MEMORANDUM

DATE: March 1, 2018

TO: Carlos Arias
4G Development & Consulting, Inc.

FROM: Jeff Schramm / Amy Wasserman
TENW

SUBJECT: Updated Traffic Impact Analysis for the proposed
Chick-fil-A Fircrest, WA
TENW Project #5434

This memorandum summarizes the Updated Traffic Impact Analysis (TIA) conducted for the proposed Chick-fil-A Fircrest project. The document includes a project description, trip generation estimate, trip distribution and assignment, traffic volumes, Level of Service and queue analyses, drive-through queue analyses, parking analysis, and Traffic Management Plan. This TIA is an update to our previous traffic analysis dated April 11, 2017 to reflect the updated site plan with increased building area and modified access.

Project Description

The project site is located at 6520 19th Street W in the City of Fircrest. A vicinity map of the surrounding area is shown in Figure 1. The project includes the development of a 4,706 square foot (SF) fast-food restaurant with an expanded dual-entry drive-through. The existing site includes a 4,678 SF small office building which will be removed with the proposed project.

Vehicle access is proposed via two full-access driveways on 19th Street W. Project buildout is expected in 2019. A preliminary site plan concept is shown in Figure 2.

Existing Traffic Volumes

Existing weekday noon, PM, and evening peak period traffic volumes were collected at the study intersections by All Traffic Data in March 2017. Year 2018 existing weekday noon, PM, and evening peak period traffic volumes at the study intersections were estimated by applying an annual growth rate of 4 percent to the 2017 volumes. The noon peak hour represents the highest one-hour time period between 12:00 and 2:00 PM at each study intersection. The PM peak hour represents the highest one-hour time period between 4:00 and 6:00 PM at each study intersection. The evening peak hour represents the highest one-hour time period between 6:00 and 8:00 PM at each study intersection. The existing traffic count worksheets are included in Attachment A.

Figure 3 illustrates the 2018 existing weekday noon, PM, and evening peak hour traffic volumes at the study intersections.

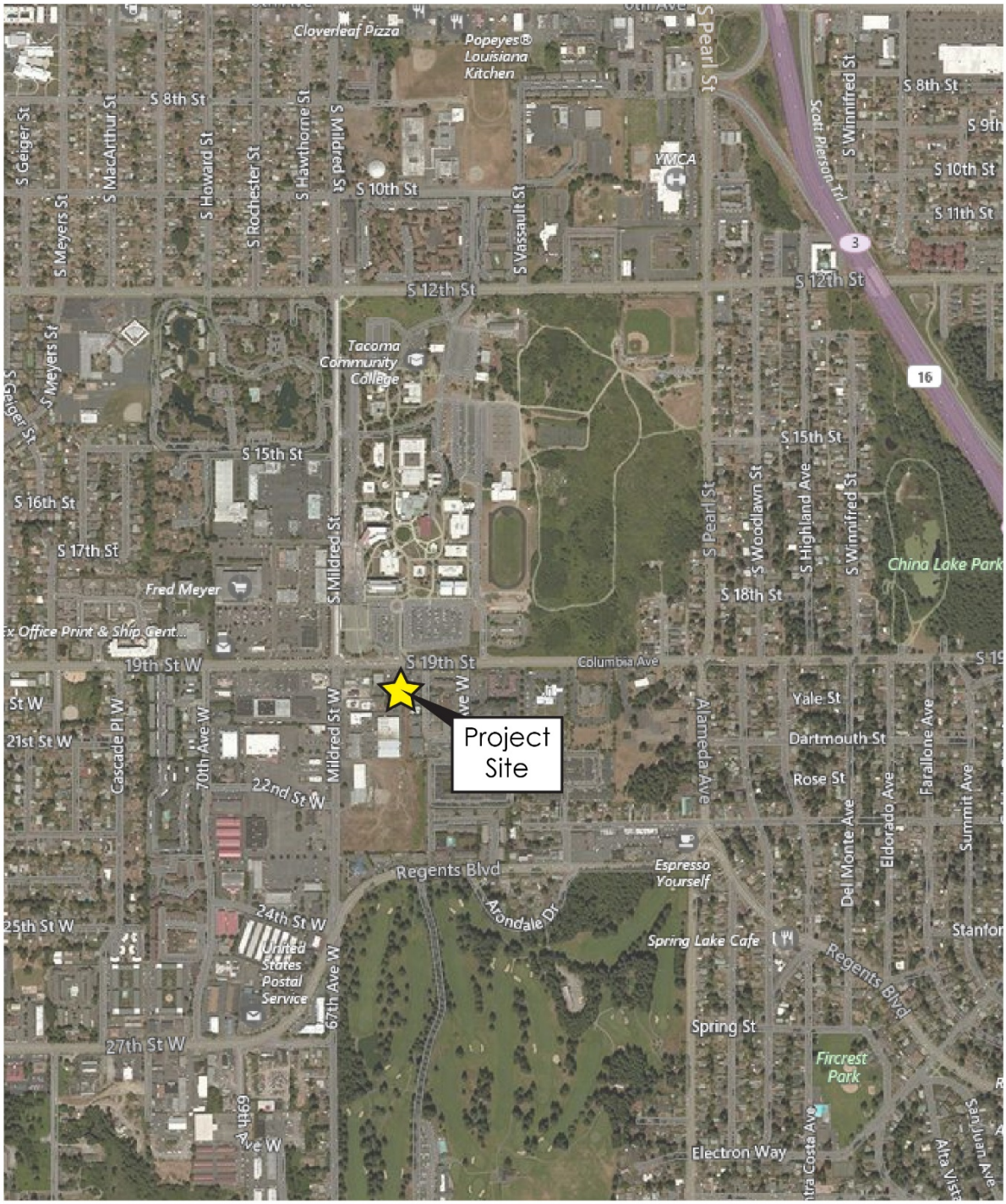

Figure 1: Vicinity Map

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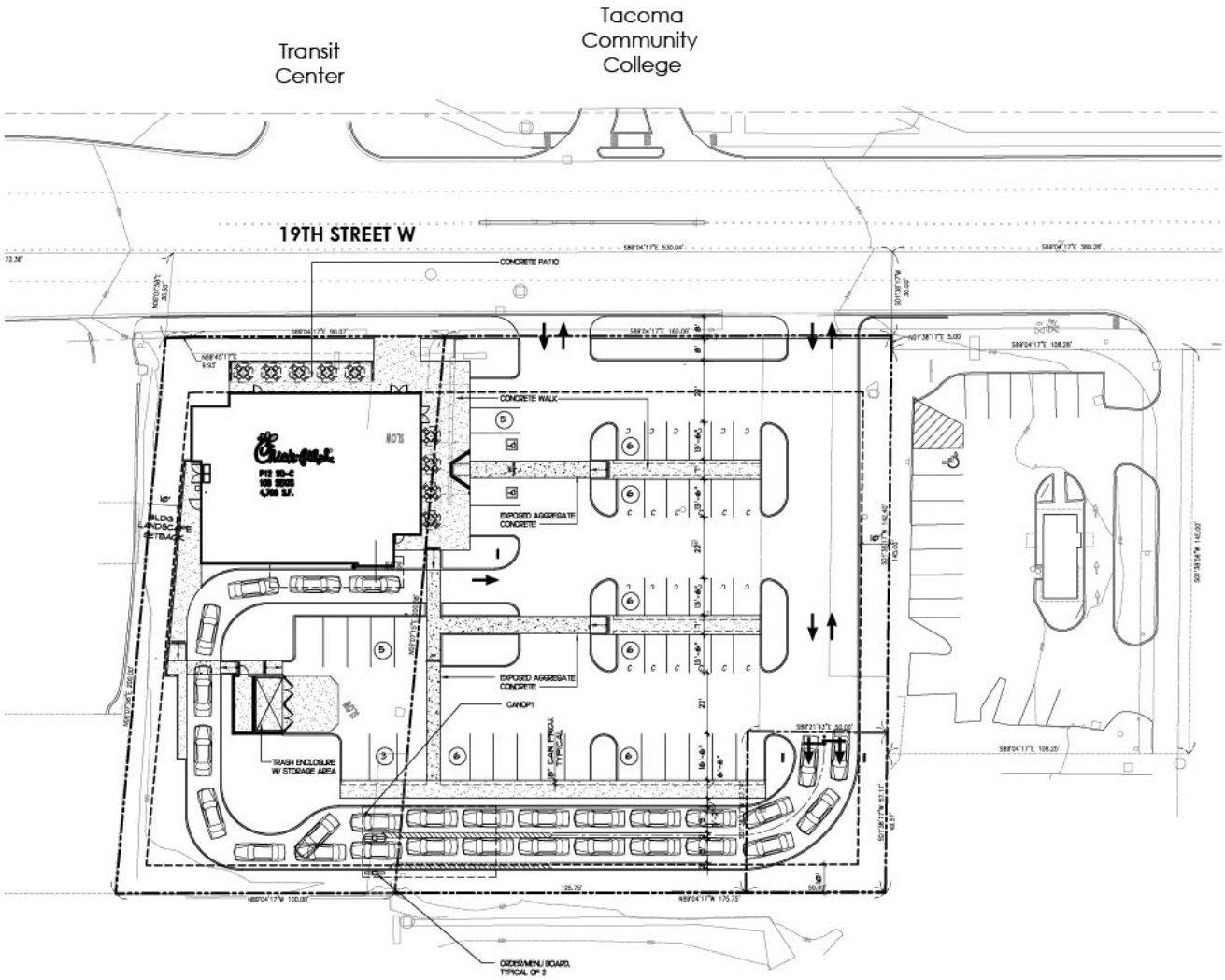
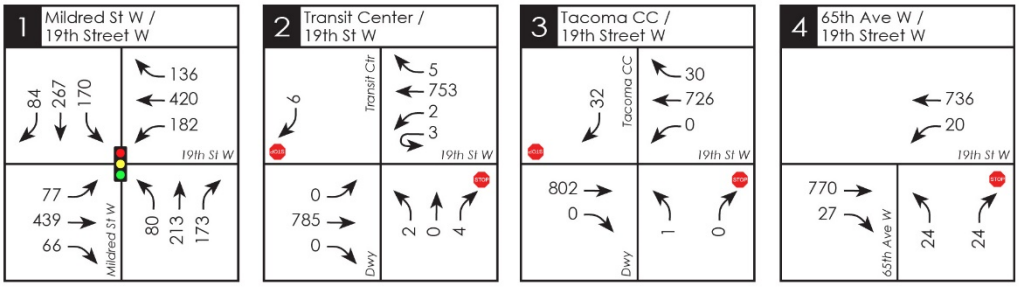
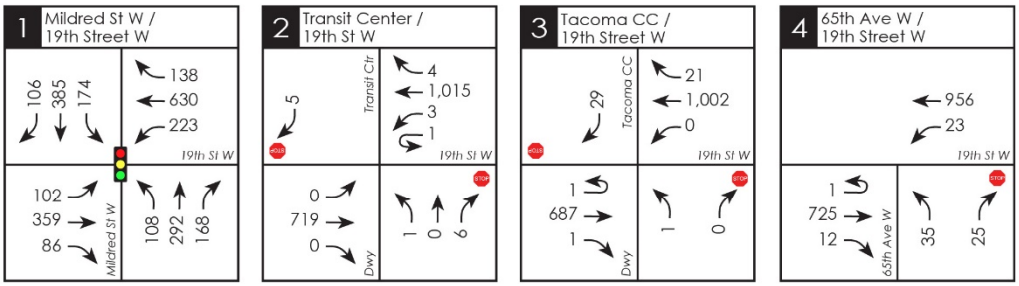


Figure 2: Preliminary Site Plan

Lunch Peak Hour



PM Peak Hour



Evening Peak Hour

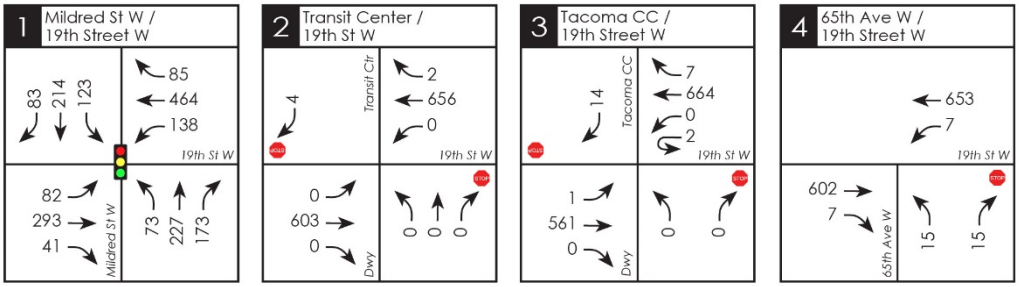


Figure 3: 2018 Existing Peak Hour Traffic Volumes

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Trip Generation

The proposed project includes a 4,706 square foot Chick-fil-A fast-food restaurant with an expanded dual-entry drive-through. The existing site includes a 4,678 SF small office building which will be removed with the proposed project. Trip generation for the proposed use was determined using methodology included in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition, for land use code (LUC) 934 (Fast-Food Restaurant with Drive-Thru). Trip generation for the existing office use to be removed was based on counts conducted at the driveway in March 2017.

Adjustments to the trip generation estimates for the proposed use were made to account for pass-by trips. Pass-by trips are made by vehicles that are already on adjacent streets and make intermediate stops at the site en-route to a primary destination (e.g. on the way from work to home).

The net new trips from the proposed project were calculated by subtracting trips generated by the existing office use from the proposed net project trips. The resulting weekday daily, lunch peak hour, PM peak hour, and evening peak hour net new trip generation estimates are summarized in Table 1. The detailed trip generation calculations are included in Attachment B.

Table 1
Chick-fil-A Fircrest – Net New Trip Generation Summary

	Net New Trips Generated		
Time Period	In	Out	Total
Weekday Daily	516	516	1,032
Weekday Lunch Peak Hour	46	39	85
Weekday PM Peak Hour	36	29	65
Weekday Evening Peak Hour	59	58	117

As shown in Table 1, the proposed project is anticipated to generate 1,032 net new trips per weekday, with 85 net new trips during the weekday lunch peak hour, 65 net new trips during the weekday PM peak hour, and 117 net new trips during the weekday evening peak hour. Additional pass-by trips are also expected at the site driveways.

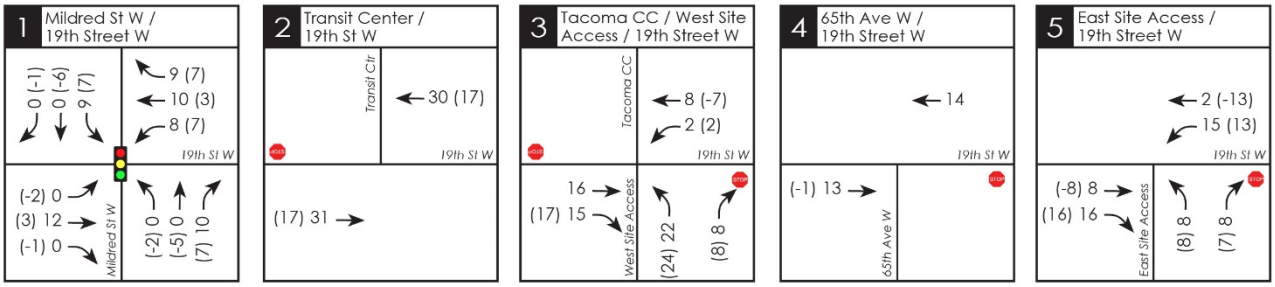
Project Trip Distribution and Assignment

The distribution of project generated vehicle trips by the proposed Chick-fil-A restaurant was based on existing travel patterns in the area and turning movement count data collected in 2017. The lunch peak hour, PM peak hour, and evening peak hour project-generated trips were distributed to the vicinity street system as follows:

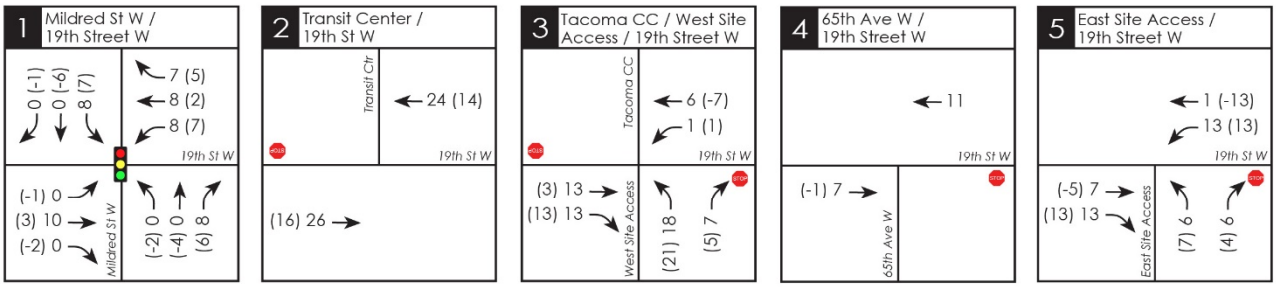
- 20 percent to/from the north via Mildred Street W
- 20 percent to/from the south via Mildred Street W
- 35 percent to/from the east via 19th Street W
- 25 percent to/from the west via 19th Street W

The assignment of net new weekday lunch peak hour, PM peak hour, and evening peak hour project-generated traffic to the adjacent street system is shown in Figure 4.

Lunch Peak Hour



PM Peak Hour



Evening Peak Hour

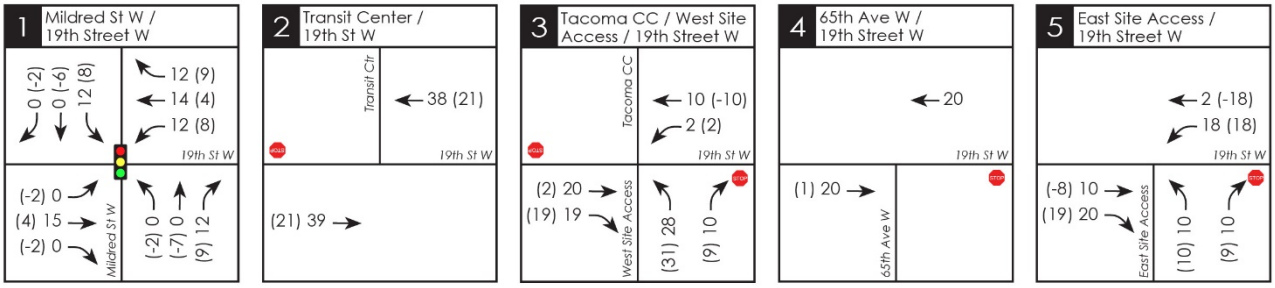
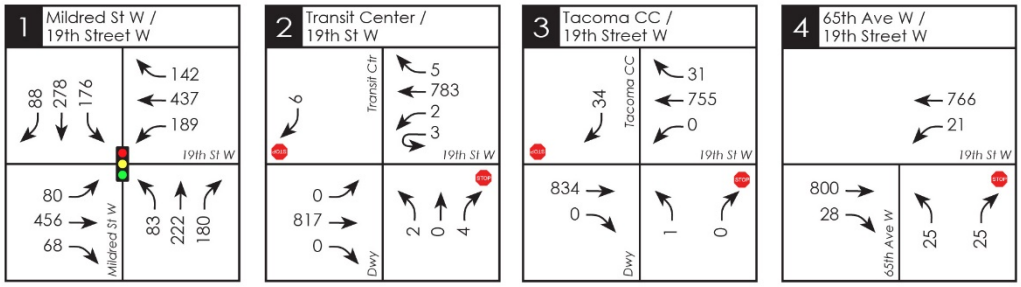
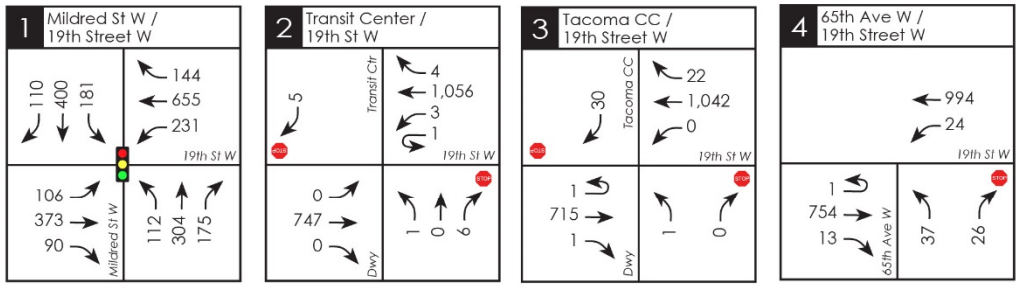


Figure 4: Peak Hour Project Trip Assignment

Lunch Peak Hour



PM Peak Hour



Evening Peak Hour

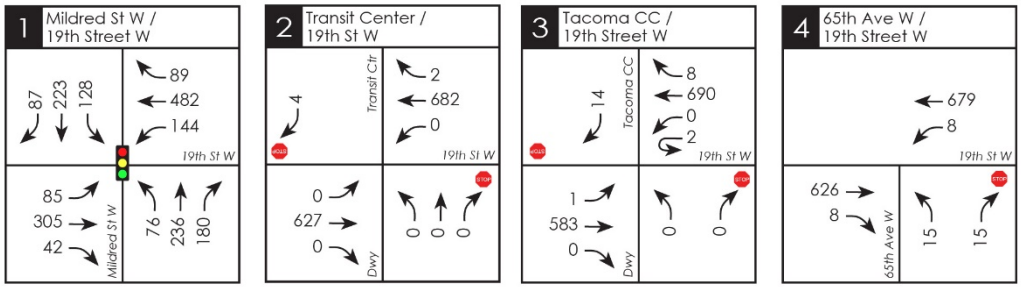


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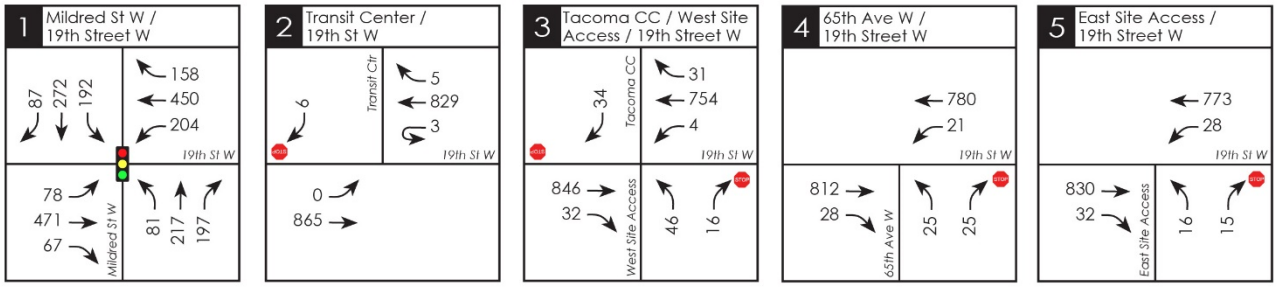
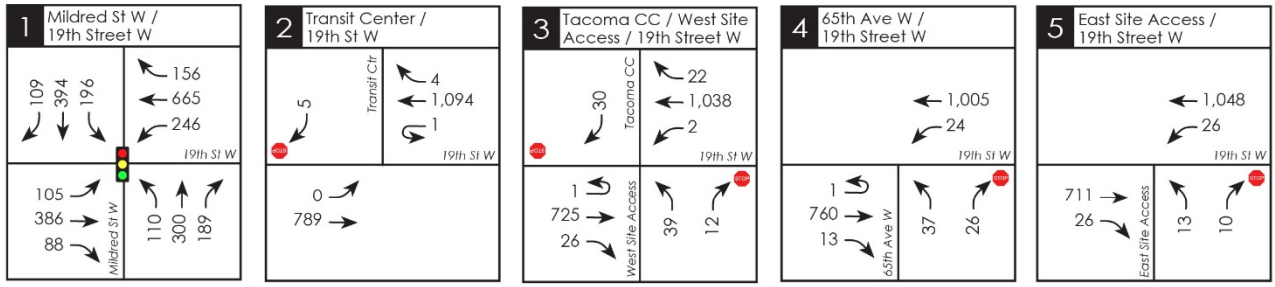
Figure 5: 2019 Without-Project Peak Hour Traffic Volumes

Lunch Peak Hour



PM Peak Hour



Evening Peak Hour

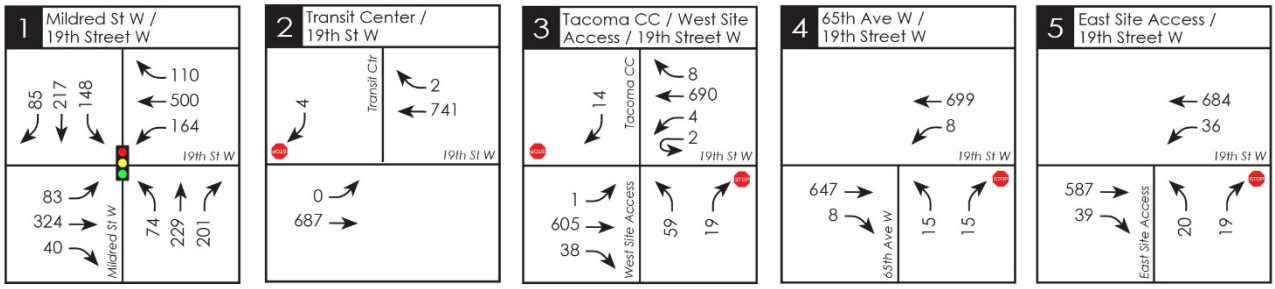


Figure 6: 2019 With-Project Peak Hour Traffic Volumes

Future Traffic Volumes

Year 2019 No Action (without-project) peak hour traffic volumes at the study intersections were estimated by applying a 4 percent annual growth rate to existing volumes. The future 2019 No Action lunch peak hour, PM peak hour, and evening peak hour traffic volumes at the study intersections are shown in Figure 5. Adding the net new and pass-by trip assignment for the project (shown in Figure 4) to the future No Action traffic volumes (shown in Figure 5) results in the 2019 With-Project peak hour traffic volumes at the study intersections (shown in Figure 6).

Level of Service Analysis

Future 2019 weekday AM and PM peak hour level of service (LOS) analyses were conducted at the study intersections and driveways along 19th Street W based on methodologies and procedures outlined in the latest *Highway Capacity Manual* (HCM 6th Edition). The LOS methodology is described in Attachment C. The *Synchro Version 10* software package was used to determine LOS results for stop controlled and signalized intersections. Table 2 summarizes the weekday lunch, PM, and evening peak hour LOS analyses results at the study intersections. The detailed LOS calculation sheets are included in Attachment C.

Table 2
Weekday Peak Hour LOS Summary

	2018 Existing		2019 Without-Project		2019 With-Project	
Study Intersection/Movement	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
Noon Peak Hour (12:00 – 2:00 PM)						
Signalized						
1. Mildred St W / 19th St W	C	27.1	C	28.0	C	29.0
Stop Controlled						
2. Transit Center / 19th St W						
Northbound Shared Left-Thru-Right	B	14.4	B	14.8	--	--
Southbound Right-Turn	B	14.0	B	14.3	B	14.6
Eastbound Left-Turn	A	0.0	A	0.0	A	0.0
Westbound Left-Turn	A	9.7	A	9.8	--	--
3. Tacoma College / West Site Access / 19th St W						
Northbound Shared Left-Right	C	20.4	C	21.2	C	24.2
Southbound Right-Turn	B	11.6	B	11.8	B	11.8
Westbound Left-Turn	A	0.0	A	0.0	B	10.1
4. 65th Ave W / 19th St W						
Northbound Shared Left-Right	C	15.9	C	16.4	C	16.6
Westbound Left-Turn	A	9.7	A	9.9	A	9.9
5. East Site Access / 19th St W						
Northbound Shared Left-Right	--	--	--	--	C	17.1
Westbound Left-Turn	--	--	--	--	B	10.2

Table 2 (continued)
Weekday Peak Hour LOS Summary

Study Intersection/Movement	2018 Existing LOS	2018 Existing Delay (sec)	2019 Without-Project LOS	2019 Without-Project Delay (sec)	2019 With-Project LOS	2019 With-Project Delay (sec)
PM Peak Hour (4:00 – 6:00 PM)						
Signalized						
1. Mildred St W / 19th St W	C	31.2	C	32.4	C	33.6
Stop Controlled						
2. Transit Center / 19th St W						
Northbound Shared Left-Thru-Right	B	12.6	B	12.9	--	--
Southbound Right-Turn	C	17.8	C	18.4	C	18.4
Eastbound Left-Turn	A	0.0	A	0.0	A	0.0
Westbound Left-Turn	A	9.3	A	9.4	--	--
3. Tacoma College / West Site Access / 19th St W						
Northbound Shared Left-Right	C	18.9	C	19.6	C	20.6
Southbound Right-Turn	B	12.7	B	13.0	B	12.9
Westbound Left-Turn	A	0.0	A	0.0	A	9.2
4. 65th Ave W / 19th St W						
Northbound Shared Left-Right	C	17.2	C	18.1	C	18.2
Westbound Left-Turn	A	9.4	A	9.5	A	9.5
5. East Site Access / 19th St W						
Northbound Shared Left-Right	--	--	--	--	C	16.5
Westbound Left-Turn	--	--	--	--	A	9.5
Evening Peak Hour (6:00 – 8:00 PM)						
Signalized						
1. Mildred St W / 19th St W	C	23.2	C	23.8	C	25.1
Stop Controlled						
2. Transit Center / 19th St W						
Northbound Shared Left-Thru-Right	A	0.0	A	0.0	--	--
Southbound Right-Turn	B	14.4	B	14.7	C	15.4
Eastbound Left-Turn	A	0.0	A	0.0	A	0.0
Westbound Left-Turn	A	0.0	A	0.0	--	--
3. Tacoma College / West Site Access / 19th St W						
Northbound Shared Left-Right	A	0.0	A	0.0	C	23.3
Southbound Right-Turn	B	11.4	B	11.5	B	11.5
Westbound Left-Turn	A	9.0	A	9.1	A	9.4
4. 65th Ave W / 19th St W						
Northbound Shared Left-Right	B	14.8	C	15.2	C	15.5
Westbound Left-Turn	A	9.3	A	9.4	A	9.6
5. East Site Access / 19th St W						
Northbound Shared Left-Right	--	--	--	--	B	14.4
Westbound Left-Turn	--	--	--	--	A	9.1

As shown in Table 2, the adjacent signalized study intersection at Mildred Street W/19th Street W is expected to continue to operate at LOS C or better during the weekday noon, PM, and evening peak hours in 2019 without or with the proposed Chick-fil-A restaurant. As also shown in Table 2, all turn movements at the stop controlled study intersections and site access driveways are also expected to operate at LOS C or better during the weekday noon, PM, and evening peak hours without or with the proposed CFA development.

Site Access Evaluation

Vehicular access to and from the proposed Chick-fil-A Fircrest will be provided at two driveways on19th Street W. The following describes the driveways serving the Chick-fil-A, and the proposed measures to manage the higher traffic flows during *Opening Weeks* which are described later in the Traffic Management Plan on page 16:

- Both proposed driveways on 19th Street W will provide full access. During opening weeks, manual control (a police officer) will be present to direct Chick-fil-A drive-through traffic to enter the site via the east driveway on 19th Street W and will also ensure drive-through queue backup does not extend onto 19th Street W. Signage, in addition to the manual control, will also help direct Chick-fil-A drive-through traffic to enter the site via the east driveway via 19th Street W.

19th Street W Queue Analysis

Evaluation of future 2019 noon, PM, and evening peak hour queuing with the proposed Chick-fil-A was conducted along 19th Street W and at the adjacent signalized study intersection of Mildred Street W/19th Street W. The queue results were based on the methodology used by the Synchro 10.0 traffic software program and were rounded to the nearest 25 feet. The reported 95th percentile queue lengths represent a condition that is exceeded only five percent of the time.

A summary of the queue analysis results is included below in Table 3. The queue reports are included in Attachment C.

Table 3
2019 With-Project Peak Hour Queue Summary

Study Intersection/Movement	95th Percentile Queues (ft) Noon Peak Hour	PM Peak Hour	Evening Peak Hour
1. Mildred St W / 19th St W			
Westbound Left-Turn	250'	375'	225'
Westbound Through	225'	375'	250'
Westbound Right-Turn	50'	75'	50'
2. Transit Center / 19th St W			
Southbound Right-Turn	< 25'	< 25'	0'
Eastbound Left-Turn	0'	0'	0'
3. Tacoma College / West Site Access / 19th St W			
Northbound Shared Left-Right	25'	25'	25'
Southbound Right-Turn	< 25'	< 25'	< 25'
Westbound Left-Turn	0'	0'	0'
4. 65th Ave W / 19th St W			
Northbound Shared Left-Right	25'	25'	< 25'
Westbound Left-Turn	< 25'	< 25'	0'
5. East Site Access / 19th St W			
Northbound Shared Left-Right	< 25'	< 25'	< 25'
Westbound Left-Turn	< 25'	< 25'	< 25'

As shown in Table 3, the westbound approach at the adjacent signalized study intersection at Mildred Street W/19th Street W is anticipated to have 95th percentile queues of approximately 375 feet during the PM peak hour. The proposed west site access driveway for the Chick-fil-A restaurant would be located approximately 325 feet east of the Mildred Street W/19th Street W signalized intersection. The queue results indicate that during the PM peak hour, the 95th percentile westbound queues at the signal may extend beyond the proposed site access driveway and may impact left-turns exiting this driveway during some of the signal cycles. However, as shown in Attachment C, the 50th percentile queues for the westbound approach are anticipated to be 250 feet or less, so on average the Chick-fil-A west driveway will not be impacted by westbound queues at the adjacent signalized intersection of Mildred Street W/19th Street W.

As also shown in Table 3, all turn movements at the proposed west and east site access driveways on 19th Street W and at the adjacent stop controlled study intersections are anticipated to have a 95th percentile queue of 25 feet (1 vehicle) or less.

Chick-fil-A Drive-Through Queue Analysis

Drive-through queues for the proposed Chick-fil-A restaurant were evaluated for two scenarios:

(1) opening weeks, and

(2) a normalized condition.

The queue analysis is based on service times collected at 3 existing Chick-fil-A restaurants in Tacoma, Bellevue, and Lynnwood in July 2016. The queue analysis considers existing and future estimated drive-through vehicle demand, existing and future estimated service times, and trade area differences between the Fircrest location and the 3 existing CFA restaurants, all of which are described next.

Trade Area Comparison

The proposed Chick-fil-A project in Fircrest is expected to have trade area differences compared to the current Tacoma/Bellevue/Lynnwood locations. The openings at these first 3 locations were strategic in that they allowed the brand to be accessible to the entire Puget Sound region with southern, central, and northern locations. Bellevue's trade area during *Opening Weeks* ranged from Bothell to Kent and was the most convenient Chick-fil-A location of the 3 openings for Seattle population.

Additionally, Tacoma and Lynnwood are super-regional retail locations with major retail shopping centers serving as a primary traffic driver along with locations situated immediately adjacent to a major interstate. The Bellevue Chick-fil-A is located in the central business district in the second largest City in the state and in the largest populated County.

While the proposed Chick-fil-A location in Fircrest is expected to have queues and traffic generation during *Normalized Conditions* less than the current 3 CFA locations based on the data shown in the chart above, traffic count and queue data collected at the 3 existing CFA locations were used to evaluate queues at the proposed Fircrest location; this provides a conservative worst-case analysis of queues during *Normalized Conditions*. During *Opening Weeks*, queues are estimated based on higher demands at the drive-through recording during the other openings.

Queue Comparison

Chick-fil-A has opened stores in Bellevue, Tacoma, and Lynnwood within the past 3 years. Each of these sites were unique in location and on-site characteristics as shown in Table 4.

Table 4
Chick-fil-A Store Characteristics

Location	Opening Date	Max Queue Available on Site (veh)	Typical Queue (veh)	Management Plan Duration
Bellevue	3/26/2015	18	18	Ongoing
Lynnwood	4/23/2015	17	6	4 Weeks
Tacoma	4/16/2015	14	12	6 Weeks

The existing Bellevue, Tacoma, and Lynnwood CFA locations provide on-site queue storage of between approximately 14 and 18 vehicles. It should be noted that at the Tacoma and Lynnwood locations, the adjacent retail centers provide the ability for queues to extend beyond the on-site limits. The proposed Fircrest location provides on-site queue for about 28 vehicles within the drive-through queue area only, which is greater than what is provided at the Bellevue, Tacoma, and Lynnwood stores.

Queue Service Times

Service times were collected at the 3 existing Chick-fil-A restaurant locations in Tacoma, Lynnwood, and Bellevue in July 2016. Services times are an important input in evaluating queues at a drive-through. In the M/M/1 queue theory, the service time is used to establish the average departure rate which is expressed in vehicles per minute. For a fast-food drive-through window, the total service time includes the amount of time a vehicle spends at the window completing a transaction and receiving their order, and the "move up" time.

Existing Services Times for *Normalized Conditions*

Existing service times collected at the 3 existing Chick-fil-A restaurants were measured based on the time between when a vehicle arrives at the pick-up window to when the next vehicle arrives at the pick-up window. This includes time to pay, time to receive the food order, and time for the next vehicle to move up to the pick-up window. The service time data collected at the 3 existing locations is included in Attachment D and is based on *Normalized Conditions*. The following represent the average service times recorded at the 3 existing locations during the lunch peak hour in July 2016:

- Bellevue: 47 seconds per vehicle (72 vehicles arriving in lunch peak hour)
- Lynnwood: 33 seconds per vehicle (96 vehicles arriving in lunch peak hour)
- Tacoma: 48 seconds per vehicle (69 vehicles arriving in lunch peak hour)

Future Service Times during *Opening Weeks*

It should be noted that Chick-fil-A has an Opening Staff group for all store openings throughout the country that remain on-site until staff are trained. They are accustomed to having high staff levels during *Opening Weeks* in order to provide a high quality level of customer service. With the increased staff levels and the Opening Staff group experience with higher customer demand during *Opening Weeks*, this results in lower service times.

Future service time is estimated to be 25 seconds during *Opening Weeks* at the Fircrest location, which reflects the efficiency of the Opening Staff group as well as the increase in staff. Evening peak service times are estimated to be about 30 seconds during *Opening Weeks*.

After about 3 months, *Normalized Conditions* are anticipated to have service times similar to the data collected and summarized above at the 3 existing Chick-fil-A restaurants.

Drive-Through Vehicle Demand

Existing Drive-Through Demand and Queues for *Normalized Conditions*

Existing drive-through demand (# vehicles per hour during peak periods) was collected at the same time when queue service times were collected at the 3 locations. Based on these services times at the drive-through windows at 3 of the existing Puget Sound Chick-fil-A locations, average and maximum (95th-percentile) drive-through queues (unconstrained) were calculated using Poisson Queuing method for *Normalized Conditions*. The calculations are provided in **Attachment E**, and summarized below:

- Bellevue: 18 vehicle average queue, 33 vehicle max queue
- Lynnwood: 6 vehicle average queue, 14 vehicle max queue
- Tacoma: 12 vehicle average queue, 23 vehicle max queue

During *Normalized Conditions*, the future drive-through demand at the proposed Fircrest location during lunch peak is estimated to be 75 vehicles, and 60 vehicles during the weekday evening peak. The 75 drive-thru vehicles is based on average drive-through demand collected at the 3 existing locations.

Future Drive-Through Demand for *Opening Weeks*

To estimate future queues at the proposed Fircrest location, two inputs were used in the Poisson Queuing Method: (1) # arriving vehicles and (2) service time.

During the *Opening Weeks* at the 3 Puget Sound Chick-fil-A locations, the maximum drive-through demand was between 120 and 130 vehicles during the lunch peak hour (based on data provided by Chick-fil-A). For purposes of estimating future drive-through queue during *Opening Weeks* at the proposed Fircrest location, a maximum of 135 vehicles were assumed in the drive-through during the weekday lunch peak. During the evening peak of the *Opening Weeks*, 110 vehicles are estimated in the drive-through at the Fircrest location.

Estimated Future Drive-Through Queues

Using the same Poisson Queuing Method, during *Opening Weeks* of the proposed Fircrest location, the 95th-percentile queue in the drive-through during the lunch peak period is estimated to be 27 vehicles based on 135 arriving vehicles and a 25 second service time. As mentioned, Chick-fil-A will have their Opening Staff group at the Fircrest location for *Opening Weeks* to help improve efficiency and ensure fast service times. The 95th-percentile queue in the drive-through during the early evening peak period in the *Opening Weeks* is estimated to be 20 vehicles based on 110 arriving vehicles and a 30 second service time. These calculations are provided in **Attachment F**.

During *Normalized Conditions*, 95th-percentile queues at the Fircrest drive-through are expected to be about 16 vehicles during the lunch peak based on 75 arriving vehicles in the drive-through, and a 43 second service time. The 95th-percentile queue in the drive-through during the weekday PM peak hour is estimated to be 10 vehicles based on 60 arriving vehicles in the drive-through and a 50 second service time.

To mitigate higher traffic generation and drive-through queue demand to the adjacent shared access easement during *Opening Weeks*, a Traffic Management Plan is proposed to ensure that that vehicle queues do not extend back to 19th Street W. Elements of the Plan are described on the next page.

Parking Analysis

A parking analysis was completed for the CFA Fircrest project to evaluate the estimated peak parking demand as it compares proposed parking supply.

Parking Supply. The project proposes a total of 49 on-site surface parking stalls.

Parking Demand. The peak parking demand for the proposed fast-food restaurant use (4,706 SF) was estimated based on rates included in the *ITE Parking Generation* manual, 4th edition for LUC 934 (Fast-Food Restaurant with Drive-Through Window). Per ITE, the average peak period parking demand rate for a fast-food restaurant with drive-through window is 9.98 vehicles per 1,000 SF. Applying the peak parking demand rate to the proposed CFA Fircrest site results in a total estimated peak parking demand of 47 stalls (9.98 X 4,706 / 1000). The 49 proposed on-site parking stalls would accommodate this peak parking demand.

Traffic Management Plan

During *Opening Weeks*, a combination of manual control and signage is proposed to be utilized. Manual control will include presence of a Chick-fil-A staff, certified flagger, and/or police officer that will be positioned strategically on the site to help direct entering Chick-fil-A vehicle traffic. Any traffic directing in the public ROW will be managed by a police officer. Signage will direct customers and also be used to restrict parking for Chick-fil-A customers in neighboring properties. The following preliminary manual control and signage locations are illustrated in Attachment G with a description of their operation next.

M1. Chick-fil-A drive-through traffic will be directed to access the drive-through via the east site access driveway on 19th Street W. A police officer will be positioned at the east site access driveway on 19th Street W to control the Chick-fil-A driveway intended to be used by drive-through customers and ensure drive-through queues do not extend back to 19th Street W.

M2. A Chick-fil-A staff member will be positioned at the exit of the drive-through internal intersection to assist in guiding both entering and exiting traffic to appropriate locations.

S1. Signage will be located at the Chick-fil-A accesses on 19th Street W directing Chick-fil-A drive-through traffic to access via the East Site Access on 19th Street W.

S2. Signage will be located at Café Elite indicating no Chick-fil-A parking.

These traffic management plan measures are intended to help direct entering vehicles to the on-site drive-through queue area and eliminate queue spill-back onto adjacent streets. It is expected that the duration of the management plan will be reviewed and collaborated with City staff.

If you have any questions regarding the information presented in this assessment, please feel free to contact Jeff at (425) 250-0581 or schramm@tenw.com.

Attachments:
A. Existing Traffic Count Data
B. Trip Generation Calculations
C. LOS Methodology & Calculations
D. Existing Chick-fil-A Service Times
E. Existing Chick-fil-A Queue Calculations
F. Chick-fil-A Fircrest Queue Calculations
G. Traffic Management Plan

ATTACHMENT A

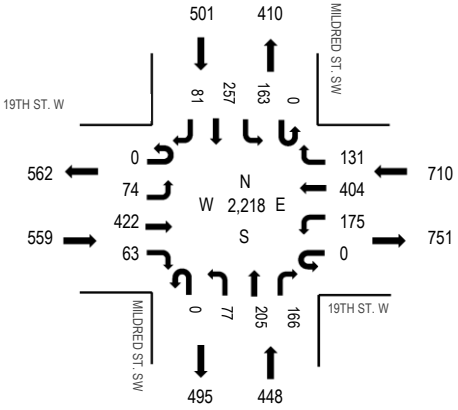
Existing Traffic Count Data

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

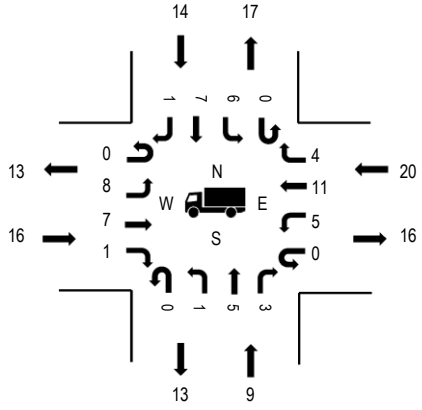
Location: 1 MILDRED ST. SW & 19TH ST. W Noon
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 12:15 PM - 01:15 PM

Peak Hour

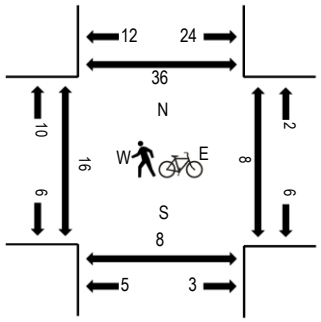
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.9%	0.88
WB	2.8%	0.87
NB	2.0%	0.91
SB	2.8%	0.91
All	2.7%	0.95

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				MILDRED ST. SW Northbound				MILDRED ST. SW Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
11:30 AM	0	26	92	6	0	56	76	21	0	16	53	40	0	36	47	21	490	2,078
11:45 AM	0	31	94	14	0	49	108	36	0	6	45	37	0	31	58	33	542	2,144
12:00 PM	0	24	93	8	0	49	90	26	0	7	53	37	0	33	65	22	507	2,183
12:15 PM	0	14	102	19	0	43	96	38	0	18	46	43	0	37	65	18	539	2,218
12:30 PM	0	14	105	16	0	39	108	23	0	20	55	39	0	39	74	24	556	2,207
12:45 PM	0	16	124	18	0	57	113	35	0	13	51	40	0	44	54	16	581	
1:00 PM	0	30	91	10	0	36	87	35	0	26	53	44	0	43	64	23	542	
1:15 PM	0	27	114	15	0	40	81	42	0	28	49	46	0	24	42	20	528	
Count Total	0	182	815	106	0	369	759	256	0	134	405	326	0	287	469	177	4,285	
Peak Hour	0	74	422	63	0	175	404	131	0	77	205	166	0	163	257	81	2,218	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

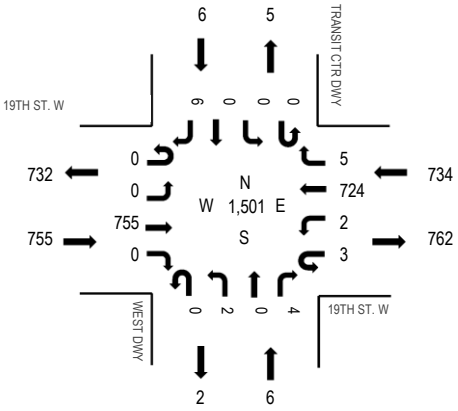
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
11:30 AM	3	3	8	3	17	11:30 AM	3	5	6	5	19
11:45 AM	7	5	4	1	17	11:45 AM	4	0	3	9	16
12:00 PM	5	4	7	3	19	12:00 PM	1	3	6	10	20
12:15 PM	6	2	5	4	17	12:15 PM	3	3	3	8	17
12:30 PM	4	2	7	6	19	12:30 PM	3	0	0	9	12
12:45 PM	3	3	6	3	15	12:45 PM	6	1	1	11	19
1:00 PM	3	2	2	1	8	1:00 PM	4	4	4	8	20
1:15 PM	4	3	6	4	17	1:15 PM	8	0	0	11	19
Count Total	35	24	45	25	129	Count Total	32	16	23	71	142
Peak Hour	16	9	20	14	59	Peak Hour	16	8	8	36	68

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

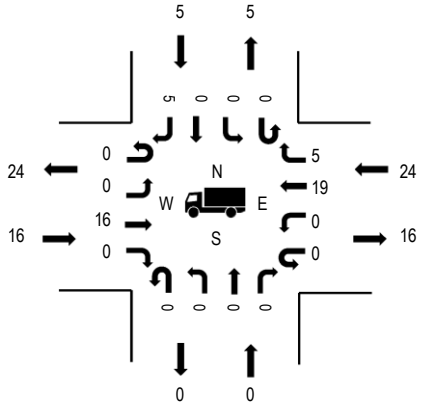
Location: 2 WEST DWY & 19TH ST. W Noon
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 12:00 PM - 01:00 PM

Peak Hour

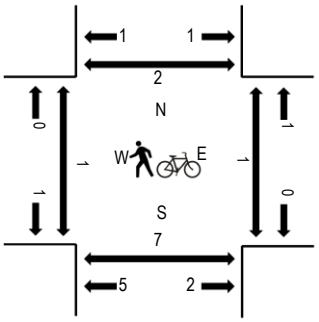
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.1%	0.95
WB	3.3%	0.93
NB	0.0%	0.75
SB	83.3%	0.50
All	3.0%	0.94

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				WEST DWY Northbound				TRANSIT CTR DWY Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
11:30 AM	0	0	184	0	0	0	161	1	0	0	0	0	0	0	0	2	348	1,436
11:45 AM	0	0	156	0	1	0	197	2	0	0	0	0	0	0	0	0	356	1,458
12:00 PM	0	0	182	0	0	0	183	1	0	0	0	1	0	0	0	2	369	1,501
12:15 PM	0	0	186	0	1	0	173	0	0	0	0	2	0	0	0	1	363	1,499
12:30 PM	0	0	188	0	1	0	174	3	0	1	0	0	0	0	0	3	370	1,479
12:45 PM	0	0	199	0	1	2	194	1	0	1	0	1	0	0	0	0	399	
1:00 PM	1	0	190	1	0	0	170	1	0	1	0	1	0	0	0	2	367	
1:15 PM	0	0	178	1	0	0	161	2	0	0	0	0	0	0	0	1	343	
Count Total	1	0	1,463	2	4	2	1,413	11	0	3	0	5	0	0	0	11	2,915	
Peak Hour	0	0	755	0	3	2	724	5	0	2	0	4	0	0	0	6	1,501	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

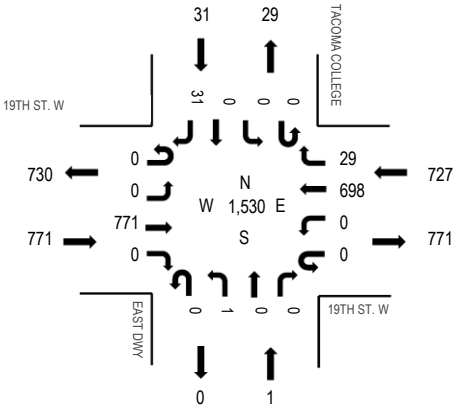
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
11:30 AM	4	0	6	2	12	11:30 AM	0	5	0	1	6
11:45 AM	7	0	5	0	12	11:45 AM	0	3	0	1	4
12:00 PM	4	0	6	2	12	12:00 PM	1	5	0	0	6
12:15 PM	6	0	3	1	10	12:15 PM	0	2	0	1	3
12:30 PM	2	0	11	2	15	12:30 PM	0	0	0	0	0
12:45 PM	4	0	4	0	8	12:45 PM	0	0	1	1	2
1:00 PM	4	0	1	2	7	1:00 PM	2	1	0	1	4
1:15 PM	6	0	6	1	13	1:15 PM	0	4	1	0	5
Count Total	37	0	42	10	89	Count Total	3	20	2	5	30
Peak Hour	16	0	24	5	45	Peak Hour	1	7	1	2	11

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

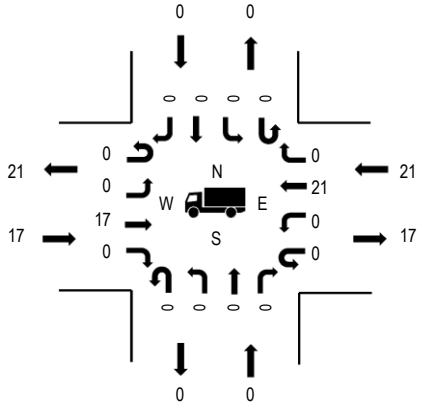
Location: 3 EAST DWY & 19TH ST. W Noon
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 12:15 PM - 01:15 PM

Peak Hour

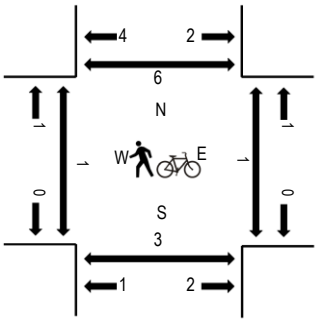
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.2%	0.94
WB	2.9%	0.91
NB	0.0%	0.25
SB	0.0%	0.60
All	2.5%	0.94

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				EAST DWY Northbound				TACOMA COLLEGE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
11:30 AM	0	0	167	1	0	0	164	8	0	1	0	0	0	0	0	6	347	1,448
11:45 AM	1	0	157	0	0	0	190	6	0	0	0	0	0	0	0	5	359	1,469
12:00 PM	0	0	186	2	0	0	175	4	0	0	0	0	0	0	0	5	372	1,519
12:15 PM	0	0	188	0	0	0	165	8	0	0	0	0	0	0	0	9	370	1,530
12:30 PM	0	0	187	0	0	0	170	7	0	0	0	0	0	0	0	4	368	1,499
12:45 PM	0	0	204	0	0	0	196	3	0	1	0	0	0	0	0	5	409	
1:00 PM	0	0	192	0	0	0	167	11	0	0	0	0	0	0	0	13	383	
1:15 PM	0	0	182	0	0	1	142	7	0	1	0	0	0	0	0	6	339	
Count Total	1	0	1,463	3	0	1	1,369	54	0	3	0	0	0	0	0	53	2,947	
Peak Hour	0	0	771	0	0	0	698	29	0	1	0	0	0	0	0	31	1,530	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

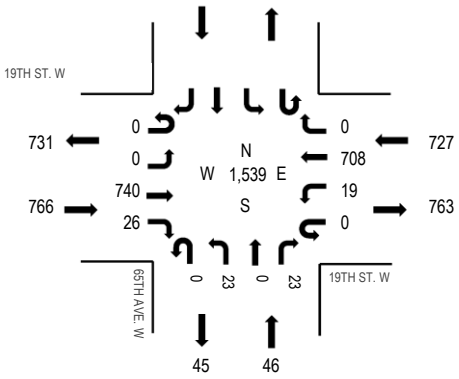
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
11:30 AM	3	0	7	0	10	11:30 AM	0	4	0	0	4
11:45 AM	6	0	4	0	10	11:45 AM	0	1	0	1	2
12:00 PM	4	0	5	0	9	12:00 PM	0	2	0	0	2
12:15 PM	7	0	5	0	12	12:15 PM	0	2	0	1	3
12:30 PM	2	0	11	0	13	12:30 PM	0	0	0	1	1
12:45 PM	4	0	4	0	8	12:45 PM	1	0	0	2	3
1:00 PM	4	0	1	0	5	1:00 PM	0	1	1	2	4
1:15 PM	6	0	3	1	10	1:15 PM	0	3	1	0	4
Count Total	36	0	40	1	77	Count Total	1	13	2	7	23
Peak Hour	17	0	21	0	38	Peak Hour	1	3	1	6	11

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

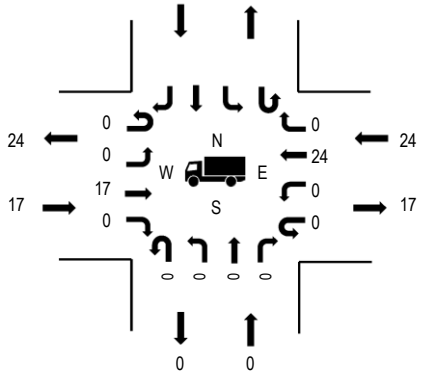
Location: 4 65TH AVE. W & 19TH ST. W Noon
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 12:00 PM - 01:00 PM

Peak Hour

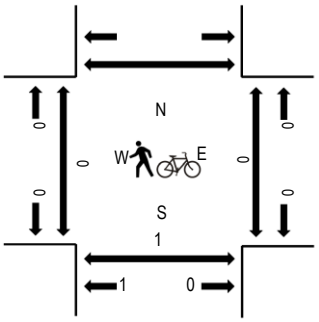
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.2%	0.95
WB	3.3%	0.95
NB	0.0%	0.82
SB		
All	2.7%	0.95

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				65TH AVE. W Northbound				Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
11:30 AM	0	0	155	12	0	7	168	0	0	6	0	5					353	1,474
11:45 AM	0	0	150	7	0	4	195	0	0	2	0	3					361	1,494
12:00 PM	0	0	182	6	0	7	178	0	0	4	0	6					383	1,539
12:15 PM	0	0	184	6	0	5	172	0	0	6	0	4					377	1,534
12:30 PM	0	0	179	8	0	5	169	0	0	4	0	8					373	1,492
12:45 PM	0	0	195	6	0	2	189	0	0	9	0	5					406	
1:00 PM	0	0	181	8	0	5	170	0	0	8	0	6					378	
1:15 PM	0	0	175	4	0	5	146	0	0	4	0	1					335	
Count Total	0	0	1,401	57	0	40	1,387	0	0	43	0	38					2,966	
Peak Hour	0	0	740	26	0	19	708	0	0	23	0	23					1,539	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles				
	EB	NB	WB	SB	Total
11:30 AM	4	0	6		10
11:45 AM	6	0	4		10
12:00 PM	5	0	6		11
12:15 PM	6	0	3		9
12:30 PM	2	0	11		13
12:45 PM	4	0	4		8
1:00 PM	5	0	1		6
1:15 PM	6	0	3		9
Count Total	38	0	38		76
Peak Hour	17	0	24		41

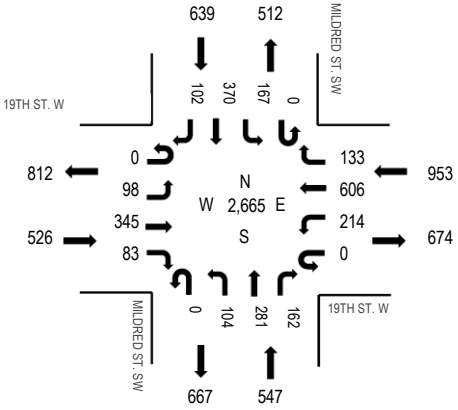
Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total
11:30 AM	0	2	0		2
11:45 AM	0	1	0		1
12:00 PM	0	0	0		0
12:15 PM	0	1	0		1
12:30 PM	0	0	0		0
12:45 PM	0	0	0		0
1:00 PM	0	0	0		0
1:15 PM	0	4	0		4
Count Total	0	8	0		8
Peak Hour	0	1	0		1

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

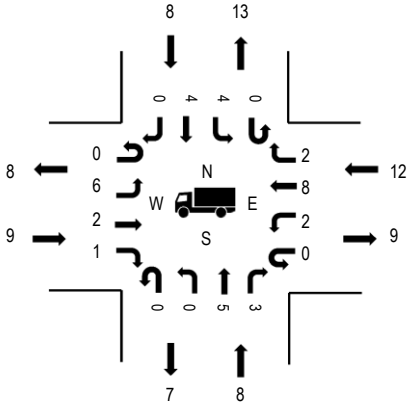
Location: 1 MILDRED ST. SW & 19TH ST. W PM
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

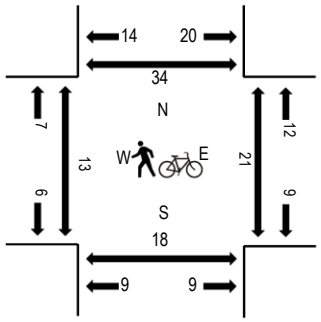
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.7%	0.93
WB	1.3%	0.89
NB	1.5%	0.89
SB	1.3%	0.86
All	1.4%	0.96

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				MILDRED ST. SW Northbound				MILDRED ST. SW Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
4:00 PM	0	27	101	17	0	47	117	24	0	23	76	53	0	27	86	25	623	2,620
4:15 PM	0	20	94	20	0	56	177	35	0	27	67	34	0	36	72	26	664	2,665
4:30 PM	0	26	91	24	0	60	121	35	0	28	67	59	0	42	113	30	696	2,643
4:45 PM	0	22	91	21	0	47	147	28	0	27	67	29	0	50	87	21	637	2,545
5:00 PM	0	30	69	18	0	51	161	35	0	22	80	40	0	39	98	25	668	2,460
5:15 PM	0	19	71	22	0	59	159	28	0	23	80	27	0	37	92	25	642	
5:30 PM	0	29	71	18	0	51	151	32	0	17	63	49	0	39	64	14	598	
5:45 PM	0	23	74	13	0	35	139	33	0	17	56	39	0	41	63	19	552	
Count Total	0	196	662	153	0	406	1,172	250	0	184	556	330	0	311	675	185	5,080	
Peak Hour	0	98	345	83	0	214	606	133	0	104	281	162	0	167	370	102	2,665	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

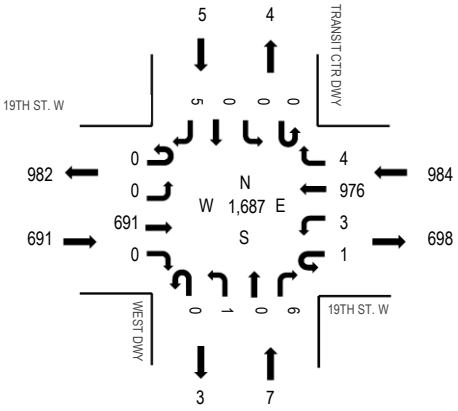
Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	3	3	3	0	9	4:00 PM	1	1	10	3	15
4:15 PM	3	3	5	3	14	4:15 PM	6	2	4	12	24
4:30 PM	3	3	0	3	9	4:30 PM	2	3	4	11	20
4:45 PM	1	2	4	1	8	4:45 PM	2	5	7	7	21
5:00 PM	2	0	3	1	6	5:00 PM	3	8	6	4	21
5:15 PM	2	1	5	7	15	5:15 PM	2	2	2	3	9
5:30 PM	3	2	1	2	8	5:30 PM	6	3	0	10	19
5:45 PM	1	2	5	3	11	5:45 PM	3	0	1	3	7
Count Total	18	16	26	20	80	Count Total	25	24	34	53	136
Peak Hour	9	8	12	8	37	Peak Hour	13	18	21	34	86

All Traffic Data Services Inc.
(303) 216-2439
www.alltrafficdata.net

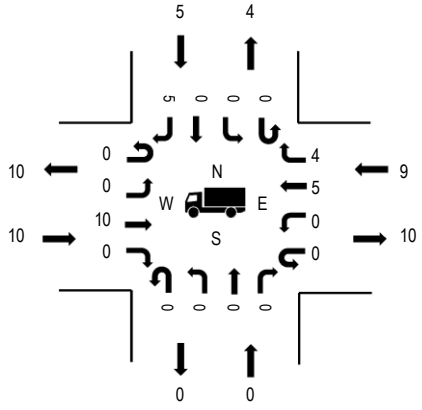
Location: 2 WEST DWY & 19TH ST. W PM
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 04:30 PM - 05:30 PM

Peak Hour

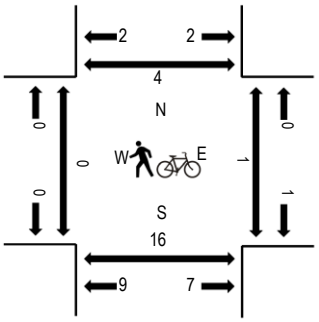
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.4%	0.82
WB	0.9%	0.92
NB	0.0%	0.58
SB	100.0%	0.63
All	1.4%	0.96

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				WEST DWY Northbound				TRANSIT CTR DWY Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	192	1	0	0	203	1	0	0	0	0	0	0	0	2	399	1,658
4:15 PM	0	0	159	0	1	0	247	0	0	0	0	2	0	0	0	1	410	1,672
4:30 PM	0	0	211	0	1	1	224	1	0	0	0	1	0	0	0	0	439	1,687
4:45 PM	0	0	160	0	0	1	244	0	0	1	0	2	0	0	0	2	410	1,664
5:00 PM	0	0	162	0	0	1	244	1	0	0	0	3	0	0	0	2	413	1,670
5:15 PM	0	0	158	0	0	0	264	2	0	0	0	0	0	0	0	1	425	
5:30 PM	0	0	175	0	0	0	237	3	0	0	0	0	0	1	0	0	416	
5:45 PM	0	0	173	0	1	0	238	1	0	0	0	1	0	0	0	2	416	
Count Total	0	0	1,390	1	3	3	1,901	9	0	1	0	9	0	1	0	10	3,328	
Peak Hour	0	0	691	0	1	3	976	4	0	1	0	6	0	0	0	5	1,687	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	3	0	4	2	9	4:00 PM	0	2	0	0	2
4:15 PM	3	0	2	1	6	4:15 PM	0	1	0	1	2
4:30 PM	7	0	1	0	8	4:30 PM	0	1	0	2	3
4:45 PM	0	0	2	2	4	4:45 PM	0	7	1	2	10
5:00 PM	1	0	3	2	6	5:00 PM	0	2	0	0	2
5:15 PM	2	0	3	1	6	5:15 PM	0	6	0	0	6
5:30 PM	2	0	3	1	6	5:30 PM	0	4	0	1	5
5:45 PM	2	0	3	2	7	5:45 PM	0	2	0	0	2
Count Total	20	0	21	11	52	Count Total	0	25	1	6	32
Peak Hour	10	0	9	5	24	Peak Hour	0	16	1	4	21

All Traffic Data Services Inc.
(303) 216-2439
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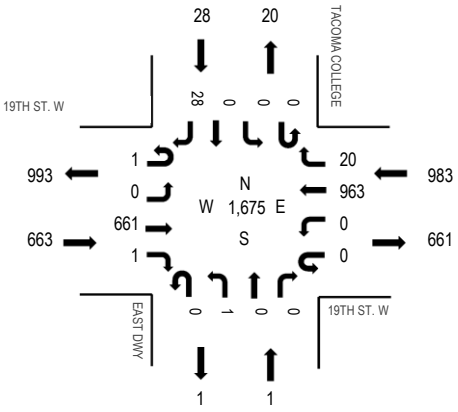
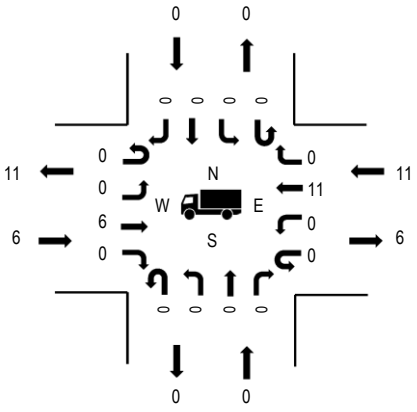
Location: 3 EAST DWY & 19TH ST. W PM
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 04:45 PM - 05:45 PM

Peak Hour

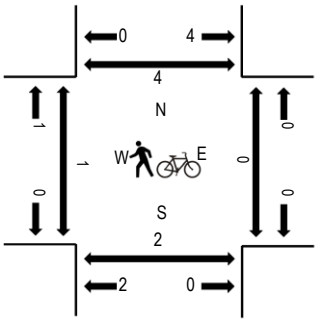
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.9%	0.95
WB	1.1%	0.92
NB	0.0%	0.25
SB	0.0%	0.47
All	1.0%	0.99

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				EAST DWY Northbound				TACOMA COLLEGE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	174	0	0	0	191	2	0	0	0	1	0	0	0	2	370	1,627
4:15 PM	0	0	164	0	0	0	256	3	0	0	0	0	0	0	0	8	431	1,672
4:30 PM	0	1	180	0	0	0	216	3	0	0	0	0	0	0	0	8	408	1,665
4:45 PM	0	0	168	1	0	0	226	7	0	1	0	0	0	0	0	15	418	1,675
5:00 PM	1	0	166	0	0	0	241	2	0	0	0	0	0	0	0	5	415	1,666
5:15 PM	0	0	153	0	0	0	262	4	0	0	0	0	0	0	0	5	424	
5:30 PM	0	0	174	0	0	0	234	7	0	0	0	0	0	0	0	3	418	
5:45 PM	0	0	182	0	0	0	213	3	0	0	0	0	0	0	0	11	409	
Count Total	1	1	1,361	1	0	0	1,839	31	0	1	0	1	0	0	0	57	3,293	
Peak Hour	1	0	661	1	0	0	963	20	0	1	0	0	0	0	0	28	1,675	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	3	0	3	0	6	4:00 PM	0	2	0	0	2
4:15 PM	3	0	3	0	6	4:15 PM	0	1	0	2	3
4:30 PM	6	0	1	0	7	4:30 PM	0	0	0	3	3
4:45 PM	1	0	2	0	3	4:45 PM	1	2	0	2	5
5:00 PM	1	0	3	0	4	5:00 PM	0	0	0	0	0
5:15 PM	1	0	3	0	4	5:15 PM	0	0	0	0	0
5:30 PM	3	0	3	0	6	5:30 PM	0	0	0	2	2
5:45 PM	2	0	3	0	5	5:45 PM	0	1	0	0	1
Count Total	20	0	21	0	41	Count Total	1	6	0	9	16
Peak Hour	6	0	11	0	17	Peak Hour	1	2	0	4	7

All Traffic Data Services Inc.
(303) 216-2439
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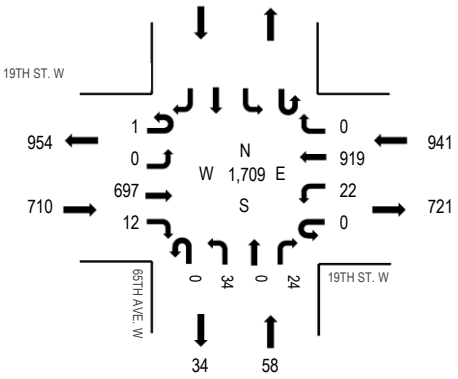
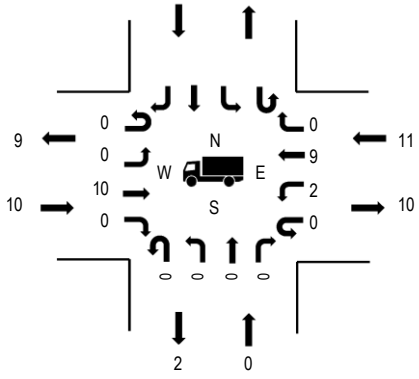
Location: 4 65TH AVE. W & 19TH ST. W PM
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 04:15 PM - 05:15 PM

Peak Hour

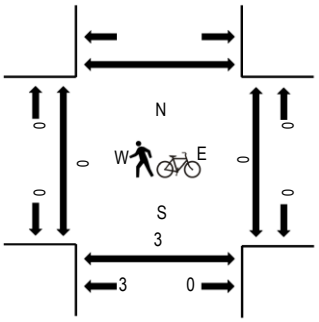
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.4%	0.92
WB	1.2%	0.90
NB	0.0%	0.56
SB		
All	1.2%	0.96

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				65TH AVE. W Northbound				Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	0	179	4	0	2	191	0	0	2	0	11					389	1,668
4:15 PM	0	0	170	3	0	8	253	0	0	6	0	3					443	1,709
4:30 PM	0	0	190	2	0	4	210	0	0	8	0	5					419	1,693
4:45 PM	1	0	170	5	0	6	225	0	0	7	0	3					417	1,691
5:00 PM	0	0	167	2	0	4	231	0	0	13	0	13					430	1,678
5:15 PM	0	0	150	3	0	1	259	0	0	7	0	7					427	
5:30 PM	0	0	168	3	0	4	232	0	0	7	0	3					417	
5:45 PM	0	0	174	5	0	2	211	0	0	6	0	6					404	
Count Total	1	0	1,368	27	0	31	1,812	0	0	56	0	51					3,346	
Peak Hour	1	0	697	12	0	22	919	0	0	34	0	24					1,709	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	5	0	3		8	4:00 PM	0	0	0		0
4:15 PM	2	0	3		5	4:15 PM	0	1	0		1
4:30 PM	6	0	1		7	4:30 PM	0	0	0		0
4:45 PM	1	0	4		5	4:45 PM	0	2	0		2
5:00 PM	1	0	3		4	5:00 PM	0	0	0		0
5:15 PM	2	0	3		5	5:15 PM	0	0	0		0
5:30 PM	3	0	3		6	5:30 PM	0	0	0		0
5:45 PM	2	0	3		5	5:45 PM	0	2	0		2
Count Total	22	0	23		45	Count Total	0	5	0		5
Peak Hour	10	0	11		21	Peak Hour	0	3	0		3

All Traffic Data Services Inc.
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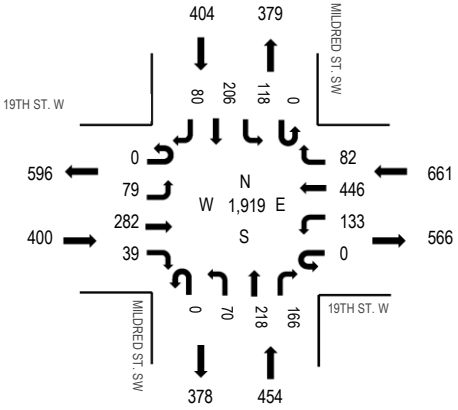
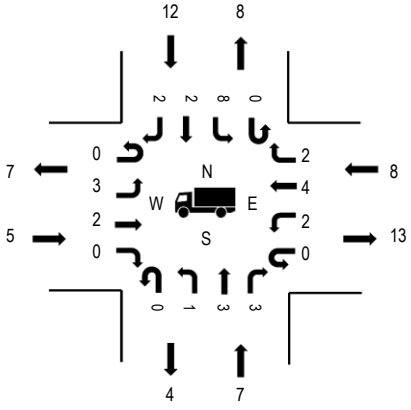
Location: 1 MILDRED ST. SW & 19TH ST. W PM
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 06:00 PM - 07:00 PM

Peak Hour

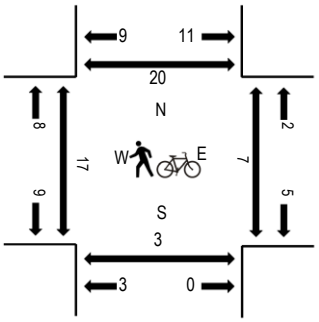
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	1.3%	0.89
WB	1.2%	0.82
NB	1.5%	0.95
SB	3.0%	0.81
All	1.7%	0.87

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				MILDRED ST. SW Northbound				MILDRED ST. SW Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
6:00 PM	0	19	89	4	0	41	138	22	0	21	49	45	0	37	60	27	552	1,919
6:15 PM	0	22	72	13	0	33	122	21	0	15	46	43	0	26	51	21	485	1,783
6:30 PM	0	19	61	11	0	35	109	19	0	18	63	38	0	28	49	17	467	1,660
6:45 PM	0	19	60	11	0	24	77	20	0	16	60	40	0	27	46	15	415	1,571
7:00 PM	0	12	66	10	0	39	76	18	0	10	53	39	0	16	59	18	416	1,504
7:15 PM	0	16	67	16	0	20	68	19	0	15	34	19	0	24	49	15	362	
7:30 PM	0	16	63	6	0	25	80	22	0	15	29	27	0	25	52	18	378	
7:45 PM	0	17	62	13	0	25	70	12	0	15	28	23	0	20	48	15	348	
Count Total	0	140	540	84	0	242	740	153	0	125	362	274	0	203	414	146	3,423	
Peak Hour	0	79	282	39	0	133	446	82	0	70	218	166	0	118	206	80	1,919	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
6:00 PM	2	1	3	7	13	6:00 PM	4	0	2	0	6
6:15 PM	1	4	3	2	10	6:15 PM	2	2	3	8	15
6:30 PM	2	1	0	1	4	6:30 PM	7	0	0	10	17
6:45 PM	0	1	2	2	5	6:45 PM	4	1	2	2	9
7:00 PM	3	0	0	2	5	7:00 PM	1	0	0	4	5
7:15 PM	2	2	2	1	7	7:15 PM	3	2	1	0	6
7:30 PM	1	2	1	0	4	7:30 PM	3	0	0	4	7
7:45 PM	0	0	2	2	4	7:45 PM	1	0	0	0	1
Count Total	11	11	13	17	52	Count Total	25	5	8	28	66
Peak Hour	5	7	8	12	32	Peak Hour	17	3	7	20	47

All Traffic Data Services Inc.
(303) 216-2439
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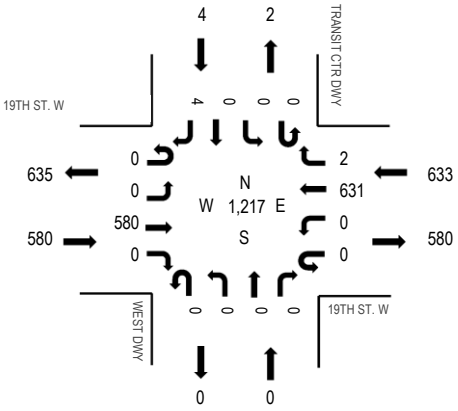
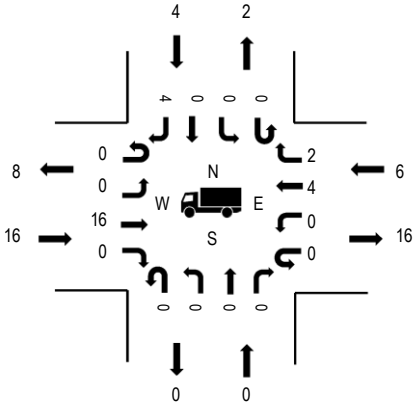
Location: 2 WEST DWY & 19TH ST. W PM
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 06:00 PM - 07:00 PM

Peak Hour

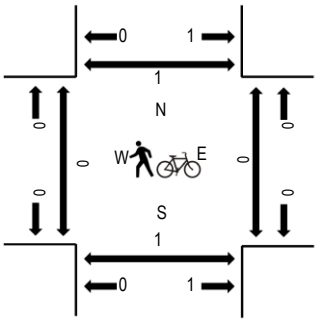
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.8%	0.84
WB	0.9%	0.81
NB	0.0%	0.00
SB	100.0%	0.50
All	2.1%	0.82

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				WEST DWY Northbound				TRANSIT CTR DWY Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
6:00 PM	0	0	172	0	0	0	195	0	0	0	0	0	0	0	0	2	369	1,217
6:15 PM	0	0	138	0	0	0	156	1	0	0	0	0	0	0	0	1	296	1,117
6:30 PM	0	0	136	0	0	0	152	1	0	0	0	0	0	0	0	0	289	1,034
6:45 PM	0	0	134	0	0	0	128	0	0	0	0	0	0	0	0	1	263	992
7:00 PM	0	0	131	0	0	0	135	1	0	0	0	0	0	0	0	2	269	939
7:15 PM	0	0	111	0	0	0	101	0	0	1	0	0	0	0	0	0	213	
7:30 PM	0	0	122	0	1	0	122	1	0	0	0	0	0	0	0	1	247	
7:45 PM	0	0	94	0	0	1	115	0	0	0	0	0	0	0	0	0	210	
Count Total	0	0	1,038	0	1	1	1,104	4	0	1	0	0	0	0	0	7	2,156	
Peak Hour	0	0	580	0	0	0	631	2	0	0	0	0	0	0	0	4	1,217	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
6:00 PM	8	0	2	2	12	6:00 PM	0	0	0	0	0
6:15 PM	5	0	2	1	8	6:15 PM	0	1	0	0	1
6:30 PM	1	0	1	0	2	6:30 PM	0	0	0	1	1
6:45 PM	2	0	1	1	4	6:45 PM	0	0	0	0	0
7:00 PM	3	0	1	2	6	7:00 PM	0	0	0	0	0
7:15 PM	3	0	0	0	3	7:15 PM	0	0	0	0	0
7:30 PM	0	0	4	1	5	7:30 PM	0	0	0	0	0
7:45 PM	2	0	0	0	2	7:45 PM	0	0	0	0	0
Count Total	24	0	11	7	42	Count Total	0	1	0	1	2
Peak Hour	16	0	6	4	26	Peak Hour	0	1	0	1	2

All Traffic Data Services Inc.
(303) 216-2439
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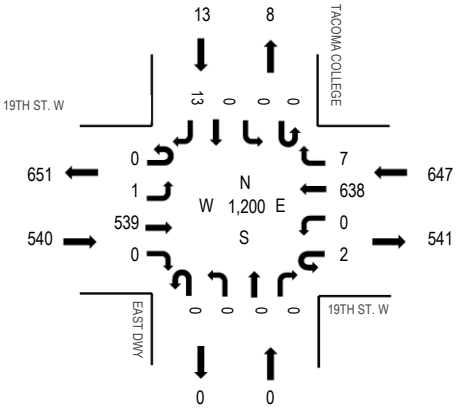
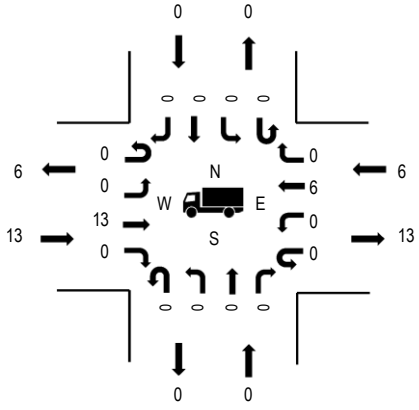
Location: 3 EAST DWY & 19TH ST. W PM
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 06:00 PM - 07:00 PM

Peak Hour

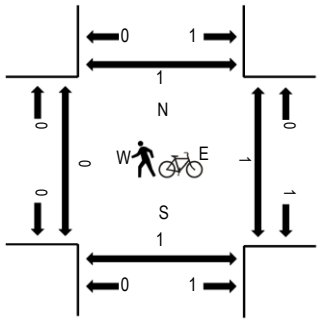
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.4%	0.82
WB	0.9%	0.77
NB	0.0%	0.00
SB	0.0%	0.65
All	1.6%	0.80

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				EAST DWY Northbound				TACOMA COLLEGE Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
6:00 PM	0	0	165	0	1	0	208	1	0	0	0	0	0	0	0	2	377	1,200
6:15 PM	0	0	136	0	0	0	158	3	0	0	0	0	0	0	0	2	299	1,086
6:30 PM	0	1	129	0	1	0	160	2	0	0	0	0	0	0	0	4	297	998
6:45 PM	0	0	109	0	0	0	112	1	0	0	0	0	0	0	0	5	227	944
7:00 PM	1	0	121	0	0	0	141	0	0	0	0	0	0	0	0	0	263	932
7:15 PM	0	0	105	0	0	0	103	0	0	0	0	0	0	0	0	3	211	
7:30 PM	0	0	118	0	0	0	123	0	0	0	0	0	0	0	0	2	243	
7:45 PM	0	0	88	0	0	0	125	0	0	0	0	0	0	0	0	2	215	
Count Total	1	1	971	0	2	0	1,130	7	0	0	0	0	0	0	0	20	2,132	
Peak Hour	0	1	539	0	2	0	638	7	0	0	0	0	0	0	0	13	1,200	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
6:00 PM	6	0	2	0	8	6:00 PM	0	0	0	0	0
6:15 PM	4	0	2	0	6	6:15 PM	0	1	0	0	1
6:30 PM	2	0	1	0	3	6:30 PM	0	0	0	0	0
6:45 PM	1	0	1	0	2	6:45 PM	0	0	1	1	2
7:00 PM	2	0	1	0	3	7:00 PM	0	0	0	0	0
7:15 PM	3	0	0	0	3	7:15 PM	0	1	0	0	1
7:30 PM	0	0	3	0	3	7:30 PM	0	1	0	0	1
7:45 PM	2	0	0	0	2	7:45 PM	0	0	0	0	0
Count Total	20	0	10	0	30	Count Total	0	3	1	1	5
Peak Hour	13	0	6	0	19	Peak Hour	0	1	1	1	3

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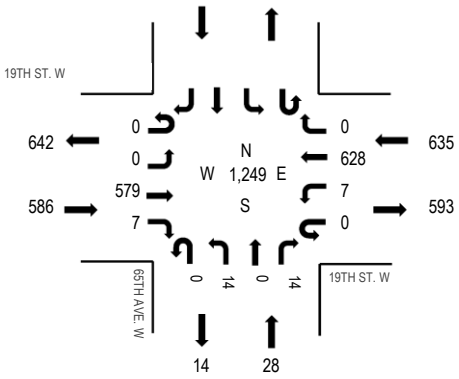
(303) 216-2439
www.alltrafficdata.net

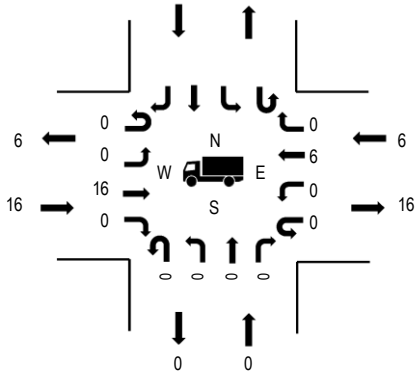
Location: 4 65TH AVE. W & 19TH ST. W PM
Date and Start Time: Tuesday, March 28, 2017
Peak Hour: 06:00 PM - 07:00 PM

Peak Hour

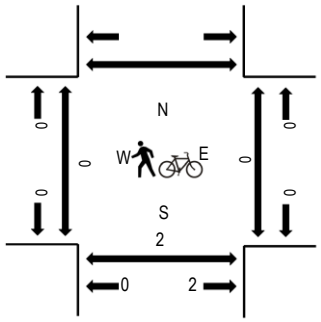
All Vehicles



Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	2.7%	0.83
WB	0.9%	0.77
NB	0.0%	0.54
SB		
All	1.8%	0.79

Traffic Counts - All Vehicles

Interval Start Time	19TH ST. W Eastbound				19TH ST. W Westbound				65TH AVE. W Northbound				Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
6:00 PM	0	0	174	3	0	3	204	0	0	6	0	7					397	1,249
6:15 PM	0	0	142	1	0	0	159	0	0	1	0	3					306	1,121
6:30 PM	0	0	139	3	0	2	154	0	0	6	0	3					307	1,037
6:45 PM	0	0	124	0	0	2	111	0	0	1	0	1					239	969
7:00 PM	0	0	126	4	0	0	134	0	0	3	0	2					269	942
7:15 PM	0	0	116	1	0	1	99	0	0	3	0	2					222	
7:30 PM	0	0	118	0	0	0	120	0	0	1	0	0					239	
7:45 PM	0	0	99	0	0	0	109	0	0	1	0	3					212	
Count Total	0	0	1,038	12	0	8	1,090	0	0	22	0	21					2,191	
Peak Hour	0	0	579	7	0	7	628	0	0	14	0	14					1,249	

Traffic Counts - Heavy Vehicles and Pedestrians/Bicycles in Crosswalk

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
6:00 PM	8	0	2		10	6:00 PM	0	0	0		0
6:15 PM	4	0	2		6	6:15 PM	0	1	0		1
6:30 PM	2	0	1		3	6:30 PM	0	0	0		0
6:45 PM	2	0	1		3	6:45 PM	0	1	0		1
7:00 PM	2	0	1		3	7:00 PM	0	0	0		0
7:15 PM	4	0	0		4	7:15 PM	0	0	0		0
7:30 PM	0	0	3		3	7:30 PM	0	1	0		1
7:45 PM	2	0	0		2	7:45 PM	0	0	0		0
Count Total	24	0	10		34	Count Total	0	3	0		3
Peak Hour	16	0	6		22	Peak Hour	0	2	0		2

ATTACHMENT B

Trip Generation Calculations

Chick-fil-A Fircrest
Trip Generation Summary

Land Use	Area	Units [1]	ITE LUC [2]	Directional Distribution In	Directional Distribution Out	Trip Rate	Trips Generated In	Trips Generated Out	Trips Generated Total
Weekday Daily									
Proposed Use:									
Fast-Food Rest. with Drive-Thru	4,706	GFA	934	50%	50%	470.95	1,108	1,108	2,216
Pass-By Trips [3]	*50%*						*-554*	*-554*	*-1,108*
						Net Proposed Trips =	554	554	1,108
Less Existing Use:									
Small Office Building	4,678	GFA	712	50%	50%	16.19	38	38	76
						Net Existing Trips =	38	38	76
						Net New Weekday Daily Trips =	**516**	**516**	**1,032**
Weekday Lunch Peak Hour									
Proposed Use:									
Fast-Food Rest. with Drive-Thru [4]	4,706	GFA	934	51%	49%	40.19	96	93	189
Pass-By Trips [3]	*50%*						*-48*	*-47*	*-95*
						Net Proposed Trips =	48	46	94
Less Existing Use:									
Small Office Building [6]	4,678	GFA	--	--	--	--	2	7	9
						Net Existing Trips =	2	7	9
						Net New Weekday Lunch Peak Hour Trips =	**46**	**39**	**85**
Weekday PM Peak Hour									
Proposed Use:									
Fast-Food Rest. with Drive-Thru	4,706	GFA	934	52%	48%	32.67	80	74	154
Pass-By Trips [3]	*50%*						*-40*	*-37*	*-77*
						Net Proposed Trips =	40	37	77
Less Existing Use:									
Small Office Building [6]	4,678	GFA	--	--	--	--	4	8	12
						Net Existing Trips =	4	8	12
						Net New Weekday PM Peak Hour Trips =	**36**	**29**	**65**
Weekday Evening Peak Hour									
Proposed Use:									
Fast-Food Rest. with Drive-Thru [5]	4,706	GFA	-	50%	50%	49.71	117	117	234
Pass-By Trips [3]	*50%*						*-58*	*-59*	*-117*
						Net Proposed Trips =	59	58	117
Less Existing Use:									
Small Office Building [6]	4,678	GFA	--	--	--	--	0	0	0
						Net Existing Trips =	0	0	0
						Net New Weekday Evening Peak Hour Trips =	**59**	**58**	**117**

Notes:

[1] GFA = Gross Floor Area.

[2] Institute of Transportation Engineers, Trip Generation Manual, 10th edition Land Use Code.

[3] Pass-by percentage based on studies documents in the ITE Trip Generation Handbook, 3rd Edition, 2017.

[4] Weekday Lunch trip rate for proposed use based on ITE PM peak hour of generator.

[5] Weekday Evening trip rate for proposed use based on existing counts at Bellevue and Tacoma locations (November 2015).

[6] Weekday Lunch, PM, and Evening trip rate for existing office based on counts conducted at existing driveway in March 2017.

ATTACHMENT C

LOS Methodology & Calculations and Queue Calculations

Level of Service Methodology

Level of service calculations for intersections were based on methodology and procedures outlined in the 2016 update of the *Highway Capacity Manual*, Transportation Research Board (HCM 6th Edition) using *Synchro 10.0* and *Sidra 6.1* traffic analysis software.

LOS generally refers to the degree of congestion on a roadway or intersection. It is a measure of vehicle operating speed, travel time, travel delays, and driving comfort. A letter scale from A to F generally describes intersection LOS. At signalized intersections, LOS A represents free-flow conditions (motorists experience little or no delays), and LOS F represents forced-flow conditions where motorists experience an average delay in excess of 80 seconds per vehicle.

The LOS reported for signalized intersections represents the average control delay (sec/veh) and can be reported for the overall intersection, for each approach, and for each lane group (additional v/c ratio criteria apply to lane group LOS only).

The LOS reported at stop-controlled intersections is based on the average control delay and can be reported for each controlled minor approach, controlled minor lane group, and controlled major-street movement (and for the overall intersection at all-way stop controlled intersections. Additional v/c ratio criteria apply to lane group or movement LOS only).

Table C1 outlines the current HCM 6th Edition LOS criteria for signalized and stop-controlled intersections based on these methodologies.

Table C1
LOS Criteria for Signalized and Stop Controlled Intersections[1]

SIGNALIZED INTERSECTIONS			STOP-CONTROLLED INTERSECTIONS		
	LOS by Volume-to Capacity (V/C) Ratio[2]			LOS by Volume-to Capacity (V/C) Ratio[3]	
Control Delay (sec/veh)	≤ 1.0	> 1.0	Control Delay (sec/veh)	≤ 1.0	> 1.0
≤ 10	A	F	≤ 10	A	F
> 10 to ≤ 20	B	F	> 10 to ≤ 15	B	F
> 20 to ≤ 35	C	F	> 15 to ≤ 25	C	F
> 35 to ≤ 55	D	F	> 25 to ≤ 35	D	F
> 55 to ≤ 80	E	F	> 35 to ≤ 50	E	F
> 80	F	F	> 50	F	F

1 Source: Highway Capacity Manual, Transportation Research Board, 2016.

2 For approach-based and intersection-wide assessments at signals, LOS is defined solely by control delay.

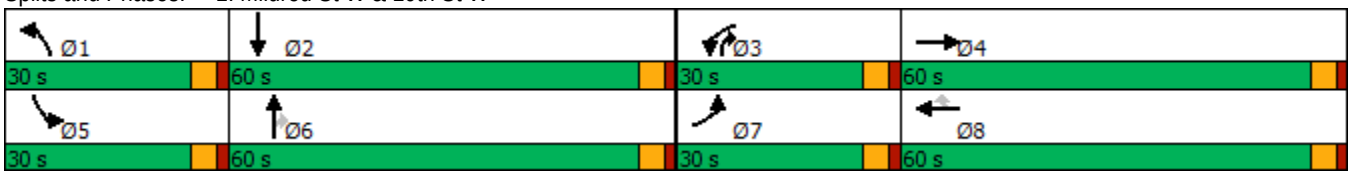
3 For two-way stop controlled intersections, the LOS criteria apply to each lane on a given approach and to each approach on the minor street. LOS is not calculated for major-street approaches or for the intersection as a whole at two-way stop controlled intersections. For approach-based and intersection-wide assessments at all-way stop controlled intersections, LOS is solely defined by control delay.

2018 Existing

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	439	66	182	420	136	80	213	173	170	267	84
Future Volume (vph)	77	439	66	182	420	136	80	213	173	170	267	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			8			36			8			16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 180	
Actuated Cycle Length: 96.4	
Natural Cycle: 95	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Mildred St W & 19th St W

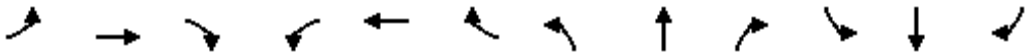


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	81	531	192	442	143	84	224	182	179	369
v/c Ratio	0.44	0.66	0.60	0.37	0.26	0.44	0.62	0.27	0.59	0.42
Control Delay	54.0	39.1	48.2	27.8	6.3	53.8	46.6	5.6	49.2	30.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	39.1	48.2	27.8	6.3	53.8	46.6	5.6	49.2	30.6
Queue Length 50th (ft)	47	151	108	110	0	49	126	8	101	91
Queue Length 95th (ft)	119	270	233	201	47	123	257	55	219	169
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	480	2071	480	2114	868	485	1124	816	480	2026
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.26	0.40	0.21	0.16	0.17	0.20	0.22	0.37	0.18

Intersection Summary

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

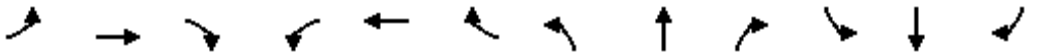
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	439	66	182	420	136	80	213	173	170	267	84
Future Volume (veh/h)	77	439	66	182	420	136	80	213	173	170	267	84
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	81	462	69	192	442	0	84	224	78	179	281	88
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	3	3	3
Cap, veh/h	113	863	128	236	1236	551	110	378	528	222	703	215
Arrive On Green	0.06	0.28	0.28	0.13	0.35	0.00	0.06	0.20	0.20	0.13	0.27	0.27
Sat Flow, veh/h	1767	3072	456	1767	3526	1572	1781	1870	1566	1767	2645	810
Grp Volume(v), veh/h	81	264	267	192	442	0	84	224	78	179	185	184
Grp Sat Flow(s),veh/h/ln	1767	1763	1766	1767	1763	1572	1781	1870	1566	1767	1763	1692
Q Serve(g_s), s	3.5	9.8	9.9	8.2	7.2	0.0	3.6	8.4	2.7	7.6	6.7	6.9
Cycle Q Clear(g_c), s	3.5	9.8	9.9	8.2	7.2	0.0	3.6	8.4	2.7	7.6	6.7	6.9
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	113	495	496	236	1236	551	110	378	528	222	469	450
V/C Ratio(X)	0.72	0.53	0.54	0.81	0.36	0.00	0.76	0.59	0.15	0.81	0.39	0.41
Avail Cap(c_a), veh/h	570	1250	1252	570	2501	1115	574	1327	1323	570	1250	1200
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.6	23.6	23.6	32.7	18.7	0.0	35.8	28.0	18.0	33.0	23.3	23.4
Incr Delay (d2), s/veh	6.2	0.7	0.7	5.1	0.1	0.0	7.9	1.1	0.1	5.2	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	4.0	4.1	3.7	2.8	0.0	1.7	3.7	0.9	3.4	2.7	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.8	24.2	24.3	37.7	18.8	0.0	43.7	29.1	18.1	38.1	23.7	23.9
LnGrp LOS	D	C	C	D	B	A	D	C	B	D	C	C
Approach Vol, veh/h		612			634			386			548	
Approach Delay, s/veh		26.6			24.5			30.1			28.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.8	25.6	15.3	26.8	14.7	20.7	10.0	32.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	5.6	8.9	10.2	11.9	9.6	10.4	5.5	9.2
Green Ext Time (p_c), s	0.1	1.8	0.3	2.9	0.3	1.2	0.1	2.7

Intersection Summary	
HCM 6th Ctrl Delay	27.1
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	785	0	5	753	5	2	0	4	0	0	6
Future Volume (vph)	0	785	0	5	753	5	2	0	4	0	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		343			147			120			137	
Travel Time (s)		7.8			3.3			5.5			6.2	
Confl. Peds. (#/hr)	3		8	8		3	8		8	3		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	83%	83%	83%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

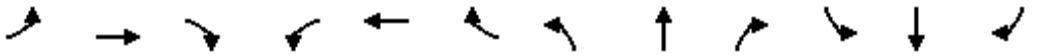
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	785	0	5	753	5	2	0	4	0	0	6
Future Vol, veh/h	0	785	0	5	753	5	2	0	4	0	0	6
Conflicting Peds, #/hr	3	0	8	8	0	3	8	0	8	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	3	0	0	0	83	83	83
Mvmt Flow	0	835	0	5	801	5	2	0	4	0	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	809	0	0	843	0	0	1262	1662	434	-	-	414
Stage 1	-	-	-	-	-	-	843	843	-	-	-	-
Stage 2	-	-	-	-	-	-	419	819	-	-	-	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.5	6.5	6.9	-	-	8.56
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.23	-	-	3.5	4	3.3	-	-	4.13
Pot Cap-1 Maneuver	812	-	-	782	-	-	129	98	576	0	0	409
Stage 1	-	-	-	-	-	-	329	382	-	0	0	-
Stage 2	-	-	-	-	-	-	588	392	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	810	-	-	776	-	-	124	96	567	-	-	405
Mov Cap-2 Maneuver	-	-	-	-	-	-	240	219	-	-	-	-
Stage 1	-	-	-	-	-	-	326	379	-	-	-	-
Stage 2	-	-	-	-	-	-	571	388	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14.4	14
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	390	810	-	-	776	-	-	405
HCM Lane V/C Ratio	0.016	-	-	-	0.007	-	-	0.016
HCM Control Delay (s)	14.4	0	-	-	9.7	-	-	14
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	802	0	0	726	30	1	0	0	0	0	32
Future Volume (vph)	0	802	0	0	726	30	1	0	0	0	0	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			144			127			135	
Travel Time (s)		3.3			3.3			5.8			6.1	
Confl. Peds. (#/hr)	7		4	4		7	4		4	7		7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	802	0	0	726	30	1	0	0	0	0	32
Future Vol, veh/h	0	802	0	0	726	30	1	0	0	0	0	32
Conflicting Peds, #/hr	7	0	4	4	0	7	4	0	4	7	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	0	0	0
Mvmt Flow	0	853	0	0	772	32	1	0	0	0	0	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	857	0	0	1250	1668	435	-	-	416
Stage 1	-	-	-	-	-	-	857	857	-	-	-	-
Stage 2	-	-	-	-	-	-	393	811	-	-	-	-
Critical Hdwy	-	-	-	4.16	-	-	7.54	6.54	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	-	-	-	2.23	-	-	3.52	4.02	3.32	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	773	-	-	129	95	569	0	0	591
Stage 1	0	-	-	-	-	-	318	372	-	0	0	-
Stage 2	0	-	-	-	-	-	603	391	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	770	-	-	120	94	565	-	-	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	235	216	-	-	-	-
Stage 1	-	-	-	-	-	-	318	371	-	-	-	-
Stage 2	-	-	-	-	-	-	564	388	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	20.4	11.6
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	235	-	-	770	-	-	583
HCM Lane V/C Ratio	0.005	-	-	-	-	-	0.058
HCM Control Delay (s)	20.4	-	-	0	-	-	11.6
HCM Lane LOS	C	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	770	27	20	736	24	24
Future Volume (vph)	770	27	20	736	24	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	25	
Link Distance (ft)	144			543	252	
Travel Time (s)	3.3			12.3	6.9	
Confl. Peds. (#/hr)		1	1		1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	3%	3%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	770	27	20	736	24	24
Future Vol, veh/h	770	27	20	736	24	24
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	811	28	21	775	25	25

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	840	0	1257	422
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	431	-
Critical Hdwy	-	-	4.16	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.23	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	784	-	166	586
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	783	-	161	585
Mov Cap-2 Maneuver	-	-	-	-	283	-
Stage 1	-	-	-	-	384	-
Stage 2	-	-	-	-	628	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	15.9
HCM LOS			C

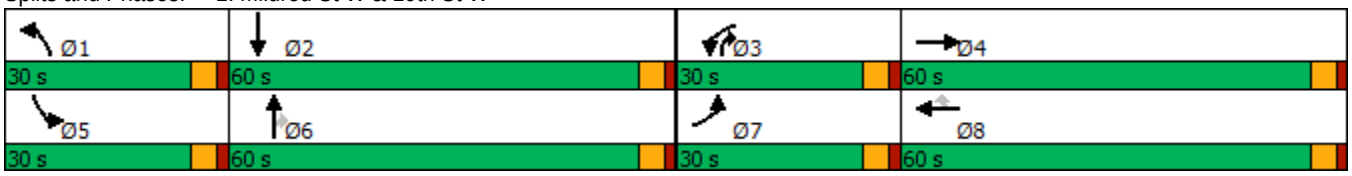
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	381	-	-	783	-
HCM Lane V/C Ratio	0.133	-	-	0.027	-
HCM Control Delay (s)	15.9	-	-	9.7	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	359	86	223	630	138	108	292	168	174	385	106
Future Volume (vph)	102	359	86	223	630	138	108	292	168	174	385	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			18			34			21			13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 108.3
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Mildred St W & 19th St W



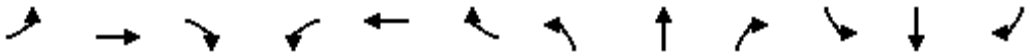
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	106	464	232	656	144	113	304	175	181	511
v/c Ratio	0.52	0.63	0.63	0.60	0.29	0.54	0.72	0.23	0.64	0.55
Control Delay	60.1	42.8	51.7	36.4	10.6	59.8	51.4	4.0	57.1	36.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.1	42.8	51.7	36.4	10.6	59.8	51.4	4.0	57.1	36.3
Queue Length 50th (ft)	70	153	143	203	12	74	193	2	117	151
Queue Length 95th (ft)	155	248	#313	345	72	162	352	44	236	252
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	430	1832	434	1912	795	430	997	816	434	1845
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.25	0.53	0.34	0.18	0.26	0.30	0.21	0.42	0.28

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

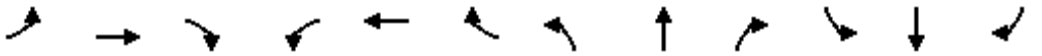
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	102	359	86	223	630	138	108	292	168	174	385	106
Future Volume (veh/h)	102	359	86	223	630	138	108	292	168	174	385	106
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	106	374	90	232	656	0	112	304	73	181	401	110
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	137	746	177	273	1215	542	144	443	606	220	774	210
Arrive On Green	0.08	0.26	0.26	0.15	0.34	0.00	0.08	0.24	0.24	0.12	0.28	0.28
Sat Flow, veh/h	1781	2827	671	1795	3582	1598	1781	1870	1543	1795	2775	753
Grp Volume(v), veh/h	106	233	231	232	656	0	112	304	73	181	257	254
Grp Sat Flow(s),veh/h/ln	1781	1777	1722	1795	1791	1598	1781	1870	1543	1795	1791	1737
Q Serve(g_s), s	5.2	9.9	10.1	11.2	13.2	0.0	5.5	13.2	2.7	8.8	10.8	11.0
Cycle Q Clear(g_c), s	5.2	9.9	10.1	11.2	13.2	0.0	5.5	13.2	2.7	8.8	10.8	11.0
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		0.43
Lane Grp Cap(c), veh/h	137	469	454	273	1215	542	144	443	606	220	499	484
V/C Ratio(X)	0.78	0.50	0.51	0.85	0.54	0.00	0.78	0.69	0.12	0.82	0.51	0.52
Avail Cap(c_a), veh/h	500	1098	1064	504	2213	987	500	1156	1194	504	1107	1073
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.3	27.8	27.9	36.7	23.8	0.0	40.1	30.9	17.4	38.1	27.0	27.1
Incr Delay (d2), s/veh	6.8	0.6	0.7	5.5	0.3	0.0	6.7	1.4	0.1	5.6	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	4.2	4.2	5.2	5.4	0.0	2.6	5.9	0.9	4.1	4.5	4.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.2	28.4	28.5	42.3	24.1	0.0	46.8	32.4	17.5	43.7	27.6	27.8
LnGrp LOS	D	C	C	D	C	A	D	C	B	D	C	C
Approach Vol, veh/h		570			888			489			692	
Approach Delay, s/veh		31.9			28.8			33.4			31.9	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.2	29.8	18.5	28.5	15.9	26.1	11.8	35.2
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	7.5	13.0	13.2	12.1	10.8	15.2	7.2	15.2
Green Ext Time (p_c), s	0.2	2.6	0.4	2.5	0.3	1.7	0.2	4.2

Intersection Summary	
HCM 6th Ctrl Delay	31.2
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	719	0	4	1015	4	1	0	6	0	0	5
Future Volume (vph)	0	719	0	4	1015	4	1	0	6	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		343			147			120			137	
Travel Time (s)		7.8			3.3			5.5			6.2	
Confl. Peds. (#/hr)	4		16	17		5	16		17	5		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	100%	100%	100%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

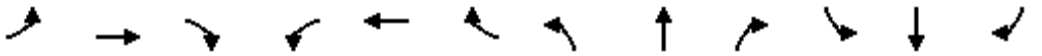
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	719	0	4	1015	4	1	0	6	0	0	5
Future Vol, veh/h	0	719	0	4	1015	4	1	0	6	0	0	5
Conflicting Peds, #/hr	4	0	16	17	0	5	16	0	17	5	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	100	100	100
Mvmt Flow	0	749	0	4	1057	4	1	0	6	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1066	0	0	766	0	0	1319	1840	409	-	-	552
Stage 1	-	-	-	-	-	-	766	766	-	-	-	-
Stage 2	-	-	-	-	-	-	553	1074	-	-	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.5	6.5	6.9	-	-	8.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.5	4	3.3	-	-	4.3
Pot Cap-1 Maneuver	655	-	-	850	-	-	117	76	597	0	0	292
Stage 1	-	-	-	-	-	-	366	415	-	0	0	-
Stage 2	-	-	-	-	-	-	490	299	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	652	-	-	836	-	-	111	74	578	-	-	286
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	189	-	-	-	-
Stage 1	-	-	-	-	-	-	360	408	-	-	-	-
Stage 2	-	-	-	-	-	-	471	296	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.6	17.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	479	652	-	-	836	-	-	286
HCM Lane V/C Ratio	0.015	-	-	-	0.005	-	-	0.018
HCM Control Delay (s)	12.6	0	-	-	9.3	-	-	17.8
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	688	1	0	1002	21	1	0	0	0	0	29
Future Volume (vph)	0	688	1	0	1002	21	1	0	0	0	0	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			144			127			135	
Travel Time (s)		3.3			3.3			5.8			6.1	
Confl. Peds. (#/hr)	5		3	2		4	3		2	4		5
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	688	1	0	1002	21	1	0	0	0	0	29
Future Vol, veh/h	0	688	1	0	1002	21	1	0	0	0	0	29
Conflicting Peds, #/hr	5	0	3	2	0	4	3	0	2	4	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	695	1	0	1012	21	1	0	0	0	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	699	0	0	1210	1736	353	-	-	526
Stage 1	-	-	-	-	-	-	699	699	-	-	-	-
Stage 2	-	-	-	-	-	-	511	1037	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.5	6.5	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	-	-	-	2.21	-	-	3.5	4	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	900	-	-	141	88	649	0	0	502
Stage 1	0	-	-	-	-	-	401	445	-	0	0	-
Stage 2	0	-	-	-	-	-	519	311	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	897	-	-	132	87	646	-	-	498
Mov Cap-2 Maneuver	-	-	-	-	-	-	260	205	-	-	-	-
Stage 1	-	-	-	-	-	-	401	444	-	-	-	-
Stage 2	-	-	-	-	-	-	486	310	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	18.9	12.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	260	-	-	897	-	-	498
HCM Lane V/C Ratio	0.004	-	-	-	-	-	0.059
HCM Control Delay (s)	18.9	-	-	0	-	-	12.7
HCM Lane LOS	C	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2

Lane Group	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1	725	12	23	956	35	25
Future Volume (vph)	1	725	12	23	956	35	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0
Storage Lanes	0		0	1		1	0
Taper Length (ft)	25			25		25	
Link Speed (mph)		30			30	25	
Link Distance (ft)		144			543	252	
Travel Time (s)		3.3			12.3	6.9	
Confl. Peds. (#/hr)			3	3		3	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	0%	0%
Shared Lane Traffic (%)							
Sign Control		Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	1	725	12	23	956	35	25
Future Vol, veh/h	1	725	12	23	956	35	25
Conflicting Peds, #/hr	0	0	3	3	0	3	3
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	-	-	50	-	0	-
Veh in Median Storage, #	-	0	-	-	0	1	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	0	0
Mvmt Flow	1	755	13	24	996	36	26

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	996	0	0	771	0	1316	390
Stage 1	-	-	-	-	-	767	-
Stage 2	-	-	-	-	-	549	-
Critical Hdwy	6.42	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	-	5.8	-
Follow-up Hdwy	2.51	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	337	-	-	846	-	152	614
Stage 1	-	-	-	-	-	424	-
Stage 2	-	-	-	-	-	548	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	337	-	-	844	-	146	610
Mov Cap-2 Maneuver	-	-	-	-	-	275	-
Stage 1	-	-	-	-	-	409	-
Stage 2	-	-	-	-	-	546	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	17.2
HCM LOS			C

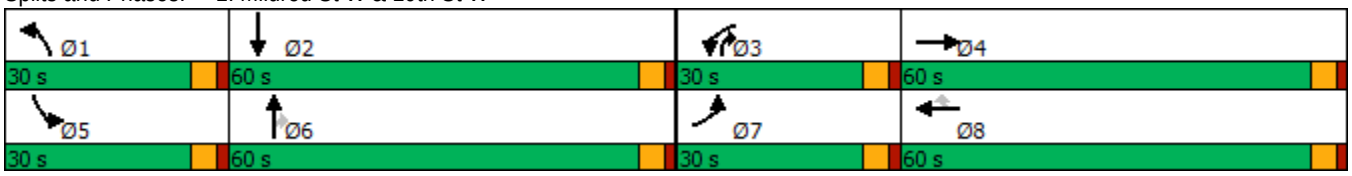
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	357	-	-	844	-
HCM Lane V/C Ratio	0.175	-	-	0.028	-
HCM Control Delay (s)	17.2	-	-	9.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.6	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	293	41	138	464	85	73	227	173	123	214	83
Future Volume (vph)	82	293	41	138	464	85	73	227	173	123	214	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			3			20			7			17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 86.7
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Mildred St W & 19th St W

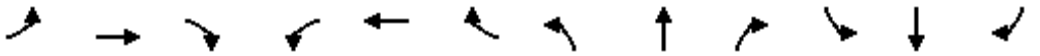


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	94	384	159	533	98	84	261	199	141	341
v/c Ratio	0.43	0.50	0.55	0.58	0.22	0.41	0.64	0.28	0.52	0.34
Control Delay	47.5	33.1	44.9	31.9	7.6	47.8	41.0	3.8	45.7	25.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	47.5	33.1	44.9	31.9	7.6	47.8	41.0	3.8	45.7	25.8
Queue Length 50th (ft)	45	90	75	127	0	40	120	0	67	66
Queue Length 95th (ft)	123	174	183	228	37	114	270	38	167	143
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	551	2381	551	2426	1021	546	1264	922	540	2260
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.16	0.29	0.22	0.10	0.15	0.21	0.22	0.26	0.15

Intersection Summary

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

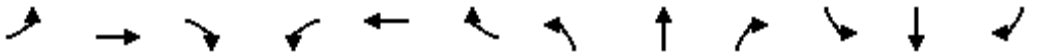
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	293	41	138	464	85	73	227	173	123	214	83
Future Volume (veh/h)	82	293	41	138	464	85	73	227	173	123	214	83
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	94	337	47	159	533	0	84	261	62	141	246	95
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	3	3	3
Cap, veh/h	139	720	99	206	951	424	110	437	548	183	687	257
Arrive On Green	0.08	0.23	0.23	0.11	0.27	0.00	0.06	0.23	0.23	0.10	0.28	0.28
Sat Flow, veh/h	1795	3158	436	1795	3582	1598	1781	1870	1571	1767	2495	934
Grp Volume(v), veh/h	94	190	194	159	533	0	84	261	62	141	172	169
Grp Sat Flow(s),veh/h/ln	1795	1791	1803	1795	1791	1598	1781	1870	1571	1767	1763	1667
Q Serve(g_s), s	3.2	5.7	5.8	5.4	8.0	0.0	2.9	7.8	1.7	4.9	4.9	5.1
Cycle Q Clear(g_c), s	3.2	5.7	5.8	5.4	8.0	0.0	2.9	7.8	1.7	4.9	4.9	5.1
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.56
Lane Grp Cap(c), veh/h	139	408	411	206	951	424	110	437	548	183	485	459
V/C Ratio(X)	0.68	0.46	0.47	0.77	0.56	0.00	0.76	0.60	0.11	0.77	0.35	0.37
Avail Cap(c_a), veh/h	719	1578	1588	719	3155	1407	713	1648	1565	708	1553	1468
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	28.0	20.8	20.9	26.8	19.8	0.0	28.8	21.3	13.8	27.3	18.2	18.3
Incr Delay (d2), s/veh	4.2	0.6	0.6	4.6	0.4	0.0	7.9	1.0	0.1	5.0	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	2.3	2.4	2.4	3.1	0.0	1.4	3.2	0.6	2.2	1.8	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.3	21.4	21.5	31.4	20.2	0.0	36.8	22.3	13.9	32.3	18.5	18.6
LnGrp LOS	C	C	C	C	C	A	D	C	B	C	B	B
Approach Vol, veh/h		478			692			407			482	
Approach Delay, s/veh		23.6			22.8			24.0			22.6	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.9	22.2	12.2	19.2	11.5	19.6	9.8	21.6
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	4.9	7.1	7.4	7.8	6.9	9.8	5.2	10.0
Green Ext Time (p_c), s	0.1	1.7	0.3	2.0	0.2	1.4	0.1	3.3

Intersection Summary	
HCM 6th Ctrl Delay	23.2
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	603	0	0	656	2	0	0	0	0	0	4
Future Volume (vph)	0	603	0	0	656	2	0	0	0	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		343			147			120			137	
Travel Time (s)		7.8			3.3			5.5			6.2	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	0%	0%	0%	100%	100%	100%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

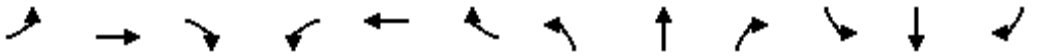
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	603	0	0	656	2	0	0	0	0	0	4
Future Vol, veh/h	0	603	0	0	656	2	0	0	0	0	0	4
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	100	100	100
Mvmt Flow	0	735	0	0	800	2	0	0	0	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	803	0	0	736	0	0	1137	1539	370	-	-	403
Stage 1	-	-	-	-	-	-	736	736	-	-	-	-
Stage 2	-	-	-	-	-	-	401	803	-	-	-	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.5	6.5	6.9	-	-	8.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	2.23	-	-	2.21	-	-	3.5	4	3.3	-	-	4.3
Pot Cap-1 Maneuver	810	-	-	872	-	-	159	117	633	0	0	389
Stage 1	-	-	-	-	-	-	381	428	-	0	0	-
Stage 2	-	-	-	-	-	-	602	399	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	809	-	-	871	-	-	157	117	632	-	-	388
Mov Cap-2 Maneuver	-	-	-	-	-	-	279	242	-	-	-	-
Stage 1	-	-	-	-	-	-	381	428	-	-	-	-
Stage 2	-	-	-	-	-	-	594	399	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	14.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	809	-	-	871	-	-	388
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.013
HCM Control Delay (s)	0	0	-	-	0	-	-	14.4
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	562	0	2	664	7	0	0	0	0	0	14
Future Volume (vph)	0	562	0	2	664	7	0	0	0	0	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			144			127			135	
Travel Time (s)		3.3			3.3			5.8			6.1	
Confl. Peds. (#/hr)	1		1	2		2	1		2	2		1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	562	0	2	664	7	0	0	0	0	0	14
Future Vol, veh/h	0	562	0	2	664	7	0	0	0	0	0	14
Conflicting Peds, #/hr	1	0	1	2	0	2	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	703	0	3	830	9	0	0	0	0	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	705	0	0	1127	1552	356	-	-	423
Stage 1	-	-	-	-	-	-	705	705	-	-	-	-
Stage 2	-	-	-	-	-	-	422	847	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.5	6.5	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	-	-	-	2.21	-	-	3.5	4	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	896	-	-	162	115	646	0	0	585
Stage 1	0	-	-	-	-	-	398	442	-	0	0	-
Stage 2	0	-	-	-	-	-	585	381	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	894	-	-	156	114	644	-	-	583
Mov Cap-2 Maneuver	-	-	-	-	-	-	281	238	-	-	-	-
Stage 1	-	-	-	-	-	-	398	441	-	-	-	-
Stage 2	-	-	-	-	-	-	565	379	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	11.4
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	894	-	-	583
HCM Lane V/C Ratio	-	-	-	0.003	-	-	0.03
HCM Control Delay (s)	0	-	-	9	-	-	11.4
HCM Lane LOS	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0	-	-	0.1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	602	7	7	653	15	15
Future Volume (vph)	602	7	7	653	15	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	25	
Link Distance (ft)	144			543	252	
Travel Time (s)	3.3			12.3	6.9	
Confl. Peds. (#/hr)		2	2		2	2
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	3%	3%	1%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	602	7	7	653	15	15
Future Vol, veh/h	602	7	7	653	15	15
Conflicting Peds, #/hr	0	2	2	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	3	3	1	1	0	0
Mvmt Flow	762	9	9	827	19	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	773	0	1203	390
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	434	-
Critical Hdwy	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	845	-	180	614
Stage 1	-	-	-	-	423	-
Stage 2	-	-	-	-	627	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	843	-	177	612
Mov Cap-2 Maneuver	-	-	-	-	304	-
Stage 1	-	-	-	-	418	-
Stage 2	-	-	-	-	626	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	14.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	406	-	-	843	-
HCM Lane V/C Ratio	0.094	-	-	0.011	-
HCM Control Delay (s)	14.8	-	-	9.3	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

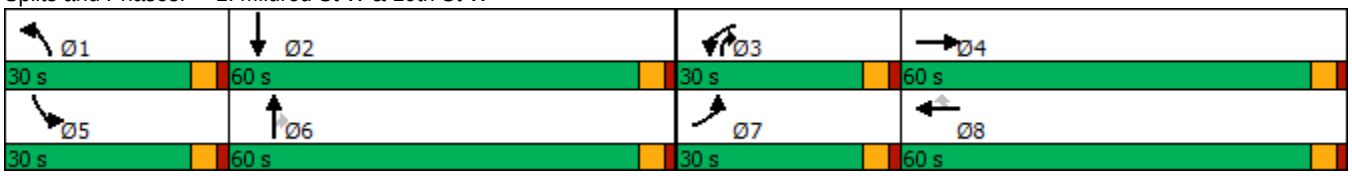
2019 Without-Project

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	456	68	189	437	142	83	222	180	176	278	88
Future Volume (vph)	80	456	68	189	437	142	83	222	180	176	278	88
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			8			36			8			16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 99.5
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Mildred St W & 19th St W

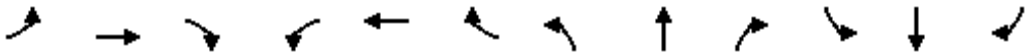


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	84	552	199	460	149	87	234	189	185	386
v/c Ratio	0.45	0.68	0.61	0.42	0.28	0.46	0.64	0.28	0.61	0.43
Control Delay	55.6	40.7	49.5	29.7	6.5	55.6	48.4	6.8	50.5	31.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	55.6	40.7	49.5	29.7	6.5	55.6	48.4	6.8	50.5	31.5
Queue Length 50th (ft)	51	165	117	119	0	53	138	15	110	100
Queue Length 95th (ft)	123	283	242	212	49	126	269	65	226	178
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	463	1996	463	2039	845	468	1084	799	463	1955
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.28	0.43	0.23	0.18	0.19	0.22	0.24	0.40	0.20

Intersection Summary

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

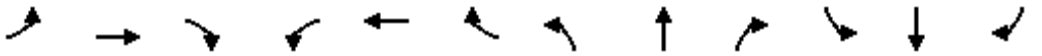
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	456	68	189	437	142	83	222	180	176	278	88
Future Volume (veh/h)	80	456	68	189	437	142	83	222	180	176	278	88
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	84	480	72	199	460	0	87	234	94	185	293	93
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	3	3	3
Cap, veh/h	112	863	129	242	1251	558	114	382	537	227	709	220
Arrive On Green	0.06	0.28	0.28	0.14	0.35	0.00	0.06	0.20	0.20	0.13	0.27	0.27
Sat Flow, veh/h	1767	3070	458	1767	3526	1572	1781	1870	1566	1767	2635	818
Grp Volume(v), veh/h	84	275	277	199	460	0	87	234	94	185	194	192
Grp Sat Flow(s),veh/h/ln	1767	1763	1765	1767	1763	1572	1781	1870	1566	1767	1763	1691
Q Serve(g_s), s	3.8	10.6	10.8	8.8	7.8	0.0	3.9	9.1	3.4	8.2	7.3	7.5
Cycle Q Clear(g_c), s	3.8	10.6	10.8	8.8	7.8	0.0	3.9	9.1	3.4	8.2	7.3	7.5
Prop In Lane	1.00		0.26	1.00		1.00	1.00		1.00	1.00		0.48
Lane Grp Cap(c), veh/h	112	495	496	242	1251	558	114	382	537	227	474	455
V/C Ratio(X)	0.75	0.55	0.56	0.82	0.37	0.00	0.76	0.61	0.17	0.81	0.41	0.42
Avail Cap(c_a), veh/h	550	1208	1209	550	2415	1077	555	1281	1290	550	1208	1158
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	37.0	24.6	24.6	33.7	19.2	0.0	37.0	29.0	18.5	34.1	24.1	24.2
Incr Delay (d2), s/veh	7.3	0.7	0.7	5.2	0.1	0.0	7.7	1.2	0.1	5.3	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	4.4	4.4	4.0	3.1	0.0	1.9	4.0	1.2	3.7	2.9	2.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.3	25.3	25.4	38.9	19.4	0.0	44.7	30.2	18.6	39.3	24.5	24.7
LnGrp LOS	D	C	C	D	B	A	D	C	B	D	C	C
Approach Vol, veh/h		636			659			415			571	
Approach Delay, s/veh		27.8			25.3			30.6			29.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.1	26.6	16.0	27.6	15.3	21.4	10.1	33.5
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	5.9	9.5	10.8	12.8	10.2	11.1	5.8	9.8
Green Ext Time (p_c), s	0.1	1.9	0.3	3.0	0.3	1.3	0.1	2.8

Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	817	0	5	783	5	2	0	4	0	0	6
Future Volume (vph)	0	817	0	5	783	5	2	0	4	0	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		343			147			120			137	
Travel Time (s)		7.8			3.3			5.5			6.2	
Confl. Peds. (#/hr)	3		8	8		3	8		8	3		3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	0%	0%	0%	83%	83%	83%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

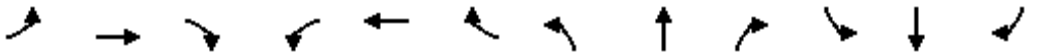
Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	817	0	5	783	5	2	0	4	0	0	6
Future Vol, veh/h	0	817	0	5	783	5	2	0	4	0	0	6
Conflicting Peds, #/hr	3	0	8	8	0	3	8	0	8	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	3	0	0	0	83	83	83
Mvmt Flow	0	869	0	5	833	5	2	0	4	0	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	841	0	0	877	0	0	1312	1728	451	-	-	430
Stage 1	-	-	-	-	-	-	877	877	-	-	-	-
Stage 2	-	-	-	-	-	-	435	851	-	-	-	-
Critical Hdwy	4.14	-	-	4.16	-	-	7.5	6.5	6.9	-	-	8.56
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.23	-	-	3.5	4	3.3	-	-	4.13
Pot Cap-1 Maneuver	790	-	-	759	-	-	118	89	561	0	0	397
Stage 1	-	-	-	-	-	-	314	369	-	0	0	-
Stage 2	-	-	-	-	-	-	575	379	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	788	-	-	753	-	-	114	87	552	-	-	393
Mov Cap-2 Maneuver	-	-	-	-	-	-	229	209	-	-	-	-
Stage 1	-	-	-	-	-	-	311	366	-	-	-	-
Stage 2	-	-	-	-	-	-	558	375	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	14.8	14.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	375	788	-	-	753	-	-	393
HCM Lane V/C Ratio	0.017	-	-	-	0.007	-	-	0.016
HCM Control Delay (s)	14.8	0	-	-	9.8	-	-	14.3
HCM Lane LOS	B	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	834	0	0	755	31	1	0	0	0	0	34
Future Volume (vph)	0	834	0	0	755	31	1	0	0	0	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			144			127			135	
Travel Time (s)		3.3			3.3			5.8			6.1	
Confl. Peds. (#/hr)	7		4	4		7	4		4	7		7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	834	0	0	755	31	1	0	0	0	0	34
Future Vol, veh/h	0	834	0	0	755	31	1	0	0	0	0	34
Conflicting Peds, #/hr	7	0	4	4	0	7	4	0	4	7	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	0	0	0
Mvmt Flow	0	887	0	0	803	33	1	0	0	0	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	891	0	0	1300	1734	452	-	-	432
Stage 1	-	-	-	-	-	-	891	891	-	-	-	-
Stage 2	-	-	-	-	-	-	409	843	-	-	-	-
Critical Hdwy	-	-	-	4.16	-	-	7.54	6.54	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	-	-	-	2.23	-	-	3.52	4.02	3.32	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	750	-	-	119	87	555	0	0	577
Stage 1	0	-	-	-	-	-	304	359	-	0	0	-
Stage 2	0	-	-	-	-	-	590	378	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	747	-	-	110	86	551	-	-	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	223	206	-	-	-	-
Stage 1	-	-	-	-	-	-	304	358	-	-	-	-
Stage 2	-	-	-	-	-	-	549	375	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	21.2	11.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	223	-	-	747	-	-	569
HCM Lane V/C Ratio	0.005	-	-	-	-	-	0.064
HCM Control Delay (s)	21.2	-	-	0	-	-	11.8
HCM Lane LOS	C	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	800	28	21	766	25	25
Future Volume (vph)	800	28	21	766	25	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	25	
Link Distance (ft)	144			543	252	
Travel Time (s)	3.3			12.3	6.9	
Confl. Peds. (#/hr)		1	1		1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	3%	3%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	800	28	21	766	25	25
Future Vol, veh/h	800	28	21	766	25	25
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	842	29	22	806	26	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	872	0	1306	438
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	448	-
Critical Hdwy	-	-	4.16	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.23	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	763	-	154	572
Stage 1	-	-	-	-	381	-
Stage 2	-	-	-	-	616	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	762	-	149	571
Mov Cap-2 Maneuver	-	-	-	-	271	-
Stage 1	-	-	-	-	370	-
Stage 2	-	-	-	-	615	-

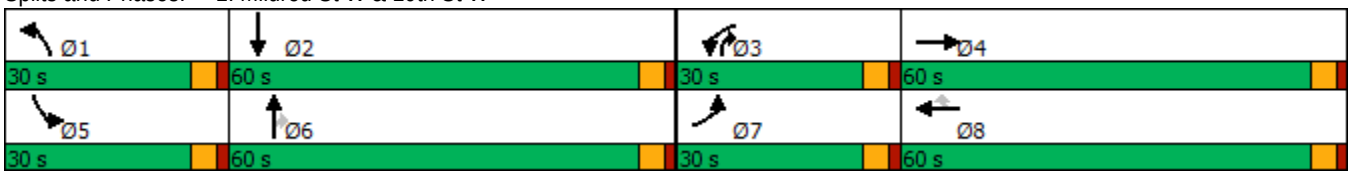
Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	368	-	-	762	-
HCM Lane V/C Ratio	0.143	-	-	0.029	-
HCM Control Delay (s)	16.4	-	-	9.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	106	373	90	231	655	144	112	304	175	181	400	110
Future Volume (vph)	106	373	90	231	655	144	112	304	175	181	400	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			18			34			21			13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary	
Area Type:	Other
Cycle Length: 180	
Actuated Cycle Length: 113.5	
Natural Cycle: 105	
Control Type: Actuated-Uncoordinated	

Splits and Phases: 1: Mildred St W & 19th St W



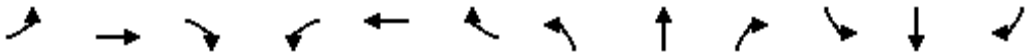
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	110	483	241	682	150	117	317	182	189	532
v/c Ratio	0.55	0.66	0.64	0.61	0.29	0.57	0.73	0.23	0.66	0.56
Control Delay	63.1	45.0	53.9	38.1	11.5	62.8	52.9	4.5	60.1	37.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	45.0	53.9	38.1	11.5	62.8	52.9	4.5	60.1	37.3
Queue Length 50th (ft)	77	171	161	230	16	82	210	4	131	162
Queue Length 95th (ft)	163	263	#351	370	79	172	377	49	255	272
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	407	1735	411	1810	759	407	943	805	411	1748
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.28	0.59	0.38	0.20	0.29	0.34	0.23	0.46	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

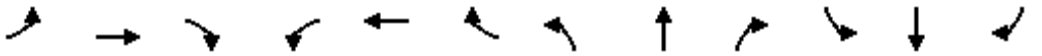
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	373	90	231	655	144	112	304	175	181	400	110
Future Volume (veh/h)	106	373	90	231	655	144	112	304	175	181	400	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	110	389	94	241	682	0	117	317	80	189	417	115
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	141	741	177	281	1216	542	149	446	615	227	780	213
Arrive On Green	0.08	0.26	0.26	0.16	0.34	0.00	0.08	0.24	0.24	0.13	0.28	0.28
Sat Flow, veh/h	1781	2824	674	1795	3582	1598	1781	1870	1543	1795	2771	756
Grp Volume(v), veh/h	110	243	240	241	682	0	117	317	80	189	268	264
Grp Sat Flow(s),veh/h/ln	1781	1777	1721	1795	1791	1598	1781	1870	1543	1795	1791	1737
Q Serve(g_s), s	5.6	10.8	11.1	12.1	14.4	0.0	6.0	14.4	3.1	9.5	11.7	11.9
Cycle Q Clear(g_c), s	5.6	10.8	11.1	12.1	14.4	0.0	6.0	14.4	3.1	9.5	11.7	11.9
Prop In Lane	1.00		0.39	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	141	466	451	281	1216	542	149	446	615	227	504	489
V/C Ratio(X)	0.78	0.52	0.53	0.86	0.56	0.00	0.79	0.71	0.13	0.83	0.53	0.54
Avail Cap(c_a), veh/h	482	1058	1025	486	2133	951	482	1114	1167	486	1066	1034
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	41.7	29.1	29.2	38.0	24.9	0.0	41.5	32.3	17.9	39.4	28.0	28.1
Incr Delay (d2), s/veh	6.8	0.7	0.7	5.7	0.3	0.0	6.6	1.6	0.1	5.8	0.6	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	4.6	4.6	5.7	6.0	0.0	2.8	6.5	1.1	4.4	4.9	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.6	29.8	29.9	43.7	25.2	0.0	48.1	33.8	17.9	45.2	28.7	28.8
LnGrp LOS	D	C	C	D	C	A	D	C	B	D	C	C
Approach Vol, veh/h		593			923			514			721	
Approach Delay, s/veh		33.3			30.0			34.6			33.1	
Approach LOS		C			C			C			C	

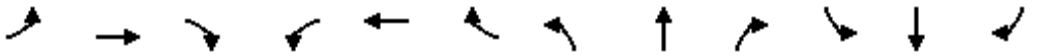
Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	31.0	19.4	29.2	16.7	27.0	12.3	36.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	8.0	13.9	14.1	13.1	11.5	16.4	7.6	16.4
Green Ext Time (p_c), s	0.2	2.7	0.4	2.6	0.3	1.7	0.2	4.4

Intersection Summary	
HCM 6th Ctrl Delay	32.4
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	747	0	4	1056	4	1	0	6	0	0	5
Future Volume (vph)	0	747	0	4	1056	4	1	0	6	0	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		343			147			120			137	
Travel Time (s)		7.8			3.3			5.5			6.2	
Confl. Peds. (#/hr)	4		16	17		5	16		17	5		4
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	100%	100%	100%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	716	1	0	1042	22	1	0	0	0	0	30
Future Volume (vph)	0	716	1	0	1042	22	1	0	0	0	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			144			127			135	
Travel Time (s)		3.3			3.3			5.8			6.1	
Confl. Peds. (#/hr)	5		3	2		4	3		2	4		5
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	716	1	0	1042	22	1	0	0	0	0	30
Future Vol, veh/h	0	716	1	0	1042	22	1	0	0	0	0	30
Conflicting Peds, #/hr	5	0	3	2	0	4	3	0	2	4	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	723	1	0	1053	22	1	0	0	0	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	727	0	0	1259	1806	367	-	-	547
Stage 1	-	-	-	-	-	-	727	727	-	-	-	-
Stage 2	-	-	-	-	-	-	532	1079	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.5	6.5	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	-	-	-	2.21	-	-	3.5	4	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	879	-	-	129	80	636	0	0	486
Stage 1	0	-	-	-	-	-	386	432	-	0	0	-
Stage 2	0	-	-	-	-	-	504	297	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	876	-	-	120	79	633	-	-	482
Mov Cap-2 Maneuver	-	-	-	-	-	-	248	195	-	-	-	-
Stage 1	-	-	-	-	-	-	386	431	-	-	-	-
Stage 2	-	-	-	-	-	-	470	296	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	19.6	13
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	248	-	-	876	-	-	482
HCM Lane V/C Ratio	0.004	-	-	-	-	-	0.063
HCM Control Delay (s)	19.6	-	-	0	-	-	13
HCM Lane LOS	C	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	747	0	4	1056	4	1	0	6	0	0	5
Future Vol, veh/h	0	747	0	4	1056	4	1	0	6	0	0	5
Conflicting Peds, #/hr	4	0	16	17	0	5	16	0	17	5	0	4
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	100	100	100
Mvmt Flow	0	778	0	4	1100	4	1	0	6	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1109	0	0	795	0	0	1369	1912	423	-	-	573
Stage 1	-	-	-	-	-	-	795	795	-	-	-	-
Stage 2	-	-	-	-	-	-	574	1117	-	-	-	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.5	6.5	6.9	-	-	8.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	2.21	-	-	2.21	-	-	3.5	4	3.3	-	-	4.3
Pot Cap-1 Maneuver	631	-	-	829	-	-	107	69	585	0	0	280
Stage 1	-	-	-	-	-	-	351	402	-	0	0	-
Stage 2	-	-	-	-	-	-	476	285	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	628	-	-	816	-	-	101	67	566	-	-	274
Mov Cap-2 Maneuver	-	-	-	-	-	-	224	180	-	-	-	-
Stage 1	-	-	-	-	-	-	345	396	-	-	-	-
Stage 2	-	-	-	-	-	-	458	282	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	12.9	18.4
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	465	628	-	-	816	-	-	274
HCM Lane V/C Ratio	0.016	-	-	-	0.005	-	-	0.019
HCM Control Delay (s)	12.9	0	-	-	9.4	-	-	18.4
HCM Lane LOS	B	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.1

Lane Group	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1	754	13	24	994	37	26
Future Volume (vph)	1	754	13	24	994	37	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0
Storage Lanes	0		0	1		1	0
Taper Length (ft)	25			25		25	
Link Speed (mph)		30			30	25	
Link Distance (ft)		144			543	252	
Travel Time (s)		3.3			12.3	6.9	
Confl. Peds. (#/hr)			3	3		3	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	0%	0%
Shared Lane Traffic (%)							
Sign Control		Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	1	754	13	24	994	37	26
Future Vol, veh/h	1	754	13	24	994	37	26
Conflicting Peds, #/hr	0	0	3	3	0	3	3
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	-	-	50	-	0	-
Veh in Median Storage, #	-	0	-	-	0	1	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	0	0
Mvmt Flow	1	785	14	25	1035	39	27

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1035	0	0	802	0	1368	406
Stage 1	-	-	-	-	-	797	-
Stage 2	-	-	-	-	-	571	-
Critical Hdwy	6.42	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	-	5.8	-
Follow-up Hdwy	2.51	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	318	-	-	824	-	140	600
Stage 1	-	-	-	-	-	409	-
Stage 2	-	-	-	-	-	534	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	318	-	-	822	-	134	597
Mov Cap-2 Maneuver	-	-	-	-	-	262	-
Stage 1	-	-	-	-	-	393	-
Stage 2	-	-	-	-	-	532	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.1
HCM LOS			C

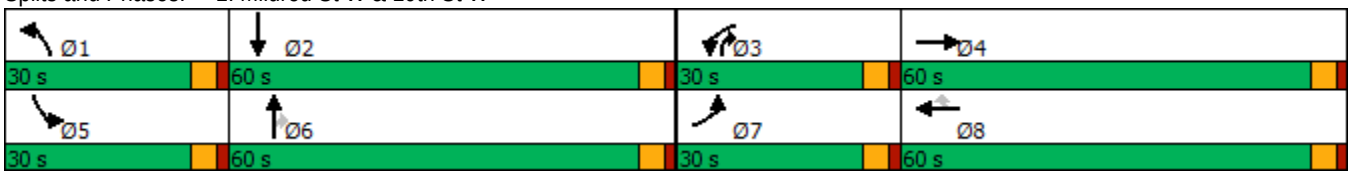
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	341	-	-	822	-
HCM Lane V/C Ratio	0.192	-	-	0.03	-
HCM Control Delay (s)	18.1	-	-	9.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	305	42	144	482	89	76	236	180	128	223	87
Future Volume (vph)	85	305	42	144	482	89	76	236	180	128	223	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			3			20			7			17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 89
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Mildred St W & 19th St W

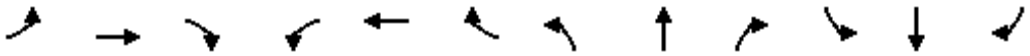


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	98	399	166	554	102	87	271	207	147	356
v/c Ratio	0.45	0.53	0.56	0.60	0.23	0.42	0.65	0.28	0.54	0.40
Control Delay	48.8	34.6	46.0	33.2	7.9	49.1	41.9	3.7	46.8	27.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.8	34.6	46.0	33.2	7.9	49.1	41.9	3.7	46.8	27.2
Queue Length 50th (ft)	49	98	82	137	0	44	130	0	73	73
Queue Length 95th (ft)	129	185	193	244	38	118	284	38	176	151
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	536	2316	536	2360	997	531	1230	920	525	2199
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.17	0.31	0.23	0.10	0.16	0.22	0.23	0.28	0.16

Intersection Summary

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

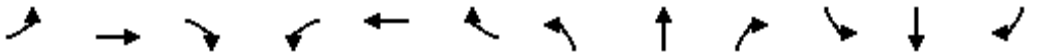
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	305	42	144	482	89	76	236	180	128	223	87
Future Volume (veh/h)	85	305	42	144	482	89	76	236	180	128	223	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	98	351	48	166	554	0	87	271	63	147	256	100
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	3	3	3
Cap, veh/h	138	719	98	213	964	430	114	441	559	190	694	263
Arrive On Green	0.08	0.23	0.23	0.12	0.27	0.00	0.06	0.24	0.24	0.11	0.28	0.28
Sat Flow, veh/h	1795	3166	429	1795	3582	1598	1781	1870	1571	1767	2485	942
Grp Volume(v), veh/h	98	197	202	166	554	0	87	271	63	147	179	177
Grp Sat Flow(s),veh/h/ln	1795	1791	1805	1795	1791	1598	1781	1870	1571	1767	1763	1665
Q Serve(g_s), s	3.4	6.2	6.3	5.8	8.6	0.0	3.1	8.3	1.7	5.2	5.3	5.5
Cycle Q Clear(g_c), s	3.4	6.2	6.3	5.8	8.6	0.0	3.1	8.3	1.7	5.2	5.3	5.5
Prop In Lane	1.00		0.24	1.00		1.00	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	138	407	410	213	964	430	114	441	559	190	492	465
V/C Ratio(X)	0.71	0.48	0.49	0.78	0.57	0.00	0.76	0.61	0.11	0.77	0.36	0.38
Avail Cap(c_a), veh/h	697	1530	1542	697	3061	1365	692	1598	1531	686	1506	1423
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	29.0	21.6	21.6	27.5	20.3	0.0	29.6	22.0	14.0	28.0	18.6	18.7
Incr Delay (d2), s/veh	4.9	0.7	0.7	4.5	0.4	0.0	7.6	1.0	0.1	5.0	0.3	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	2.5	2.6	2.6	3.4	0.0	1.5	3.5	0.6	2.3	2.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	22.3	22.3	32.1	20.7	0.0	37.2	23.0	14.0	32.9	19.0	19.1
LnGrp LOS	C	C	C	C	C	A	D	C	B	C	B	B
Approach Vol, veh/h		497			720			421			503	
Approach Delay, s/veh		24.6			23.4			24.6			23.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.1	23.0	12.7	19.6	11.9	20.2	10.0	22.3
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	5.1	7.5	7.8	8.3	7.2	10.3	5.4	10.6
Green Ext Time (p_c), s	0.1	1.8	0.3	2.1	0.2	1.5	0.2	3.5

Intersection Summary	
HCM 6th Ctrl Delay	23.8
HCM 6th LOS	C



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	627	0	0	682	2	0	0	0	0	0	4
Future Volume (vph)	0	627	0	0	682	2	0	0	0	0	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		0	50		0	0		0	0		0
Storage Lanes	1		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		343			147			120			137	
Travel Time (s)		7.8			3.3			5.5			6.2	
Confl. Peds. (#/hr)	1		1	1		1	1		1	1		1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	3%	3%	3%	1%	1%	1%	0%	0%	0%	100%	100%	100%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

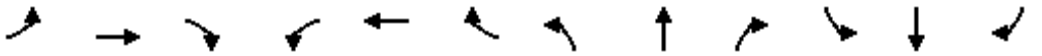
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	627	0	0	682	2	0	0	0	0	0	4
Future Vol, veh/h	0	627	0	0	682	2	0	0	0	0	0	4
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	50	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	3	3	3	1	1	1	0	0	0	100	100	100
Mvmt Flow	0	765	0	0	832	2	0	0	0	0	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	835	0	0	766	0	0	1183	1601	385	-	-	419
Stage 1	-	-	-	-	-	-	766	766	-	-	-	-
Stage 2	-	-	-	-	-	-	417	835	-	-	-	-
Critical Hdwy	4.16	-	-	4.12	-	-	7.5	6.5	6.9	-	-	8.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	2.23	-	-	2.21	-	-	3.5	4	3.3	-	-	4.3
Pot Cap-1 Maneuver	788	-	-	850	-	-	147	107	619	0	0	378
Stage 1	-	-	-	-	-	-	366	415	-	0	0	-
Stage 2	-	-	-	-	-	-	589	386	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	787	-	-	849	-	-	145	107	618	-	-	377
Mov Cap-2 Maneuver	-	-	-	-	-	-	266	231	-	-	-	-
Stage 1	-	-	-	-	-	-	366	415	-	-	-	-
Stage 2	-	-	-	-	-	-	581	386	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	14.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	787	-	-	849	-	-	377
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.013
HCM Control Delay (s)	0	0	-	-	0	-	-	14.7
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	584	0	2	690	8	0	0	0	0	0	14
Future Volume (vph)	0	584	0	2	690	8	0	0	0	0	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			144			127			135	
Travel Time (s)		3.3			3.3			5.8			6.1	
Confl. Peds. (#/hr)	1		1	2		2	1		2	2		1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	584	0	2	690	8	0	0	0	0	0	14
Future Vol, veh/h	0	584	0	2	690	8	0	0	0	0	0	14
Conflicting Peds, #/hr	1	0	1	2	0	2	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	730	0	3	863	10	0	0	0	0	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	732	0	0	1171	1613	369	-	-	440
Stage 1	-	-	-	-	-	-	732	732	-	-	-	-
Stage 2	-	-	-	-	-	-	439	881	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.5	6.5	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	-	-	-	2.21	-	-	3.5	4	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	875	-	-	150	105	634	0	0	570
Stage 1	0	-	-	-	-	-	383	430	-	0	0	-
Stage 2	0	-	-	-	-	-	572	367	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	873	-	-	145	104	632	-	-	568
Mov Cap-2 Maneuver	-	-	-	-	-	-	270	227	-	-	-	-
Stage 1	-	-	-	-	-	-	383	429	-	-	-	-
Stage 2	-	-	-	-	-	-	552	365	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	11.5
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	873	-	-	568
HCM Lane V/C Ratio	-	-	-	0.003	-	-	0.031
HCM Control Delay (s)	0	-	-	9.1	-	-	11.5
HCM Lane LOS	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0	-	-	0.1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	626	8	8	679	15	15
Future Volume (vph)	626	8	8	679	15	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	25	
Link Distance (ft)	144			543	252	
Travel Time (s)	3.3			12.3	6.9	
Confl. Peds. (#/hr)		2	2		2	2
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	3%	3%	1%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	626	8	8	679	15	15
Future Vol, veh/h	626	8	8	679	15	15
Conflicting Peds, #/hr	0	2	2	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	3	3	1	1	0	0
Mvmt Flow	792	10	10	859	19	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	804	0	1251	405
Stage 1	-	-	-	-	799	-
Stage 2	-	-	-	-	452	-
Critical Hdwy	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	822	-	167	601
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	614	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	820	-	164	599
Mov Cap-2 Maneuver	-	-	-	-	291	-
Stage 1	-	-	-	-	402	-
Stage 2	-	-	-	-	613	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	392	-	-	820	-
HCM Lane V/C Ratio	0.097	-	-	0.012	-
HCM Control Delay (s)	15.2	-	-	9.4	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

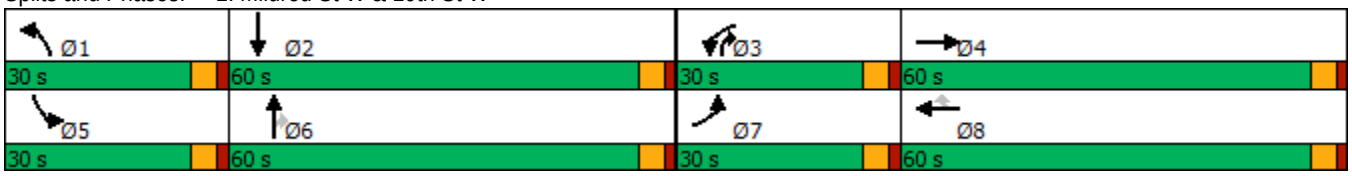
2019 With-Project

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	78	471	67	204	450	158	81	217	197	192	272	87
Future Volume (vph)	78	471	67	204	450	158	81	217	197	192	272	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			8			36			8			16
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	2%	2%	2%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 103.6
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Mildred St W & 19th St W

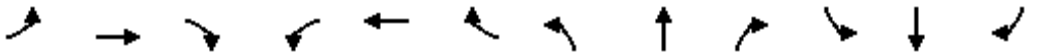


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	82	567	215	474	166	85	228	207	202	378
v/c Ratio	0.46	0.71	0.62	0.41	0.30	0.47	0.66	0.30	0.63	0.42
Control Delay	58.0	42.8	50.0	29.7	6.2	57.8	51.0	9.2	51.8	31.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	42.8	50.0	29.7	6.2	57.8	51.0	9.2	51.8	31.9
Queue Length 50th (ft)	53	181	132	126	0	55	143	29	126	102
Queue Length 95th (ft)	121	292	262	218	51	124	263	88	247	174
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	441	1901	441	1940	818	445	1031	760	441	1859
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.30	0.49	0.24	0.20	0.19	0.22	0.27	0.46	0.20

Intersection Summary

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

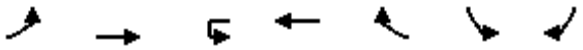
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	78	471	67	204	450	158	81	217	197	192	272	87
Future Volume (veh/h)	78	471	67	204	450	158	81	217	197	192	272	87
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1856	1856	1856	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	82	496	71	215	474	0	85	228	122	202	286	92
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	2	2	2	3	3	3
Cap, veh/h	108	861	123	257	1280	571	111	373	543	243	722	227
Arrive On Green	0.06	0.28	0.28	0.15	0.36	0.00	0.06	0.20	0.20	0.14	0.28	0.28
Sat Flow, veh/h	1767	3091	440	1767	3526	1572	1781	1870	1566	1767	2626	826
Grp Volume(v), veh/h	82	282	285	215	474	0	85	228	122	202	190	188
Grp Sat Flow(s),veh/h/ln	1767	1763	1769	1767	1763	1572	1781	1870	1566	1767	1763	1690
Q Serve(g_s), s	3.8	11.5	11.6	9.9	8.3	0.0	3.9	9.3	4.6	9.3	7.3	7.6
Cycle Q Clear(g_c), s	3.8	11.5	11.6	9.9	8.3	0.0	3.9	9.3	4.6	9.3	7.3	7.6
Prop In Lane	1.00		0.25	1.00		1.00	1.00		1.00	1.00		0.49
Lane Grp Cap(c), veh/h	108	491	493	257	1280	571	111	373	543	243	485	465
V/C Ratio(X)	0.76	0.57	0.58	0.84	0.37	0.00	0.77	0.61	0.22	0.83	0.39	0.40
Avail Cap(c_a), veh/h	527	1157	1160	527	2313	1032	531	1227	1258	527	1157	1108
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	38.8	26.0	26.0	34.8	19.6	0.0	38.7	30.6	19.5	35.2	24.7	24.8
Incr Delay (d2), s/veh	7.9	0.8	0.8	5.3	0.1	0.0	7.9	1.2	0.2	5.4	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	4.8	4.8	4.5	3.3	0.0	1.9	4.2	1.7	4.2	3.0	3.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	46.7	26.8	26.8	40.2	19.8	0.0	46.6	31.8	19.7	40.6	25.1	25.2
LnGrp LOS	D	C	C	D	B	A	D	C	B	D	C	C
Approach Vol, veh/h		649			689			435			580	
Approach Delay, s/veh		29.3			26.1			31.3			30.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	28.1	17.2	28.4	16.6	21.7	10.1	35.4
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	5.9	9.6	11.9	13.6	11.3	11.3	5.8	10.3
Green Ext Time (p_c), s	0.1	1.9	0.4	3.1	0.3	1.4	0.1	2.9

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	0	865	3	829	5	0	6
Future Volume (vph)	0	865	3	829	5	0	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50		0	0	0
Storage Lanes	1		0		0	0	1
Taper Length (ft)	25		25			25	
Link Speed (mph)		30		30		15	
Link Distance (ft)		343		147		137	
Travel Time (s)		7.8		3.3		6.2	
Confl. Peds. (#/hr)	3		1		3	3	3
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	3%	3%	3%	83%	83%
Shared Lane Traffic (%)							
Sign Control		Free		Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

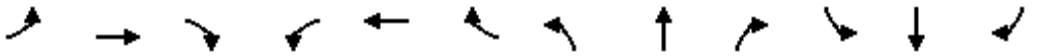
Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	0	865	3	829	5	0	6
Future Vol, veh/h	0	865	3	829	5	0	6
Conflicting Peds, #/hr	3	0	1	0	3	3	3
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	50	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	3	3	3	83	83
Mvmt Flow	0	920	3	882	5	0	6

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	890	0	920	-	0	-	450
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	6.46	-	-	-	8.56
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	2.53	-	-	-	4.13
Pot Cap-1 Maneuver	757	-	371	-	-	0	383
Stage 1	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	0	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	755	-	371	-	-	-	381
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	755	-	-	-	381
HCM Lane V/C Ratio	-	-	-	-	0.017
HCM Control Delay (s)	0	-	-	-	14.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	846	32	4	754	31	46	0	16	0	0	34
Future Volume (vph)	0	846	32	4	754	31	46	0	16	0	0	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			73			127			135	
Travel Time (s)		3.3			1.7			5.8			6.1	
Confl. Peds. (#/hr)	7		4	4		7	4		4	7		7
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	2%	2%	2%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	846	32	4	754	31	46	0	16	0	0	34
Future Vol, veh/h	0	846	32	4	754	31	46	0	16	0	0	34
Conflicting Peds, #/hr	7	0	4	4	0	7	4	0	4	7	0	7
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	3	3	3	2	2	2	0	0	0
Mvmt Flow	0	900	34	4	802	33	49	0	17	0	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	938	0	0	1337	1771	475	-	-	432
Stage 1	-	-	-	-	-	-	921	921	-	-	-	-
Stage 2	-	-	-	-	-	-	416	850	-	-	-	-
Critical Hdwy	-	-	-	4.16	-	-	7.54	6.54	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	-	-	-
Follow-up Hdwy	-	-	-	2.23	-	-	3.52	4.02	3.32	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	720	-	-	111	82	536	0	0	577
Stage 1	0	-	-	-	-	-	291	347	-	0	0	-
Stage 2	0	-	-	-	-	-	585	375	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	717	-	-	102	81	532	-	-	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	214	200	-	-	-	-
Stage 1	-	-	-	-	-	-	291	346	-	-	-	-
Stage 2	-	-	-	-	-	-	541	370	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	24.2	11.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	253	-	-	717	-	-	569
HCM Lane V/C Ratio	0.261	-	-	0.006	-	-	0.064
HCM Control Delay (s)	24.2	-	-	10.1	-	-	11.8
HCM Lane LOS	C	-	-	B	-	-	B
HCM 95th %tile Q(veh)	1	-	-	0	-	-	0.2

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	812	28	21	780	25	25
Future Volume (vph)	812	28	21	780	25	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	25	
Link Distance (ft)	71			543	252	
Travel Time (s)	1.6			12.3	6.9	
Confl. Peds. (#/hr)		1	1		1	1
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	2%	2%	3%	3%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	812	28	21	780	25	25
Future Vol, veh/h	812	28	21	780	25	25
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	3	3	0	0
Mvmt Flow	855	29	22	821	26	26

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	885	0	1327	444
Stage 1	-	-	-	-	871	-
Stage 2	-	-	-	-	456	-
Critical Hdwy	-	-	4.16	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.23	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	754	-	149	567
Stage 1	-	-	-	-	375	-
Stage 2	-	-	-	-	611	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	753	-	144	566
Mov Cap-2 Maneuver	-	-	-	-	266	-
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	610	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	16.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	362	-	-	753	-
HCM Lane V/C Ratio	0.145	-	-	0.029	-
HCM Control Delay (s)	16.6	-	-	9.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	830	32	28	773	16	15
Future Volume (vph)	830	32	28	773	16	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	15	
Link Distance (ft)	73			71	132	
Travel Time (s)	1.7			1.6	6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	3%	3%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	830	32	28	773	16	15
Future Vol, veh/h	830	32	28	773	16	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	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	3	3	2	2
Mvmt Flow	902	35	30	840	17	16

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	937	0	1400	469
Stage 1	-	-	-	-	920	-
Stage 2	-	-	-	-	480	-
Critical Hdwy	-	-	4.16	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.23	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	721	-	131	541
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	588	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	721	-	125	541
Mov Cap-2 Maneuver	-	-	-	-	243	-
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	588	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	17.1
HCM LOS			C

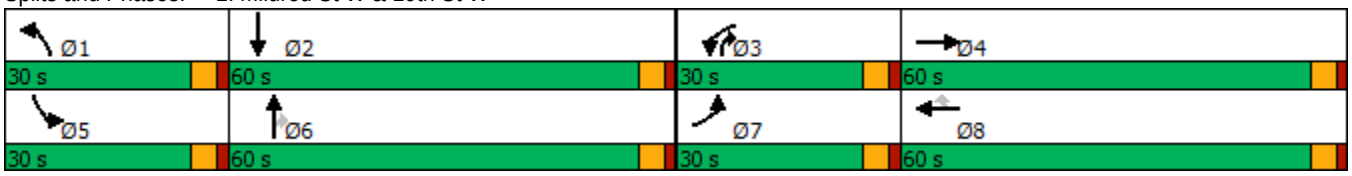
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	331	-	-	721	-
HCM Lane V/C Ratio	0.102	-	-	0.042	-
HCM Control Delay (s)	17.1	-	-	10.2	-
HCM Lane LOS	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	105	386	88	246	665	156	110	300	189	196	394	109
Future Volume (vph)	105	386	88	246	665	156	110	300	189	196	394	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			18			34			21			13
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 116.7
Natural Cycle: 105
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Mildred St W & 19th St W



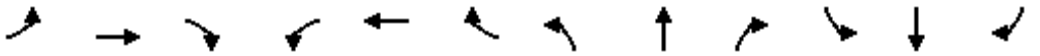
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	109	494	256	693	163	115	313	197	204	524
v/c Ratio	0.56	0.68	0.65	0.60	0.31	0.57	0.75	0.25	0.69	0.54
Control Delay	64.7	46.8	54.3	38.2	11.4	64.6	55.2	5.8	61.3	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	64.7	46.8	54.3	38.2	11.4	64.6	55.2	5.8	61.3	37.4
Queue Length 50th (ft)	78	180	177	240	19	83	212	12	144	160
Queue Length 95th (ft)	163	269	#385	375	84	170	373	63	276	268
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	391	1670	395	1740	739	391	906	779	395	1678
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.30	0.65	0.40	0.22	0.29	0.35	0.25	0.52	0.31

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

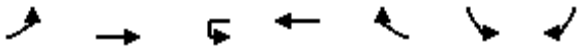
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	386	88	246	665	156	110	300	189	196	394	109
Future Volume (veh/h)	105	386	88	246	665	156	110	300	189	196	394	109
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		1.00	1.00		0.97	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1885	1870	1870	1870	1885	1885	1885
Adj Flow Rate, veh/h	109	402	92	256	693	0	115	312	103	204	410	114
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	139	741	168	294	1235	551	146	437	620	242	791	218
Arrive On Green	0.08	0.26	0.26	0.16	0.34	0.00	0.08	0.23	0.23	0.13	0.29	0.29
Sat Flow, veh/h	1781	2857	646	1795	3582	1598	1781	1870	1542	1795	2766	761
Grp Volume(v), veh/h	109	248	246	256	693	0	115	312	103	204	264	260
Grp Sat Flow(s),veh/h/ln	1781	1777	1727	1795	1791	1598	1781	1870	1542	1795	1791	1736
Q Serve(g_s), s	5.8	11.5	11.8	13.3	15.0	0.0	6.1	14.7	4.1	10.6	11.8	12.1
Cycle Q Clear(g_c), s	5.8	11.5	11.8	13.3	15.0	0.0	6.1	14.7	4.1	10.6	11.8	12.1
Prop In Lane	1.00		0.37	1.00		1.00	1.00		1.00	1.00		0.44
Lane Grp Cap(c), veh/h	139	461	448	294	1235	551	146	437	620	242	512	497
V/C Ratio(X)	0.78	0.54	0.55	0.87	0.56	0.00	0.79	0.71	0.17	0.84	0.52	0.52
Avail Cap(c_a), veh/h	465	1021	992	469	2057	918	465	1074	1145	469	1029	997
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.3	30.5	30.6	39.0	25.5	0.0	43.1	33.8	18.6	40.5	28.6	28.7
Incr Delay (d2), s/veh	7.0	0.7	0.8	8.5	0.3	0.0	6.8	1.6	0.1	6.0	0.6	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.8	4.9	4.9	6.5	6.3	0.0	2.9	6.7	1.5	5.0	5.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	50.3	31.3	31.4	47.6	25.8	0.0	50.0	35.4	18.7	46.4	29.2	29.3
LnGrp LOS	D	C	C	D	C	A	D	D	B	D	C	C
Approach Vol, veh/h		603			949			530			728	
Approach Delay, s/veh		34.8			31.7			35.3			34.1	
Approach LOS		C			C			D			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.9	32.4	20.7	29.8	17.9	27.4	12.5	38.0
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	8.1	14.1	15.3	13.8	12.6	16.7	7.8	17.0
Green Ext Time (p_c), s	0.2	2.7	0.4	2.7	0.3	1.8	0.2	4.5

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	0	789	1	1094	4	0	5
Future Volume (vph)	0	789	1	1094	4	0	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50		50		0	0	0
Storage Lanes	1		0		0	0	1
Taper Length (ft)	25		25			25	
Link Speed (mph)		30		30		15	
Link Distance (ft)		343		147		137	
Travel Time (s)		7.8		3.3		6.2	
Confl. Peds. (#/hr)	4		1		5	5	4
Peak Hour Factor	0.96	0.96	0.92	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	100%	100%
Shared Lane Traffic (%)							
Sign Control		Free		Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

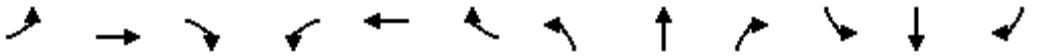
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Vol, veh/h	0	789	1	1094	4	0	5
Future Vol, veh/h	0	789	1	1094	4	0	5
Conflicting Peds, #/hr	4	0	1	0	5	5	4
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	-	None	-	None
Storage Length	50	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	0	-	0	-
Grade, %	-	0	-	0	-	0	-
Peak Hour Factor	96	96	92	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	100	100
Mvmt Flow	0	822	1	1140	4	0	5

Major/Minor	Major1		Major2			Minor2	
Conflicting Flow All	1149	0	822	-	0	-	581
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-
Critical Hdwy	4.12	-	6.42	-	-	-	8.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-
Follow-up Hdwy	2.21	-	2.51	-	-	-	4.3
Pot Cap-1 Maneuver	610	-	435	-	-	0	276
Stage 1	-	-	-	-	-	0	-
Stage 2	-	-	-	-	-	0	-
Platoon blocked, %		-		-	-		
Mov Cap-1 Maneuver	607	-	435	-	-	-	274
Mov Cap-2 Maneuver	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	607	-	-	-	274
HCM Lane V/C Ratio	-	-	-	-	0.019
HCM Control Delay (s)	0	-	-	-	18.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	726	26	2	1038	22	39	0	12	0	0	30
Future Volume (vph)	0	726	26	2	1038	22	39	0	12	0	0	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			73			127			135	
Travel Time (s)		3.3			1.7			5.8			6.1	
Confl. Peds. (#/hr)	5		3	2		4	3		2	4		5
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	726	26	2	1038	22	39	0	12	0	0	30
Future Vol, veh/h	0	726	26	2	1038	22	39	0	12	0	0	30
Conflicting Peds, #/hr	5	0	3	2	0	4	3	0	2	4	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	99	99	99	99	99	99	99	99	99	99	99	99
Heavy Vehicles, %	1	1	1	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	733	26	2	1048	22	39	0	12	0	0	30

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	762	0	0	1282	1827	385	-	-	544
Stage 1	-	-	-	-	-	-	749	749	-	-	-	-
Stage 2	-	-	-	-	-	-	533	1078	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.5	6.5	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	-	-	-	2.21	-	-	3.5	4	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	853	-	-	125	78	619	0	0	488
Stage 1	0	-	-	-	-	-	375	422	-	0	0	-
Stage 2	0	-	-	-	-	-	503	297	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	851	-	-	116	77	616	-	-	484
Mov Cap-2 Maneuver	-	-	-	-	-	-	242	192	-	-	-	-
Stage 1	-	-	-	-	-	-	375	421	-	-	-	-
Stage 2	-	-	-	-	-	-	468	295	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	20.6	12.9
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	282	-	-	851	-	-	484
HCM Lane V/C Ratio	0.183	-	-	0.002	-	-	0.063
HCM Control Delay (s)	20.6	-	-	9.2	-	-	12.9
HCM Lane LOS	C	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.7	-	-	0	-	-	0.2

Lane Group	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Volume (vph)	1	760	13	24	1005	37	26
Future Volume (vph)	1	760	13	24	1005	37	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0
Storage Lanes	0		0	1		1	0
Taper Length (ft)	25			25		25	
Link Speed (mph)		30			30	25	
Link Distance (ft)		71			543	252	
Travel Time (s)		1.6			12.3	6.9	
Confl. Peds. (#/hr)			3	3		3	3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	1%	1%	1%	1%	1%	0%	0%
Shared Lane Traffic (%)							
Sign Control		Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.7

Movement	EBU	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations							
Traffic Vol, veh/h	1	760	13	24	1005	37	26
Future Vol, veh/h	1	760	13	24	1005	37	26
Conflicting Peds, #/hr	0	0	3	3	0	3	3
Sign Control	Free	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	-	None	-	None	-	None
Storage Length	-	-	-	50	-	0	-
Veh in Median Storage, #	-	0	-	-	0	1	-
Grade, %	-	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	0	0
Mvmt Flow	1	792	14	25	1047	39	27

Major/Minor	Major1			Major2		Minor1	
Conflicting Flow All	1047	0	0	809	0	1381	409
Stage 1	-	-	-	-	-	804	-
Stage 2	-	-	-	-	-	577	-
Critical Hdwy	6.42	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	-	5.8	-
Follow-up Hdwy	2.51	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	312	-	-	819	-	138	597
Stage 1	-	-	-	-	-	406	-
Stage 2	-	-	-	-	-	530	-
Platoon blocked, %		-	-		-		
Mov Cap-1 Maneuver	312	-	-	817	-	132	594
Mov Cap-2 Maneuver	-	-	-	-	-	259	-
Stage 1	-	-	-	-	-	390	-
Stage 2	-	-	-	-	-	528	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	18.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	338	-	-	817	-
HCM Lane V/C Ratio	0.194	-	-	0.031	-
HCM Control Delay (s)	18.2	-	-	9.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	711	26	26	1048	13	10
Future Volume (vph)	711	26	26	1048	13	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	15	
Link Distance (ft)	73			71	132	
Travel Time (s)	1.7			1.6	6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	1%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	711	26	26	1048	13	10
Future Vol, veh/h	711	26	26	1048	13	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	1	2	2
Mvmt Flow	773	28	28	1139	14	11

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	801	0	1413	401
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	626	-
Critical Hdwy	-	-	4.12	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.21	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	825	-	129	599
Stage 1	-	-	-	-	409	-
Stage 2	-	-	-	-	495	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	825	-	125	599
Mov Cap-2 Maneuver	-	-	-	-	252	-
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	495	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	16.5
HCM LOS			C

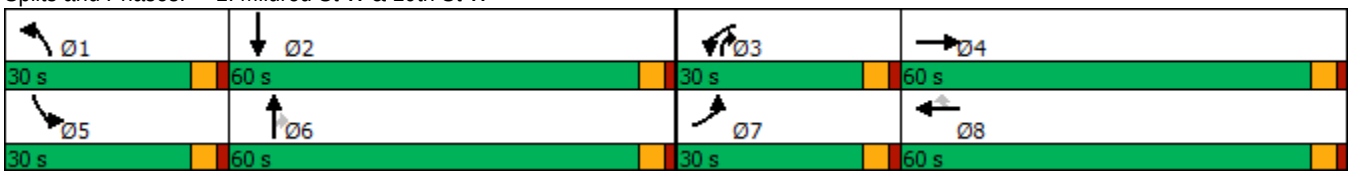
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	337	-	-	825	-
HCM Lane V/C Ratio	0.074	-	-	0.034	-
HCM Control Delay (s)	16.5	-	-	9.5	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	83	324	40	164	500	110	74	229	201	148	217	85
Future Volume (vph)	83	324	40	164	500	110	74	229	201	148	217	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	180		0	220		225	180		180	200		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			35			35	
Link Distance (ft)		350			343			356			412	
Travel Time (s)		8.0			7.8			6.9			8.0	
Confl. Peds. (#/hr)			3			20			7			17
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	2%	2%	2%	3%	3%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	
Protected Phases	7	4		3	8		1	6	3	5	2	
Permitted Phases						8			6			
Detector Phase	7	4		3	8	8	1	6	3	5	2	
Switch Phase												
Minimum Initial (s)	6.0	10.0		6.0	10.0	10.0	4.0	5.0	6.0	4.0	10.0	
Minimum Split (s)	11.0	38.0		11.0	31.0	31.0	9.0	34.0	11.0	9.0	31.0	
Total Split (s)	30.0	60.0		30.0	60.0	60.0	30.0	60.0	30.0	30.0	60.0	
Total Split (%)	16.7%	33.3%		16.7%	33.3%	33.3%	16.7%	33.3%	16.7%	16.7%	33.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.5	1.5		1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	Min		None	Min	Min	None	None	None	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 180
Actuated Cycle Length: 92.5
Natural Cycle: 95
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Mildred St W & 19th St W

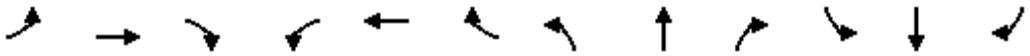


Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	95	418	189	575	126	85	263	231	170	347
v/c Ratio	0.45	0.58	0.58	0.60	0.26	0.43	0.65	0.31	0.58	0.33
Control Delay	51.2	37.8	46.2	33.6	8.1	51.4	44.2	4.3	47.8	26.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.2	37.8	46.2	33.6	8.1	51.4	44.2	4.3	47.8	26.3
Queue Length 50th (ft)	50	111	98	149	3	45	134	4	89	73
Queue Length 95th (ft)	130	203	221	258	45	120	287	48	202	149
Internal Link Dist (ft)		270		263			276			332
Turn Bay Length (ft)	180		220		225	180		180	200	
Base Capacity (vph)	514	2224	514	2264	968	509	1180	897	504	2111
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.19	0.37	0.25	0.13	0.17	0.22	0.26	0.34	0.16

Intersection Summary

HCM 6th Signalized Intersection Summary
1: Mildred St W & 19th St W

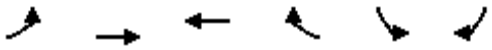
02/23/2018



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	324	40	164	500	110	74	229	201	148	217	85
Future Volume (veh/h)	83	324	40	164	500	110	74	229	201	148	217	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		0.99	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1856	1856	1856
Adj Flow Rate, veh/h	95	372	46	189	575	0	85	263	85	170	249	98
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	3	3	3
Cap, veh/h	131	728	89	238	1024	457	111	426	568	215	712	272
Arrive On Green	0.07	0.23	0.23	0.13	0.29	0.00	0.06	0.23	0.23	0.12	0.29	0.29
Sat Flow, veh/h	1795	3208	394	1795	3582	1598	1781	1870	1570	1767	2481	947
Grp Volume(v), veh/h	95	206	212	189	575	0	85	263	85	170	175	172
Grp Sat Flow(s),veh/h/ln	1795	1791	1811	1795	1791	1598	1781	1870	1570	1767	1763	1665
Q Serve(g_s), s	3.6	6.9	7.0	7.0	9.4	0.0	3.2	8.7	2.5	6.4	5.4	5.7
Cycle Q Clear(g_c), s	3.6	6.9	7.0	7.0	9.4	0.0	3.2	8.7	2.5	6.4	5.4	5.7
Prop In Lane	1.00		0.22	1.00		1.00	1.00		1.00	1.00		0.57
Lane Grp Cap(c), veh/h	131	406	411	238	1024	457	111	426	568	215	506	478
V/C Ratio(X)	0.72	0.51	0.51	0.80	0.56	0.00	0.76	0.62	0.15	0.79	0.35	0.36
Avail Cap(c_a), veh/h	654	1434	1451	654	2869	1280	648	1498	1467	643	1412	1333
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	31.1	23.2	23.2	28.9	20.9	0.0	31.7	23.8	14.9	29.3	19.4	19.5
Incr Delay (d2), s/veh	5.5	0.7	0.7	4.5	0.4	0.0	7.8	1.1	0.1	4.8	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	2.8	2.9	3.2	3.7	0.0	1.6	3.7	0.8	2.9	2.1	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.7	23.9	24.0	33.4	21.2	0.0	39.5	24.9	14.9	34.1	19.7	19.8
LnGrp LOS	D	C	C	C	C	A	D	C	B	C	B	B
Approach Vol, veh/h		513			764			433			517	
Approach Delay, s/veh		26.3			24.2			25.8			24.5	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	9.3	24.7	14.1	20.6	13.4	20.6	10.0	24.6
Change Period (Y+Rc), s	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Max Green Setting (Gmax), s	25.0	55.0	25.0	55.0	25.0	55.0	25.0	55.0
Max Q Clear Time (g_c+I1), s	5.2	7.7	9.0	9.0	8.4	10.7	5.6	11.4
Green Ext Time (p_c), s	0.1	1.7	0.3	2.2	0.3	1.5	0.1	3.6

Intersection Summary	
HCM 6th Ctrl Delay	25.1
HCM 6th LOS	C



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	687	741	2	0	4
Future Volume (vph)	0	687	741	2	0	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	0	1
Taper Length (ft)	25				25	
Link Speed (mph)		30	30		15	
Link Distance (ft)		343	147		137	
Travel Time (s)		7.8	3.3		6.2	
Confl. Peds. (#/hr)	1			1	1	1
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles (%)	3%	3%	1%	1%	100%	100%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

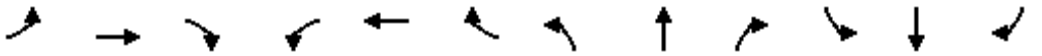
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	687	741	2	0	4
Future Vol, veh/h	0	687	741	2	0	4
Conflicting Peds, #/hr	1	0	0	1	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	50	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	82	82	82	82	82	82
Heavy Vehicles, %	3	3	1	1	100	100
Mvmt Flow	0	838	904	2	0	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	907	0	-	0	-	455
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.16	-	-	-	-	8.9
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.23	-	-	-	-	4.3
Pot Cap-1 Maneuver	740	-	-	-	0	352
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	739	-	-	-	-	351
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	739	-	-	-	351
HCM Lane V/C Ratio	-	-	-	-	0.014
HCM Control Delay (s)	0	-	-	-	15.4
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	606	38	6	690	8	59	0	19	0	0	14
Future Volume (vph)	0	606	38	6	690	8	59	0	19	0	0	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	50		0	0		0	0		0
Storage Lanes	0		0	1		0	0		0	0		1
Taper Length (ft)	25			25			25			25		
Link Speed (mph)		30			30			15			15	
Link Distance (ft)		147			73			127			135	
Travel Time (s)		3.3			1.7			5.8			6.1	
Confl. Peds. (#/hr)	1		1	2		2	1		2	2		1
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Heavy Vehicles (%)	2%	2%	2%	1%	1%	1%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Sign Control		Free			Free			Stop			Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	606	38	6	690	8	59	0	19	0	0	14
Future Vol, veh/h	0	606	38	6	690	8	59	0	19	0	0	14
Conflicting Peds, #/hr	1	0	1	2	0	2	1	0	2	2	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	50	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	1	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	1	1	1	0	0	0	0	0	0
Mvmt Flow	0	758	48	8	863	10	74	0	24	0	0	18

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	-	0	0	808	0	0	1233	1675	407	-	-	440
Stage 1	-	-	-	-	-	-	784	784	-	-	-	-
Stage 2	-	-	-	-	-	-	449	891	-	-	-	-
Critical Hdwy	-	-	-	4.12	-	-	7.5	6.5	6.9	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.5	5.5	-	-	-	-
Follow-up Hdwy	-	-	-	2.21	-	-	3.5	4	3.3	-	-	3.3
Pot Cap-1 Maneuver	0	-	-	820	-	-	135	96	599	0	0	570
Stage 1	0	-	-	-	-	-	357	407	-	0	0	-
Stage 2	0	-	-	-	-	-	564	363	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	-	-	-	818	-	-	129	95	597	-	-	568
Mov Cap-2 Maneuver	-	-	-	-	-	-	252	217	-	-	-	-
Stage 1	-	-	-	-	-	-	357	406	-	-	-	-
Stage 2	-	-	-	-	-	-	541	359	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.1	23.3	11.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	293	-	-	818	-	-	568
HCM Lane V/C Ratio	0.333	-	-	0.009	-	-	0.031
HCM Control Delay (s)	23.3	-	-	9.4	-	-	11.5
HCM Lane LOS	C	-	-	A	-	-	B
HCM 95th %tile Q(veh)	1.4	-	-	0	-	-	0.1

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	647	8	8	699	15	15
Future Volume (vph)	647	8	8	699	15	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	25	
Link Distance (ft)	71			543	252	
Travel Time (s)	1.6			12.3	6.9	
Confl. Peds. (#/hr)		2	2		2	2
Peak Hour Factor	0.79	0.79	0.79	0.79	0.79	0.79
Heavy Vehicles (%)	3%	3%	1%	1%	0%	0%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other
Control Type: Unsignalized	

Intersection	
Int Delay, s/veh	0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	647	8	8	699	15	15
Future Vol, veh/h	647	8	8	699	15	15
Conflicting Peds, #/hr	0	2	2	0	2	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	0	-
Veh in Median Storage, #	0	-	-	0	1	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	3	3	1	1	0	0
Mvmt Flow	819	10	10	885	19	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	831	0	1291	419
Stage 1	-	-	-	-	826	-
Stage 2	-	-	-	-	465	-
Critical Hdwy	-	-	4.12	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	-	-	2.21	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	803	-	158	589
Stage 1	-	-	-	-	395	-
Stage 2	-	-	-	-	604	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	801	-	155	587
Mov Cap-2 Maneuver	-	-	-	-	281	-
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	603	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	15.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	380	-	-	801	-
HCM Lane V/C Ratio	0.1	-	-	0.013	-
HCM Control Delay (s)	15.5	-	-	9.6	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	587	39	36	684	20	19
Future Volume (vph)	587	39	36	684	20	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	50		0	0
Storage Lanes		0	1		1	0
Taper Length (ft)			25		25	
Link Speed (mph)	30			30	15	
Link Distance (ft)	73			71	132	
Travel Time (s)	1.7			1.6	6.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	1%	1%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary	
Area Type:	Other

Control Type: Unsignalized

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	587	39	36	684	20	19
Future Vol, veh/h	587	39	36	684	20	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	50	-	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	1	1	2	2
Mvmt Flow	638	42	39	743	22	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	680	0	1109	340
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	450	-
Critical Hdwy	-	-	4.12	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.21	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	915	-	204	656
Stage 1	-	-	-	-	476	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	915	-	195	656
Mov Cap-2 Maneuver	-	-	-	-	319	-
Stage 1	-	-	-	-	456	-
Stage 2	-	-	-	-	609	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	425	-	-	915	-
HCM Lane V/C Ratio	0.1	-	-	0.043	-
HCM Control Delay (s)	14.4	-	-	9.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

ATTACHMENT D

Existing Chick-fil-A Service Times

Chick-fil-A Bellevue
Drive-Thru Service Times - Lunch Peak Hour
7/27/2016

Customer	Service Time + Queue Move Up (s)
1	57.36
2	83.14
3	35.88
4	59.20
5	77.18
6	48.37
7	34.62
8	26.15
9	16.68
10	71.01
11	40.31
12	26.15
13	56.99
14	30.63
15	48.60
16	38.96
17	45.55
18	41.02
19	23.79
20	39.79
21	41.63
22	32.00
23	74.53
24	23.71
25	40.04
26	46.28
27	26.12
28	38.56
29	36.91
30	51.31
31	79.88
32	25.79
33	32.38
34	46.20
35	35.77
36	33.44
37	50.96
38	106.93
39	75.66
40	33.75
41	45.11

Chick-fil-A Bellevue
Drive-Thru Service Times - Lunch Peak Hour
7/27/2016

Customer	Service Time + Queue Move Up (s)
42	80.16
43	42.89
44	44.95
45	27.61
46	39.96
47	49.98
48	43.04
49	27.58
50	32.68
51	31.59
52	38.42
53	78.77
54	81.40
55	20.01
56	41.40
57	43.82
58	35.16
59	113.55
60	89.03
61	31.78
62	83.38
63	34.16
64	35.71
65	37.09
66	34.23
67	34.33
68	25.92
69	43.02
70	117.66
71	58.00
72	42.39
MIN	16.68
MAX	117.66
AVG	47.47

Chick-fil-A Lynnwood
Drive-Thru Service Times - Lunch Peak Hour
7/28/2016

Customer	Service Time + Queue Move Up (s)
1	24.17
2	20.12
3	13.40
4	13.50
5	28.46
6	51.43
7	30.39
8	40.32
9	87.98
10	14.68
11	14.32
12	13.17
13	38.36
14	16.67
15	54.90
16	32.58
17	60.19
18	23.51
19	166.75
20	15.70
21	39.76
22	19.31
23	79.30
24	64.46
25	24.52
26	28.60
27	18.91
28	33.25
29	20.43
30	58.16
31	28.11
32	26.09
33	170.23
34	28.77
35	12.72
36	12.75
37	34.42
38	17.77
39	36.73
40	36.94
41	8.41

Chick-fil-A Lynnwood
Drive-Thru Service Times - Lunch Peak Hour
7/28/2016

Customer	Service Time + Queue Move Up (s)
42	16.64
43	12.14
44	14.98
45	31.33
46	20.42
47	11.53
48	15.61
49	62.77
50	13.73
51	106.77
52	34.05
53	19.11
54	20.71
55	29.08
56	12.20
57	112.22
58	10.02
59	10.65
60	15.03
61	23.89
62	24.25
63	13.56
64	22.52
65	17.05
66	10.54
67	20.79
68	18.53
69	51.12
70	20.04
71	27.23
72	12.94
73	31.60
74	29.73
75	25.90
76	25.92
77	111.00
78	18.38
79	11.58
80	12.11
81	11.15
82	24.47

Chick-fil-A Lynnwood
Drive-Thru Service Times - Lunch Peak Hour
7/28/2016

Customer	Service Time + Queue Move Up (s)
83	28.32
84	83.24
85	13.69
86	17.41
87	15.51
88	30.33
89	28.24
90	23.53
91	87.70
92	49.47
93	42.39
94	15.79
95	20.31
96	19.25

MIN	8.41
MAX	170.23
AVG	33.01

Chick-fil-A Tacoma
Drive-Thru Service Times - Lunch Peak Hour
7/28/2016

Customer	Service Time + Queue Move Up (s)
1	71.85
2	35.90
3	36.00
4	31.54
5	50.67
6	52.67
7	30.79
8	75.69
9	65.67
10	76.95
11	36.98
12	68.09
13	77.69
14	40.40
15	39.82
16	57.78
17	51.75
18	53.92
19	65.59
20	50.55
21	40.53
22	106.54
23	45.66
24	24.01
25	13.35
26	22.53
27	44.20
28	74.28
29	42.90
30	43.39
31	14.24
32	55.07
33	109.84
34	78.51
35	36.63
36	62.70
37	51.73
38	40.49
39	55.94
40	42.82
41	95.76

Chick-fil-A Tacoma
Drive-Thru Service Times - Lunch Peak Hour
7/28/2016

Customer	Service Time + Queue Move Up (s)
42	43.89
43	35.46
44	84.77
45	28.11
46	12.98
47	35.90
48	21.04
49	57.83
50	79.58
51	40.11
52	28.13
53	19.16
54	35.18
55	96.77
56	46.99
57	53.49
58	25.16
59	35.10
60	41.85
61	14.51
62	32.86
63	54.75
64	37.47
65	42.48
66	24.21
67	43.58
68	38.22
69	50.91
MIN	12.98
MAX	109.84
AVG	48.29

ATTACHMENT E

Existing Chick-fil-A Queue Calculations

Attachment E

Drive-Through Queue Calculations at Existing Chick-fil-A Locations

Bellevue

Peak Hour Drive-Thru Volume: 72

# of Vehicles Arriving	Time Period (min)	Average Arrival Rate, λ, (veh/min)	Service Time (sec)[1]	Average Departure Rate, μ, (veh/min)	Arrival Rate / Departure Rate, ρ = λ / μ	Average Queue Length (veh) [2]	95th Percentile Queue Length (veh) [3]
72	60	1.20	47.47	1.263956183	0.95	18	33

Lynnwood

Peak Hour Drive-Thru Volume: 96

# of Vehicles Arriving	Time Period (min)	Average Arrival Rate, λ, (veh/min)	Service Time (sec)[1]	Average Departure Rate, μ, (veh/min)	Arrival Rate / Departure Rate, ρ = λ / μ	Average Queue Length (veh) [2]	95th Percentile Queue Length (veh) [3]
96	60	1.60	33.01	1.817631021	0.88	6	14

Tacoma

Peak Hour Drive-Thru Volume: 69

# of Vehicles Arriving	Time Period (min)	Average Arrival Rate, λ, (veh/min)	Service Time (sec)[1]	Average Departure Rate, μ, (veh/min)	Arrival Rate / Departure Rate, ρ = λ / μ	Average Queue Length (veh) [2]	95th Percentile Queue Length (veh) [3]
69	60	1.15	48.29	1.24249327	0.93	12	23

Notes:

1. Service times (including queue move up) based on observations conducted in July 2016.
2. Average length of queue = $Q = \frac{\rho^2}{1 - \rho}$ Source: M/M/1 queuing regime (*Principles of Highway Engineering and Traffic Analysis*)
3. 95th percentile queue was estimated from the average queue using formula found in Transportation Research Record 1776, Paper No. 01-2019.

ATTACHMENT F

Chick-fil-A Fircrest Queue Calculations

Attachment F

Future Drive-Through Queue Calculations - Fircrest, WA

Lunch Peak Hour (Opening Weeks)

Future Peak Hour Drive-Thru Volume: 135

# of Vehicles Arriving	Time Period (min)	Average Arrival Rate, λ, (veh/min)	Service Time (sec)[1]	Average Departure Rate, μ, (veh/min)	Arrival Rate / Departure Rate, ρ = λ / μ	Average Queue Length (veh) [2]	95th Percentile Queue Length (veh) [3]
135	60	2.25	25	2.4	0.94	14	27

Evening Peak Hour (Opening Weeks)

Future Peak Hour Drive-Thru Volume: 110

# of Vehicles Arriving	Time Period (min)	Average Arrival Rate, λ, (veh/min)	Service Time (sec)[1]	Average Departure Rate, μ, (veh/min)	Arrival Rate / Departure Rate, ρ = λ / μ	Average Queue Length (veh) [2]	95th Percentile Queue Length (veh) [3]
110	60	1.83	30	2	0.92	10	20

Lunch Peak Hour (Normalized)

Future Peak Hour Drive-Thru Volume: 75

# of Vehicles Arriving	Time Period (min)	Average Arrival Rate, λ, (veh/min)	Service Time (sec)[2]	Average Departure Rate, μ, (veh/min)	Arrival Rate / Departure Rate, ρ = λ / μ	Average Queue Length (veh) [2]	95th Percentile Queue Length (veh) [3]
75	60	1.25	42.92	1.397841112	0.89	8	16

Evening Peak Hour (Normalized)

Future Peak Hour Drive-Thru Volume: 60

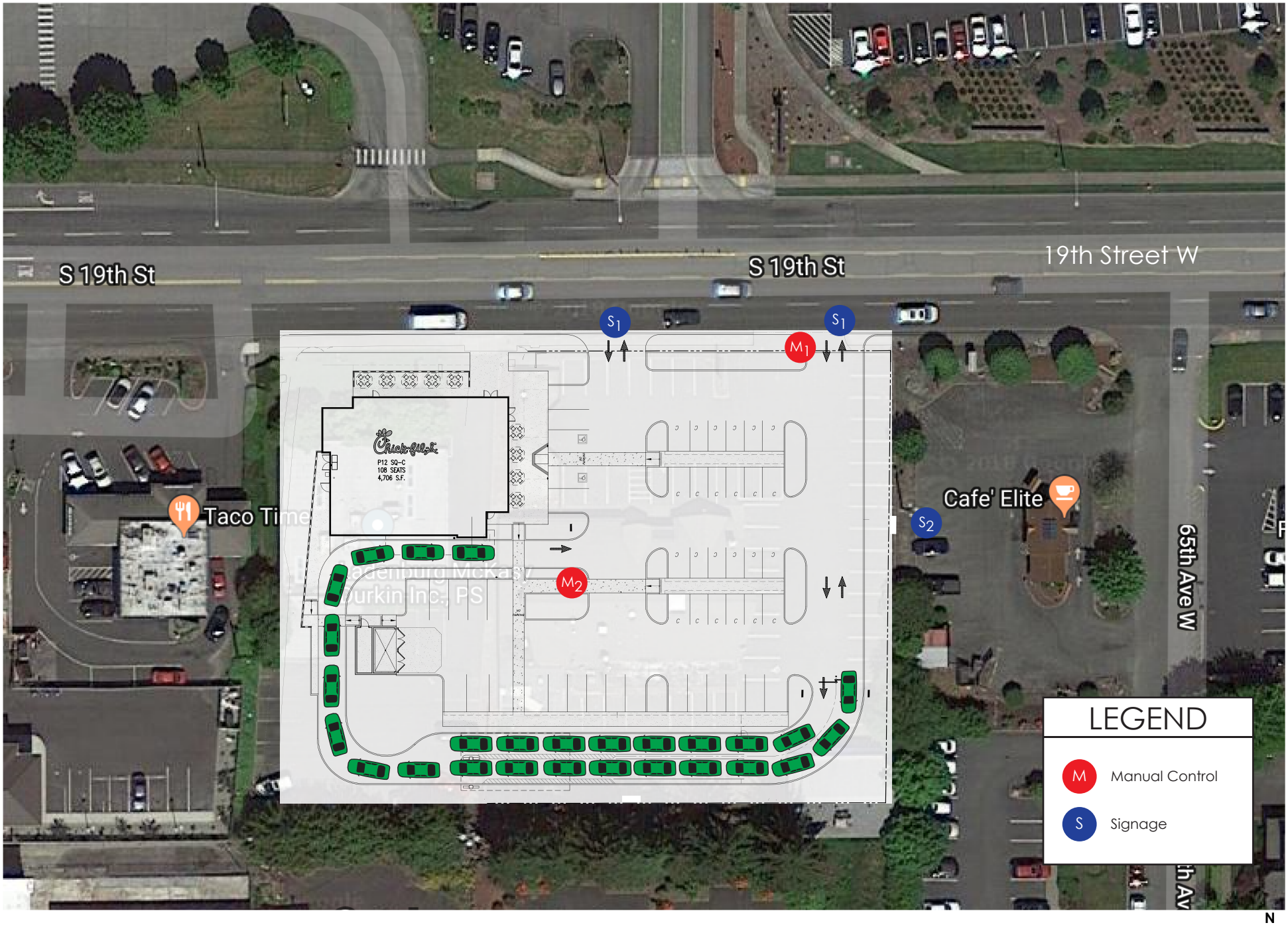
# of Vehicles Arriving	Time Period (min)	Average Arrival Rate, λ, (veh/min)	Service Time (sec)	Average Departure Rate, μ, (veh/min)	Arrival Rate / Departure Rate, ρ = λ / μ	Average Queue Length (veh) [2]	95th Percentile Queue Length (veh) [3]
60	60	1.00	50	1.2	0.83	4	10

Notes:

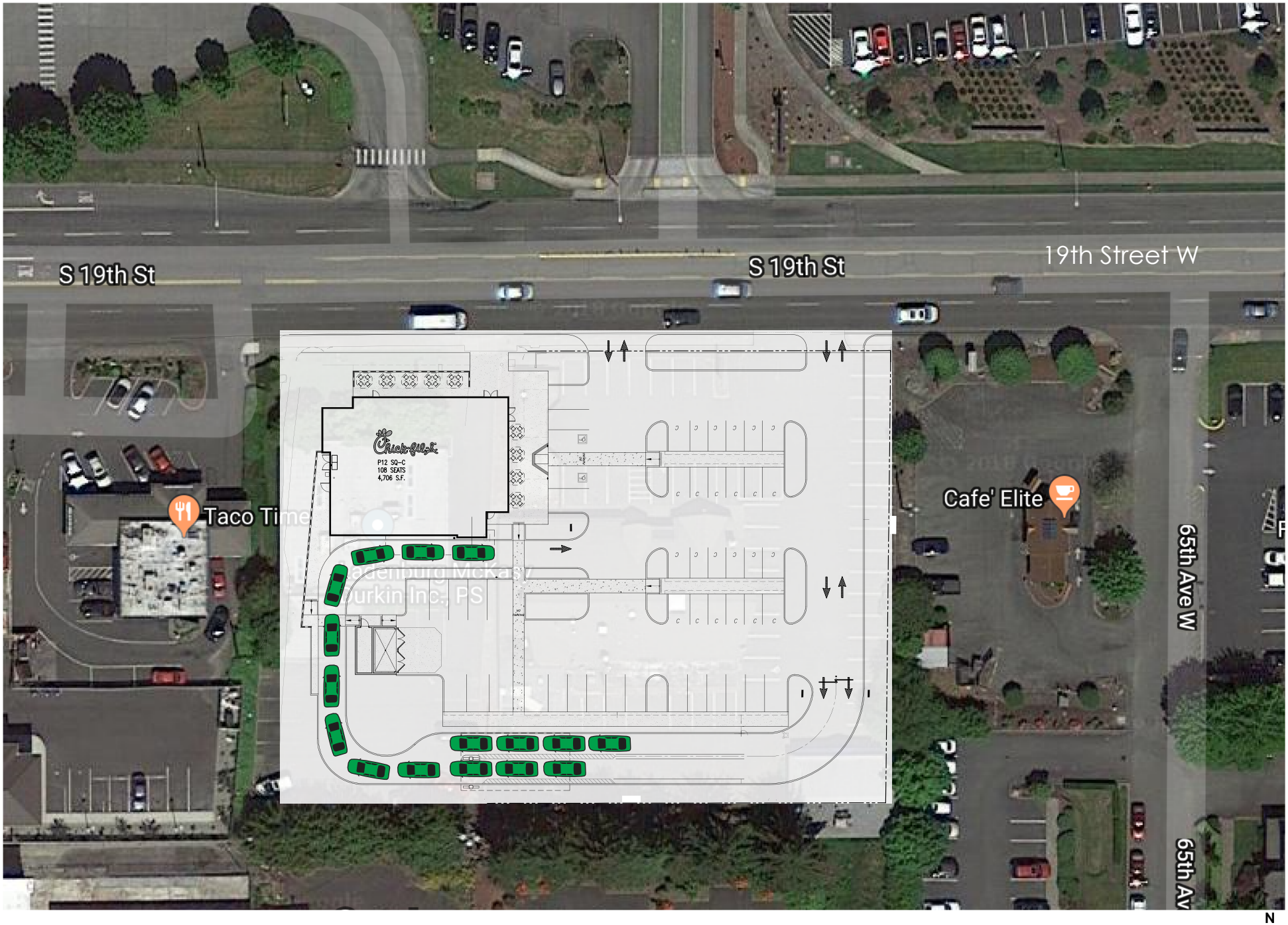
1. Service time (including queue move up) for opening weeks based on anticipated staff increase.
2. Service time (including queue move up) based on observations at existing Bellevue, Lynnwood, and Tacoma locations.
3. Average length of queue = $Q = \frac{\rho^2}{1 - \rho}$ Source: M/M/1 queuing regime (*Principles of Highway Engineering and Traffic Analysis*)
4. 95th percentile queue was estimated from the average queue using formula found in Transportation Research Record 1776, Paper No. 01-2019.

ATTACHMENT G

Traffic Management Plan



Attachment G1: Chick-fil-A Fircrest - Traffic Management Plan - Opening Weeks (27 vehicles)



Attachment G2: Chick-fil-A Fircrest - Traffic Management Plan - Normalized (16 vehicles)