13.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	40.9	58.4			11.0	11.0	184.1	184.1				
Actuated g/C Ratio	0.16	0.23			0.04	0.04	0.72	0.72				
v/c Ratio	0.35	0.67			0.31	0.68	0.02	0.03				
Control Delay (s/veh)	56.6	47.9			123.7	31.6	11.3	0.0				
Queue Delay	0.1	0.2			0.0	0.0	0.0	0.0				
Total Delay (s/veh)	56.7	48.1			123.7	31.6	11.3	0.0				
LOS	E	D			F	C	B	A				
Approach Delay (s/veh)		50.3			56.1		7.9					
Approach LOS		D			E		A					

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay (s/veh): 44.8  
 Intersection Capacity Utilization 52.0%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service A

Splits and Phases: 3: WHARTON WEEMS & NB FRONTAGE



Exist PM 11:59 am 11/22/2023 Baseline

Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

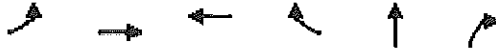
11/22/2023

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	4	5	6	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	26%	36%	24%	26%	5%	5%
Maximum Green (s)	59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Min	None	C-Min	Min	None	None
Walk Time (s)	7.0		7.0	7.0		
Flash Dont Walk (s)	34.0		12.0	25.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
w/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
<b>Intersection Summary</b>						

Phasings

3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	1	2 1	2		4 12		4	5	6	8	12	16
Permitted Phases				2		4 12						
Minimum Initial (s)	5.0		10.0	10.0			8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	22.5		33.5	33.5			55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	91.5		61.5	61.5			66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	35.7%		24.0%	24.0%			26%	36%	24%	26%	5%	5%
Maximum Green (s)	85.0		55.0	55.0			59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0		2.0	2.0			2.5	2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lag		Lead	Lead			Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None		Min	Min			Min	None	C-Min	Min	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0		
Flash Dont Walk (s)			13.0	13.0			34.0		12.0	25.0		
Pedestrian Calls (#/hr)			0	0			0		0	0		
90th %ile Green (s)	51.4		15.0	15.0			8.0	14.9	162.6	43.4	154.6	8.1
90th %ile Term Code	Hold		Gap	Gap			Min	Hold	Coord	Gap	Coord	Gap
70th %ile Green (s)	44.0		10.0	10.0			8.0	11.1	172.6	38.4	167.0	6.9
70th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap
50th %ile Green (s)	40.6		10.0	10.0			8.0	12.3	174.4	36.6	170.4	5.7
50th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap
30th %ile Green (s)	36.8		10.0	10.0			8.0	12.5	178.4	32.6	174.2	5.5
30th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap
10th %ile Green (s)	31.5		10.0	10.0			8.0	0.0	184.4	26.6	179.5	24.5
10th %ile Term Code	Hold		Min	Min			Min	Skip	Coord	Gap	Coord	Hold

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Queues

3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	98	286	47	130	78	34
v/c Ratio	0.35	0.67	0.31	0.68	0.02	0.03
Control Delay (s/veh)	56.6	47.9	123.7	31.6	11.3	0.0
Queue Delay	0.1	0.2	0.0	0.0	0.0	0.0
Total Delay (s/veh)	56.7	48.1	123.7	31.6	11.3	0.0
Queue Length 50th (ft)	67	171	41	0	13	0
Queue Length 95th (ft)	109	207	70	86	24	0
Internal Link Dist (ft)		178	194		120	
Turn Bay Length (ft)						
Base Capacity (vph)	750	795	760	442	3610	1167
Starvation Cap Reductn	150	106	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.42	0.06	0.29	0.02	0.03

Intersection Summary

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑					↖	↑↑	↗
Traffic Volume (vph)	0	88	31	25	30	0	0	0	0	228	65	60
Future Volume (vph)	0	88	31	25	30	0	0	0	0	228	65	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104									102
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		400			258			161			232	
Travel Time (s)		7.8			3.9			2.7			4.0	
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
Adj. Flow (vph)	0	96	34	27	33	0	0	0	0	248	71	65
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	96	34	27	33	0	0	0	0	248	71	65
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	R NA
Median Width(ft)		14			24			12			12	
Link Offset(ft)		0			0			5			0	
Crosswalk Width(ft)		12			36			16			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors			1	2	2					3	3	3
Detector Template		TXLT	Right							TX40	TX40	TX40
Leading Detector (ft)		0	20	156	156					240	240	240
Trailing Detector (ft)		0	0	5	5					-5	-5	-5
Detector 1 Position(ft)		-5	0	5	5					-5	-5	-5
Detector 1 Size(ft)		20	20	6	6					20	20	20
Detector 1 Type		Call	CI+Ex	CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		21		150	150					104	104	104
Detector 2 Size(ft)		20		6	6					6	6	6
Detector 2 Type		Call		CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 3 Position(ft)										234	234	234
Detector 3 Size(ft)										6	6	6
Detector 3 Type										CI+Ex	CI+Ex	CI+Ex
Detector 3 Channel												
Detector 3 Extend (s)										0.0	0.0	0.0
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

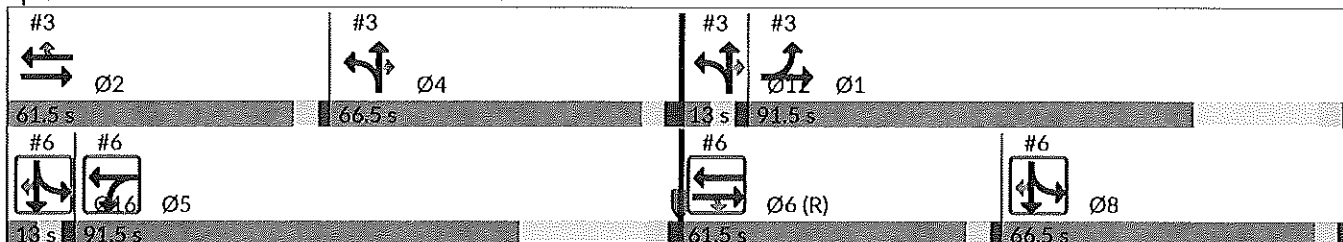


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	6 5					16 8	16 8	
Permitted Phases			6									16 8
Detector Phase		6	6	5	6 5					16 8	16 8	16 8
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0								
Minimum Split (s)		32.5	32.5	11.5								
Total Split (s)		61.5	61.5	91.5								
Total Split (%)		24.0%	24.0%	35.7%								
Maximum Green (s)		55.0	55.0	85.0								
Yellow Time (s)		4.5	4.5	4.5								
All-Red Time (s)		2.0	2.0	2.0								
Lost Time Adjust (s)		0.0	0.0	0.0								
Total Lost Time (s)		6.5	6.5	6.5								
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		2.0	2.0	2.0								
Recall Mode		C-Min	C-Min	None								
Walk Time (s)		7.0	7.0									
Flash Dont Walk (s)		12.0	12.0									
Pedestrian Calls (#/hr)		0	0									
Act Effct Green (s)		174.5	174.5	11.2	190.8					52.7	52.7	52.7
Actuated g/C Ratio		0.68	0.68	0.04	0.75					0.21	0.21	0.21
v/c Ratio		0.08	0.03	0.35	0.02					0.68	0.10	0.16
Control Delay (s/veh)		14.8	0.1	52.4	7.0					104.4	82.6	1.3
Queue Delay		0.0	0.0	0.0	0.0					0.3	0.0	0.0
Total Delay (s/veh)		14.8	0.1	52.4	7.0					104.7	82.6	1.3
LOS		B	A	D	A					F	F	A
Approach Delay (s/veh)		11.0			27.4						83.1	
Approach LOS		B			C						F	

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay (s/veh): 61.0  
 Intersection Capacity Utilization 52.0%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service A

Splits and Phases: 6: SB FRONTAGE & WHARTON WEEMS



Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Protected Phases	1	2	4	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	5.0	10.0	8.0	8.0	2.0	2.0
Minimum Split (s)	22.5	33.5	55.0	46.0	9.0	9.0
Total Split (s)	91.5	61.5	66.5	66.5	13.0	13.0
Total Split (%)	36%	24%	26%	26%	5%	5%
Maximum Green (s)	85.0	55.0	59.5	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0		
Flash Dont Walk (s)		13.0	34.0	25.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
w/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
<b>Intersection Summary</b>						

Phasings

6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	Ø1	Ø2	Ø4	Ø8	Ø12
Protected Phases	6		5	6 5	16 8	16 8		1	2	4	8	12
Permitted Phases		6					16 8					
Minimum Initial (s)	10.0	10.0	5.0					5.0	10.0	8.0	8.0	2.0
Minimum Split (s)	32.5	32.5	11.5					22.5	33.5	55.0	46.0	9.0
Total Split (s)	61.5	61.5	91.5					91.5	61.5	66.5	66.5	13.0
Total Split (%)	24.0%	24.0%	35.7%					36%	24%	26%	26%	5%
Maximum Green (s)	55.0	55.0	85.0					85.0	55.0	59.5	59.5	6.0
Yellow Time (s)	4.5	4.5	4.5					4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lead	Lead	Lag					Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Min	C-Min	None					None	Min	Min	Min	None
Walk Time (s)	7.0	7.0							7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0							13.0	34.0	25.0	
Pedestrian Calls (#/hr)	0	0							0	0	0	
90th %ile Green (s)	162.6	162.6	14.9					51.4	15.0	8.0	43.4	154.6
90th %ile Term Code	Coord	Coord	Hold					Hold	Gap	Min	Gap	Coord
70th %ile Green (s)	172.6	172.6	11.1					44.0	10.0	8.0	38.4	167.0
70th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord
50th %ile Green (s)	174.4	174.4	12.3					40.6	10.0	8.0	36.6	170.4
50th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord
30th %ile Green (s)	178.4	178.4	12.5					36.8	10.0	8.0	32.6	174.2
30th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord
10th %ile Green (s)	184.4	184.4	0.0					31.5	10.0	8.0	26.6	179.5
10th %ile Term Code	Coord	Coord	Skip					Hold	Min	Min	Gap	Coord

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Lane Group	Ø16
Protected Phases	16
Permitted Phases	
Minimum Initial (s)	2.0
Minimum Split (s)	9.0
Total Split (s)	13.0
Total Split (%)	5%
Maximum Green (s)	6.0
Yellow Time (s)	4.5
All-Red Time (s)	2.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
90th %ile Green (s)	8.1
90th %ile Term Code	Gap
70th %ile Green (s)	6.9
70th %ile Term Code	Gap
50th %ile Green (s)	5.7
50th %ile Term Code	Gap
30th %ile Green (s)	5.5
30th %ile Term Code	Gap
10th %ile Green (s)	24.5
10th %ile Term Code	Hold
<b>Intersection Summary</b>	

Queues

6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	96	34	27	33	248	71	65
v/c Ratio	0.08	0.03	0.35	0.02	0.68	0.10	0.16
Control Delay (s/veh)	14.8	0.1	52.4	7.0	104.4	82.6	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay (s/veh)	14.8	0.1	52.4	7.0	104.7	82.6	1.3
Queue Length 50th (ft)	53	0	44	41	402	53	0
Queue Length 95th (ft)	92	0	84	75	502	80	3
Internal Link Dist (ft)	320			178		152	
Turn Bay Length (ft)							
Base Capacity (vph)	1269	1112	750	1409	411	822	446
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	50	0	0	0	15	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03	0.04	0.02	0.63	0.09	0.15

Intersection Summary

Lanes, Volumes, Timings  
 9: Fairmont Greens & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕		↕
Traffic Volume (vph)	276	29	7	142	13	8
Future Volume (vph)	276	29	7	142	13	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987			0.947		
Flt Protected				0.998	0.970	
Satd. Flow (prot)	1839	0	0	1859	1711	0
Flt Permitted				0.998	0.970	
Satd. Flow (perm)	1839	0	0	1859	1711	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	351			741	214	
Travel Time (s)	13.8			16.8	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	300	32	8	154	14	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	332	0	0	162	23	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 26.3% ICU Level of Service A  
 Analysis Period (min) 15

HCM 7th TWSC  
 9: Fairmont Greens & WHARTON WEEMS

11/22/2023

**Intersection**

Int Delay, s/veh 0.6

**Movement** EBT EBR WBL WBT NBL NBR

Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	276	29	7	142	13	8
Future Vol, veh/h	276	29	7	142	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	300	32	8	154	14	9

**Major/Minor** Major1 Major2 Minor1

Conflicting Flow All	0	0	332	0	485	316
Stage 1	-	-	-	-	316	-
Stage 2	-	-	-	-	170	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1228	-	541	725
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	860	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1228	-	537	725
Mov Cap-2 Maneuver	-	-	-	-	537	-
Stage 1	-	-	-	-	739	-
Stage 2	-	-	-	-	854	-

**Approach** EB WB NB

HCM Control Delay, s/v	0	0.37	11.28
HCM LOS			B

**Minor Lane/Major Mvmt** NBLn1 EBT EBR WBL WBT

Capacity (veh/h)	596	-	-	85	-
HCM Lane V/C Ratio	0.038	-	-	0.006	-
HCM Control Delay (s/veh)	11.3	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings  
 10: NB FRONTAGE/WHARTON WEEMS & NB UTURN

11/22/2023



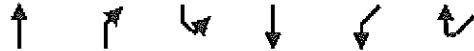
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations	↙	↑↑↑↑				
Traffic Volume (vph)	29	102	0	0	0	0
Future Volume (vph)	29	102	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00
<b>Frt</b>						
Flt Protected	0.950					
Satd. Flow (prot)	1770	6408	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	6408	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		216	200		107	
Travel Time (s)		5.9	4.8		2.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	32	111	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	32	111	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
17: SB FRONTAGE & NB UTURN

11/22/2023



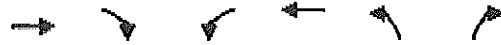
Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑↑↑	↘	
Traffic Volume (vph)	0	0	0	121	29	0
Future Volume (vph)	0	0	0	121	29	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
<b>Fr</b>						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	5085	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	5085	1770	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	359			161	88	
Travel Time (s)	11.1			3.5	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	132	32	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	132	32	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
19: WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1863	0	0	1863	1863	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1863	0	0	1863	1863	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	741			1642	162	
Travel Time (s)	16.8			13.1	3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

Int Delay, s/veh 0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1622	-	1020
Stage 1	-	-	-	-	1022
Stage 2	-	-	-	-	1022
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	-	1020
Mov Cap-2 Maneuver	-	-	-	-	1020
Stage 1	-	-	-	-	1022
Stage 2	-	-	-	-	1022

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings  
 20: SB FRONTAGE & SB UTURN

11/22/2023

	↑	↗	↘	↓	↙	↖
Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations			↘	↑↑↑		
Traffic Volume (vph)	0	0	179	353	0	0
Future Volume (vph)	0	0	179	353	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
<b>Frt</b>						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	5085	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	5085	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	232			276	158	
Travel Time (s)	8.3			11.2	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	195	384	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	195	384	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			12	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
 23: SB UTURN & NB FRONTAGE

11/22/2023



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑			↘	
Traffic Volume (vph)	0	263	0	0	179	0
Future Volume (vph)	0	263	0	0	179	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	1.00	1.00
<b>Flt</b>						
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	0	0	1770	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		186	297		119	
Travel Time (s)		4.0	6.8		3.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	286	0	0	195	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	286	0	0	195	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Yield	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 21.7%      ICU Level of Service A  
 Analysis Period (min) 15

Lanes, Volumes, Timings  
 24: WHARTON WEEMS

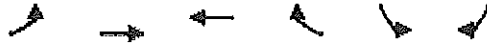
11/22/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Frt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	1863	1863	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	1863	1863	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		265	351		135	
Travel Time (s)		6.0	7.8		3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 6.7% ICU Level of Service A  
 Analysis Period (min) 15



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Flt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	1863	1863	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	1863	1863	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		274	136		169	
Travel Time (s)		5.8	2.9		3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	36		0	
Link Offset(ft)		0	6		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
28: NB FRONTAGE

11/22/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	5085	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	0	5085	0	0	0
Link Speed (mph)	30		40			40
Link Distance (ft)	152		257			216
Travel Time (s)	3.5		6.3			5.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Right	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		12			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.8%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
30: NB FRONTAGE

11/22/2023



Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
<b>Flt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1863	3539	0	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1863	3539	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		489	481		247	
Travel Time (s)		11.1	10.9		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	65			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	21.7%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
32: WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	3539	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1863	3539	0	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		871	400		132	
Travel Time (s)		24.6	4.7		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
34: SB FRONTAGE

11/22/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					↑↑↑	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	0	0	0	5085	0
Flt Permitted						
Satd. Flow (perm)	0	0	0	0	5085	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	118			276	232	
Travel Time (s)	2.7			6.3	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.3%
	ICU Level of Service A
Analysis Period (min)	15

**APPENDIX C:**

Synchro Output, 2024 No Build Conditions AM & PM

Lanes, Volumes, Timings  
 1: S Broadway & WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	88	190	171	166	34
Future Volume (vph)	37	88	190	171	166	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	200			0
Storage Lanes	0	0	1			0
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.977	
Flt Protected	0.986		0.950			
Satd. Flow (prot)	1662	0	1770	1863	1820	0
Flt Permitted	0.986		0.950			
Satd. Flow (perm)	1662	0	1770	1863	1820	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	1642			796	680	
Travel Time (s)	24.9			18.1	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	96	207	186	180	37
Shared Lane Traffic (%)						
Lane Group Flow (vph)	136	0	207	186	217	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	38.8%
ICU Level of Service	A
Analysis Period (min)	15

**Intersection**

Int Delay, s/veh 4.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↘		↘	↑	↑	
Traffic Vol, veh/h	37	88	190	171	166	34
Future Vol, veh/h	37	88	190	171	166	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	40	96	207	186	180	37

**Major/Minor**

	Minor2	Major1	Major2			
Conflicting Flow All	798	199	217	0	-	0
Stage 1	199	-	-	-	-	-
Stage 2	599	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	355	842	1352	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	549	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	301	842	1352	-	-	-
Mov Cap-2 Maneuver	301	-	-	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	549	-	-	-	-	-

**Approach**

	EB	NB	SB
HCM Control Delay, s/v	13.69	4.29	0
HCM LOS	B		

**Minor Lane/Major Mvmt**

	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1352	-	550	-	-
HCM Lane V/C Ratio	0.153	-	0.247	-	-
HCM Control Delay (s/veh)	8.1	-	13.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %ile Q(veh)	0.5	-	1	-	-

Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑			↑↑	↗		↑↑↑	↗			
Traffic Volume (vph)	72	105	0	0	41	196	40	111	29	0	0	0
Future Volume (vph)	72	105	0	0	41	196	40	111	29	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.987				
Satd. Flow (prot)	1770	1863	0	0	3539	1583	0	5019	1583	0	0	0
Flt Permitted	0.950							0.987				
Satd. Flow (perm)	1770	1863	0	0	3539	1583	0	5019	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						213			102			
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		258			274			200			186	
Travel Time (s)		3.9			4.2			3.4			3.2	
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
Adj. Flow (vph)	78	114	0	0	45	213	43	121	32	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	78	114	0	0	45	213	0	164	32	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		28			20			36			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2			2	2	1	3	3			
Detector Template					TXLT	TXLT	Left	TX40	TX40			
Leading Detector (ft)	156	156			0	0	20	240	240			
Trailing Detector (ft)	5	5			0	0	0	-5	-5			
Detector 1 Position(ft)	5	5			-5	-5	0	-5	-5			
Detector 1 Size(ft)	6	6			20	20	20	20	20			
Detector 1 Type	CI+Ex	CI+Ex			Call	Call	CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	150	150			21	21		104	104			
Detector 2 Size(ft)	6	6			20	20		6	6			
Detector 2 Type	CI+Ex	CI+Ex			Call	Call		CI+Ex	CI+Ex			
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 3 Position(ft)								234	234			
Detector 3 Size(ft)								6	6			
Detector 3 Type								CI+Ex	CI+Ex			
Detector 3 Channel												
Detector 3 Extend (s)								0.0	0.0			
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

11/22/2023

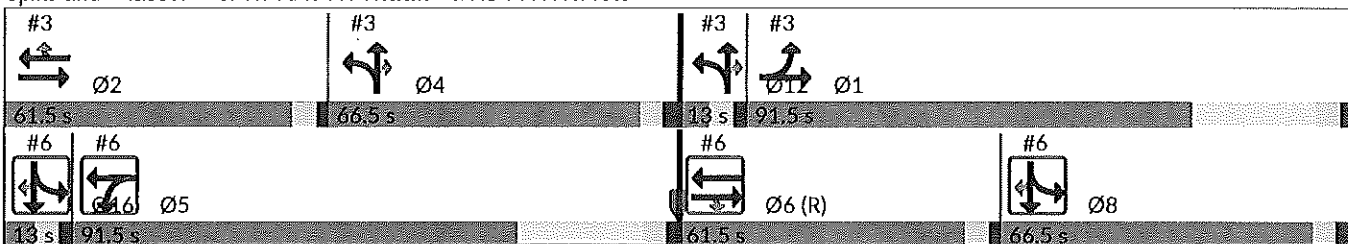


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	2 1			2		4 1 2	4 1 2				
Permitted Phases						2			4 1 2			
Detector Phase	1	2 1			2	2	4 1 2	4 1 2	4 1 2			
Switch Phase												
Minimum Initial (s)	5.0				10.0	10.0						
Minimum Split (s)	22.5				33.5	33.5						
Total Split (s)	91.5				61.5	61.5						
Total Split (%)	35.7%				24.0%	24.0%						
Maximum Green (s)	85.0				55.0	55.0						
Yellow Time (s)	4.5				4.5	4.5						
All-Red Time (s)	2.0				2.0	2.0						
Lost Time Adjust (s)	0.0				0.0	0.0						
Total Lost Time (s)	6.5				6.5	6.5						
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	2.0				2.0	2.0						
Recall Mode	None				Min	Min						
Walk Time (s)					7.0	7.0						
Flash Dont Walk (s)					13.0	13.0						
Pedestrian Calls (#/hr)					0	0						
Act Effect Green (s)	22.0	40.0			11.5	11.5		202.5	202.5			
Actuated g/C Ratio	0.09	0.16			0.04	0.04		0.79	0.79			
v/c Ratio	0.51	0.39			0.28	0.78		0.04	0.03			
Control Delay (s/veh)	90.2	76.2			122.1	30.2		6.4	0.0			
Queue Delay	0.0	0.1			0.0	0.0		0.0	0.0			
Total Delay (s/veh)	90.2	76.3			122.1	30.2		6.4	0.0			
LOS	F	E			F	C		A	A			
Approach Delay (s/veh)		81.9			46.2			5.4				
Approach LOS		F			D			A				

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay (s/veh): 44.5  
 Intersection LOS: D  
 Intersection Capacity Utilization 39.6%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 3: WHARTON WEEMS & NB FRONTAGE



Background AM 11:49 am 11/22/2023 Baseline

Synchro 12 Report

Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

11/22/2023

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	4	5	6	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	26%	36%	24%	26%	5%	5%
Maximum Green (s)	59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Min	None	C-Min	Min	None	None
Walk Time (s)	7.0		7.0	7.0		
Flash Dont Walk (s)	34.0		12.0	25.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
<b>Intersection Summary</b>						

Phasings

3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	1	2 1	2		4 12		4	5	6	8	12	16
Permitted Phases				2		4 12						
Minimum Initial (s)	5.0		10.0	10.0			8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	22.5		33.5	33.5			55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	91.5		61.5	61.5			66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	35.7%		24.0%	24.0%			26%	36%	24%	26%	5%	5%
Maximum Green (s)	85.0		55.0	55.0			59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0		2.0	2.0			2.5	2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lag		Lead	Lead			Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None		Min	Min			Min	None	C-Min	Min	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0		
Flash Dont Walk (s)			13.0	13.0			34.0		12.0	25.0		
Pedestrian Calls (#/hr)			0	0			0		0	0		
90th %ile Green (s)	31.1		17.4	17.4			9.6	20.8	179.2	22.8	170.9	6.2
90th %ile Term Code	Hold		Gap	Gap			Gap	Hold	Coord	Gap	Coord	Gap
70th %ile Green (s)	24.3		10.0	10.0			8.0	13.0	192.1	18.9	186.7	5.0
70th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap
50th %ile Green (s)	20.8		10.0	10.0			8.0	13.0	194.2	16.8	190.2	5.0
50th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap
30th %ile Green (s)	18.7		10.0	10.0			8.0	13.1	196.3	14.7	192.3	4.9
30th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap
10th %ile Green (s)	15.2		10.0	10.0			8.0	13.2	199.9	11.1	195.8	4.8
10th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

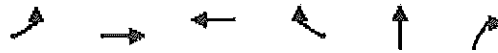
Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Queues

3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	78	114	45	213	164	32
v/c Ratio	0.51	0.39	0.28	0.78	0.04	0.03
Control Delay (s/veh)	90.2	76.2	122.1	30.2	6.4	0.0
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay (s/veh)	90.2	76.3	122.1	30.2	6.4	0.0
Queue Length 50th (ft)	87	121	40	0	19	0
Queue Length 95th (ft)	133	172	66	107	36	0
Internal Link Dist (ft)		178	194		120	
Turn Bay Length (ft)						
Base Capacity (vph)	750	789	760	507	3970	1273
Starvation Cap Reductn	49	139	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.18	0.06	0.42	0.04	0.03

Intersection Summary

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑					↖	↑↑	↗
Traffic Volume (vph)	0	132	14	31	55	0	0	0	0	90	57	120
Future Volume (vph)	0	132	14	31	55	0	0	0	0	90	57	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104									130
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		400			258			161			232	
Travel Time (s)		7.8			3.9			2.7			4.0	
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
Adj. Flow (vph)	0	143	15	34	60	0	0	0	0	98	62	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	143	15	34	60	0	0	0	0	98	62	130
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	R NA
Median Width(ft)		14			24			12			12	
Link Offset(ft)		0			0			5			0	
Crosswalk Width(ft)		12			36			16			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1	2	2					3	3	3
Detector Template		TXLT	Right							TX40	TX40	TX40
Leading Detector (ft)		0	20	156	156					240	240	240
Trailing Detector (ft)		0	0	5	5					-5	-5	-5
Detector 1 Position(ft)		-5	0	5	5					-5	-5	-5
Detector 1 Size(ft)		20	20	6	6					20	20	20
Detector 1 Type		Call	CI+Ex	CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		21		150	150					104	104	104
Detector 2 Size(ft)		20		6	6					6	6	6
Detector 2 Type		Call		CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 3 Position(ft)										234	234	234
Detector 3 Size(ft)										6	6	6
Detector 3 Type										CI+Ex	CI+Ex	CI+Ex
Detector 3 Channel												
Detector 3 Extend (s)										0.0	0.0	0.0
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

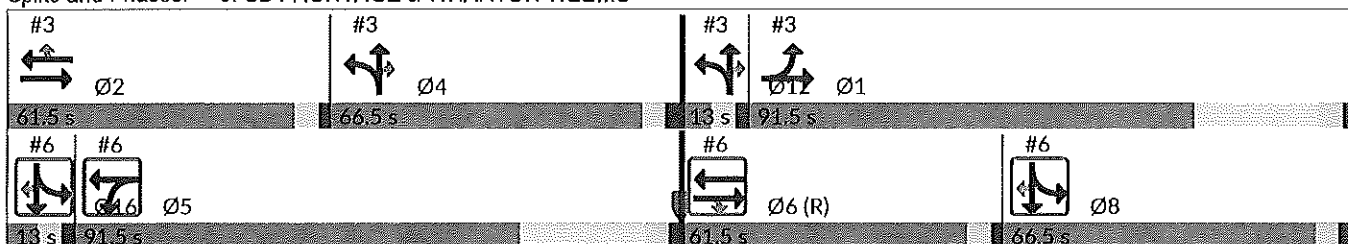


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	6 5					16 8	16 8	
Permitted Phases			6									16 8
Detector Phase		6	6	5	6 5					16 8	16 8	16 8
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0								
Minimum Split (s)		32.5	32.5	11.5								
Total Split (s)		61.5	61.5	91.5								
Total Split (%)		24.0%	24.0%	35.7%								
Maximum Green (s)		55.0	55.0	85.0								
Yellow Time (s)		4.5	4.5	4.5								
All-Red Time (s)		2.0	2.0	2.0								
Lost Time Adjust (s)		0.0	0.0	0.0								
Total Lost Time (s)		6.5	6.5	6.5								
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		2.0	2.0	2.0								
Recall Mode		C-Min	C-Min	None								
Walk Time (s)		7.0	7.0									
Flash Dont Walk (s)		12.0	12.0									
Pedestrian Calls (#/hr)		0	0									
Act Effct Green (s)		192.3	192.3	14.6	213.5					29.0	29.0	29.0
Actuated g/c Ratio		0.75	0.75	0.06	0.83					0.11	0.11	0.11
v/c Ratio		0.10	0.01	0.34	0.04					0.49	0.15	0.44
Control Delay (s/veh)		9.4	0.0	71.8	4.6					114.1	101.9	16.5
Queue Delay		0.0	0.0	0.0	1.6					0.0	0.0	0.0
Total Delay (s/veh)		9.4	0.0	71.8	6.1					114.1	101.9	16.5
LOS		A	A	E	A					F	F	B
Approach Delay (s/veh)		8.5			29.9						67.7	
Approach LOS		A			C						E	

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay (s/veh): 43.9  
 Intersection Capacity Utilization 39.6%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service A

Splits and Phases: 6: SB FRONTAGE & WHARTON WEEMS



Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Protected Phases	1	2	4	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	5.0	10.0	8.0	8.0	2.0	2.0
Minimum Split (s)	22.5	33.5	55.0	46.0	9.0	9.0
Total Split (s)	91.5	61.5	66.5	66.5	13.0	13.0
Total Split (%)	36%	24%	26%	26%	5%	5%
Maximum Green (s)	85.0	55.0	59.5	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0		
Flash Dont Walk (s)		13.0	34.0	25.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
<b>Intersection Summary</b>						

Phasings

6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	Ø1	Ø2	Ø4	Ø8	Ø12
Protected Phases	6		5	6 5	16 8	16 8		1	2	4	8	12
Permitted Phases		6					16 8					
Minimum Initial (s)	10.0	10.0	5.0					5.0	10.0	8.0	8.0	2.0
Minimum Split (s)	32.5	32.5	11.5					22.5	33.5	55.0	46.0	9.0
Total Split (s)	61.5	61.5	91.5					91.5	61.5	66.5	66.5	13.0
Total Split (%)	24.0%	24.0%	35.7%					36%	24%	26%	26%	5%
Maximum Green (s)	55.0	55.0	85.0					85.0	55.0	59.5	59.5	6.0
Yellow Time (s)	4.5	4.5	4.5					4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lead	Lead	Lag					Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Min	C-Min	None					None	Min	Min	Min	None
Walk Time (s)	7.0	7.0							7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0							13.0	34.0	25.0	
Pedestrian Calls (#/hr)	0	0							0	0	0	
90th %ile Green (s)	179.2	179.2	20.8					31.1	17.4	9.6	22.8	170.9
90th %ile Term Code	Coord	Coord	Hold					Hold	Gap	Gap	Gap	Coord
70th %ile Green (s)	192.1	192.1	13.0					24.3	10.0	8.0	18.9	186.7
70th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord
50th %ile Green (s)	194.2	194.2	13.0					20.8	10.0	8.0	16.8	190.2
50th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord
30th %ile Green (s)	196.3	196.3	13.1					18.7	10.0	8.0	14.7	192.3
30th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord
10th %ile Green (s)	199.9	199.9	13.2					15.2	10.0	8.0	11.1	195.8
10th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Lane Group	Ø16
Protected Phases	16
Permitted Phases	
Minimum Initial (s)	2.0
Minimum Split (s)	9.0
Total Split (s)	13.0
Total Split (%)	5%
Maximum Green (s)	6.0
Yellow Time (s)	4.5
All-Red Time (s)	2.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
90th %ile Green (s)	6.2
90th %ile Term Code	Gap
70th %ile Green (s)	5.0
70th %ile Term Code	Gap
50th %ile Green (s)	5.0
50th %ile Term Code	Gap
30th %ile Green (s)	4.9
30th %ile Term Code	Gap
10th %ile Green (s)	4.8
10th %ile Term Code	Gap
<b>Intersection Summary</b>	

Queues

6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	143	15	34	60	98	62	130
v/c Ratio	0.10	0.01	0.34	0.04	0.49	0.15	0.44
Control Delay (s/veh)	9.4	0.0	71.8	4.6	114.1	101.9	16.5
Queue Delay	0.0	0.0	0.0	1.6	0.0	0.0	0.0
Total Delay (s/veh)	9.4	0.0	71.8	6.1	114.1	101.9	16.5
Queue Length 50th (ft)	60	0	54	51	159	51	0
Queue Length 95th (ft)	107	0	96	82	231	80	78
Internal Link Dist (ft)	320			178		152	
Turn Bay Length (ft)							
Base Capacity (vph)	1399	1215	750	1553	411	822	467
Starvation Cap Reductn	0	0	0	1378	0	0	0
Spillback Cap Reductn	0	0	0	0	1	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.01	0.05	0.34	0.24	0.08	0.28

Intersection Summary

Lanes, Volumes, Timings  
 9: Fairmont Greens & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Traffic Volume (vph)	105	14	5	220	34	13
Future Volume (vph)	105	14	5	220	34	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.984			0.963		
Frt Protected				0.999	0.965	
Satd. Flow (prot)	1833	0	0	1861	1731	0
Frt Permitted				0.999	0.965	
Satd. Flow (perm)	1833	0	0	1861	1731	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	351			741	214	
Travel Time (s)	13.8			16.8	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	114	15	5	239	37	14
Shared Lane Traffic (%)						
Lane Group Flow (vph)	129	0	0	244	51	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	25.6%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

Int Delay, s/veh 1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	↕
Traffic Vol, veh/h	105	14	5	220	34	13
Future Vol, veh/h	105	14	5	220	34	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	114	15	5	239	37	14

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	129	0	372
Stage 1	-	-	-	-	122
Stage 2	-	-	-	-	250
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1456	-	629
Stage 1	-	-	-	-	904
Stage 2	-	-	-	-	792
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1456	-	626
Mov Cap-2 Maneuver	-	-	-	-	626
Stage 1	-	-	-	-	904
Stage 2	-	-	-	-	788

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.17	10.65
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	688	-	-	40	-
HCM Lane V/C Ratio	0.074	-	-	0.004	-
HCM Control Delay (s/veh)	10.6	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Lanes, Volumes, Timings

10: NB FRONTAGE/WHARTON WEEMS & NB UTURN

11/22/2023



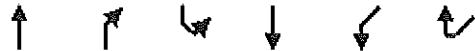
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations	↵	↑↑↑↑				
Traffic Volume (vph)	53	180	0	0	0	0
Future Volume (vph)	53	180	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1770	6408	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	6408	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		216	200		107	
Travel Time (s)		5.9	4.8		2.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	196	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	196	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.3%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
17: SB FRONTAGE & NB UTURN

11/22/2023



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑↑↑	↘	
Traffic Volume (vph)	0	0	0	1240	53	0
Future Volume (vph)	0	0	0	1240	53	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
Frt						
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	5085	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	5085	1770	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	359			161	88	
Travel Time (s)	11.1			3.5	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	1348	58	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	1348	58	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	41.3%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
19: WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕	↕	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Flt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1863	0	0	1863	1863	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1863	0	0	1863	1863	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	741			1642	162	
Travel Time (s)	16.8			13.1	3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	↑
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	1	0	2
Stage 1	-	-	-	-	1
Stage 2	-	-	-	-	1
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1622	-	1020
Stage 1	-	-	-	-	1022
Stage 2	-	-	-	-	1022
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	-	1020
Mov Cap-2 Maneuver	-	-	-	-	1020
Stage 1	-	-	-	-	1022
Stage 2	-	-	-	-	1022

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings  
 20: SB FRONTAGE & SB UTURN

11/22/2023



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations			↵	↑↑↑		
Traffic Volume (vph)	0	0	37	267	0	0
Future Volume (vph)	0	0	37	267	0	0
Ideal Flow (vphp)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
<b>Frt</b>						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	5085	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	5085	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	232			276	158	
Travel Time (s)	8.3			11.2	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	40	290	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	40	290	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			12	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	8.5%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
 23: SB UTURN & NB FRONTAGE

11/22/2023



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑			↵	
Traffic Volume (vph)	0	379	0	0	37	0
Future Volume (vph)	0	379	0	0	37	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	1.00	1.00
<b>Fr</b>						
Flt Protected					0.950	
Satd. Flow (prot)	0	5085	0	0	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	5085	0	0	1770	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		186	297		119	
Travel Time (s)		4.0	6.8		3.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	412	0	0	40	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	412	0	0	40	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Yield	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 17.3% ICU Level of Service A  
 Analysis Period (min) 15

Lanes, Volumes, Timings  
 24: WHARTON WEEMS

11/22/2023



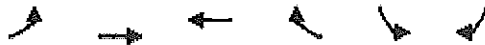
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Frt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	1863	1863	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	1863	1863	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		265	351		135	
Travel Time (s)		6.0	7.8		3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 6.7% ICU Level of Service A  
 Analysis Period (min) 15

Lanes, Volumes, Timings  
26: WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Frt</b>						
Flt Protected						
Satd. Flow (prot)	0	1863	1863	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1863	1863	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		274	136		169	
Travel Time (s)		5.8	2.9		3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	36		0	
Link Offset(ft)		0	6		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
28: NB FRONTAGE

11/22/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	1.00
<b>Frt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	0	5085	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	0	5085	0	0	0
Link Speed (mph)	30		40			40
Link Distance (ft)	152		257			216
Travel Time (s)	3.5		6.3			5.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Right	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		12			0
Crosswalk Width(ft)	16		16			16
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 15.8% ICU Level of Service A  
 Analysis Period (min) 15

Lanes, Volumes, Timings  
30: NB FRONTAGE

11/22/2023



Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Flt Protected						
Satd. Flow (prot)	1863	3539	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	1863	3539	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		489	481		247	
Travel Time (s)		11.1	10.9		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	65			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	17.3%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
32: WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
<b>Frt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	1863	3539	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	1863	3539	0	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		871	400		132	
Travel Time (s)		24.6	4.7		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
34: SB FRONTAGE

11/22/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					↑↑↑	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00
<b>FrI</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	0	0	0	5085	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	0	0	0	5085	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	118			276	232	
Travel Time (s)	2.7			6.3	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	8.5%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
 1: S Broadway & WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	41	245	108	146	254	50
Future Volume (vph)	41	245	108	146	254	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	200			0
Storage Lanes	0	0	1			0
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Fr't	0.885				0.978	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1637	0	1770	1863	1822	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1637	0	1770	1863	1822	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	1642			796	680	
Travel Time (s)	24.9			18.1	15.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	45	266	117	159	276	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	311	0	117	159	330	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	49.8%
	ICU Level of Service A
Analysis Period (min)	15

HCM 7th TWSC  
 1: S Broadway & WHARTON WEEMS

11/22/2023

**Intersection**

Int Delay, s/veh 6.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	Y		Y	↑	↑	
Traffic Vol, veh/h	41	245	108	146	254	50
Future Vol, veh/h	41	245	108	146	254	50
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	266	117	159	276	54

**Major/Minor**

	Minor2	Major1	Major2			
Conflicting Flow All	697	303	330	0	-	0
Stage 1	303	-	-	-	-	-
Stage 2	393	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	407	736	1229	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	682	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	368	736	1229	-	-	-
Mov Cap-2 Maneuver	368	-	-	-	-	-
Stage 1	677	-	-	-	-	-
Stage 2	682	-	-	-	-	-

**Approach**

	EB	NB	SB
HCM Control Delay, s/v	15.69	3.5	0
HCM LOS	C		

**Minor Lane/Major Mvmt**

	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1229	-	644	-	-
HCM Lane V/C Ratio	0.096	-	0.483	-	-
HCM Control Delay (s/veh)	8.2	-	15.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.3	-	2.6	-	-

Lanes, Volumes, Timings  
3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑			↑↑	↗		↔↔↔	↗			
Traffic Volume (vph)	92	268	0	0	44	122	18	54	32	0	0	0
Future Volume (vph)	92	268	0	0	44	122	18	54	32	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.988				
Satd. Flow (prot)	1770	1863	0	0	3539	1583	0	5024	1583	0	0	0
Flt Permitted	0.950							0.988				
Satd. Flow (perm)	1770	1863	0	0	3539	1583	0	5024	1583	0	0	0
Right Turn on Red			Yes			Yes		Yes				Yes
Satd. Flow (RTOR)						133			102			
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		258			274			200			186	
Travel Time (s)		3.9			4.2			3.4			3.2	
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
Adj. Flow (vph)	100	291	0	0	48	133	20	59	35	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	291	0	0	48	133	0	79	35	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		28			20			36			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2			2	2	1	3	3			
Detector Template					TXLT	TXLT	Left	TX40	TX40			
Leading Detector (ft)	156	156			0	0	20	240	240			
Trailing Detector (ft)	5	5			0	0	0	-5	-5			
Detector 1 Position(ft)	5	5			-5	-5	0	-5	-5			
Detector 1 Size(ft)	6	6			20	20	20	20	20			
Detector 1 Type	CI+Ex	CI+Ex			Call	Call	CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	150	150			21	21		104	104			
Detector 2 Size(ft)	6	6			20	20		6	6			
Detector 2 Type	CI+Ex	CI+Ex			Call	Call		CI+Ex	CI+Ex			
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 3 Position(ft)								234	234			
Detector 3 Size(ft)								6	6			
Detector 3 Type								CI+Ex	CI+Ex			
Detector 3 Channel												
Detector 3 Extend (s)								0.0	0.0			
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
3: WHARTON WEEMS & NB FRONTAGE

11/22/2023

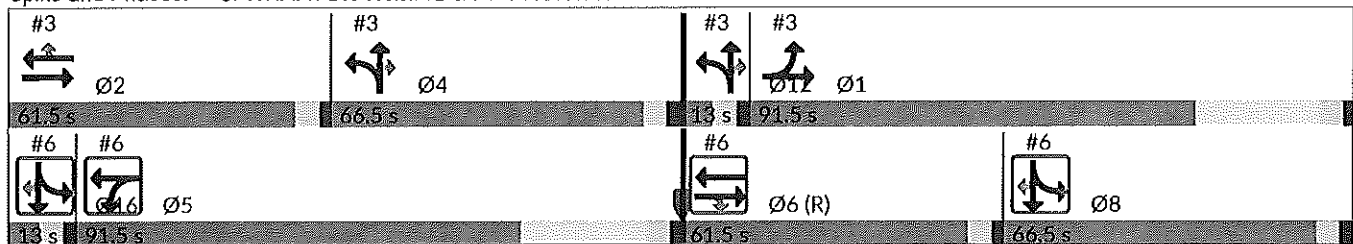


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	2 1			2		4 12	4 12				
Permitted Phases						2			4 12			
Detector Phase	1	2 1			2	2	4 12	4 12	4 12			
Switch Phase												
Minimum Initial (s)	5.0				10.0	10.0						
Minimum Split (s)	22.5				33.5	33.5						
Total Split (s)	91.5				61.5	61.5						
Total Split (%)	35.7%				24.0%	24.0%						
Maximum Green (s)	85.0				55.0	55.0						
Yellow Time (s)	4.5				4.5	4.5						
All-Red Time (s)	2.0				2.0	2.0						
Lost Time Adjust (s)	0.0				0.0	0.0						
Total Lost Time (s)	6.5				6.5	6.5						
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	2.0				2.0	2.0						
Recall Mode	None				Min	Min						
Walk Time (s)					7.0	7.0						
Flash Dont Walk (s)					13.0	13.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	41.1	58.6			11.0	11.0		183.9	183.9			
Actuated g/C Ratio	0.16	0.23			0.04	0.04		0.72	0.72			
v/c Ratio	0.35	0.68			0.32	0.68		0.02	0.03			
Control Delay (s/veh)	57.3	51.0			123.9	31.7		11.3	0.1			
Queue Delay	0.1	0.2			0.0	0.0		0.0	0.0			
Total Delay (s/veh)	57.4	51.2			123.9	31.7		11.3	0.1			
LOS	E	D			F	C		B	A			
Approach Delay (s/veh)		52.7			56.1			7.9				
Approach LOS		D			E			A				

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay (s/veh): 46.2  
 Intersection LOS: D  
 Intersection Capacity Utilization 51.7%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 3: WHARTON WEEMS & NB FRONTAGE



Lanes, Volumes, Timings  
 3: WHARTON WEEMS & NB FRONTAGE

11/22/2023

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	4	5	6	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	26%	36%	24%	26%	5%	5%
Maximum Green (s)	59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Min	None	C-Min	Min	None	None
Walk Time (s)	7.0		7.0	7.0		
Flash Dont Walk (s)	34.0		12.0	25.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
<b>Intersection Summary</b>						

Phasings

3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	1	2 1	2		4 12		4	5	6	8	12	16
Permitted Phases				2		4 12						
Minimum Initial (s)	5.0		10.0	10.0			8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	22.5		33.5	33.5			55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	91.5		61.5	61.5			66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	35.7%		24.0%	24.0%			26%	36%	24%	26%	5%	5%
Maximum Green (s)	85.0		55.0	55.0			59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0		2.0	2.0			2.5	2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lag		Lead	Lead			Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None		Min	Min			Min	None	C-Min	Min	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0		
Flash Dont Walk (s)			13.0	13.0			34.0		12.0	25.0		
Pedestrian Calls (#/hr)			0	0			0		0	0		
90th %ile Green (s)	49.9		15.0	15.0			8.0	15.9	164.1	41.9	156.1	7.1
90th %ile Term Code	Hold		Gap	Gap			Min	Hold	Coord	Gap	Coord	Gap
70th %ile Green (s)	45.1		10.0	10.0			8.0	11.2	171.6	39.4	165.9	6.8
70th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap
50th %ile Green (s)	41.5		10.0	10.0			8.0	12.3	173.5	37.5	169.5	5.7
50th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap
30th %ile Green (s)	37.5		10.0	10.0			8.0	12.5	177.7	33.3	173.5	5.5
30th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap
10th %ile Green (s)	31.6		10.0	10.0			8.0	0.0	184.3	26.7	179.4	24.5
10th %ile Term Code	Gap		Min	Min			Min	Skip	Coord	Hold	Coord	Hold

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

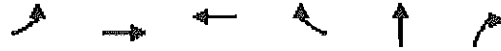
Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Queues

3: WHARTON WEEMS & NB FRONTAGE

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	100	291	48	133	79	35
w/c Ratio	0.35	0.68	0.32	0.68	0.02	0.03
Control Delay (s/veh)	57.3	51.0	123.9	31.7	11.3	0.1
Queue Delay	0.1	0.2	0.0	0.0	0.0	0.0
Total Delay (s/veh)	57.4	51.2	123.9	31.7	11.3	0.1
Queue Length 50th (ft)	70	217	42	0	13	0
Queue Length 95th (ft)	119	222	72	88	24	0
Internal Link Dist (ft)		178	194		120	
Turn Bay Length (ft)						
Base Capacity (vph)	750	793	760	444	3608	1165
Starvation Cap Reductn	150	106	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced w/c Ratio	0.17	0.42	0.06	0.30	0.02	0.03

Intersection Summary

Lanes, Volumes, Timings  
6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↘	↑					↖	↑↑	↗
Traffic Volume (vph)	0	90	32	26	31	0	0	0	0	223	66	61
Future Volume (vph)	0	90	32	26	31	0	0	0	0	223	66	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Flt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104									102
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		400			258			161			232	
Travel Time (s)		7.8			3.9			2.7			4.0	
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
Adj. Flow (vph)	0	98	35	28	34	0	0	0	0	242	72	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	98	35	28	34	0	0	0	0	242	72	66
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	R NA
Median Width(ft)		14			24			12			12	
Link Offset(ft)		0			0			5			0	
Crosswalk Width(ft)		12			36			16			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors			1	2	2					3	3	3
Detector Template		TXLT	Right							TX40	TX40	TX40
Leading Detector (ft)		0	20	156	156					240	240	240
Trailing Detector (ft)		0	0	5	5					-5	-5	-5
Detector 1 Position(ft)		-5	0	5	5					-5	-5	-5
Detector 1 Size(ft)		20	20	6	6					20	20	20
Detector 1 Type		Call	CI+Ex	CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		21		150	150					104	104	104
Detector 2 Size(ft)		20		6	6					6	6	6
Detector 2 Type		Call		CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 3 Position(ft)										234	234	234
Detector 3 Size(ft)										6	6	6
Detector 3 Type										CI+Ex	CI+Ex	CI+Ex
Detector 3 Channel												
Detector 3 Extend (s)										0.0	0.0	0.0
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

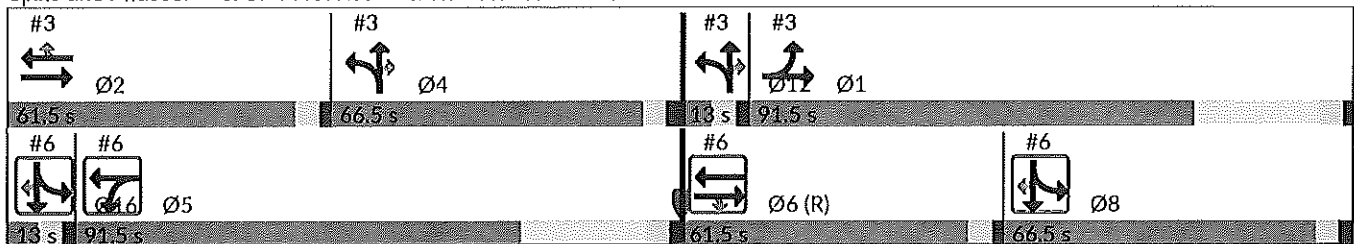


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	6.5					16.8	16.8	
Permitted Phases			6									16.8
Detector Phase		6	6	5	6.5					16.8	16.8	16.8
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0								
Minimum Split (s)		32.5	32.5	11.5								
Total Split (s)		61.5	61.5	91.5								
Total Split (%)		24.0%	24.0%	35.7%								
Maximum Green (s)		55.0	55.0	85.0								
Yellow Time (s)		4.5	4.5	4.5								
All-Red Time (s)		2.0	2.0	2.0								
Lost Time Adjust (s)		0.0	0.0	0.0								
Total Lost Time (s)		6.5	6.5	6.5								
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		2.0	2.0	2.0								
Recall Mode		C-Min	C-Min	None								
Walk Time (s)		7.0	7.0									
Flash Dont Walk (s)		12.0	12.0									
Pedestrian Calls (#/hr)		0	0									
Act Effct Green (s)		174.2	174.2	11.4	190.8					52.7	52.7	52.7
Actuated g/C Ratio		0.68	0.68	0.04	0.75					0.21	0.21	0.21
v/c Ratio		0.08	0.03	0.36	0.02					0.66	0.10	0.16
Control Delay (s/veh)		14.9	0.1	51.2	6.8					103.5	82.9	1.6
Queue Delay		0.0	0.0	0.0	0.0					0.3	0.0	0.0
Total Delay (s/veh)		14.9	0.1	51.2	6.8					103.8	82.9	1.6
LOS		B	A	D	A					F	F	A
Approach Delay (s/veh)		11.0			26.9						82.1	
Approach LOS		B			C						F	

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.68  
 Intersection Signal Delay (s/veh): 59.7  
 Intersection LOS: E  
 Intersection Capacity Utilization 51.7%  
 ICU Level of Service A  
 Analysis Period (min) 15

Splits and Phases: 6: SB FRONTAGE & WHARTON WEEMS



Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Protected Phases	1	2	4	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	5.0	10.0	8.0	8.0	2.0	2.0
Minimum Split (s)	22.5	33.5	55.0	46.0	9.0	9.0
Total Split (s)	91.5	61.5	66.5	66.5	13.0	13.0
Total Split (%)	36%	24%	26%	26%	5%	5%
Maximum Green (s)	85.0	55.0	59.5	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0		
Flash Dont Walk (s)		13.0	34.0	25.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effect Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
<b>Intersection Summary</b>						

Phasings

6: SB FRONTAGE & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	Ø1	Ø2	Ø4	Ø8	Ø12
Protected Phases	6		5	6 5	16 8	16 8		1	2	4	8	12
Permitted Phases		6					16 8					
Minimum Initial (s)	10.0	10.0	5.0					5.0	10.0	8.0	8.0	2.0
Minimum Split (s)	32.5	32.5	11.5					22.5	33.5	55.0	46.0	9.0
Total Split (s)	61.5	61.5	91.5					91.5	61.5	66.5	66.5	13.0
Total Split (%)	24.0%	24.0%	35.7%					36%	24%	26%	26%	5%
Maximum Green (s)	55.0	55.0	85.0					85.0	55.0	59.5	59.5	6.0
Yellow Time (s)	4.5	4.5	4.5					4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lead	Lead	Lag					Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Min	C-Min	None					None	Min	Min	Min	None
Walk Time (s)	7.0	7.0							7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0							13.0	34.0	25.0	
Pedestrian Calls (#/hr)	0	0							0	0	0	
90th %ile Green (s)	164.1	164.1	15.9					49.9	15.0	8.0	41.9	156.1
90th %ile Term Code	Coord	Coord	Hold					Hold	Gap	Min	Gap	Coord
70th %ile Green (s)	171.6	171.6	11.2					45.1	10.0	8.0	39.4	165.9
70th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord
50th %ile Green (s)	173.5	173.5	12.3					41.5	10.0	8.0	37.5	169.5
50th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord
30th %ile Green (s)	177.7	177.7	12.5					37.5	10.0	8.0	33.3	173.5
30th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord
10th %ile Green (s)	184.3	184.3	0.0					31.6	10.0	8.0	26.7	179.4
10th %ile Term Code	Coord	Coord	Skip					Gap	Min	Min	Hold	Coord

**Intersection Summary**

Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Control Type: Actuated-Coordinated

Lane Group	Ø16
Protected Phases	16
Permitted Phases	
Minimum Initial (s)	2.0
Minimum Split (s)	9.0
Total Split (s)	13.0
Total Split (%)	5%
Maximum Green (s)	6.0
Yellow Time (s)	4.5
All-Red Time (s)	2.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
90th %ile Green (s)	7.1
90th %ile Term Code	Gap
70th %ile Green (s)	6.8
70th %ile Term Code	Gap
50th %ile Green (s)	5.7
50th %ile Term Code	Gap
30th %ile Green (s)	5.5
30th %ile Term Code	Gap
10th %ile Green (s)	24.5
10th %ile Term Code	Hold
<b>Intersection Summary</b>	

Queues

6: SB FRONTAGE & WHARTON WEEMS

11/22/2023

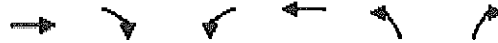


Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	98	35	28	34	242	72	66
v/c Ratio	0.08	0.03	0.36	0.02	0.66	0.10	0.16
Control Delay (s/veh)	14.9	0.1	51.2	6.8	103.5	82.9	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.3	0.0	0.0
Total Delay (s/veh)	14.9	0.1	51.2	6.8	103.8	82.9	1.6
Queue Length 50th (ft)	55	0	45	43	389	53	0
Queue Length 95th (ft)	92	0	87	78	495	82	3
Internal Link Dist (ft)	320			178		152	
Turn Bay Length (ft)							
Base Capacity (vph)	1268	1110	750	1409	411	822	446
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	93	0	0	0	16	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.08	0.03	0.04	0.02	0.61	0.09	0.15

Intersection Summary

Lanes, Volumes, Timings  
 9: Fairmont Greens & WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↕			↕		↕
Traffic Volume (vph)	282	30	7	145	13	8
Future Volume (vph)	282	30	7	145	13	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.987			0.947		
Flt Protected				0.998	0.970	
Satd. Flow (prot)	1839	0	0	1859	1711	0
Flt Permitted				0.998	0.970	
Satd. Flow (perm)	1839	0	0	1859	1711	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	351			741	214	
Travel Time (s)	13.8			16.8	8.2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	307	33	8	158	14	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	340	0	0	166	23	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	9		15	15		9
Sign Control	Free			Free	Stop	

**Intersection Summary**  
 Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 26.7% ICU Level of Service A  
 Analysis Period (min) 15

**Intersection**

Int Delay, s/veh 0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Traffic Vol, veh/h	282	30	7	145	13	8
Future Vol, veh/h	282	30	7	145	13	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	307	33	8	158	14	9

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	339	0	496 323
Stage 1	-	-	-	-	323 -
Stage 2	-	-	-	-	173 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1220	-	533 718
Stage 1	-	-	-	-	734 -
Stage 2	-	-	-	-	857 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1220	-	530 718
Mov Cap-2 Maneuver	-	-	-	-	530 -
Stage 1	-	-	-	-	734 -
Stage 2	-	-	-	-	851 -

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0.37	11.36
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	589	-	-	83	-
HCM Lane V/C Ratio	0.039	-	-	0.006	-
HCM Control Delay (s/veh)	11.4	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %ile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings  
 10: NB FRONTAGE/WHARTON WEEMS & NB UTURN

11/22/2023



Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations	↙	↑↑↑↑				
Traffic Volume (vph)	30	104	0	0	0	0
Future Volume (vph)	30	104	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1770	6408	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	6408	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		216	200		107	
Travel Time (s)		5.9	4.8		2.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	113	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	113	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0% ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 17: SB FRONTAGE & NB UTURN

11/22/2023



Lane Group	NBT	NBR	SBL	SBT	SWL	SWR
Lane Configurations				↑↑↑	↘	
Traffic Volume (vph)	0	0	0	124	30	0
Future Volume (vph)	0	0	0	124	30	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
Flt Protected					0.950	
Satd. Flow (prot)	0	0	0	5085	1770	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	0	0	5085	1770	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	359			161	88	
Travel Time (s)	11.1			3.5	2.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	135	33	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	135	33	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Yield	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0% ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
19: WHARTON WEEMS

11/22/2023



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Fr</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	1863	0	0	1863	1863	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	1863	0	0	1863	1863	0
Link Speed (mph)	45			45	30	
Link Distance (ft)	741			1642	162	
Travel Time (s)	16.8			13.1	3.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Stop	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
Analysis Period (min)	15
	ICU Level of Service A

**Intersection**

Int Delay, s/veh 0

**Movement** EBT EBR WBL WBT NBL NBR

Lane Configurations	↑			↑	↑	
Traffic Vol, veh/h	0	0	0	0	0	0
Future Vol, veh/h	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	0	0	0

**Major/Minor** Major1 Major2 Minor1

Conflicting Flow All	0	0	1	0	2	1
Stage 1	-	-	-	-	1	-
Stage 2	-	-	-	-	1	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1622	-	1020	1083
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1622	-	1020	1083
Mov Cap-2 Maneuver	-	-	-	-	1020	-
Stage 1	-	-	-	-	1022	-
Stage 2	-	-	-	-	1022	-

**Approach** EB WB NB

HCM Control Delay, s/v 0 0 0

HCM LOS A

**Minor Lane/Major Mvmt** NBLn1 EBT EBR WBL WBT

Capacity (veh/h)	-	-	-	1622	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Lanes, Volumes, Timings  
 20: SB FRONTAGE & SB UTURN

11/22/2023



Lane Group	NBT	NBR	SBL	SBT	NWL	NWR
Lane Configurations			↙	↑↑↑		
Traffic Volume (vph)	0	0	183	360	0	0
Future Volume (vph)	0	0	183	360	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.91	1.00	1.00
<b>Frt</b>						
Flt Protected			0.950			
Satd. Flow (prot)	0	0	1770	5085	0	0
Flt Permitted			0.950			
Satd. Flow (perm)	0	0	1770	5085	0	0
Link Speed (mph)	40			40	30	
Link Distance (ft)	232			276	158	
Travel Time (s)	8.3			11.2	6.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	199	391	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	199	391	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			12	0	
Crosswalk Width(ft)	16			16	16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)		9	15		15	9
Sign Control	Free			Free	Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	13.5%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
 23: SB UTURN & NB FRONTAGE

11/22/2023



Lane Group	NBL	NBT	SBT	SBR	NEL	NER
Lane Configurations		↑↑↑			↵	
Traffic Volume (vph)	0	268	0	0	183	0
Future Volume (vph)	0	268	0	0	183	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.91	1.00	1.00	1.00	1.00
Frt						
Frt Protected					0.950	
Satd. Flow (prot)	0	5085	0	0	1770	0
Frt Permitted					0.950	
Satd. Flow (perm)	0	5085	0	0	1770	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		186	297		119	
Travel Time (s)		4.0	6.8		3.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	291	0	0	199	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	291	0	0	199	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Yield	

**Intersection Summary**

Area Type: Other  
 Control Type: Unsignalized  
 Intersection Capacity Utilization 22.0%      ICU Level of Service A  
 Analysis Period (min) 15

Lanes, Volumes, Timings  
24: WHARTON WEEMS

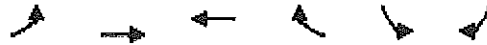
11/22/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	1863	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1863	1863	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		265	351		135	
Travel Time (s)		6.0	7.8		3.1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
Analysis Period (min)	15
	ICU Level of Service A



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
<b>Flt</b>						
<b>Flt Protected</b>						
Satd. Flow (prot)	0	1863	1863	0	0	0
<b>Flt Permitted</b>						
Satd. Flow (perm)	0	1863	1863	0	0	0
Link Speed (mph)		45	45		30	
Link Distance (ft)		274	136		169	
Travel Time (s)		5.8	2.9		3.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		24	36		0	
Link Offset(ft)		0	6		0	
Crosswalk Width(ft)		16	16		16	
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

<b>Intersection Summary</b>	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	6.7%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
28: NB FRONTAGE

11/22/2023












Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			↑↑↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.91	1.00	1.00	1.00
<b>Fr</b>						
<b>Fit Protected</b>						
Satd. Flow (prot)	0	0	5085	0	0	0
<b>Fit Permitted</b>						
Satd. Flow (perm)	0	0	5085	0	0	0
Link Speed (mph)	30		40			40
Link Distance (ft)	152		257			216
Travel Time (s)	3.5		6.3			5.5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
<b>Shared Lane Traffic (%)</b>						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	Yes	Yes	No	No
Lane Alignment	Left	Right	Right	Right	Left	Left
Median Width(ft)	0		12			12
Link Offset(ft)	0		12			0
Crosswalk Width(ft)	16		16			16
<b>Two way Left Turn Lane</b>						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Free		Free			Free

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	15.8%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
30: NB FRONTAGE

11/22/2023

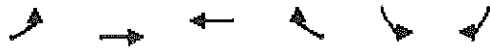
						
Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations		 				
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	1.00	1.00	1.00	1.00
Flt						
Flt Protected						
Satd. Flow (prot)	1863	3539	0	0	0	0
Flt Permitted						
Satd. Flow (perm)	1863	3539	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		489	481		247	
Travel Time (s)		11.1	10.9		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	65			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	22.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
32: WHARTON WEEMS

11/22/2023



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑↑			
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	1.00	1.00	1.00
Frt						
Flt Protected						
Satd. Flow (prot)	0	1863	3539	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1863	3539	0	0	0
Link Speed (mph)		35	35		30	
Link Distance (ft)		871	400		132	
Travel Time (s)		24.6	4.7		3.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	Yes	Yes	Yes	Yes	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

**Intersection Summary**

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	0.0%
ICU Level of Service	A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 34: SB FRONTAGE

11/22/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations					↑↑↑	
Traffic Volume (vph)	0	0	0	0	0	0
Future Volume (vph)	0	0	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.91	1.00
Fit						
Fit Protected						
Satd. Flow (prot)	0	0	0	0	5085	0
Fit Permitted						
Satd. Flow (perm)	0	0	0	0	5085	0
Link Speed (mph)	30			40	40	
Link Distance (ft)	118			276	232	
Travel Time (s)	2.7			6.3	5.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	0	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	0	0	0	0	0
Enter Blocked Intersection	No	No	No	No	Yes	Yes
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Free			Free	Free	

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization:	13.5%
	ICU Level of Service A
Analysis Period (min)	15

**APPENDIX D:**

Synchro Output, 2024 Build Conditions AM & PM

Lanes, Volumes, Timings  
 1: S Broadway & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	47	112	204	171	166	41
Future Volume (vph)	47	112	204	171	166	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	200			0
Storage Lanes	1	1	1			0
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.905				0.973	
Flt Protected	0.985		0.950			
Satd. Flow (prot)	1660	0	1770	1863	1812	0
Flt Permitted	0.985		0.950			
Satd. Flow (perm)	1660	0	1770	1863	1812	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	1634			685	675	
Travel Time (s)	24.8			15.6	15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	51	122	222	186	180	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	173	0	222	186	225	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	42.0%
	ICU Level of Service A
Analysis Period (min)	15

HCM 7th TWSC  
1: S Broadway & WHARTON WEEMS

11/28/2023

Intersection

Int Delay, s/veh 5.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
----------	-----	-----	-----	-----	-----	-----

Lane Configurations	↘		↙	↑	↗	
Traffic Vol, veh/h	47	112	204	171	166	41
Future Vol, veh/h	47	112	204	171	166	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	122	222	186	180	45

Major/Minor	Minor2	Major1	Major2
-------------	--------	--------	--------

Conflicting Flow All	832	203	225	0	-	0
Stage 1	203	-	-	-	-	-
Stage 2	629	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	339	838	1344	-	-	-
Stage 1	831	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	838	1344	-	-	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	694	-	-	-	-	-
Stage 2	531	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s/v15.03 4.47 0

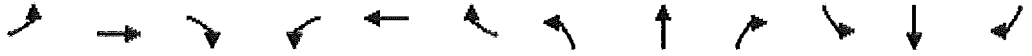
HCM LOS C

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
-----------------------	-----	-----	-------	-----	-----

Capacity (veh/h)	1344	-	531	-	-
HCM Lane V/C Ratio	0.165	-	0.326	-	-
HCM Control Delay (s/veh)	8.2	-	15	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.6	-	1.4	-	-

Lanes, Volumes, Timings  
 3: NB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	118	0	0	56	244	40	121	38	0	0	0
Future Volume (vph)	75	118	0	0	56	244	40	121	38	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frnt						0.850			0.850			
Flt Protected	0.950							0.988				
Satd. Flow (prot)	1770	1863	0	0	3539	1583	0	5024	1583	0	0	0
Flt Permitted	0.950							0.988				
Satd. Flow (perm)	1770	1863	0	0	3539	1583	0	5024	1583	0	0	0
Right Turn on Red			Yes			Yes		Yes				Yes
Satd. Flow (RTOR)						265			102			
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		258			274			200			186	
Travel Time (s)		3.9			4.2			3.4			3.2	
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
Adj. Flow (vph)	82	128	0	0	61	265	43	132	41	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	128	0	0	61	265	0	175	41	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		28			20			36			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2			2	2	1	3	3			
Detector Template					TXLT	TXLT	Left	TX40	TX40			
Leading Detector (ft)	156	156			0	0	20	240	240			
Trailing Detector (ft)	5	5			0	0	0	-5	-5			
Detector 1 Position(ft)	5	5			-5	-5	0	-5	-5			
Detector 1 Size(ft)	6	6			20	20	20	20	20			
Detector 1 Type	CI+Ex	CI+Ex			Call	Call	CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	150	150			21	21		104	104			
Detector 2 Size(ft)	6	6			20	20		6	6			
Detector 2 Type	CI+Ex	CI+Ex			Call	Call		CI+Ex	CI+Ex			
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 3 Position(ft)								234	234			
Detector 3 Size(ft)								6	6			
Detector 3 Type								CI+Ex	CI+Ex			
Detector 3 Channel												
Detector 3 Extend (s)								0.0	0.0			
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings

3: NB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	2 1			2		4 12	4 12				
Permitted Phases						2			4 12			
Detector Phase	1	2 1			2	2	4 12	4 12	4 12			
Switch Phase												
Minimum Initial (s)	5.0				10.0	10.0						
Minimum Split (s)	22.5				33.5	33.5						
Total Split (s)	91.5				61.5	61.5						
Total Split (%)	35.7%				24.0%	24.0%						
Maximum Green (s)	85.0				55.0	55.0						
Yellow Time (s)	4.5				4.5	4.5						
All-Red Time (s)	2.0				2.0	2.0						
Lost Time Adjust (s)	0.0				0.0	0.0						
Total Lost Time (s)	6.5				6.5	6.5						
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	2.0				2.0	2.0						
Recall Mode	None				Min	Min						
Walk Time (s)					7.0	7.0						
Flash Dont Walk (s)					13.0	13.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	24.8	43.5			12.2	12.2	199.0	199.0				
Actuated g/C Ratio	0.10	0.17			0.05	0.05	0.78	0.78				
v/c Ratio	0.48	0.41			0.36	0.81	0.04	0.03				
Control Delay (s/veh)	83.3	70.2			123.2	28.8	7.4	0.1				
Queue Delay	0.0	0.1			0.0	0.0	0.0	0.0				
Total Delay (s/veh)	83.3	70.2			123.2	28.8	7.4	0.1				
LOS	F	E			F	C	A	A				
Approach Delay (s/veh)		75.4			46.4		6.0					
Approach LOS		E			D		A					

Intersection Summary

Area Type: Other

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Natural Cycle: 170

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 42.9

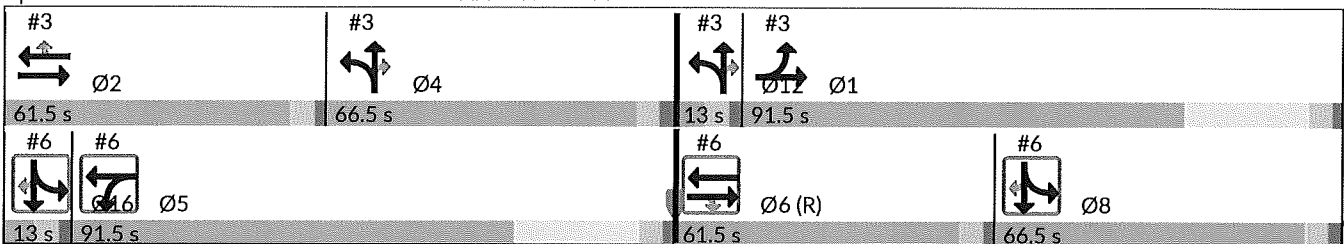
Intersection LOS: D

Intersection Capacity Utilization 42.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 3: NB FRONTAGE & WHARTON WEEMS



Site AM 8:09 am 11/20/2023 Baseline

Synchro 12 Report

Lanes, Volumes, Timings  
 3: NB FRONTAGE & WHARTON WEEMS

11/28/2023

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	4	5	6	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	26%	36%	24%	26%	5%	5%
Maximum Green (s)	59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Min	None	C-Min	Min	None	None
Walk Time (s)	7.0		7.0	7.0		
Flash Dont Walk (s)	34.0		12.0	25.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
Intersection Summary						

Phasings

3: NB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	1	2 1	2		4 12		4	5	6	8	12	16
Permitted Phases				2		4 12						
Minimum Initial (s)	5.0		10.0	10.0			8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	22.5		33.5	33.5			55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	91.5		61.5	61.5			66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	35.7%		24.0%	24.0%			26%	36%	24%	26%	5%	5%
Maximum Green (s)	85.0		55.0	55.0			59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0		2.0	2.0			2.5	2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lag		Lead	Lead			Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None		Min	Min			Min	None	C-Min	Min	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0		
Flash Dont Walk (s)			13.0	13.0			34.0		12.0	25.0		
Pedestrian Calls (#/hr)			0	0			0		0	0		
90th %ile Green (s)	34.7		20.5	20.5			10.3	24.5	172.5	25.7	163.5	6.3
90th %ile Term Code	Hold		Gap	Gap			Gap	Hold	Coord	Gap	Coord	Gap
70th %ile Green (s)	27.6		10.5	10.5			8.2	13.6	188.9	21.4	182.7	5.1
70th %ile Term Code	Hold		Gap	Gap			Gap	Hold	Coord	Gap	Coord	Gap
50th %ile Green (s)	23.6		10.0	10.0			8.0	12.9	191.8	19.2	187.4	5.1
50th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap
30th %ile Green (s)	20.9		10.0	10.0			8.0	13.0	194.1	16.9	190.1	5.0
30th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap
10th %ile Green (s)	17.2		10.0	10.0			8.0	13.2	197.8	13.2	193.8	4.8
10th %ile Term Code	Hold		Min	Min			Min	Hold	Coord	Gap	Coord	Gap

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

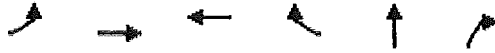
Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Queues

3: NB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	82	128	61	265	175	41
v/c Ratio	0.48	0.41	0.36	0.81	0.04	0.03
Control Delay (s/veh)	83.3	70.2	123.2	28.8	7.4	0.1
Queue Delay	0.0	0.1	0.0	0.0	0.0	0.0
Total Delay (s/veh)	83.3	70.2	123.2	28.8	7.4	0.1
Queue Length 50th (ft)	86	126	54	0	21	0
Queue Length 95th (ft)	131	176	84	115	42	0
Internal Link Dist (ft)		178	194		120	
Turn Bay Length (ft)						
Base Capacity (vph)	750	789	760	548	3905	1252
Starvation Cap Reductn	62	152	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.20	0.08	0.48	0.04	0.03

Intersection Summary

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HCM 7th Edition methodology does not support clustered intersections.

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑					↖	↑↑	↗
Traffic Volume (vph)	0	134	14	42	59	0	0	0	0	109	57	120
Future Volume (vph)	0	134	14	42	59	0	0	0	0	109	57	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frnt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104									130
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		400			258			161			232	
Travel Time (s)		7.8			3.9			2.7			4.0	
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
Adj. Flow (vph)	0	146	15	46	64	0	0	0	0	118	62	130
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	146	15	46	64	0	0	0	0	118	62	130
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	R NA
Median Width(ft)		14			24			12			12	
Link Offset(ft)		0			0			5			0	
Crosswalk Width(ft)		12			36			16			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1	2	2					3	3	3
Detector Template		TXLT	Right							TX40	TX40	TX40
Leading Detector (ft)		0	20	156	156					240	240	240
Trailing Detector (ft)		0	0	5	5					-5	-5	-5
Detector 1 Position(ft)		-5	0	5	5					-5	-5	-5
Detector 1 Size(ft)		20	20	6	6					20	20	20
Detector 1 Type		Call	CI+Ex	CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		21		150	150					104	104	104
Detector 2 Size(ft)		20		6	6					6	6	6
Detector 2 Type		Call		CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 3 Position(ft)										234	234	234
Detector 3 Size(ft)										6	6	6
Detector 3 Type										CI+Ex	CI+Ex	CI+Ex
Detector 3 Channel												
Detector 3 Extend (s)										0.0	0.0	0.0
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/28/2023

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings

6: SB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	6.5					16.8	16.8	
Permitted Phases			6									16.8
Detector Phase		6	6	5	6.5					16.8	16.8	16.8
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0								
Minimum Split (s)		32.5	32.5	11.5								
Total Split (s)		61.5	61.5	91.5								
Total Split (%)		24.0%	24.0%	35.7%								
Maximum Green (s)		55.0	55.0	85.0								
Yellow Time (s)		4.5	4.5	4.5								
All-Red Time (s)		2.0	2.0	2.0								
Lost Time Adjust (s)		0.0	0.0	0.0								
Total Lost Time (s)		6.5	6.5	6.5								
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		2.0	2.0	2.0								
Recall Mode		C-Min	C-Min	None								
Walk Time (s)		7.0	7.0									
Flash Dont Walk (s)		12.0	12.0									
Pedestrian Calls (#/hr)		0	0									
Act Effct Green (s)		189.0	189.0	15.4	211.0					31.5	31.5	31.5
Actuated g/C Ratio		0.74	0.74	0.06	0.82					0.12	0.12	0.12
v/c Ratio		0.11	0.01	0.43	0.04					0.54	0.14	0.42
Control Delay (s/veh)		10.6	0.0	66.9	5.3					114.2	99.4	15.6
Queue Delay		0.0	0.0	0.0	1.9					0.0	0.0	0.0
Total Delay (s/veh)		10.6	0.0	66.9	7.2					114.2	99.4	15.6
LOS		B	A	E	A					F	F	B
Approach Delay (s/veh)		9.6			32.1						69.9	
Approach LOS		A			C						E	

Intersection Summary

Area Type: Other

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Natural Cycle: 170

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay (s/veh): 46.0

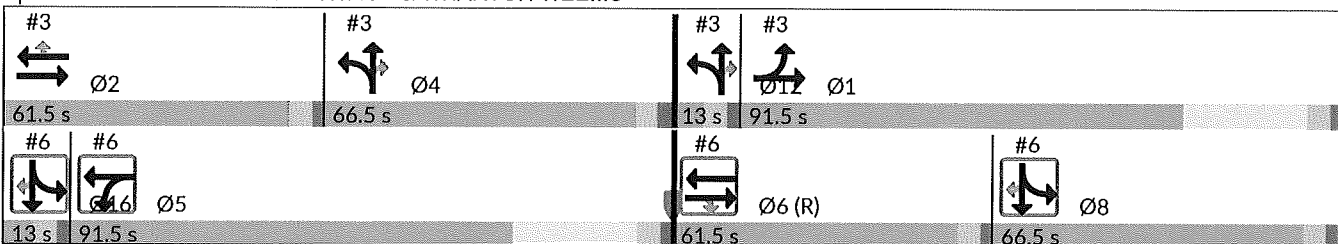
Intersection LOS: D

Intersection Capacity Utilization 42.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 6: SB FRONTAGE & WHARTON WEEMS



Site AM 8:09 am 11/20/2023 Baseline

Synchro 12 Report

Page 12

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/28/2023

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Protected Phases	1	2	4	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	5.0	10.0	8.0	8.0	2.0	2.0
Minimum Split (s)	22.5	33.5	55.0	46.0	9.0	9.0
Total Split (s)	91.5	61.5	66.5	66.5	13.0	13.0
Total Split (%)	36%	24%	26%	26%	5%	5%
Maximum Green (s)	85.0	55.0	59.5	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0		
Flash Dont Walk (s)		13.0	34.0	25.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
Intersection Summary						

Phasings

6: SB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	Ø1	Ø2	Ø4	Ø8	Ø12
Protected Phases	6		5	6 5	16 8	16 8		1	2	4	8	12
Permitted Phases		6					16 8					
Minimum Initial (s)	10.0	10.0	5.0					5.0	10.0	8.0	8.0	2.0
Minimum Split (s)	32.5	32.5	11.5					22.5	33.5	55.0	46.0	9.0
Total Split (s)	61.5	61.5	91.5					91.5	61.5	66.5	66.5	13.0
Total Split (%)	24.0%	24.0%	35.7%					36%	24%	26%	26%	5%
Maximum Green (s)	55.0	55.0	85.0					85.0	55.0	59.5	59.5	6.0
Yellow Time (s)	4.5	4.5	4.5					4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lead	Lead	Lag					Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Min	C-Min	None					None	Min	Min	Min	None
Walk Time (s)	7.0	7.0						7.0	7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0						13.0	34.0	25.0		
Pedestrian Calls (#/hr)	0	0						0	0	0		
90th %ile Green (s)	172.5	172.5	24.5					34.7	20.5	10.3	25.7	163.5
90th %ile Term Code	Coord	Coord	Hold					Hold	Gap	Gap	Gap	Coord
70th %ile Green (s)	188.9	188.9	13.6					27.6	10.5	8.2	21.4	182.7
70th %ile Term Code	Coord	Coord	Hold					Hold	Gap	Gap	Gap	Coord
50th %ile Green (s)	191.8	191.8	12.9					23.6	10.0	8.0	19.2	187.4
50th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord
30th %ile Green (s)	194.1	194.1	13.0					20.9	10.0	8.0	16.9	190.1
30th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord
10th %ile Green (s)	197.8	197.8	13.2					17.2	10.0	8.0	13.2	193.8
10th %ile Term Code	Coord	Coord	Hold					Hold	Min	Min	Gap	Coord

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Phasings

6: SB FRONTAGE & WHARTON WEEMS

11/28/2023

Lane Group	Ø16
Protected Phases	16
Permitted Phases	
Minimum Initial (s)	2.0
Minimum Split (s)	9.0
Total Split (s)	13.0
Total Split (%)	5%
Maximum Green (s)	6.0
Yellow Time (s)	4.5
All-Red Time (s)	2.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
90th %ile Green (s)	6.3
90th %ile Term Code	Gap
70th %ile Green (s)	5.1
70th %ile Term Code	Gap
50th %ile Green (s)	5.1
50th %ile Term Code	Gap
30th %ile Green (s)	5.0
30th %ile Term Code	Gap
10th %ile Green (s)	4.8
10th %ile Term Code	Gap
Intersection Summary	

Queues

6: SB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	146	15	46	64	118	62	130
v/c Ratio	0.11	0.01	0.43	0.04	0.54	0.14	0.42
Control Delay (s/veh)	10.6	0.0	66.9	5.3	114.2	99.4	15.6
Queue Delay	0.0	0.0	0.0	1.9	0.0	0.0	0.0
Total Delay (s/veh)	10.6	0.0	66.9	7.2	114.2	99.4	15.6
Queue Length 50th (ft)	64	0	76	64	192	50	0
Queue Length 95th (ft)	120	0	120	101	270	79	77
Internal Link Dist (ft)	320			178		152	
Turn Bay Length (ft)							
Base Capacity (vph)	1375	1196	750	1534	411	822	467
Starvation Cap Reductn	0	0	0	1365	0	0	0
Spillback Cap Reductn	7	0	0	0	1	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.01	0.06	0.38	0.29	0.08	0.28

Intersection Summary

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HCM 7th Edition methodology does not support clustered intersections.

Lanes, Volumes, Timings

9: FAIRMONT GREENS/YARA LAKES & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	105	14	5	220	6	34	0	13	34	0	63
Future Volume (vph)	23	105	14	5	220	6	34	0	13	34	0	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frnt		0.983			0.996			0.963			0.913	
Flt Protected	0.950			0.950				0.965			0.983	
Satd. Flow (prot)	1770	1831	0	1770	1855	0	0	1731	0	0	1672	0
Flt Permitted	0.950			0.950				0.965			0.983	
Satd. Flow (perm)	1770	1831	0	1770	1855	0	0	1731	0	0	1672	0
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		351			431			214			164	
Travel Time (s)		13.8			16.8			8.2			0.0	
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
Adj. Flow (vph)	25	114	15	5	239	7	37	0	14	37	0	68
Shared Lane Traffic (%)												
Lane Group Flow (vph)	25	129	0	5	246	0	0	51	0	0	105	0
Enter Blocked Intersection	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		6			-6			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 31.0%

ICU Level of Service A

Analysis Period (min) 15

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔			↔	
Traffic Vol, veh/h	23	105	14	5	220	6	34	0	13	34	0	63
Future Vol, veh/h	23	105	14	5	220	6	34	0	13	34	0	63
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	25	114	15	5	239	7	37	0	14	37	0	68

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	246	0	0	129	0	0	422	428	122	417	433	242
Stage 1	-	-	-	-	-	-	172	172	-	253	253	-
Stage 2	-	-	-	-	-	-	250	257	-	164	179	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1320	-	-	1456	-	-	542	519	929	546	516	796
Stage 1	-	-	-	-	-	-	830	757	-	751	698	-
Stage 2	-	-	-	-	-	-	754	695	-	838	751	-
Platoon blocked, %												
Mov Cap-1 Maneuver	1320	-	-	1456	-	-	484	507	929	525	504	796
Mov Cap-2 Maneuver	-	-	-	-	-	-	484	507	-	525	504	-
Stage 1	-	-	-	-	-	-	814	742	-	748	695	-
Stage 2	-	-	-	-	-	-	687	693	-	810	737	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.26	0.16	12.1	11.32
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	558	1320	-	-	1456	-	-	674
HCM Lane V/C Ratio	0.091	0.019	-	-	0.004	-	-	0.156
HCM Control Delay (s/veh)	12.1	7.8	-	-	7.5	-	-	11.3
HCM Lane LOS		B	A	-	A	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.6

Lanes, Volumes, Timings  
 10: NB FRONTAGE & NB UTURN

11/28/2023



Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations	↵	↑↑↑				
Traffic Volume (vph)	53	199	0	0	0	0
Future Volume (vph)	53	199	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1770	6408	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	6408	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		216	200		107	
Travel Time (s)		5.9	4.8		2.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	216	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	58	216	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
	ICU Level of Service A
Analysis Period (min)	15

Lanes, Volumes, Timings  
 16: NB FRONTAGE & PERFECT VIEW

11/28/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕	↖		
Traffic Volume (vph)	0	44	231	28	0	0
Future Volume (vph)	0	44	231	28	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.865	0.984			
Flt Protected						
Satd. Flow (prot)	0	1611	3483	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	3483	0	0	0
Link Speed (mph)	30		40			40
Link Distance (ft)	198		481			443
Travel Time (s)	4.5		8.2			7.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	48	251	30	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	48	281	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Stop

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 17.3% ICU Level of Service A

Analysis Period (min) 15

HCM 7th TWSC  
 16: NB FRONTAGE & PERFECT VIEW

11/28/2023

Intersection

Int Delay, s/veh 1.4

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations		↑	↑↑			
Traffic Vol, veh/h	0	44	231	28	0	0
Future Vol, veh/h	0	44	231	28	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	48	251	30	0	0

Major/Minor Minor1 Major1

Conflicting Flow All	-	141	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.94	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.32	-	-
Pot Cap-1 Maneuver	0	881	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	881	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach WB NB

HCM Control Delay, s/v	9.32	0
HCM LOS	A	

Minor Lane/Major Mvmt NBT NBRWBLn1

Capacity (veh/h)	-	-	881
HCM Lane V/C Ratio	-	-	0.054
HCM Control Delay (s/veh)	-	-	9.3
HCM Lane LOS	-	-	A
HCM 95th %tile Q(veh)	-	-	0.2

Lanes, Volumes, Timings  
 1: S Broadway & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	263	141	146	254	62
Future Volume (vph)	44	263	141	146	254	62
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0	200			0
Storage Lanes	1	1	1			0
Taper Length (ft)	100		100			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.884				0.974	
Flt Protected	0.993		0.950			
Satd. Flow (prot)	1635	0	1770	1863	1814	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1635	0	1770	1863	1814	0
Link Speed (mph)	45			30	30	
Link Distance (ft)	1944			685	675	
Travel Time (s)	24.8			15.6	15.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	48	286	153	159	276	67
Shared Lane Traffic (%)						
Lane Group Flow (vph)	334	0	153	159	343	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	53.6%
ICU Level of Service	A
Analysis Period (min)	15

HCM 7th TWSC  
 1: S Broadway & WHARTON WEEMS

11/28/2023

Intersection						
Int Delay, s/veh	7.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		W	U	U	
Traffic Vol, veh/h	44	263	141	146	254	62
Future Vol, veh/h	44	263	141	146	254	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	200	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	286	153	159	276	67

Major/Minor	Minor2	Major1	Major2		
Conflicting Flow All	775	310	343	0	0
Stage 1	310	-	-	-	-
Stage 2	465	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	366	730	1216	-	-
Stage 1	744	-	-	-	-
Stage 2	632	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	320	730	1216	-	-
Mov Cap-2 Maneuver	320	-	-	-	-
Stage 1	650	-	-	-	-
Stage 2	632	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	17.49	4.12	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBTEBLn1	SBT	SBR
Capacity (veh/h)	1216	-	617	-
HCM Lane V/C Ratio	0.126	-	0.541	-
HCM Control Delay (s/veh)	8.4	-	17.5	-
HCM Lane LOS	A	-	C	-
HCM 95th %tile Q(veh)	0.4	-	3.2	-

Lanes, Volumes, Timings

3: NB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	324	0	0	57	151	18	74	61	0	0	0
Future Volume (vph)	96	324	0	0	57	151	18	74	61	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	0.95	1.00	0.91	0.91	1.00	1.00	1.00	1.00
Frt						0.850			0.850			
Flt Protected	0.950							0.990				
Satd. Flow (prot)	1770	1863	0	0	3539	1583	0	5034	1583	0	0	0
Flt Permitted	0.950							0.990				
Satd. Flow (perm)	1770	1863	0	0	3539	1583	0	5034	1583	0	0	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						164			102			
Link Speed (mph)		45			45			40			40	
Link Distance (ft)		258			274			200			186	
Travel Time (s)		3.9			4.2			3.4			3.2	
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
Adj. Flow (vph)	104	352	0	0	62	164	20	80	66	0	0	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	352	0	0	62	164	0	100	66	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Right	Left	Left	Right
Median Width(ft)		24			24			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		28			20			36			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	2	2			2	2	1	3	3			
Detector Template					TXLT	TXLT	Left	TX40	TX40			
Leading Detector (ft)	156	156			0	0	20	240	240			
Trailing Detector (ft)	5	5			0	0	0	-5	-5			
Detector 1 Position(ft)	5	5			-5	-5	0	-5	-5			
Detector 1 Size(ft)	6	6			20	20	20	20	20			
Detector 1 Type	CI+Ex	CI+Ex			Call	Call	CI+Ex	CI+Ex	CI+Ex			
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Queue (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 1 Delay (s)	0.0	0.0			0.0	0.0	0.0	0.0	0.0			
Detector 2 Position(ft)	150	150			21	21		104	104			
Detector 2 Size(ft)	6	6			20	20		6	6			
Detector 2 Type	CI+Ex	CI+Ex			Call	Call		CI+Ex	CI+Ex			
Detector 2 Channel												
Detector 2 Extend (s)	0.0	0.0			0.0	0.0		0.0	0.0			
Detector 3 Position(ft)								234	234			
Detector 3 Size(ft)								6	6			
Detector 3 Type								CI+Ex	CI+Ex			
Detector 3 Channel												
Detector 3 Extend (s)								0.0	0.0			
Turn Type	Prot	NA			NA	Perm	Split	NA	Perm			

Lanes, Volumes, Timings  
 3: NB FRONTAGE & WHARTON WEEMS

11/28/2023

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
 3: NB FRONTAGE & WHARTON WEEMS

11/28/2023

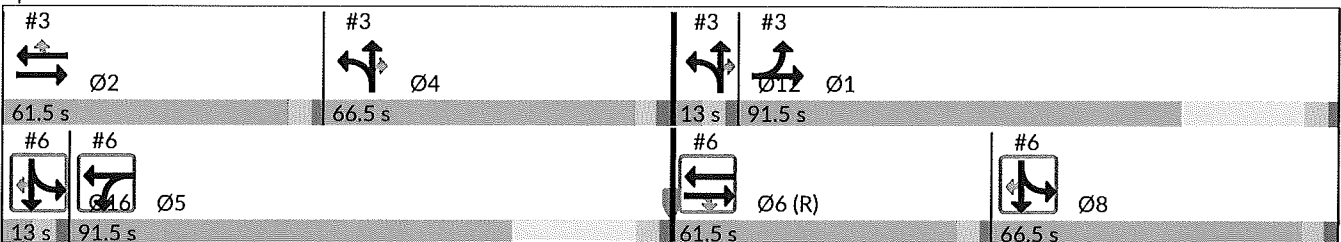


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases	1	2 1			2		4 12	4 12				
Permitted Phases						2			4 12			
Detector Phase	1	2 1			2	2	4 12	4 12	4 12			
Switch Phase												
Minimum Initial (s)	5.0				10.0	10.0						
Minimum Split (s)	22.5				33.5	33.5						
Total Split (s)	91.5				61.5	61.5						
Total Split (%)	35.7%				24.0%	24.0%						
Maximum Green (s)	85.0				55.0	55.0						
Yellow Time (s)	4.5				4.5	4.5						
All-Red Time (s)	2.0				2.0	2.0						
Lost Time Adjust (s)	0.0				0.0	0.0						
Total Lost Time (s)	6.5				6.5	6.5						
Lead/Lag	Lag				Lead	Lead						
Lead-Lag Optimize?	Yes				Yes	Yes						
Vehicle Extension (s)	2.0				2.0	2.0						
Recall Mode	None				Min	Min						
Walk Time (s)					7.0	7.0						
Flash Dont Walk (s)					13.0	13.0						
Pedestrian Calls (#/hr)					0	0						
Act Effct Green (s)	48.8	66.8			11.5	11.5	175.7	175.7				
Actuated g/C Ratio	0.19	0.26			0.04	0.04	0.69	0.69				
v/c Ratio	0.31	0.73			0.39	0.72	0.03	0.06				
Control Delay (s/veh)	52.8	43.8			125.5	30.5	14.1	0.3				
Queue Delay	0.1	0.3			0.0	0.0	0.0	0.0				
Total Delay (s/veh)	52.9	44.1			125.5	30.5	14.1	0.3				
LOS	D	D			F	C	B	A				
Approach Delay (s/veh)		46.1			56.5		8.6					
Approach LOS		D			E		A					

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay (s/veh): 41.5  
 Intersection Capacity Utilization 55.9%  
 Analysis Period (min) 15  
 Intersection LOS: D  
 ICU Level of Service B

Splits and Phases: 3: NB FRONTAGE & WHARTON WEEMS



Lanes, Volumes, Timings  
 3: NB FRONTAGE & WHARTON WEEMS

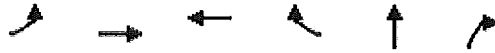
11/28/2023

Lane Group	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	4	5	6	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	26%	36%	24%	26%	5%	5%
Maximum Green (s)	59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.5	2.0	2.0	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	Min	None	C-Min	Min	None	None
Walk Time (s)	7.0		7.0	7.0		
Flash Dont Walk (s)	34.0		12.0	25.0		
Pedestrian Calls (#/hr)	0		0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
Intersection Summary						

Phasings

3: NB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR	Ø4	Ø5	Ø6	Ø8	Ø12	Ø16
Protected Phases	1	2 1	2		4 12		4	5	6	8	12	16
Permitted Phases				2		4 12						
Minimum Initial (s)	5.0		10.0	10.0			8.0	5.0	10.0	8.0	2.0	2.0
Minimum Split (s)	22.5		33.5	33.5			55.0	11.5	32.5	46.0	9.0	9.0
Total Split (s)	91.5		61.5	61.5			66.5	91.5	61.5	66.5	13.0	13.0
Total Split (%)	35.7%		24.0%	24.0%			26%	36%	24%	26%	5%	5%
Maximum Green (s)	85.0		55.0	55.0			59.5	85.0	55.0	59.5	6.0	6.0
Yellow Time (s)	4.5		4.5	4.5			4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0		2.0	2.0			2.5	2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lag		Lead	Lead			Lag	Lag	Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes		Yes	Yes			Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0		2.0	2.0			2.0	2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0		3.0	3.0			3.0	3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0		0.0	0.0			0.0	0.0	0.0	0.0	0.0	0.0
Recall Mode	None		Min	Min			Min	None	C-Min	Min	None	None
Walk Time (s)			7.0	7.0			7.0		7.0	7.0		
Flash Dont Walk (s)			13.0	13.0			34.0		12.0	25.0		
Pedestrian Calls (#/hr)			0	0			0		0	0		
90th %ile Green (s)	60.4		16.5	16.5			8.0	16.0	154.3	50.2	144.1	8.5
90th %ile Term Code	Hold		Gap	Gap			Min	Hold	Coord	Gap	Coord	Gap
70th %ile Green (s)	52.1		11.0	11.0			8.0	11.8	165.2	44.8	157.9	7.2
70th %ile Term Code	Gap		Gap	Gap			Min	Hold	Coord	Hold	Coord	Gap
50th %ile Green (s)	48.4		10.0	10.0			8.0	11.0	168.1	42.9	162.6	7.0
50th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap
30th %ile Green (s)	44.6		10.0	10.0			8.0	12.2	170.4	40.6	166.4	5.8
30th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap
10th %ile Green (s)	38.4		10.0	10.0			8.0	12.5	177.0	34.0	172.6	5.5
10th %ile Term Code	Gap		Min	Min			Min	Hold	Coord	Hold	Coord	Gap

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

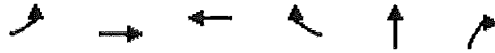
Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

Queues

3: NB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	104	352	62	164	100	66
v/c Ratio	0.31	0.73	0.39	0.72	0.03	0.06
Control Delay (s/veh)	52.8	43.8	125.5	30.5	14.1	0.3
Queue Delay	0.1	0.3	0.0	0.0	0.0	0.0
Total Delay (s/veh)	52.9	44.1	125.5	30.5	14.1	0.3
Queue Length 50th (ft)	71	216	55	0	18	0
Queue Length 95th (ft)	m109	231	87	96	34	1
Internal Link Dist (ft)		178	194		120	
Turn Bay Length (ft)						
Base Capacity (vph)	750	818	760	468	3455	1118
Starvation Cap Reductn	198	113	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.50	0.08	0.35	0.03	0.06

Intersection Summary

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

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↗	↖	↑					↘	↑↑	↖
Traffic Volume (vph)	0	100	32	36	34	0	0	0	0	280	66	61
Future Volume (vph)	0	100	32	36	34	0	0	0	0	280	66	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00
Frt			0.850									0.850
Flt Protected				0.950						0.950		
Satd. Flow (prot)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Flt Permitted				0.950						0.950		
Satd. Flow (perm)	0	1863	1583	1770	1863	0	0	0	0	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			104									102
Link Speed (mph)		35			45			40			40	
Link Distance (ft)		400			258			161			232	
Travel Time (s)		7.8			3.9			2.7			4.0	
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
Adj. Flow (vph)	0	109	35	39	37	0	0	0	0	304	72	66
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	109	35	39	37	0	0	0	0	304	72	66
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	R NA	Left	R NA
Median Width(ft)		14			24			12			12	
Link Offset(ft)		0			0			5			0	
Crosswalk Width(ft)		12			36			16			36	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors		2	1	2	2					3	3	3
Detector Template		TXLT	Right							TX40	TX40	TX40
Leading Detector (ft)		0	20	156	156					240	240	240
Trailing Detector (ft)		0	0	5	5					-5	-5	-5
Detector 1 Position(ft)		-5	0	5	5					-5	-5	-5
Detector 1 Size(ft)		20	20	6	6					20	20	20
Detector 1 Type		Call	CI+Ex	CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 1 Channel												
Detector 1 Extend (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Queue (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 1 Delay (s)		0.0	0.0	0.0	0.0					0.0	0.0	0.0
Detector 2 Position(ft)		21		150	150					104	104	104
Detector 2 Size(ft)		20		6	6					6	6	6
Detector 2 Type		Call		CI+Ex	CI+Ex					CI+Ex	CI+Ex	CI+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0		0.0	0.0					0.0	0.0	0.0
Detector 3 Position(ft)										234	234	234
Detector 3 Size(ft)										6	6	6
Detector 3 Type										CI+Ex	CI+Ex	CI+Ex
Detector 3 Channel												
Detector 3 Extend (s)										0.0	0.0	0.0
Turn Type		NA	Perm	Prot	NA					Split	NA	Perm

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/28/2023

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Lane Configurations						
Traffic Volume (vph)						
Future Volume (vph)						
Ideal Flow (vphpl)						
Lane Util. Factor						
Frt						
Flt Protected						
Satd. Flow (prot)						
Flt Permitted						
Satd. Flow (perm)						
Right Turn on Red						
Satd. Flow (RTOR)						
Link Speed (mph)						
Link Distance (ft)						
Travel Time (s)						
Peak Hour Factor						
Adj. Flow (vph)						
Shared Lane Traffic (%)						
Lane Group Flow (vph)						
Enter Blocked Intersection						
Lane Alignment						
Median Width(ft)						
Link Offset(ft)						
Crosswalk Width(ft)						
Two way Left Turn Lane						
Headway Factor						
Turning Speed (mph)						
Number of Detectors						
Detector Template						
Leading Detector (ft)						
Trailing Detector (ft)						
Detector 1 Position(ft)						
Detector 1 Size(ft)						
Detector 1 Type						
Detector 1 Channel						
Detector 1 Extend (s)						
Detector 1 Queue (s)						
Detector 1 Delay (s)						
Detector 2 Position(ft)						
Detector 2 Size(ft)						
Detector 2 Type						
Detector 2 Channel						
Detector 2 Extend (s)						
Detector 3 Position(ft)						
Detector 3 Size(ft)						
Detector 3 Type						
Detector 3 Channel						
Detector 3 Extend (s)						
Turn Type						

Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/28/2023

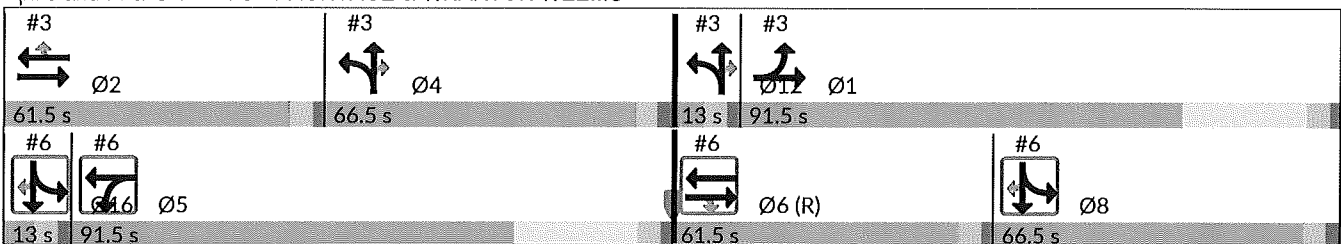


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Protected Phases		6		5	6 5					16 8	16 8	
Permitted Phases			6									16 8
Detector Phase		6	6	5	6 5					16 8	16 8	16 8
Switch Phase												
Minimum Initial (s)		10.0	10.0	5.0								
Minimum Split (s)		32.5	32.5	11.5								
Total Split (s)		61.5	61.5	91.5								
Total Split (%)		24.0%	24.0%	35.7%								
Maximum Green (s)		55.0	55.0	85.0								
Yellow Time (s)		4.5	4.5	4.5								
All-Red Time (s)		2.0	2.0	2.0								
Lost Time Adjust (s)		0.0	0.0	0.0								
Total Lost Time (s)		6.5	6.5	6.5								
Lead/Lag		Lead	Lead	Lag								
Lead-Lag Optimize?		Yes	Yes	Yes								
Vehicle Extension (s)		2.0	2.0	2.0								
Recall Mode		C-Min	C-Min	None								
Walk Time (s)		7.0	7.0									
Flash Dont Walk (s)		12.0	12.0									
Pedestrian Calls (#/hr)		0	0									
Act Effct Green (s)		167.0	167.0	12.7	186.2					56.3	56.3	56.3
Actuated g/C Ratio		0.65	0.65	0.05	0.73					0.22	0.22	0.22
v/c Ratio		0.09	0.03	0.45	0.03					0.78	0.09	0.15
Control Delay (s/veh)		17.7	0.1	50.5	7.8					108.1	78.1	1.4
Queue Delay		0.0	0.0	0.0	0.0					0.4	0.0	0.0
Total Delay (s/veh)		17.7	0.1	50.5	7.8					108.4	78.1	1.4
LOS		B	A	D	A					F	E	A
Approach Delay (s/veh)		13.4			29.7						87.5	
Approach LOS		B			C						F	

Intersection Summary

Area Type: Other  
 Cycle Length: 256  
 Actuated Cycle Length: 256  
 Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green  
 Natural Cycle: 170  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.78  
 Intersection Signal Delay (s/veh): 64.8  
 Intersection Capacity Utilization 55.9%  
 Analysis Period (min) 15  
 Intersection LOS: E  
 ICU Level of Service B

Splits and Phases: 6: SB FRONTAGE & WHARTON WEEMS



Lanes, Volumes, Timings  
 6: SB FRONTAGE & WHARTON WEEMS

11/28/2023

Lane Group	Ø1	Ø2	Ø4	Ø8	Ø12	Ø16
Protected Phases	1	2	4	8	12	16
Permitted Phases						
Detector Phase						
Switch Phase						
Minimum Initial (s)	5.0	10.0	8.0	8.0	2.0	2.0
Minimum Split (s)	22.5	33.5	55.0	46.0	9.0	9.0
Total Split (s)	91.5	61.5	66.5	66.5	13.0	13.0
Total Split (%)	36%	24%	26%	26%	5%	5%
Maximum Green (s)	85.0	55.0	59.5	59.5	6.0	6.0
Yellow Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.5	2.5	2.5	2.5
Lost Time Adjust (s)						
Total Lost Time (s)						
Lead/Lag	Lag	Lead	Lag	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	Min	Min	Min	None	None
Walk Time (s)		7.0	7.0	7.0		
Flash Dont Walk (s)		13.0	34.0	25.0		
Pedestrian Calls (#/hr)		0	0	0		
Act Effct Green (s)						
Actuated g/C Ratio						
v/c Ratio						
Control Delay (s/veh)						
Queue Delay						
Total Delay (s/veh)						
LOS						
Approach Delay (s/veh)						
Approach LOS						
Intersection Summary						

Phasings

6: SB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR	Ø1	Ø2	Ø4	Ø8	Ø12
Protected Phases	6		5	6 5	16 8	16 8		1	2	4	8	12
Permitted Phases		6					16 8					
Minimum Initial (s)	10.0	10.0	5.0					5.0	10.0	8.0	8.0	2.0
Minimum Split (s)	32.5	32.5	11.5					22.5	33.5	55.0	46.0	9.0
Total Split (s)	61.5	61.5	91.5					91.5	61.5	66.5	66.5	13.0
Total Split (%)	24.0%	24.0%	35.7%					36%	24%	26%	26%	5%
Maximum Green (s)	55.0	55.0	85.0					85.0	55.0	59.5	59.5	6.0
Yellow Time (s)	4.5	4.5	4.5					4.5	4.5	4.5	4.5	4.5
All-Red Time (s)	2.0	2.0	2.0					2.0	2.0	2.5	2.5	2.5
Lead/Lag	Lead	Lead	Lag					Lag	Lead	Lag	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes					Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0					2.0	2.0	2.0	2.0	2.0
Minimum Gap (s)	3.0	3.0	3.0					3.0	3.0	3.0	3.0	3.0
Time Before Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Time To Reduce (s)	0.0	0.0	0.0					0.0	0.0	0.0	0.0	0.0
Recall Mode	C-Min	C-Min	None					None	Min	Min	Min	None
Walk Time (s)	7.0	7.0							7.0	7.0	7.0	
Flash Dont Walk (s)	12.0	12.0							13.0	34.0	25.0	
Pedestrian Calls (#/hr)	0	0							0	0	0	
90th %ile Green (s)	154.3	154.3	16.0					60.4	16.5	8.0	50.2	144.1
90th %ile Term Code	Coord	Coord	Hold					Hold	Gap	Min	Gap	Coord
70th %ile Green (s)	165.2	165.2	11.8					52.1	11.0	8.0	44.8	157.9
70th %ile Term Code	Coord	Coord	Hold					Gap	Gap	Min	Hold	Coord
50th %ile Green (s)	168.1	168.1	11.0					48.4	10.0	8.0	42.9	162.6
50th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord
30th %ile Green (s)	170.4	170.4	12.2					44.6	10.0	8.0	40.6	166.4
30th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord
10th %ile Green (s)	177.0	177.0	12.5					38.4	10.0	8.0	34.0	172.6
10th %ile Term Code	Coord	Coord	Hold					Gap	Min	Min	Hold	Coord

Intersection Summary

Cycle Length: 256

Actuated Cycle Length: 256

Offset: 0 (0%), Referenced to phase 6:EBWB, Start of Green

Control Type: Actuated-Coordinated

# Phasings

## 6: SB FRONTAGE & WHARTON WEEMS

11/28/2023

Lane Group	Ø16
Protected Phases	16
Permitted Phases	
Minimum Initial (s)	2.0
Minimum Split (s)	9.0
Total Split (s)	13.0
Total Split (%)	5%
Maximum Green (s)	6.0
Yellow Time (s)	4.5
All-Red Time (s)	2.5
Lead/Lag	Lead
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	2.0
Minimum Gap (s)	3.0
Time Before Reduce (s)	0.0
Time To Reduce (s)	0.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
90th %ile Green (s)	8.5
90th %ile Term Code	Gap
70th %ile Green (s)	7.2
70th %ile Term Code	Gap
50th %ile Green (s)	7.0
50th %ile Term Code	Gap
30th %ile Green (s)	5.8
30th %ile Term Code	Gap
10th %ile Green (s)	5.5
10th %ile Term Code	Gap
Intersection Summary	

Queues

6: SB FRONTAGE & WHARTON WEEMS

11/28/2023



Lane Group	EBT	EBR	WBL	WBT	SBL	SBT	SBR
Lane Group Flow (vph)	109	35	39	37	304	72	66
v/c Ratio	0.09	0.03	0.45	0.03	0.78	0.09	0.15
Control Delay (s/veh)	17.7	0.1	50.5	7.8	108.1	78.1	1.4
Queue Delay	0.0	0.0	0.0	0.0	0.4	0.0	0.0
Total Delay (s/veh)	17.7	0.1	50.5	7.8	108.4	78.1	1.4
Queue Length 50th (ft)	66	0	65	50	492	52	0
Queue Length 95th (ft)	113	0	112	90	601	77	3
Internal Link Dist (ft)	320			178		152	
Turn Bay Length (ft)							
Base Capacity (vph)	1215	1068	750	1355	420	839	453
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	139	0	0	0	10	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.03	0.05	0.03	0.74	0.09	0.15
Intersection Summary							

Lanes, Volumes, Timings

9: FAIRMONT GREENS/YARA LAKES & WHARTON WEEMS

11/28/2023



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	282	30	7	145	21	13	0	8	19	0	42
Future Volume (vph)	83	282	30	7	145	21	13	0	8	19	0	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		0	100		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		0
Taper Length (ft)	100			100			100			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.985			0.981			0.947			0.907	
Flt Protected	0.950			0.950				0.970			0.985	
Satd. Flow (prot)	1770	1835	0	1770	1827	0	0	1711	0	0	1664	0
Flt Permitted	0.950			0.950				0.970			0.985	
Satd. Flow (perm)	1770	1835	0	1770	1827	0	0	1711	0	0	1664	0
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		351			431			214			164	
Travel Time (s)		13.8			16.8			8.2			0.0	
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
Adj. Flow (vph)	90	307	33	8	158	23	14	0	9	21	0	46
Shared Lane Traffic (%)												
Lane Group Flow (vph)	90	340	0	8	181	0	0	23	0	0	67	0
Enter Blocked Intersection	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		6			-6			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 33.7%

ICU Level of Service A

Analysis Period (min) 15

**Intersection**

Int Delay, s/veh 2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔	↔		↔	↔			↔			↔	
Traffic Vol, veh/h	83	282	30	7	145	21	13	0	8	19	0	42
Future Vol, veh/h	83	282	30	7	145	21	13	0	8	19	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	90	307	33	8	158	23	14	0	9	21	0	46

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	180	0	0	339	0	0	676	699	323	671	704	169
Stage 1	-	-	-	-	-	-	503	503	-	184	184	-
Stage 2	-	-	-	-	-	-	173	196	-	487	520	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1395	-	-	1220	-	-	367	364	718	370	362	875
Stage 1	-	-	-	-	-	-	551	541	-	818	747	-
Stage 2	-	-	-	-	-	-	829	739	-	562	532	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1395	-	-	1220	-	-	323	338	718	340	336	875
Mov Cap-2 Maneuver	-	-	-	-	-	-	323	338	-	340	336	-
Stage 1	-	-	-	-	-	-	515	506	-	812	743	-
Stage 2	-	-	-	-	-	-	781	734	-	519	498	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	1.63	0.32	14.32	11.91
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	409	1395	-	-	1220	-	-	587
HCM Lane V/C Ratio	0.056	0.065	-	-	0.006	-	-	0.113
HCM Control Delay (s/veh)	14.3	7.8	-	-	8	-	-	11.9
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0	-	-	0.4

Lanes, Volumes, Timings  
 10: NB FRONTAGE & NB UTURN

11/28/2023



Lane Group	NBL	NBT	SBT	SBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	30	153	0	0	0	0
Future Volume (vph)	30	153	0	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200			0	0	0
Storage Lanes	0			0	0	0
Taper Length (ft)	100				100	
Lane Util. Factor	1.00	0.86	1.00	1.00	1.00	1.00
Frt						
Flt Protected	0.950					
Satd. Flow (prot)	1770	6408	0	0	0	0
Flt Permitted	0.950					
Satd. Flow (perm)	1770	6408	0	0	0	0
Link Speed (mph)		40	40		30	
Link Distance (ft)		216	200		107	
Travel Time (s)		5.9	4.8		2.4	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	33	166	0	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	166	0	0	0	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		12	12		0	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Free	

Intersection Summary

Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	28.0%
Analysis Period (min)	15
	ICU Level of Service A

Lanes, Volumes, Timings  
 16: NB FRONTAGE & PERFECT VIEW

11/28/2023



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↕			
Traffic Volume (vph)	0	34	271	58	0	0
Future Volume (vph)	0	34	271	58	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00
Frt		0.865	0.974			
Flt Protected						
Satd. Flow (prot)	0	1611	3447	0	0	0
Flt Permitted						
Satd. Flow (perm)	0	1611	3447	0	0	0
Link Speed (mph)	30		40			40
Link Distance (ft)	198		481			443
Travel Time (s)	4.5		8.2			7.6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	0	37	295	63	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	37	358	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	0		0			0
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Stop

Intersection Summary	
Area Type:	Other
Control Type:	Unsignalized
Intersection Capacity Utilization	19.3% ICU Level of Service A
Analysis Period (min)	15

HCM 7th TWSC  
 16: NB FRONTAGE & PERFECT VIEW

11/28/2023

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↑			
Traffic Vol, veh/h	0	34	271	58	0	0
Future Vol, veh/h	0	34	271	58	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	37	295	63	0	0

Major/Minor	Minor1	Major1		
Conflicting Flow All	-	179	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.94	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.32	-	-
Pot Cap-1 Maneuver	0	833	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	833	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB
HCM Control Delay, s/v	9.52	0
HCM LOS	A	

Minor Lane/Major Mvmt	NBT	NBRWBLn1
Capacity (veh/h)	-	833
HCM Lane V/C Ratio	-	0.044
HCM Control Delay (s/veh)	-	9.5
HCM Lane LOS	-	A
HCM 95th %tile Q(veh)	-	0.1