Transportation Impact Analysis

HERZL-NER TAMID JEWISH DAY SCHOOL

January 2025

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Introduction

The purpose of this transportation impact analysis (TIA) is to identify potential traffic-related impacts associated with the proposed private school development on the Herzl (HNT) property in Mercer Island, Washington. As necessary, mitigation measures are identified that would offset or reduce significant impacts.

Project Description

The proposed project location is at 3700 E Mercer Way, located east of E Mercer Way near the I-90 ramps on Mercer Island as shown in Figure 1. The proposed project includes a private school with approximately 34,618 gross square and 12,300 gross square feet of general office. The private school will enroll up to 150 students in the PK-8 grade levels. The private school space would be occupied by the Jewish Day School (JDS), which is currently located in Bellevue and intends to move to the proposed site. Vehicular access to the project site would be provided along the northern site limits where a driveway would be provided onto Frontage Road, as illustrated in Figure 1. A preliminary site plan is shown in Figure 2. The school is projected to be open in 2026.

Study Area

The analysis focuses on the school AM and PM peak hours (7:00 to 9:00 a.m. and 3:00 to 4:00 p.m., respectively) as well as the weekday PM peak period (4:00 to 6:00 p.m.) operations at six intersections. These periods represent the highest cumulative total traffic for the adjacent street system as well as the highest time periods for the school providing a conservative timeframe for level of service (LOS) analysis. The study intersections include (see also Figure 1):

1. E Mercer Way/SE 40th Street
2. E Mercer Way/Frontage Road
3. E Mercer Way/SE 36th Street/I-90 EB On Ramp
4. E Mercer Way/I-90 EB Off Ramp
5. E Mercer Way/I-90 WB Ramps

In addition to the above study intersections, the proposed site access along Frontage Road was analyzed for purposes of future trip generation calculations.

Site Vicinity and Study Intersections

FIGURE 1

Herzl Private School

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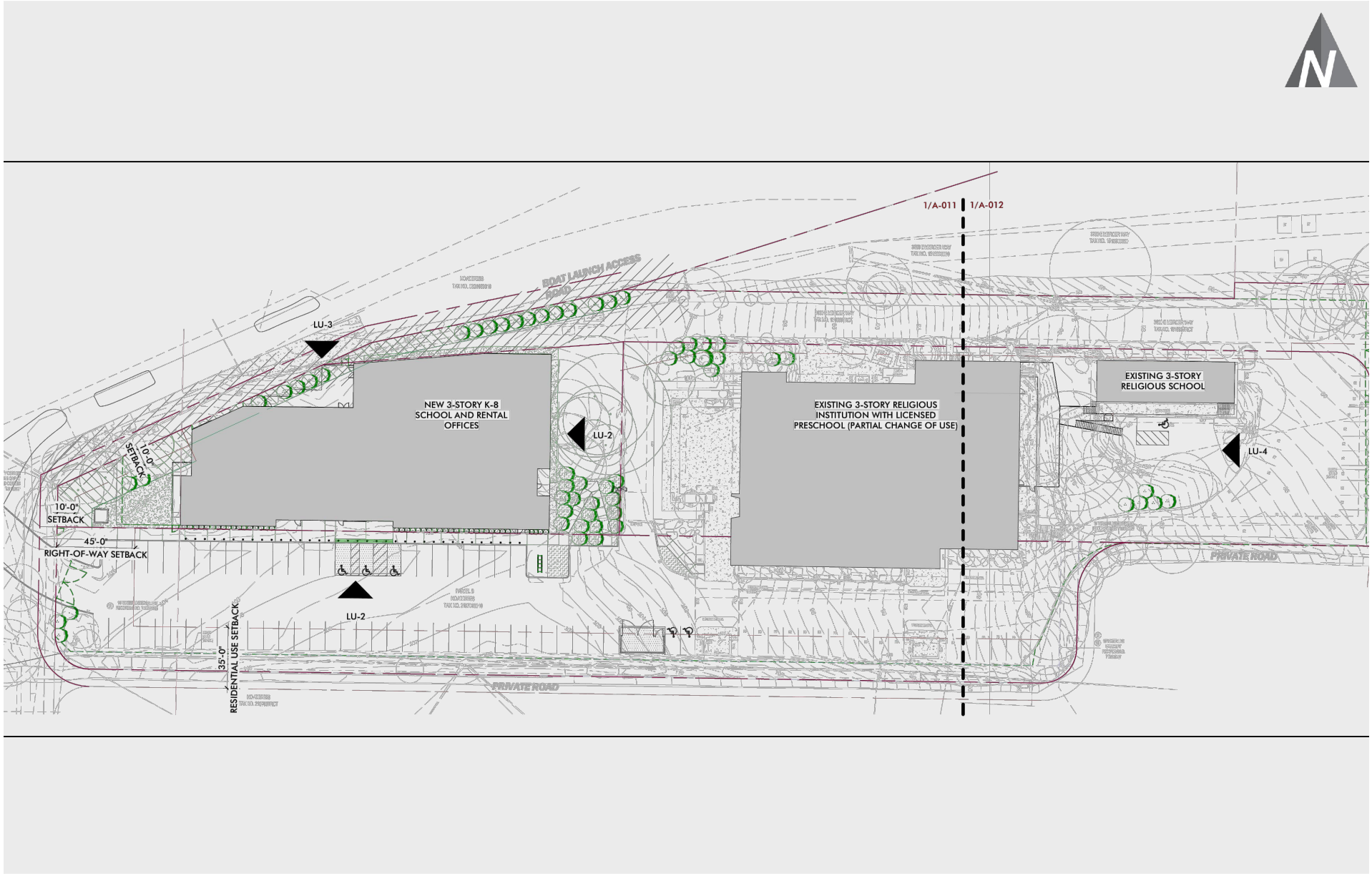

Site Plan

Herzl Private School

FIGURE
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Existing Conditions

This section describes existing condition within the identified study area. Characteristics are provided for the roadway network, non-motorized facilities, transit service, existing traffic volumes, traffic operations, and traffic safety.

Roadway Network

The project site is located in northeast Mercer Island, and is bounded by E Mercer Way to the west, Frontage Road to the north, and SE 40th Street to the south. The major roadways within the study area include:

SE 36th Street is a two-lane roadway classified as a secondary arterial. This roadway provides east-west access with sidewalks located on the south side and a center two-way left-turn lane. SE 36th Street serves as a connection to eastbound and westbound Interstate 90 (I-90) with freeway access at the N Mercer Way and E Mercer Way intersections. The posted speed limit is 30 miles per hour (mph) in the vicinity of the project.

E Mercer Way is a two-lane roadway classified as a collector arterial with sidewalks. This roadway provides north-south access and a connection to I-90 with a freeway connection at the SE 36th Street intersection. The posted speed limit is 30 mph in the vicinity of the project.

SE 40th Street is an east-west residential roadway located south of the project site area. The road provides one lane in each direction and no sidewalks. The posted speed limit is 25 mph in the vicinity of the project.

Frontage Road is an east-west city facility roadway located north of the project site area. The road provides one lane in each direction and no sidewalks. Access to the project site is provided via a driveway along the south side of Frontage Road.

Non-Motorized Facilities

Sidewalks are provided along SE 36th Street and E Mercer Way with crosswalks located at major intersections allowing safe pedestrian mobility throughout the area. Signalized crossings are provided at the SE 36th Street/E Mercer Way intersection, as well as the E Mercer Way/I-90 WB ramps intersection. Unsignalized crossings are located along E Mercer Way at the north and south legs of the Jewish Community Center Access Road intersection. Additional pedestrian circulation near the site is discussed below.

No marked bicycle facilities are provided along roadways in the project vicinity, but E Mercer Way and SE 36th Street are considered bicycle-friendly roadways.

Transit Service

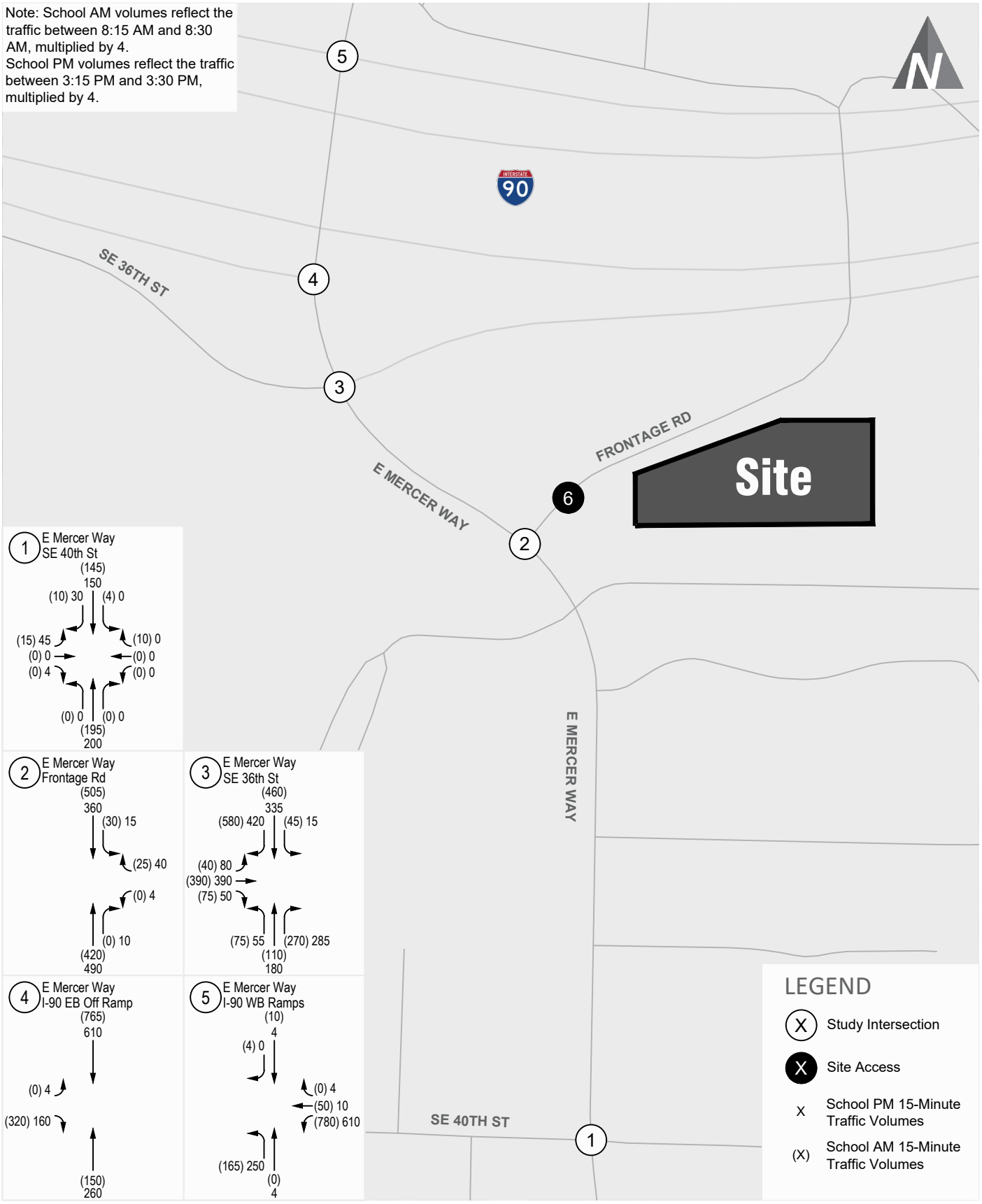
No public transit routes utilize study area roadways, including E Mercer Way, SE 36th Street, and SE 40th Street. The nearest transit stop to the project site is located at the N Mercer Way/Fortuna Drive intersection approximately 0.6 miles northwest of the project site which is served by King County Metro Route 204 Dial-a-Ride Transit (DART) service providing service between North Mercer Island and the Mercer Village Shopping Center. DART service offers both fixed and variable routing on N Mercer Way between the hours of 9 am and 3 pm on weekdays, and 9 am to 7 pm on Saturdays.

The East Link is a planned Sound Transit Link Light Rail extension that would provide service from Downtown Seattle to Mercer Island to Redmond. The segment of the East Link between Bellevue and Redmond is expected to open in April 2024, with the remainder of the link extension, including the segment running through Mercer Island, being scheduled to open in 2025.

Although limited public service is available under existing conditions, the JDS does provide bus service for families of the school. During the 2023-2024 school year, the JDS provided four buses, with a total of 25 students using the bus.

Existing Volumes

Traffic counts were collected at each study intersection including the site access in March 2024 for the school AM and PM peaks and the weekday PM peak hours and are summarized in Figure 3 and Figure 4, respectively. These counts included both traffic and pedestrian volumes. It should be noted that the French American School of Puget Sound, the Stroum Jewish Community Center and Early Childhood Center are located near the site on the west side of E Mercer Way. Traffic associated with these other uses were captured through the data collection that occurred at the study intersections. Detailed intersection traffic and pedestrian counts are provided in Appendix A.



Existing (2024) School 15-Minute Traffic Volumes

Herzl Private School

FIGURE 3

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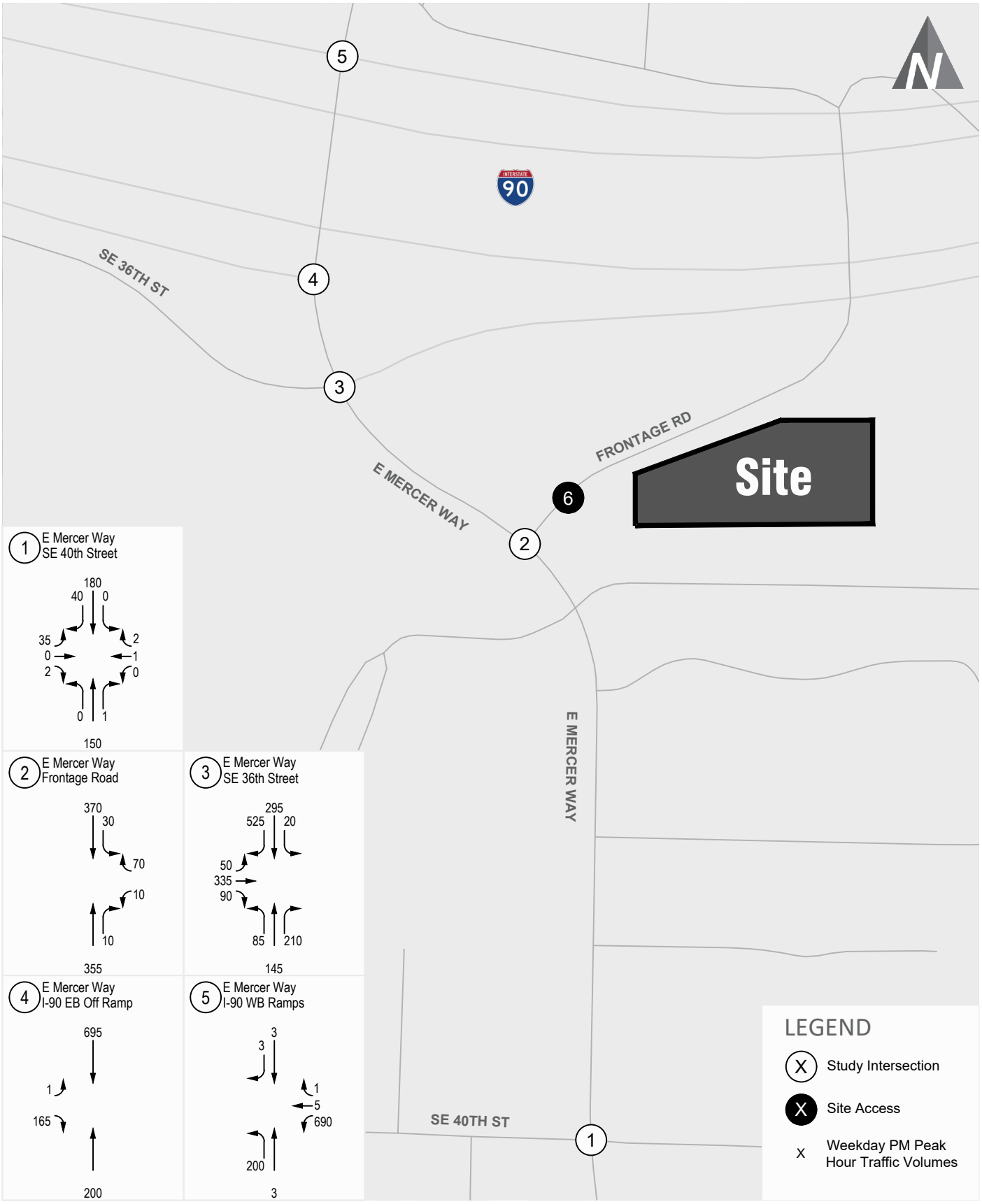

Existing (2024) PM Peak Hour Traffic Volumes

Herzl Private School

FIGURE 4

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Existing Traffic Operations

The operational characteristics of an intersection are determined by calculating the intersection's level of service (LOS). The intersection as a whole and its individual turning movements can be described alphabetically with a range of levels of service (A through F), with LOS A indicating free-flow traffic and LOS F indicating extreme congestion and long vehicle delays. LOS is measured in average control delay per vehicle and is typically reported for the intersection as a whole at signalized intersections and for the approach or turning movement that experiences the most delay at two-way stop-controlled intersections. Control delay is defined as the combination of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Appendix B provides a more detailed explanation of intersection LOS criteria.

Existing levels of service and delays were calculated using the *Highway Capacity Manual* (*HCM*) *7th Edition* methodology. *Synchro* (version 12) was used for these calculations. For the operations analysis of existing conditions at the signalized study intersections, signal timing and phasing information was obtained from the Washington State Department of Transportation (WSDOT) and input into *Synchro*. Existing peak hour factors and heavy vehicle percentages were used for the operations analysis. The City of Mercer Island has adopted a standard of LOS D or better for City intersections.

As requested by the City, a conservative approach to evaluating impacts from the project was taken by assuming all traffic from the site will arrive and depart within a 15 minute period. This is not anticipated to occur given the project will stagger the arrival and departure times for both the preschool and K-8 students and staff tend to arrive earlier and depart later than students. The proposal is to have the K-8 portion operate from 8:30 AM to 3:30 PM and the preschool to operate from 8:45 AM to 3:00 PM. Even though actual traffic will be distributed over a longer period, a conservative approach was taken to account for all of the school traffic occurring during a peak 15 minute period from 8:15 AM to 8:30 AM and 3:15 PM to 3:30 PM, when a majority of the school drop off and pick up is expected to occur. The Synchro analysis takes into consideration volumes throughout the entire hour. To isolate the analysis on the peak 15 minute period the volumes during that time period were multiplied by 4 with a peak hour factor of 1.0 to have four equal 15 minute periods. As mentioned before this is a conservative approach given the project volumes account for all traffic including staffing, visitors and student drop off/pick ups that do not occur within a concentrated 15 minute period.

Table 1 shows the school AM and PM peak hour and weekday PM peak hour existing traffic operations. Detailed intersection LOS worksheets are contained in Appendix C.

Table 1. Existing Weekday AM and PM Peak Hour Intersection Operations

	School AM Peak Hour[1]			School PM Peak Hour[2]			Weekday PM Peak Hour		
Intersection	**LOS[3]**	**Delay[4]**	**WM[5]**	**LOS**	**Delay**	**WM**	**LOS**	**Delay**	**WM**
1. E Mercer Way/SE 40th Street	B	11	EB	B	11	EB	B	12	EB
2. E Mercer Way/Frontage Rd	B	11	WB	B	12	WB	B	13	WB
3. E Mercer Way/SE 36th Street/I-90 EB On Ramp[6]	B	19	-	C	21	-	B	19	-
4. E Mercer Way/I-90 EB Off Ramp[6]	B	12	-	A	8	-	A	8	-
5. E Mercer Way/I-90 WB Ramps	B	15	-	B	14	-	B	13	-

1. School AM peak hour LOS and delay based on 15-minute volumes from 8:15 AM to 8:30 AM
2. School PM peak hour LOS and delay based on 15-minute volumes from 3:15 PM to 3:30 PM
3. Level of Service (A – F) as defined by the Highway Capacity Manual (TRB, 7th Edition).
4. Average delay per vehicle in seconds.
5. Worst movement (WM) reported for stop controlled intersections. EB = eastbound approach; and WB = westbound approach.
6. Traffic operations ran in HCM 2000 due to clustered intersection

As shown in Table 1, all study intersections currently operate at LOS D or better during the peak periods, meeting the City of Mercer Island's LOS D standard.

Traffic Safety

Washington State Department of Transportation (WSDOT) provided the collision data for the most recent three-year period for intersections and roadway segments within the City of Mercer Island. Specifically, the data was summarized between January 1, 2020 and December 31, 2022. Table 2 provides a summary of collision history within the study area.

Table 2. Three-Year Collision Summary (2020-2022)

Location	Number of Collisions			Total	Annual Average	Collisions per MEV[1]
	2020	2021	2022			
1. E Mercer Way/SE 40th St	0	1	0	1	0.33	0.22
2. E Mercer Way/Frontage Rd	0	0	1	1	0.33	0.11
3. E Mercer Way/SE 36th St/I-90 EB On Ramp	1	0	1	2	0.67	0.10
4. E Mercer Way/I-90 EB Off Ramp	0	0	0	0	0	0.00
5. E Mercer Way/I-90 WB Ramps	0	2	0	2	0.67	0.20

Source: WSDOT, 2023
Under 23 U.S. Code § 409 and 23 U.S. Code § 148, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.
1. Million Entering Vehicles

Within the analysis time period, the highest number of collisions occurred at the E Mercer Way/SE 36th Street/I-90 EB On-Ramp intersection and the E Mercer Way/I-90 WB Ramps intersection, with an average of less than one collision per year. Of the 6 collisions that occurred in the study area, 4 resulted in property damage only, and 2 resulted in some form of injury. Both injuries occurred at the E Mercer Way/SE 36th Street/I-90 EB On Ramp intersection, with one collision being an approach turn collision and one collision involving a cyclist. Both collisions resulted in only minor injuries, and do not represent enough of a pattern to establish a safety concern at the intersection.

By incorporating the traffic volume at the intersection, the rate of collisions per million entering vehicles (MEV) allows a uniform standard for evaluating accident history. Generally, a collision rate at intersections greater than 1.0 collisions per MEV is considered higher than normal. Based on this threshold, there were no safety issues identified at the study intersections.

Future Without-Project Conditions

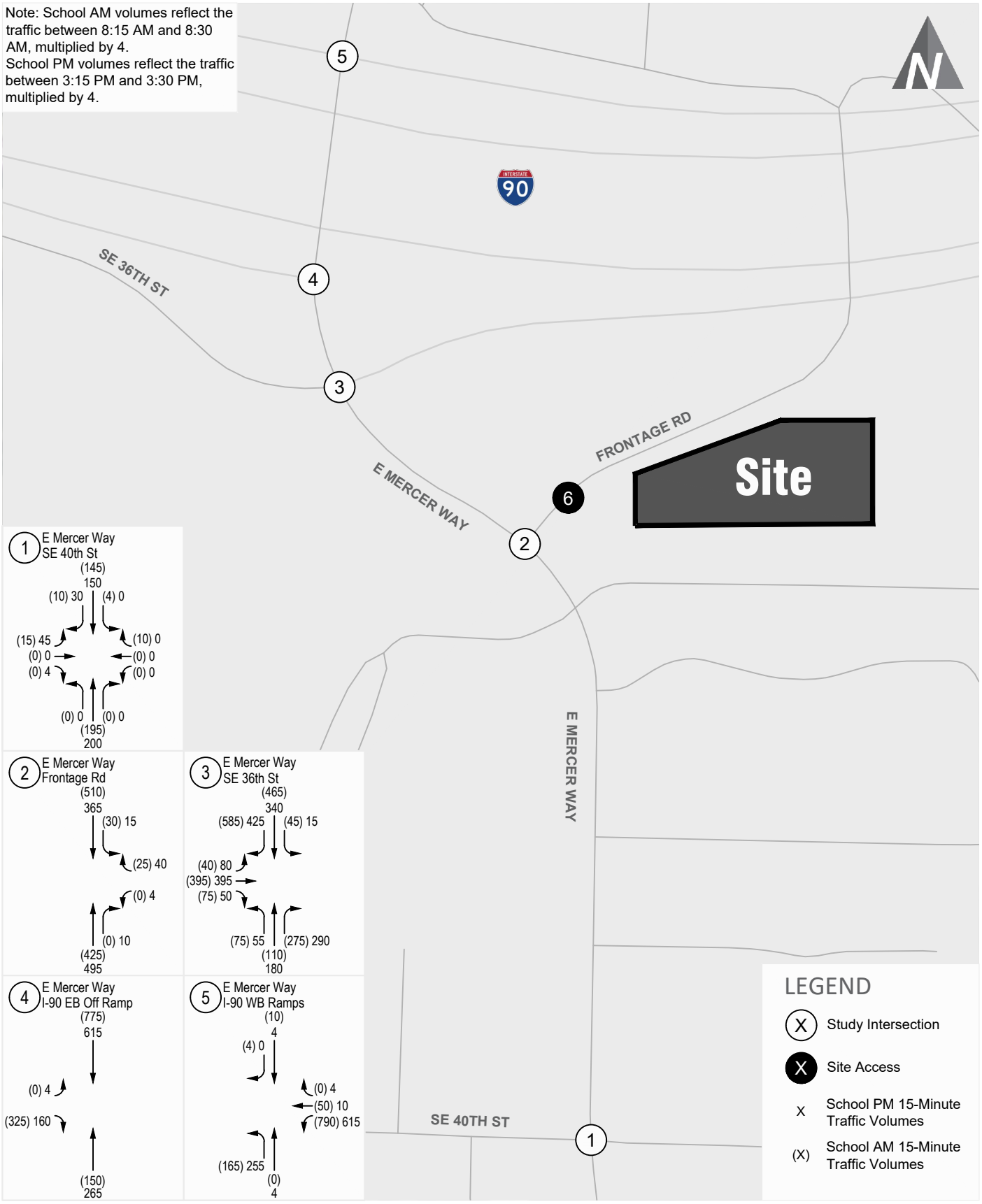
This section describes the future (2026) traffic conditions during school AM and PM peaks and the weekday PM peak hours without the addition of project traffic. The following describes planned transportation improvements, traffic volume forecasts, and traffic operations.

Planned Transportation Improvements

Based on a review of the City of Mercer Island's 2024-2029 Six-Year Transportation Improvement Program (TIP), there are no planned improvements in the study area that are anticipated to change intersection or roadway capacities by altering intersection traffic control or geometrics. Repaving of sections of SE 36th Street and East Mercer Way within the study area are anticipated to take place in 2025 and 2027, respectively. Neither of these projects are expected to change the existing roadway conditions within the study area.

Future Traffic Volume Forecasts

Future (2026) without-project traffic volumes were forecasted using an annual background growth rate of 0.5 percent. These volumes were forecasted using the information from the City of Mercer Island's background growth rate for areas outside the Town Center boundary, as defined by the City of Mercer Island Comprehensive Plan. Future (2026) without-project traffic volumes are shown in Figure 5 and Figure 6 for the School AM and PM peak hours and the weekday PM peak hour, respectively.



Future (2026) Without-Project School 15-Minute Traffic Volumes

FIGURE 5

Herzl Private School

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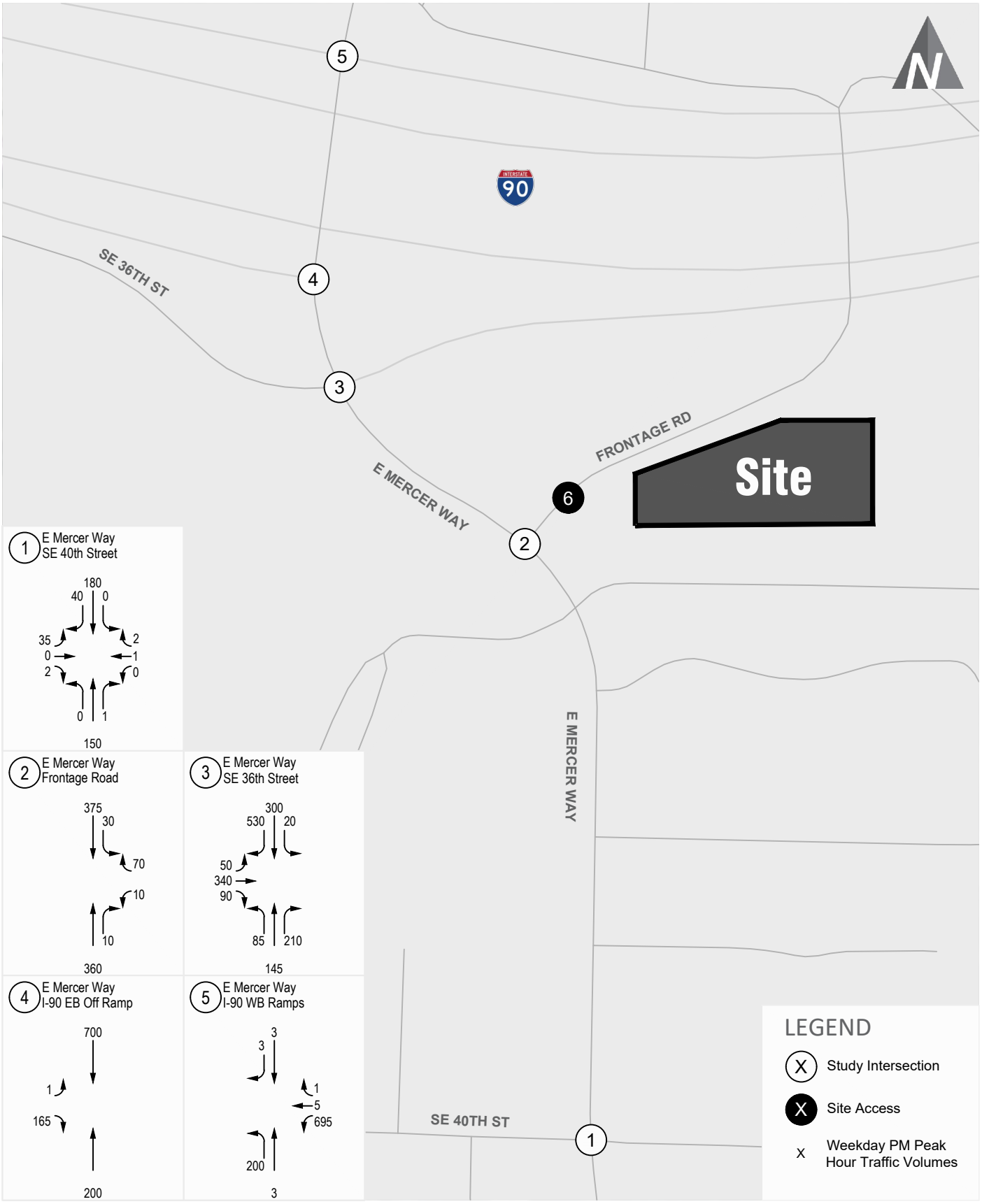

Future (2026) Without-Project PM Peak Hour Traffic Volumes

FIGURE 6

Herzl Private School

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Future Traffic Operations

Future intersection operations were evaluated for the future (2026) without-project conditions. Intersection LOS was calculated at the study intersections using the LOS method described previously. Table 3summarizes 2026 school AM and PM peaks and the weekday PM peak hours LOS. The detailed LOS worksheets are included in Appendix C.

Table 3. Future Without-Project Peak Hour Intersection Operations

	Existing (2024)			Future (2026) Without-Project		
Intersection	**LOS[1]**	**Delay[2]**	**WM[3]**	**LOS**	**Delay**	**WM**
School AM Peak Hour[5]						
1. E Mercer Way/SE 40th Street	B	11	EB	B	11	EB
2. E Mercer Way/Frontage Rd	B	11	WB	B	11	WB
3. E Mercer Way/SE 36th Street/I-90 EB On Ramp[4]	B	19	-	B	19	-
4. E Mercer Way/I-90 EB Off Ramp[4]	B	12	-	B	13	-
5. E Mercer Way/I-90 WB Ramps	B	15	-	B	16	-
School PM Peak Hour[6]						
1. E Mercer Way/SE 40th Street	B	11	EB	B	11	EB
2. E Mercer Way/Frontage Rd	B	12	WB	B	12	WB
3. E Mercer Way/SE 36th Street/I-90 EB On Ramp[4]	C	21	-	C	22	-
4. E Mercer Way/I-90 EB Off Ramp[4]	A	8	-	A	8	-
5. E Mercer Way/I-90 WB Ramps	B	14	-	B	14	-
Weekday PM Peak Hour						
1. E Mercer Way/SE 40th Street	B	12	EB	B	12	EB
2. E Mercer Way/Frontage Rd	B	13	WB	B	13	WB
3. E Mercer Way/SE 36th Street/I-90 EB On Ramp[4]	B	19	-	B	19	-
4. E Mercer Way/I-90 EB Off Ramp[4]	A	8	-	A	8	-
5. E Mercer Way/I-90 WB Ramps	B	13	-	B	13	-

1. Level of Service (A – F) as defined by the Highway Capacity Manual (TRB, 7th Edition).
2. Average delay per vehicle in seconds.
3. Worst movement (WM) reported for side-street stop controlled intersections. EB = eastbound approach; and WB = westbound approach.
4. Traffic operations ran in HCM 2000 due to clustered intersection
5. School AM peak hour LOS and delay based on 15-minute volumes from 8:15 AM to 8:30 AM
6. School PM peak hour LOS and delay based on 15-minute volumes from 3:15 PM to 3:30 PM

As shown in Table 3, all study intersections currently operate at LOS C or better during the peak periods, meeting the City of Mercer Island's LOS D standard with 1 second or less additional delay being added in without-project conditions relative to existing conditions.

Project Impacts

This section of the analysis documents project-generated impacts on the surrounding roadway network and at the study intersections. First, peak hour traffic volumes are estimated, distributed, and assigned to adjacent roadways and intersection within the study area. Next, 2026 volumes are projected and potential impact to traffic volumes, traffic operations and non-motorized facilities are identified.

Trip Generation

Project trip generation estimates were developed for the project based on information contained in the Institute of Transportation Engineers (ITE) *Trip Generation* (11th Edition, 2021). Trip Generation is a nationally recognized and locally accepted method for determining trip generation for private and public developments. Trips were calculated using the Private School (K-8) (LU #530) and General Office (ITE LU #710) land uses. The following paragraphs summarize the preliminary trip generation estimate for the remaining proposed uses.

Table 4summarizes the project's estimated trip generation for weekday AM peak hour, PM peak hour, and school peak hour time periods. School peak hour trip generation is based on the PM peak hour of generator for the private school land use. Detailed trip generation calculation worksheets are provided in Appendix D.

Table 4. Estimated Trip Generation

		School AM Peak Hour			School PM Peak Hour			Weekday PM Peak Hour		
Land Use	**Size**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**In**	**Out**	**Total**
Proposed Uses										
Private School (LU #530)	150 students	71	55	126	44	50	94	18	21	39
General Office (LU #710)	12,300 sf	25	3	28	7	8	15	5	24	29
Total		**96**	**58**	**154**	**51**	**58**	**109**	**23**	**45**	**68**

Trip Distribution and Assignment

Vehicular trip distribution for the private school land use is based on information provided by the JDS regarding the ZIP code locations where students currently attending the school lived. It is assumed that the trip distribution of the proposed private school will match the current trip distribution at JDS. A separate primary vehicular trip distribution was determined for office trips consistent with Mercer Island General Traffic Impact Analysis Requirements. Vehicular trip distribution for the office land use is based on the U.S. Census Bureau's *OnTheMap* tool. *OnTheMap* is a web-based mapping and reporting application, which shows where workers are employed and where they live based on census data. The school and office trip distributions are provided in Attachment B. Table 5 summarizes the general primary trip distribution patterns assumed by land use.

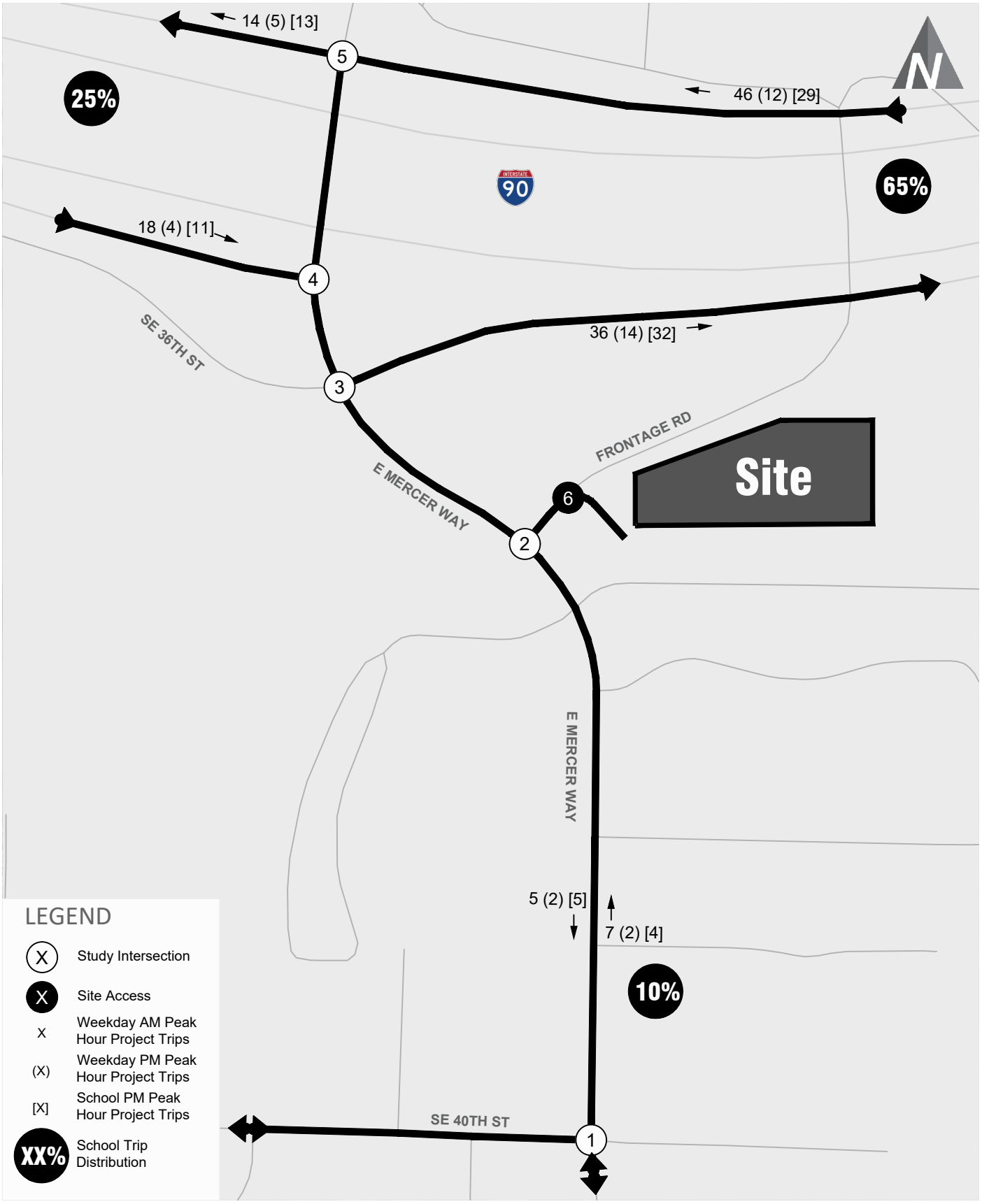
Table 5. Weekday AM & PM Peak Hour Trip Distribution by Land Use

Location	School Trips	Office Trips
East of Mercer Island	65%	45%
West of Mercer Island	25%	40%
Within Mercer Island	10%	15%

Primary project trips for each site use were assigned to the study intersections based on these general travel patterns. The resulting distribution and assignment for the school and office land uses are shown in Figure 7 and Figure 8, respectively. The combined trip assignment for the two land uses is shown in Figure 9.

Future With-Project Traffic Volumes

The project traffic volumes were added to the future baseline 2026 traffic volumes to form the basis of the with-project analysis. Figure 10 and Figure 11 show the school AM and PM peak and the weekday PM peak hour traffic volumes at the study intersections.



School Trip Distribution and Assignment

Herzl Private School

FIGURE 7

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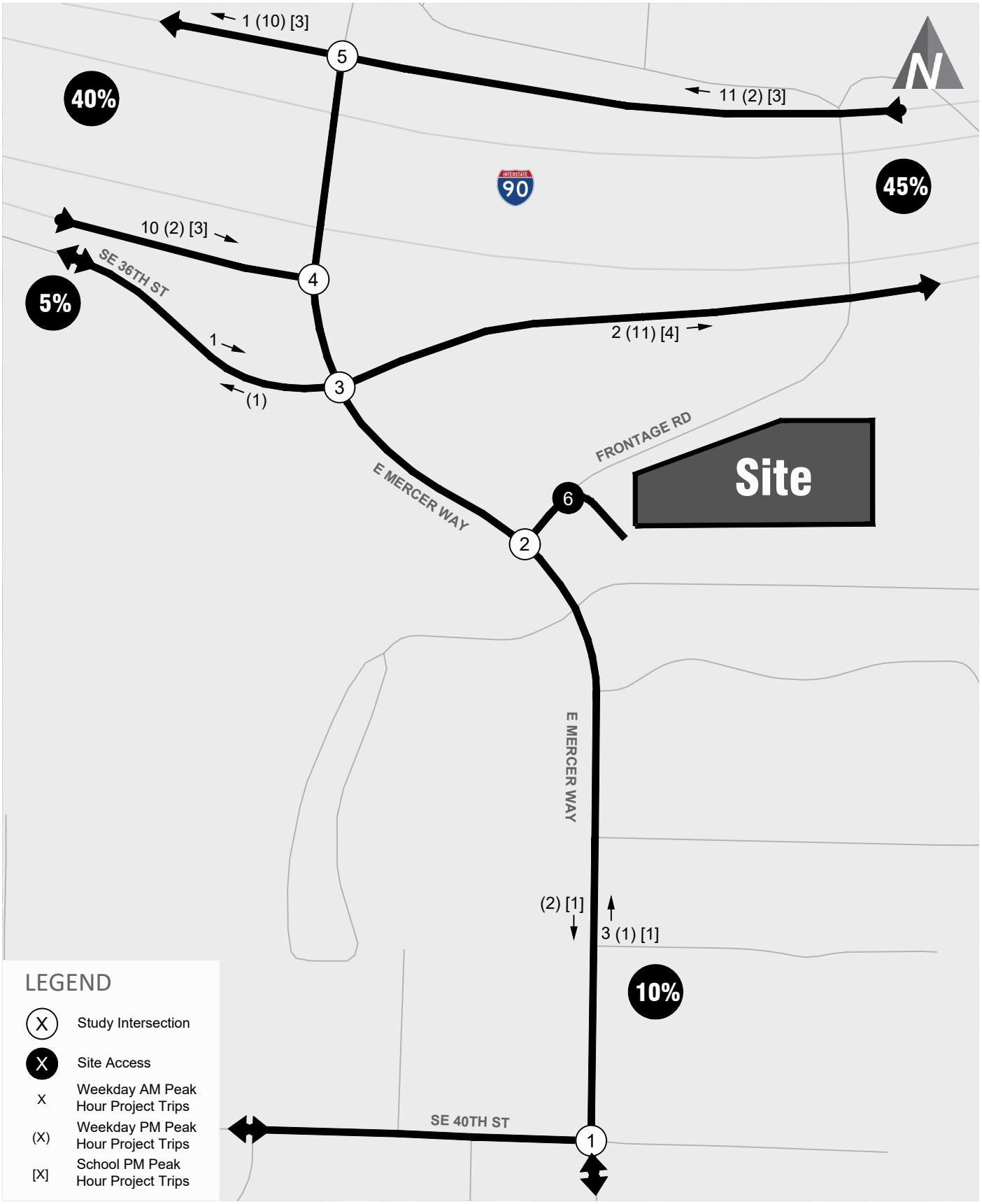

Office Trip Distribution and Assignment

Herzl Private School

FIGURE
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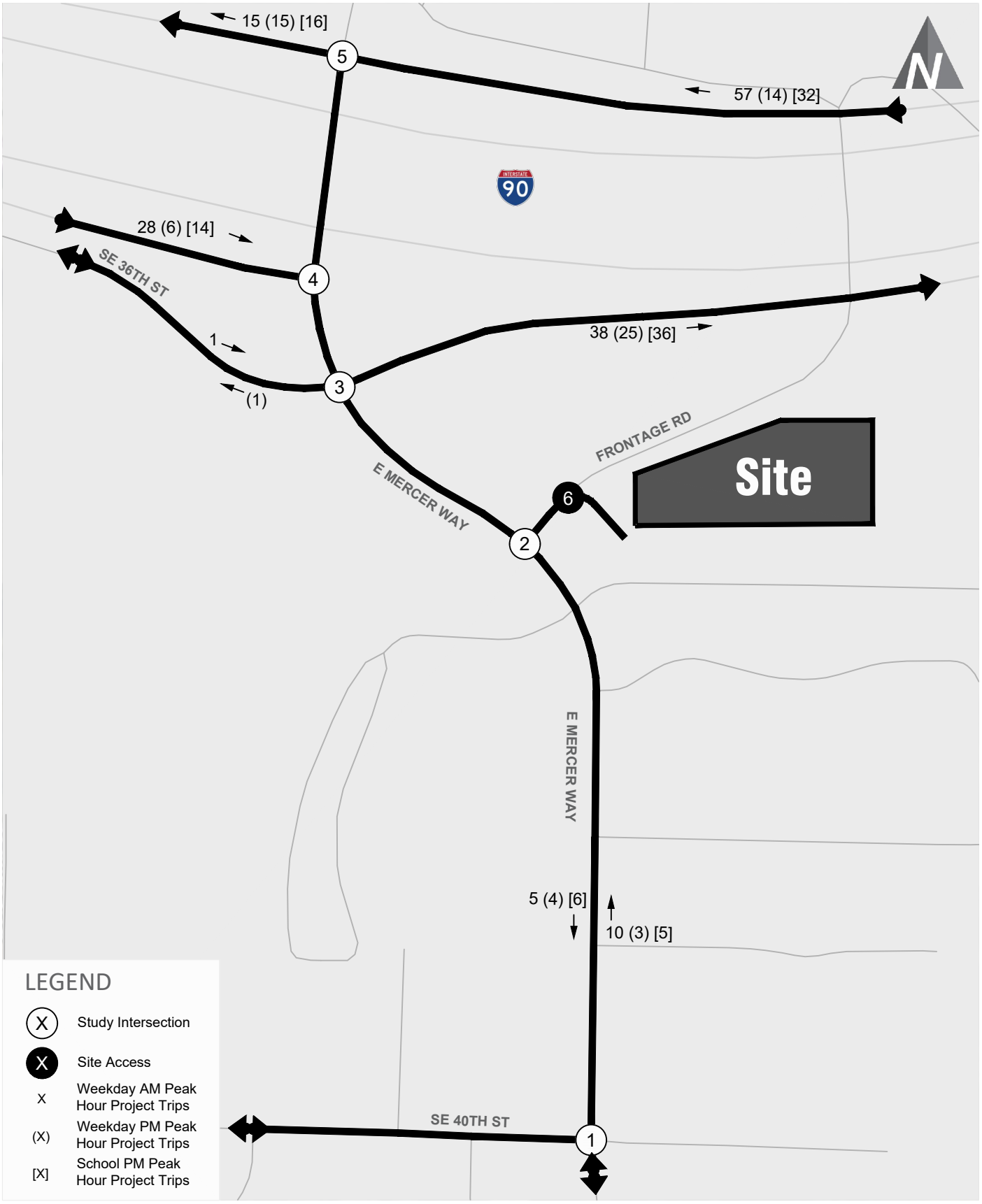

Total Trip Distribution and Assignment

Herzl Private School

FIGURE
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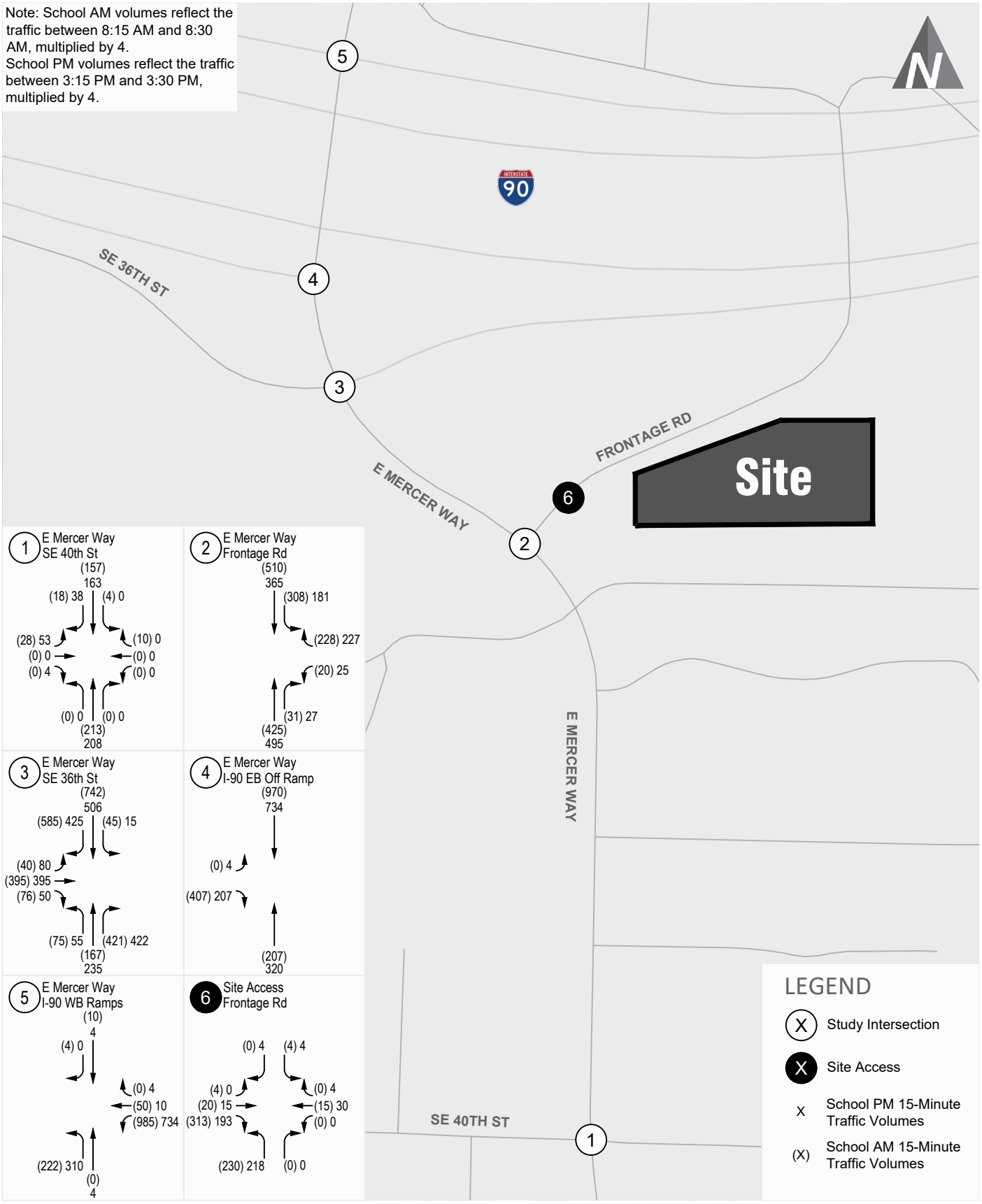

Future (2026) With-Project School 15-Minute Traffic Volumes

Herzl Private School

FIGURE **10**

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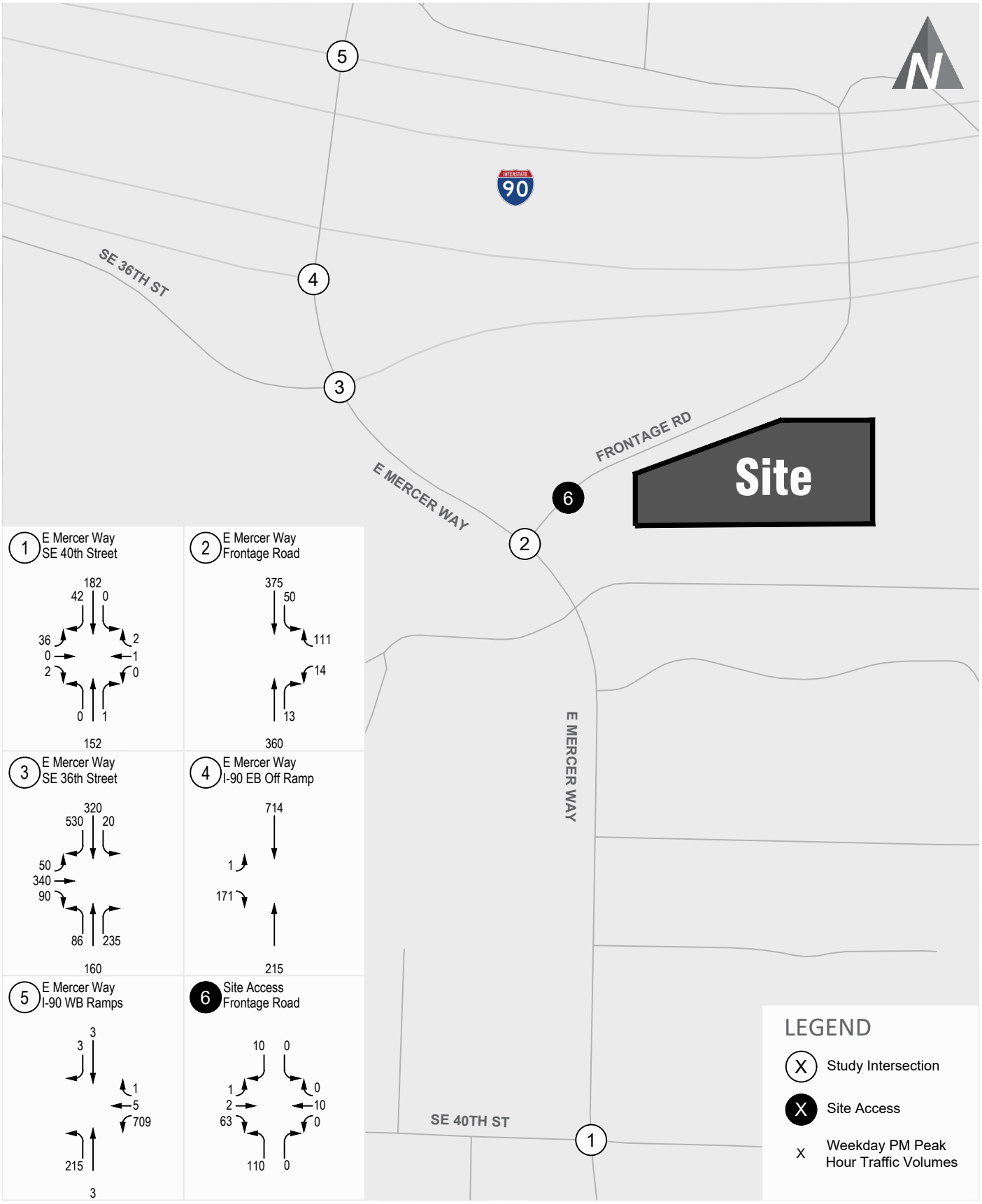

Future (2026) With-Project PM Peak Hour Traffic Volumes

FIGURE 11

Herzl Private School

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Future With-Project Traffic Operations

Intersection operations analysis was conducted in the study area to evaluate the future 2026 conditions with the development of the project. Intersection LOS were calculated at the study intersections using the LOS methodology described previously. For the school AM and PM with-project operations, all inbound and outbound trips were applied to the 15-minute period analyzed in the previous sections, while the office trips were evenly distributed over the course of the peak hour.

Table 6 provides a comparison between the 2026 with and without project conditions. The detailed LOS worksheets are included in Appendix C.

Table 6. Future Without-Project and With-Project Peak Hour LOS Summary

	2026 Without-Project			2026 With-Project		
Intersection	**LOS[1]**	**Delay[2]**	**WM[3]**	**LOS**	**Delay**	**WM**
School AM Peak Hour[5]						
1. E Mercer Way/SE 40th Street	B	11	EB	B	12	EB
2. E Mercer Way/Frontage Rd	B	11	WB	D	33	WB
3. E Mercer Way/SE 36th Street/I-90 EB On Ramp[4]	B	19	-	D	35	-
4. E Mercer Way/I-90 EB Off Ramp[4]	B	13	-	B	20	-
5. E Mercer Way/I-90 WB Ramps	B	16	-	D	48	-
6. Site Access/Frontage Road	-	-	-	B	12	NBL
School PM Peak Hour[6]						
1. E Mercer Way/SE 40th Street	B	11	EB	B	12	EB
2. E Mercer Way/Frontage Rd	B	12	WB	C	22	WB
3. E Mercer Way/SE 36th Street/I-90 EB On Ramp[4]	C	22	-	C	26	-
4. E Mercer Way/I-90 EB Off Ramp[4]	A	8	-	A	9	-
5. E Mercer Way/I-90 WB Ramps	B	14	-	C	20	-
6. Site Access/Frontage Road	-	-	-	B	11	NBL
Weekday PM Peak Hour						
1. E Mercer Way/SE 40th Street	B	12	EB	B	12	EB
2. E Mercer Way/Frontage Rd	B	13	WB	B	14	WB
3. E Mercer Way/SE 36th Street/I-90 EB On Ramp[4]	B	19	-	B	20	-
4. E Mercer Way/I-90 EB Off Ramp[4]	A	8	-	A	8	-
5. E Mercer Way/I-90 WB Ramps	B	13	-	B	14	-
6. Site Access/Frontage Road	-	-	-	B	11	NBL

1. Level Of Service (A – F) as defined by the Highway Capacity Manual (TRB, 7th Edition)
2. Average delay per vehicle in seconds.
3. Worst movement (WM) reported for side-street stop controlled intersections. EB = eastbound approach; WB = westbound approach; and NBL = northbound left-turn movement.
4. Traffic operations ran in HCM 2000 due to clustered intersection
5. School AM peak hour LOS and delay based on 15-minute volumes from 8:15 AM to 8:30 AM
6. School PM peak hour LOS and delay based on 15-minute volumes from 3:15 PM to 3:30 PM

As shown in Table 6, all study intersections currently operate at LOS D or better during the peak periods, meeting the City of Mercer Island's LOS D standard with 32 seconds or less additional delay relative to without-project conditions. The site access along Frontage Road

functions at LOS B or better under future with-project conditions, with 12 seconds of delay or less in all scenarios. Based on the acceptable LOS forecasts at the study intersections and the site accesses, there are no mitigations required for this project.

For the school AM and school PM operations, JDS has expressed willingness to implement staggered arrival and dismissal times to help alleviate the impact that student drop off and pick up will have on the existing roadway network. The current LOS and delay results assume that all inbound and outbound school trips will be arriving during the 15 minute period, and do not factor in the impact of the proposed staggered arrival and dismissal schedule for the daycare. Because of this, the future with-project results presented are conservative in regards to the number of trips added to the 15 minute period, and it is anticipated that the implementation of staggered arrival and dismissal times would improve the LOS and delay during the school peak hours.

In response to City comments, queuing results were evaluated at the E Mercer Way/Frontage Road intersection during the peak 15 minutes of the school AM and school PM period. Overall, the intersection is reported to operate well with the worst movement being the stop controlled westbound movement, which operates at an acceptable LOS C. The southbound movement operates at LOS A. The 95th percentile queues were evaluated and the southbound approach queue is calculated at 109 feet during the school AM peak and 84 feet during the school PM peak. With an estimated storage length of approximately 260 feet, the existing southbound lane should be able to accommodate the queues generated from vehicles entering the site and not cause undo delay given the movement operates at LOS A. The queuing for the westbound movement was also reviewed considering there is limited space between E Mercer Way and the site driveway. There is approximately 65-75 feet of queuing space between the stop bar and the center of the site driveway. The 95th percentile queue length for the westbound movement was calculated to be between 64 and 70 feet for the different time periods, which can be accommodated in the space available. This represents approximately three vehicles at a time. The number of occasions when vehicles exiting the site will need to wait for the queue from E Mercer Way will be limited. As mentioned in the Site Circulation section below, there is ample room on site to accommodate additional queuing if that occurs.

Based on these results no further mitigation or improvements are recommended for the southbound movement. It should be noted that these results do not account for the proposed Transportation Management Plan, which is discussed later in the document and will include staggered arrival and dismissal times and help manage traffic impacts from the site.

Parking Demand

ITE’s Parking Generation Manual (6th Edition) was used to estimate the peak parking demand for the proposed uses. It is estimated that the peak parking demand for the school use will be 21 vehicles, while the peak parking demand for the office use is 23 vehicles. Hourly breakdown of the parking demand is shown in Table 7 below.

Table 7. Parking Demand by Hour

	Elementary School (LU 520)[1]		General Office (LU 710)		
Time	% of weekday peak parking demand	Parking Demand	% of weekday peak parking demand	Parking Demand	Total Parking Demand
8:00 AM	100%	21	47%	11	32
9:00 AM	96%	20	87%	20	40
10:00 AM	**95%**	**20**	**99%**	**23**	**43**
11:00 AM	**97%**	**20**	**100%**	**23**	**43**
12:00 PM	94%	20	86%	20	40
1:00 PM	96%	20	84%	19	39
2:00 PM	96%	20	93%	21	41
3:00 PM	75%	16	93%	21	37
4:00 PM	53%	11	85%	20	31
5:00 PM	28%	6	57%	13	19

1. K-8 Private School (LU 530) has no data in ITE Parking Generation Manual (6th Edition), data from LU 520 used as closest matching LU.

As shown in Table 7, the peak overall parking demand for the proposed site is estimated to be 43 vehicles between the hours of 10 AM and 11 AM. The proposed site plan for the JDS site currently provides 100 parking spaces, which is shared with the neighboring Herzl-Ner Tamid Conservative Congregation. This is a very compatible use as the synagogue would only require parking for between 10-12 staff during the weekday given religious services primarily occur on the weekends. School hours and days will not overlap or coincide with either religious service or Jewish holidays; therefore, the proposed parking supply of 100 spaces should meet the peak parking demand of 43 vehicles expected from the proposed JDS site.

To help facilitate improved pick-up and drop-off 22 of the spaces along the south side of the building would be coned off and managed by staff during peak pick-up and drop-off periods. More detail is provided in the Site Circulation section below.

Site Circulation

As requested, the site circulation is identified in Figure 12. For vehicles dropping off and picking up students on site, vehicles will enter the site through the main entrance and travel east around the existing religious buildings and either drop off or pick up students on the south edge of the building. There is a significant amount of vehicle circulation and queuing space available on site to accommodate the school activities. This includes approximately 1,800 feet of available queuing space. To help facilitate drop off and pick up times, the perpendicular parking stalls along the south side of the school building will be coned off to allow for improved unloading and loading during drop off and pick-up periods. This will be managed by 4-5 staff members and function as a parallel loading/unloading area with a passing lane during the peak periods and allow for 90-degree parking during other periods. The unloading/loading area would accommodate approximately 8 vehicles to be actively unloading or loading.

In order to minimize impacts, the school will incorporate a Transportation Management Plan (TMP), which is included in Appendix F. This includes appointing a Transportation Coordinator for the entire site, implementing staggered arrival and dismissal times, designating an area and staff to manage peak drop off and pick up periods, bus service, providing Orca cards for staff, as well as providing bicycle parking. The staggered drop-off and pick-up times are in place for the preschool and kindergarten through 8th grade students where the 110 K-8 students would arrive between 8:00-8:30 a.m. and the 40 preschool students would arrive 8:30-8:45 a.m.

Three buses will be provided by the Jewish Day School that are anticipated to accommodate 60 of the K-8 students. This would include two smaller 15 passenger vehicles and a 30-passenger bus. The two smaller vehicles will be parked on-site, and the larger 30 passenger bus will be parked/stored off-site. Bus loading and unloading will occur in a loading zone along the eastern side of the school building on site.

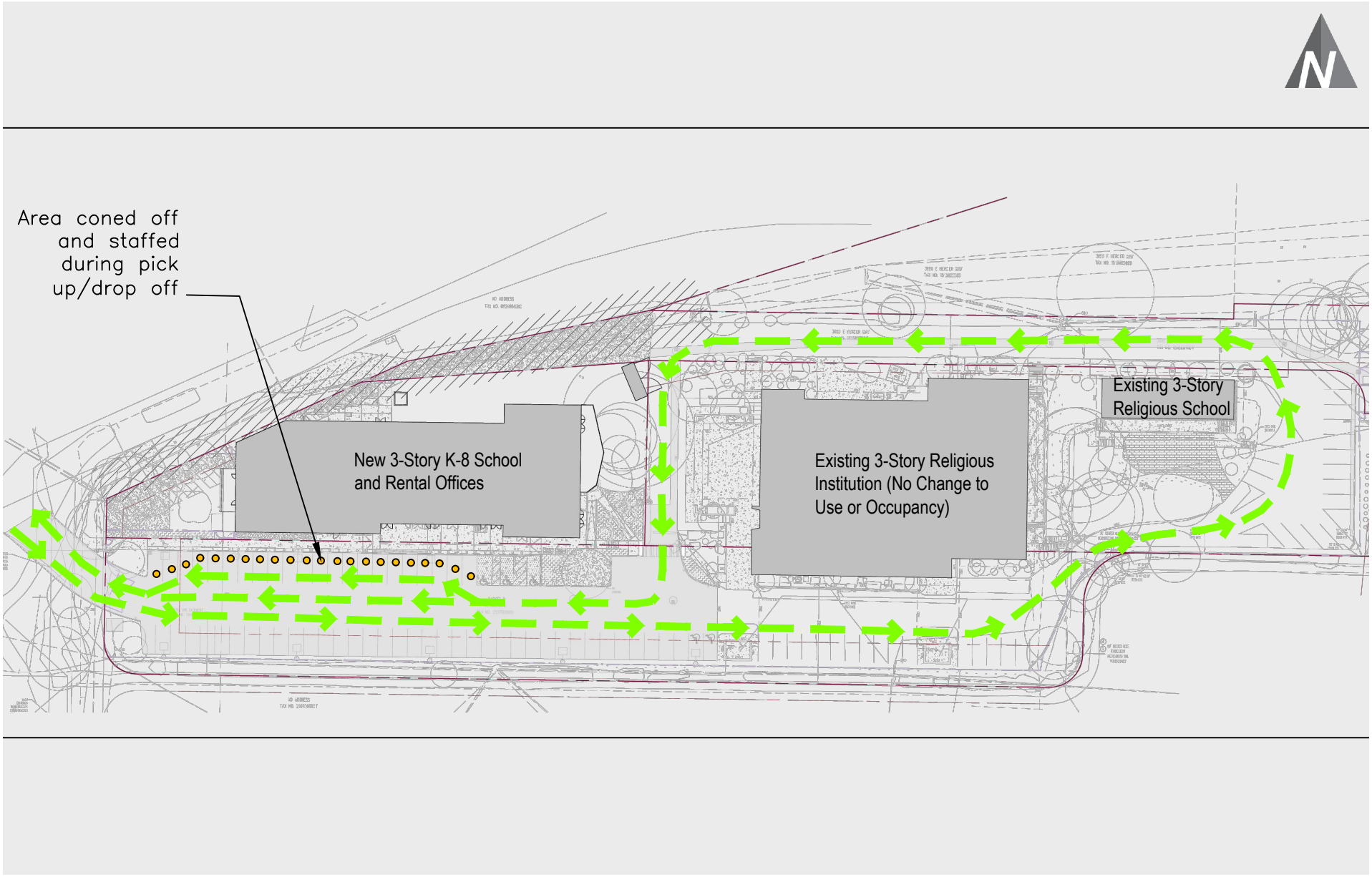
Queuing was evaluated utilizing data published by the North Carolina Department of Transportation (NCDOT) in *NCDOT Research Project 2021-15* (June 2023) titled *Evaluation of School Travel Patterns and Preferences*. This included queue rates in feet per student based on data collected at 85 schools and is included in Appendix E. Queueing rates and the maximum assumed queue for the Jewish Day School's AM and PM peak periods are summarized in Table 8. NCDOT queue rates were generated based on the observed maximum queue distance and number of students attending each school, accounting for average bus ridership and multimodal use.

Table 8. Maximum Vehicle Queue on Site

Category	Peak Number of Students[2]	Maximum Queue Rate (ft/student)[1]	JDS Maximum Anticipated Queue
AM Peak Hour:			
Pre-K	40 students	2.215	90 ft
K-8	110 students	1.653	180 ft
School PM Peak Hour:			
Pre-K	15 students[2]	4.952	75 ft
K-8	73 students[3]	3.758	275 ft

1. Queue length rate per student based on North Carolina Department of Transportation (NCDOT) in *NCDOT Research Project 2021-15* (June 2023) titled *Evaluation of School Travel Patterns and Preferences.*
2. Drop-off and pick-up schedule outlined in the TMP. Assumed all K-8 students will be dropped off within a 30-minute window in the AM peak hour. PM peak period pickup is spread across the primary pick-up window for K-8 students in which 2/3 of students will be picked-up, while the remaining students stay after school for aftercare and sports and will be picked up over a 2-hour window.
3. Pre-K drop-off in the AM peak hour will occur after the K-8 drop-off. Pre-K students are picked up over 3 time periods with 10 students picked up at 1 p.m., 15 students just before the primary K-8 pick-up, and 15 students remaining on site for aftercare, picked up between 4-6 p.m.

As summarized in the table, the 110 K-8 grade students are estimated to generate a maximum queue of 180 feet during the AM peak drop off and a maximum queue of 275 feet in the PM peak pick up period. The 40 preschoolers are estimated to generate a maximum queue of 90 feet in the AM and 75 feet in the PM. The anticipated level of queuing will be accommodated on-site.



Site Circulation Plan

Herzl Private School

FIGURE 12

transpogroup

Findings and Recommendations

This transportation impact study summarizes the project traffic impacts of the FASPS enrollment increase. General findings and recommendations include:

- **Proposed Project**: The proposed project would create a 12,300 square foot office space and a private school enrolling up to 150 students in the K-8 grade level
- **Trip Generation**: The proposed project would generate approximately 154 new school AM peak hour trips, 109 new school PM peak hour trips, and 68 new weekday PM peak hour trips.
- **Traffic Operations**: Under existing and future conditions, all study intersections are anticipated to operate at LOS D or better during the school AM and PM and weekday PM peak hours. The site access intersection with-project is forecast to operate at LOS B or better, with 12 seconds of delay or less during all 3 time periods.
- **Transportation Management Plan**: A Transportation Management Plan (TMP) has been developed to stagger pick-up and drop-off times for students in order to manage queueing on-site.
- **Future Parking Demand**: The proposed site would generate a peak parking demand of 43 vehicles. The proposed parking supply of 100 parking spaces can accommodate future with-project parking demand estimates.
- **Site Circulation**: Vehicles dropping off and picking up students will enter the site through the main entrance and travel east around the existing religious buildings, forming a queue as they travel west towards the school building. The perpendicular parking stalls along the south side of the school building will be coned off during drop off and pick-up periods for vehicles to pull in parallel to the building, out of the main flow of traffic, allowing students to enter/exit the vehicle. The total queue distance of 1,800 feet available on site will accommodate the maximum queues anticipated with ample space available.
- **Traffic Impact Fees**. The City of Mercer Island will assess and collect traffic impact fees from the proposed development to off-set transportation impacts.
- **Transportation Management Plan**. A TMP will be utilized for the entire site to help reduce traffic impacts. This will include the appointment of a Transportation Coordinator for the entire site, implementing staggered arrival and dismissal times, designating an area and staff to manage peak drop off and pick up periods, bus service, providing Orca cards for staff, as well as providing bicycle parking.

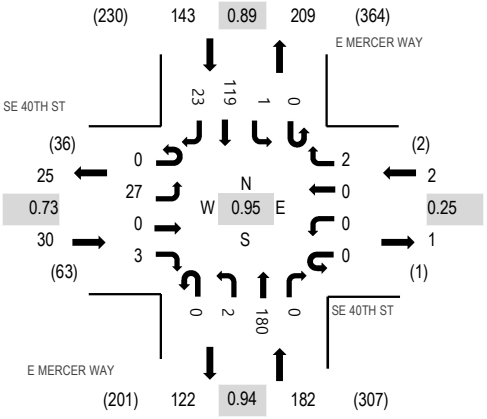
Appendix A:Traffic Counts

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 E MERCER WAY & SE 40TH ST AM
Date: Wednesday, March 27, 2024
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour

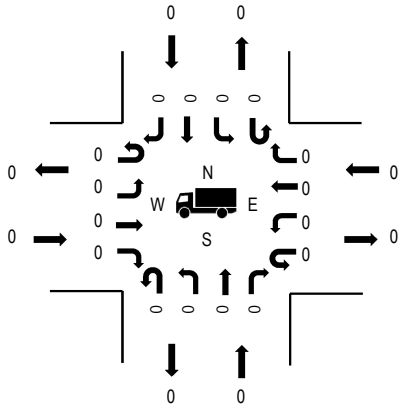
Motorized Vehicles



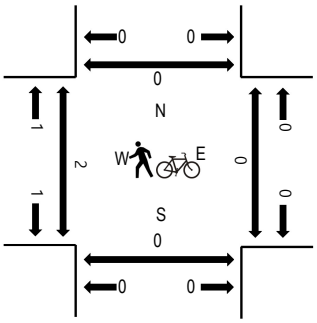
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.73
WB	0.0%	0.25
NB	0.0%	0.94
SB	0.0%	0.89
All	0.0%	0.95

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	SE 40TH ST Eastbound				SE 40TH ST Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	5	0	0	0	0	0	0	0	0	22	0	0	0	13	0	40	245
7:15 AM	0	9	0	1	0	0	0	0	0	0	31	0	0	0	18	4	63	299
7:30 AM	0	14	0	0	0	0	0	0	0	0	28	0	0	0	20	2	64	329
7:45 AM	0	4	0	0	0	0	0	0	0	2	42	0	0	0	27	3	78	348
8:00 AM	0	13	0	0	0	0	0	2	0	0	45	0	0	0	28	6	94	357
8:15 AM	0	4	0	0	0	0	0	0	0	0	49	0	0	1	36	3	93	
8:30 AM	0	6	0	1	0	0	0	0	0	1	45	0	0	0	23	7	83	
8:45 AM	0	4	0	2	0	0	0	0	0	1	41	0	0	0	32	7	87	
Count Total	0	59	0	4	0	0	0	2	0	4	303	0	0	1	197	32	602	
Peak Hour	0	27	0	3	0	0	0	2	0	2	180	0	0	1	119	23	357	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

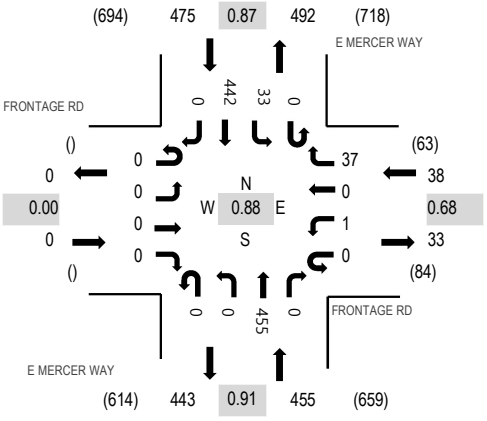
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0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

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 E MERCER WAY & FRONTAGE RD AM
Date: Wednesday, March 27, 2024
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

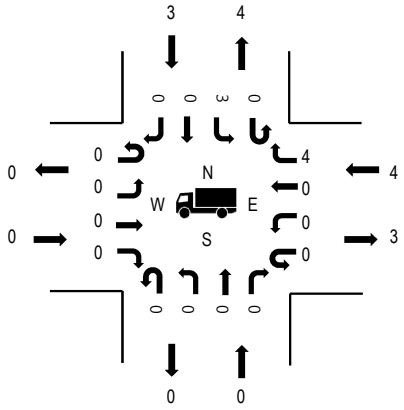
Peak Hour

Motorized Vehicles

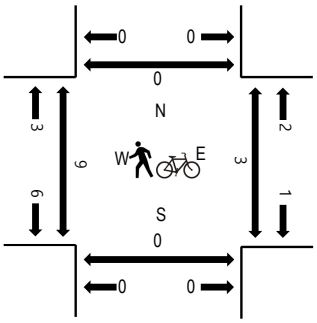


Note: Total study counts contained in parentheses.

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



	HV%	PHF
EB	0.0%	0.00
WB	10.5%	0.68
NB	0.0%	0.91
SB	0.6%	0.87
All	0.7%	0.88

Traffic Counts - Motorized Vehicles

Interval Start Time	FRONTAGE RD Eastbound				FRONTAGE RD Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	0	0	0	0	0	0	6	0	0	36	1	0	6	24	0	73	448
7:15 AM	0	0	0	0	0	0	0	11	0	0	47	1	1	12	31	0	103	650
7:30 AM	0	0	0	0	0	0	0	6	0	0	57	1	0	12	40	0	116	791
7:45 AM	0	0	0	0	0	0	0	2	0	0	60	1	0	17	76	0	156	917
8:00 AM	0	0	0	0	0	1	0	12	0	0	125	0	0	14	123	0	275	968
8:15 AM	0	0	0	0	0	0	0	6	0	0	105	0	0	7	126	0	244	
8:30 AM	0	0	0	0	0	0	0	5	0	0	122	0	0	7	108	0	242	
8:45 AM	0	0	0	0	0	0	0	14	0	0	103	0	0	5	85	0	207	
Count Total	0	0	0	0	0	1	0	62	0	0	655	4	1	80	613	0	1,416	
Peak Hour	0	0	0	0	0	1	0	37	0	0	455	0	0	33	442	0	968	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

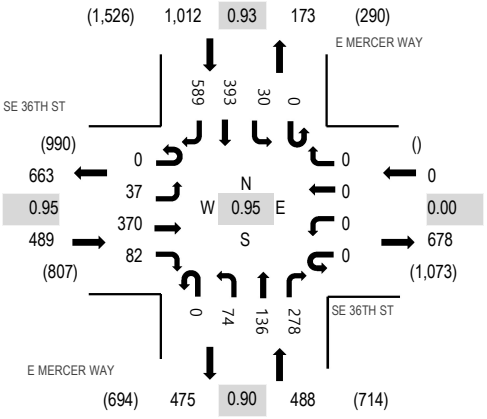
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1	7:15 AM	0	0	0	0	0	7:15 AM	1	0	3	0	4
7:30 AM	0	0	0	0	0	7:30 AM	0	2	0	1	3	7:30 AM	0	0	0	0	0
7:45 AM	0	0	0	0	0	7:45 AM	0	1	0	0	1	7:45 AM	0	0	1	0	1
8:00 AM	0	0	1	1	2	8:00 AM	0	1	0	0	1	8:00 AM	0	0	0	0	0
8:15 AM	0	0	1	2	3	8:15 AM	0	0	0	0	0	8:15 AM	4	0	0	0	4
8:30 AM	0	0	1	0	1	8:30 AM	0	1	0	2	3	8:30 AM	2	0	0	0	2
8:45 AM	0	0	1	0	1	8:45 AM	0	0	0	1	1	8:45 AM	3	0	3	0	6
Count Total	0	0	4	4	8	Count Total	0	5	0	4	9	Count Total	10	0	7	0	17
Peak Hour	0	0	4	3	7	Peak Hour	0	2	0	3	5	Peak Hour	9	0	3	0	12

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 E MERCER WAY & SE 36TH ST AM
Date: Wednesday, March 27, 2024
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour

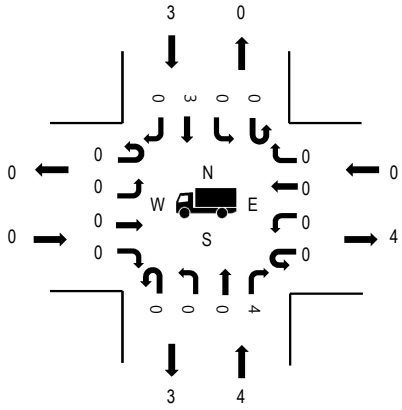
Motorized Vehicles



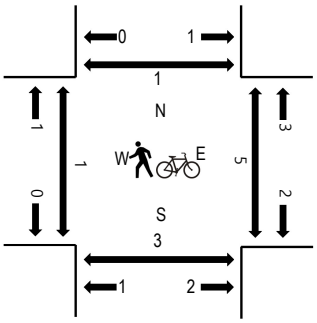
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.95
WB	0.0%	0.00
NB	0.8%	0.90
SB	0.3%	0.93
All	0.4%	0.95

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	SE 36TH ST Eastbound				SE 36TH ST Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	2	50	2	0	0	0	0	0	3	18	21	0	3	28	58	185	1,058
7:15 AM	0	9	56	7	0	0	0	0	0	4	22	32	0	4	38	52	224	1,397
7:30 AM	0	8	82	6	0	0	0	0	0	7	26	31	0	2	45	82	289	1,684
7:45 AM	0	11	73	12	0	0	0	0	0	9	21	32	0	9	81	112	360	1,890
8:00 AM	0	13	98	18	0	0	0	0	0	15	37	83	0	4	119	137	524	1,989
8:15 AM	0	10	98	19	0	0	0	0	0	19	27	67	0	11	115	145	511	
8:30 AM	0	10	86	30	0	0	0	0	0	20	36	71	0	6	91	145	495	
8:45 AM	0	4	88	15	0	0	0	0	0	20	36	57	0	9	68	162	459	
Count Total	0	67	631	109	0	0	0	0	0	97	223	394	0	48	585	893	3,047	
Peak Hour	0	37	370	82	0	0	0	0	0	74	136	278	0	30	393	589	1,989	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

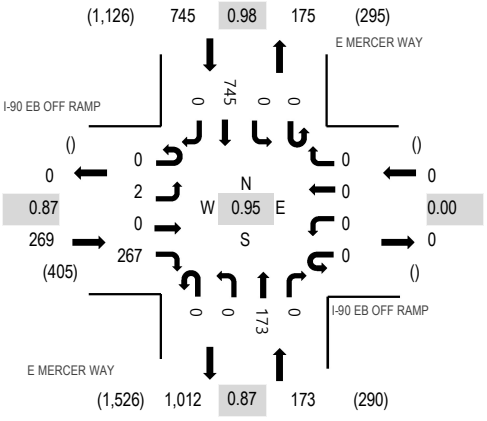
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	1	1	7:00 AM	5	0	0	0	5	7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1	7:15 AM	3	0	0	1	4	7:15 AM	0	0	1	0	1
7:30 AM	0	0	0	0	0	7:30 AM	1	2	0	2	5	7:30 AM	0	0	1	0	1
7:45 AM	0	0	0	0	0	7:45 AM	2	1	0	1	4	7:45 AM	0	0	1	0	1
8:00 AM	0	1	0	1	2	8:00 AM	1	1	0	1	3	8:00 AM	0	0	0	0	0
8:15 AM	0	1	0	2	3	8:15 AM	0	0	0	2	2	8:15 AM	0	2	2	0	4
8:30 AM	0	1	0	0	1	8:30 AM	2	1	0	3	6	8:30 AM	1	0	1	1	3
8:45 AM	0	1	0	0	1	8:45 AM	1	0	0	0	1	8:45 AM	0	1	2	0	3
Count Total	0	4	0	5	9	Count Total	15	5	0	10	30	Count Total	1	3	8	1	13
Peak Hour	0	4	0	3	7	Peak Hour	4	2	0	6	12	Peak Hour	1	3	5	1	10

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 E MERCER WAY & I-90 EB OFF RAMP AM
Date: Wednesday, March 27, 2024
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour

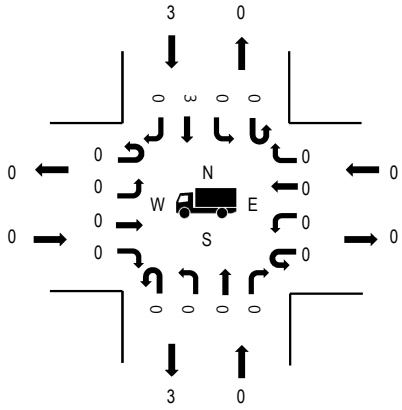
Motorized Vehicles



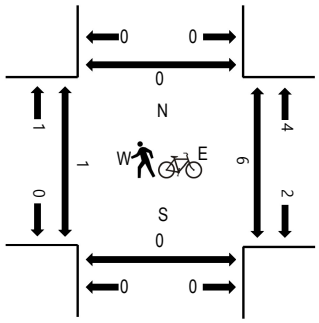
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.87
WB	0.0%	0.00
NB	0.0%	0.87
SB	0.4%	0.98
All	0.3%	0.95

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	I-90 EB OFF RAMP Eastbound				I-90 EB OFF RAMP Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	1	0	20	0	0	0	0	0	0	19	0	0	0	69	0	109	634
7:15 AM	0	0	0	16	0	0	0	0	0	0	32	0	0	0	78	0	126	836
7:30 AM	0	1	0	36	0	0	0	0	0	0	34	0	0	0	93	0	164	1,018
7:45 AM	0	1	0	61	0	0	0	0	0	0	32	0	0	0	141	0	235	1,143
8:00 AM	0	1	0	80	0	0	0	0	0	0	50	0	0	0	180	0	311	1,187
8:15 AM	0	0	0	80	0	0	0	0	0	0	37	0	0	0	191	0	308	
8:30 AM	0	1	0	57	0	0	0	0	0	0	46	0	0	0	185	0	289	
8:45 AM	0	0	0	50	0	0	0	0	0	0	40	0	0	0	189	0	279	
Count Total	0	5	0	400	0	0	0	0	0	0	290	0	0	0	1,126	0	1,821	
Peak Hour	0	2	0	267	0	0	0	0	0	0	173	0	0	0	745	0	1,187	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

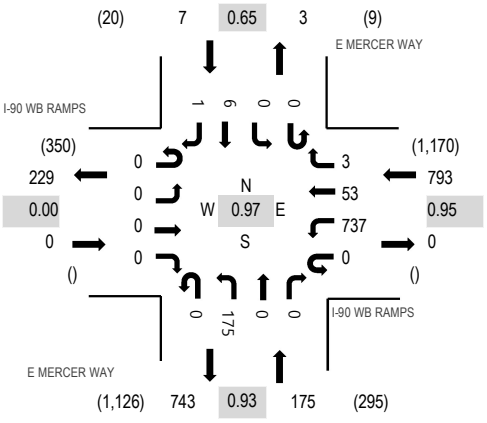
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	1	1	7:00 AM	0	5	0	0	5	7:00 AM	0	0	0	0	0
7:15 AM	0	0	0	1	1	7:15 AM	0	3	0	1	4	7:15 AM	0	0	3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

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 5 E MERCER WAY & I-90 WB RAMPS AM
Date: Wednesday, March 27, 2024
Peak Hour: 08:00 AM - 09:00 AM
Peak 15-Minutes: 08:15 AM - 08:30 AM

Peak Hour

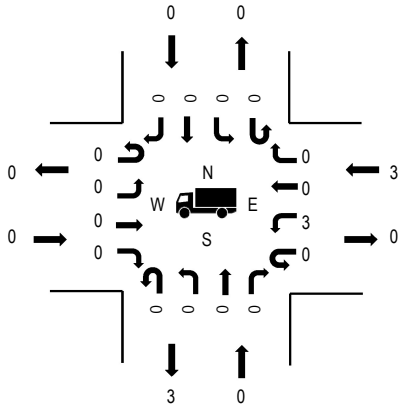
Motorized Vehicles



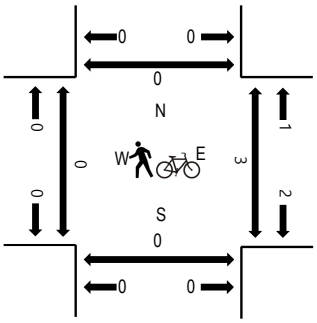
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.4%	0.95
NB	0.0%	0.93
SB	0.0%	0.65
All	0.3%	0.97

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	I-90 WB RAMPS Eastbound				I-90 WB RAMPS Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
7:00 AM	0	0	0	0	0	68	0	1	0	19	1	0	0	0	1	1	91	510
7:15 AM	0	0	0	0	0	76	1	2	0	31	0	0	0	0	2	0	112	646
7:30 AM	0	0	0	0	0	96	0	1	0	35	1	0	0	0	3	1	137	786
7:45 AM	0	0	0	0	0	132	0	0	1	32	0	0	0	0	4	1	170	899
8:00 AM	0	0	0	0	0	177	1	1	0	47	0	0	0	0	1	0	227	975
8:15 AM	0	0	0	0	0	195	13	0	0	41	0	0	0	0	2	1	252	
8:30 AM	0	0	0	0	0	185	19	1	0	43	0	0	0	0	2	0	250	
8:45 AM	0	0	0	0	0	180	20	1	0	44	0	0	0	0	1	0	246	
Count Total	0	0	0	0	0	1,109	54	7	1	292	2	0	0	0	16	4	1,485	
Peak Hour	0	0	0	0	0	737	53	3	0	175	0	0	0	0	6	1	975	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

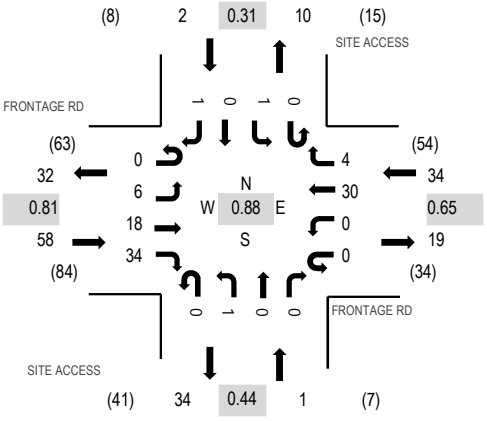
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	1	0	1	7:00 AM	0	5	0	0	5	7:00 AM	0	0	0	0	0
7:15 AM	0	0	1	0	1	7:15 AM	0	3	0	1	4	7:15 AM	0	0	2	0	2
7:30 AM	0	0	0	0	0	7:30 AM	0	2	0	2	4	7:30 AM	0	0	1	0	1
7:45 AM	0	0	0	0	0	7:45 AM	0	1	0	1	2	7:45 AM	0	0	1	0	1
8:00 AM	0	0	1	0	1	8:00 AM	0	1	0	3	4	8:00 AM	0	0	0	0	0
8:15 AM	0	0	2	0	2	8:15 AM	0	1	0	0	1	8:15 AM	0	0	1	0	1
8:30 AM	0	0	0	0	0	8:30 AM	0	2	0	3	5	8:30 AM	0	0	0	0	0
8:45 AM	0	0	0	0	0	8:45 AM	0	0	0	0	0	8:45 AM	0	0	2	0	2
Count Total	0	0	5	0	5	Count Total	0	15	0	10	25	Count Total	0	0	7	0	7
Peak Hour	0	0	3	0	3	Peak Hour	0	4	0	6	10	Peak Hour	0	0	3	0	3

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 6 SITE ACCESS & FRONTAGE RD AM
Date: Wednesday, March 27, 2024
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 08:00 AM - 08:15 AM

Peak Hour

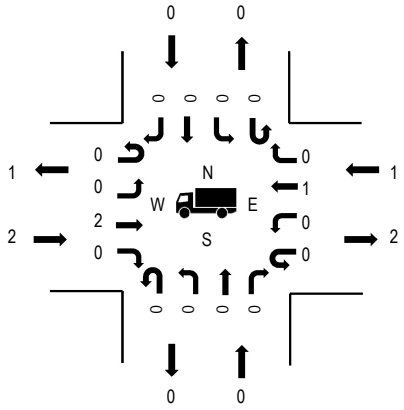
Motorized Vehicles



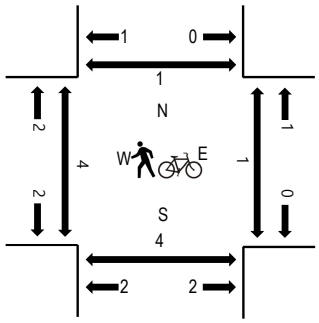
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	3.4%	0.81
WB	2.9%	0.65
NB	0.0%	0.44
SB	0.0%	0.31
All	3.2%	0.88

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	FRONTAGE RD Eastbound				FRONTAGE RD Westbound				SITE ACCESS Northbound				SITE ACCESS Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	1	3	3	0	0	4	0	0	0	0	0	0	0	0	2	13	81
7:15 AM	0	0	5	7	0	0	11	2	0	0	0	0	0	0	0	0	25	95
7:30 AM	0	2	5	7	0	0	6	0	0	0	0	0	0	0	0	0	20	84
7:45 AM	0	3	3	12	0	0	2	2	0	0	0	0	0	0	0	1	23	76
8:00 AM	0	1	5	8	0	0	11	0	0	1	0	0	0	1	0	0	27	72
8:15 AM	0	1	5	1	0	0	4	1	0	2	0	0	0	0	0	0	14	
8:30 AM	0	1	5	1	0	0	1	0	0	4	0	0	0	0	0	0	12	
8:45 AM	0	1	2	2	0	0	10	0	0	0	0	0	0	0	0	4	19	
Count Total	0	10	33	41	0	0	49	5	0	7	0	0	0	1	0	7	153	
Peak Hour	0	6	18	34	0	0	30	4	0	1	0	0	0	1	0	1	95	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

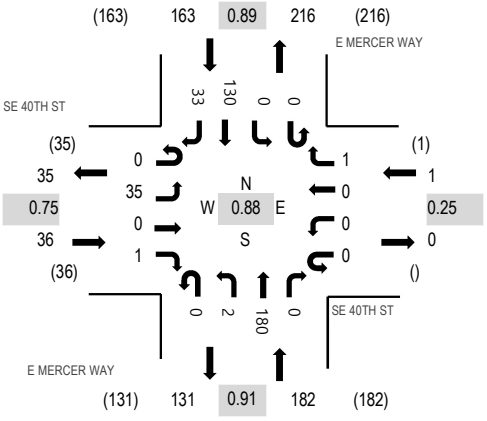
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:15 AM	1	0	0	0	1	7:15 AM	0	0	0	0	0	7:15 AM	3	2	0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

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 E MERCER WAY & SE 40TH ST PM
Date: Wednesday, March 27, 2024
Peak Hour: 03:00 PM - 04:00 PM
Peak 15-Minutes: 03:15 PM - 03:30 PM

Peak Hour

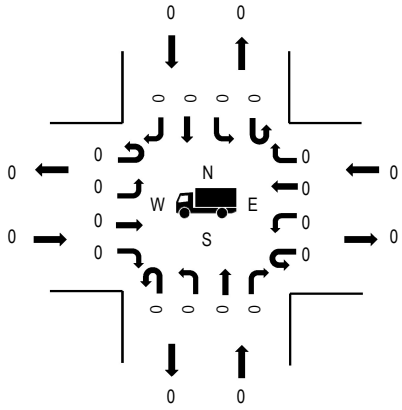
Motorized Vehicles



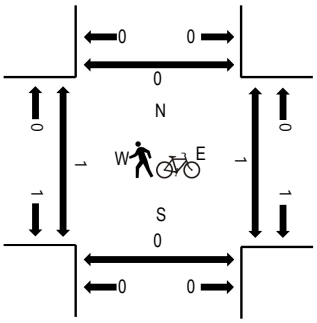
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.75
WB	0.0%	0.25
NB	0.0%	0.91
SB	0.0%	0.89
All	0.0%	0.88

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	SE 40TH ST Eastbound				SE 40TH ST Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
3:00 PM	0	9	0	0	0	0	0	0	0	0	46	0	0	0	31	9	95	382
3:15 PM	0	11	0	1	0	0	0	0	0	0	50	0	0	0	38	8	108	
3:30 PM	0	5	0	0	0	0	0	1	0	0	47	0	0	0	27	5	85	
3:45 PM	0	10	0	0	0	0	0	0	0	2	37	0	0	0	34	11	94	
Count Total	0	35	0	1	0	0	0	1	0	2	180	0	0	0	130	33	382	
Peak Hour	0	35	0	1	0	0	0	1	0	2	180	0	0	0	130	33	382	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

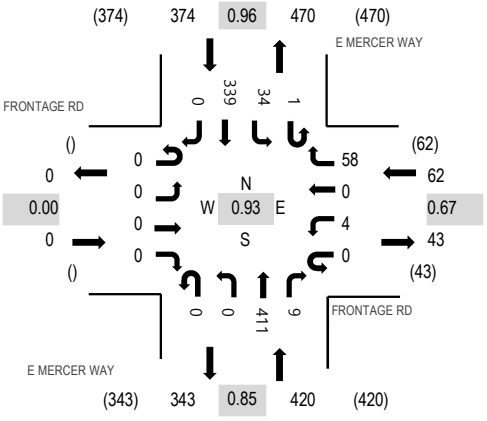
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	0	0	0	0	3:00 PM	0	1	0	2	3	3:00 PM	1	0	0	0	1
3:15 PM	0	0	0	0	0	3:15 PM	0	1	0	0	1	3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0	3:45 PM	0	1	0	0	1	3:45 PM	0	0	1	0	1
Count Total	0	0	0	0	0	Count Total	0	3	0	2	5	Count Total	1	0	1	0	2
Peak Hour	0	0	0	0	0	Peak Hour	0	3	0	2	5	Peak Hour	1	0	1	0	2

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 E MERCER WAY & FRONTAGE RD PM
Date: Wednesday, March 27, 2024
Peak Hour: 03:00 PM - 04:00 PM
Peak 15-Minutes: 03:15 PM - 03:30 PM

Peak Hour

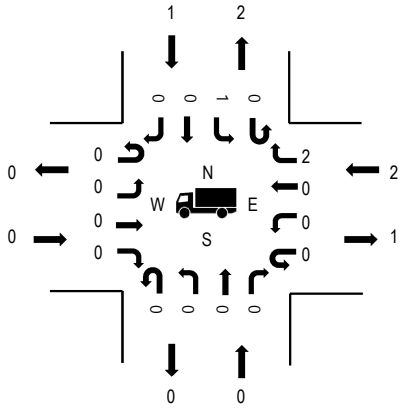
Motorized Vehicles



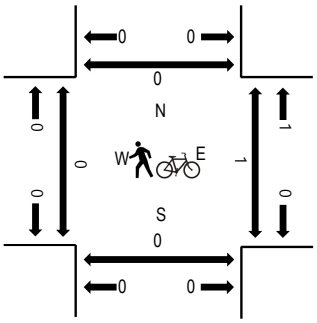
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	3.2%	0.67
NB	0.0%	0.85
SB	0.3%	0.96
All	0.4%	0.93

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	FRONTAGE RD Eastbound				FRONTAGE RD Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
3:00 PM	0	0	0	0	0	0	0	12	0	0	85	2	1	11	78	0	189	856
3:15 PM	0	0	0	0	0	1	0	10	0	0	122	2	0	4	90	0	229	
3:30 PM	0	0	0	0	0	1	0	22	0	0	102	1	0	7	90	0	223	
3:45 PM	0	0	0	0	0	2	0	14	0	0	102	4	0	12	81	0	215	
Count Total	0	0	0	0	0	4	0	58	0	0	411	9	1	34	339	0	856	
Peak Hour	0	0	0	0	0	4	0	58	0	0	411	9	1	34	339	0	856	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

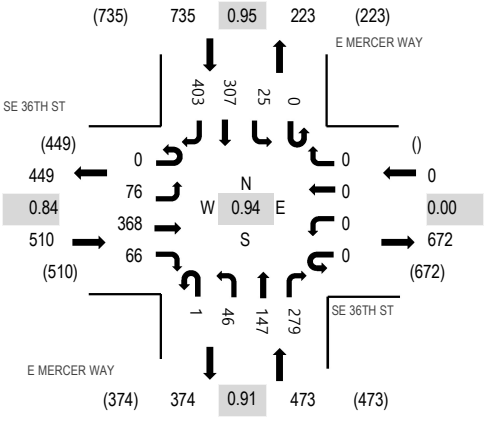
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	0	1	1	2	3:00 PM	0	1	0	1	2	3:00 PM	0	0	0	0	0
3:15 PM	0	0	1	0	1	3:15 PM	0	1	0	1	2	3:15 PM	0	0	1	0	1
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0	3:45 PM	0	1	0	0	1	3:45 PM	0	0	0	0	0
Count Total	0	0	2	1	3	Count Total	0	3	0	2	5	Count Total	0	0	1	0	1
Peak Hour	0	0	2	1	3	Peak Hour	0	3	0	2	5	Peak Hour	0	0	1	0	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 E MERCER WAY & SE 36TH ST PM
Date: Wednesday, March 27, 2024
Peak Hour: 03:00 PM - 04:00 PM
Peak 15-Minutes: 03:30 PM - 03:45 PM

Peak Hour

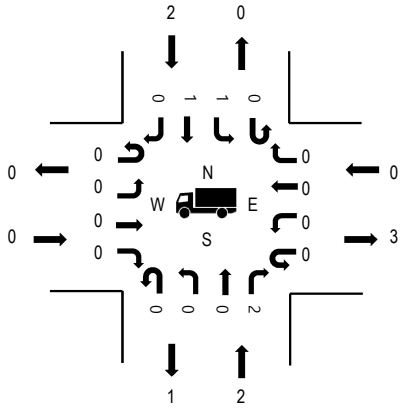
Motorized Vehicles



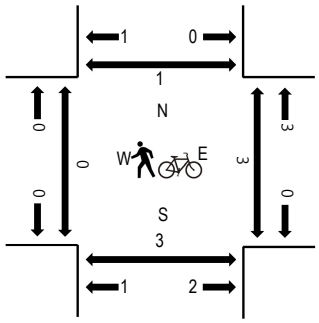
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.84
WB	0.0%	0.00
NB	0.4%	0.91
SB	0.3%	0.95
All	0.2%	0.94

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	SE 36TH ST Eastbound				SE 36TH ST Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
3:00 PM	0	20	108	23	0	0	0	0	0	11	31	59	0	7	68	89	416	1,718
3:15 PM	0	20	98	13	0	0	0	0	0	14	45	71	0	4	84	105	454	
3:30 PM	0	31	96	13	0	0	0	0	0	12	37	77	0	8	80	103	457	
3:45 PM	0	5	66	17	0	0	0	0	1	9	34	72	0	6	75	106	391	
Count Total	0	76	368	66	0	0	0	0	1	46	147	279	0	25	307	403	1,718	
Peak Hour	0	76	368	66	0	0	0	0	1	46	147	279	0	25	307	403	1,718	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

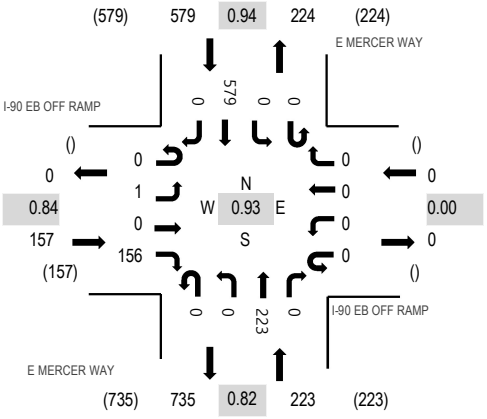
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	1	0	1	2	3:00 PM	0	1	0	1	2	3:00 PM	0	2	1	0	3
3:15 PM	0	1	0	0	1	3:15 PM	1	1	0	2	4	3:15 PM	0	0	1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

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 E MERCER WAY & I-90 EB OFF RAMP PM
Date: Wednesday, March 27, 2024
Peak Hour: 03:00 PM - 04:00 PM
Peak 15-Minutes: 03:15 PM - 03:30 PM

Peak Hour

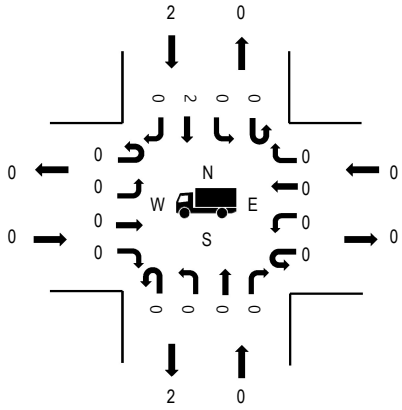
Motorized Vehicles



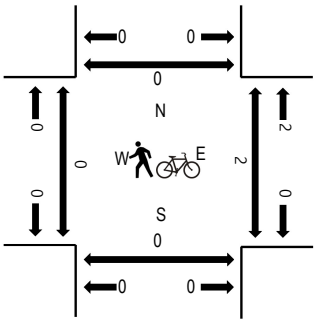
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.84
WB	0.0%	0.00
NB	0.0%	0.82
SB	0.3%	0.94
All	0.2%	0.93

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	I-90 EB OFF RAMP Eastbound				I-90 EB OFF RAMP Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
3:00 PM	0	0	0	36	0	0	0	0	0	0	51	0	0	0	128	0	215	959
3:15 PM	0	1	0	40	0	0	0	0	0	0	65	0	0	0	153	0	259	
3:30 PM	0	0	0	47	0	0	0	0	0	0	68	0	0	0	144	0	259	
3:45 PM	0	0	0	33	0	0	0	0	0	0	39	0	0	0	154	0	226	
Count Total	0	1	0	156	0	0	0	0	0	0	223	0	0	0	579	0	959	
Peak Hour	0	1	0	156	0	0	0	0	0	0	223	0	0	0	579	0	959	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

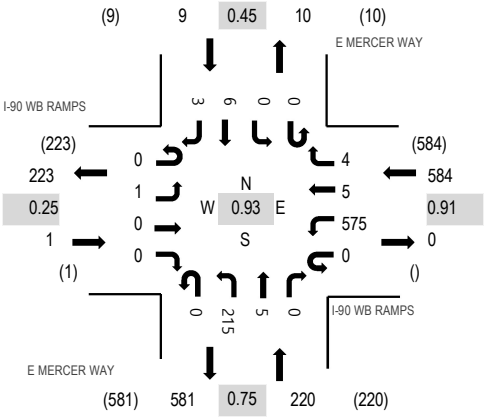
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	0	0	1	1	3:00 PM	0	0	0	1	1	3:00 PM	0	0	1	0	1
3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	2	2	3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	1	1	3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	1	1	3:45 PM	0	0	0	0	0	3:45 PM	0	0	1	0	1
Count Total	0	0	0	2	2	Count Total	0	0	0	4	4	Count Total	0	0	2	0	2
Peak Hour	0	0	0	2	2	Peak Hour	0	0	0	4	4	Peak Hour	0	0	2	0	2

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 5 E MERCER WAY & I-90 WB RAMPS PM
Date: Wednesday, March 27, 2024
Peak Hour: 03:00 PM - 04:00 PM
Peak 15-Minutes: 03:15 PM - 03:30 PM

Peak Hour

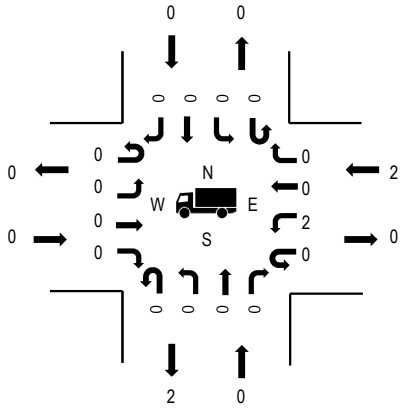
Motorized Vehicles



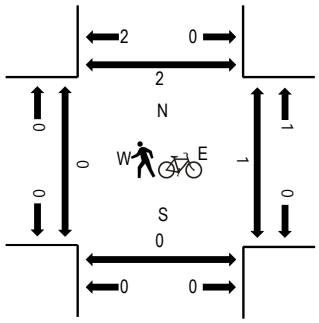
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.25
WB	0.3%	0.91
NB	0.0%	0.75
SB	0.0%	0.45
All	0.2%	0.93

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	I-90 WB RAMPS Eastbound				I-90 WB RAMPS Westbound				E MERCER WAY Northbound				E MERCER WAY Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
3:00 PM	0	0	0	0	0	124	1	1	0	47	2	0	0	0	3	2	180	814
3:15 PM	0	0	0	0	0	153	2	1	0	62	1	0	0	0	1	0	220	
3:30 PM	0	1	0	0	0	141	1	0	0	71	2	0	0	0	2	1	219	
3:45 PM	0	0	0	0	0	157	1	2	0	35	0	0	0	0	0	0	195	
Count Total	0	1	0	0	0	575	5	4	0	215	5	0	0	0	6	3	814	
Peak Hour	0	1	0	0	0	575	5	4	0	215	5	0	0	0	6	3	814	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

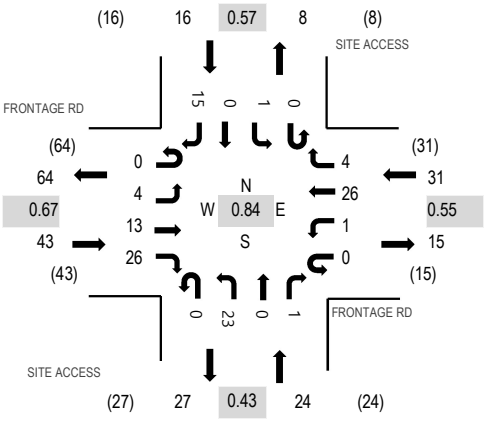
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	0	0	1	0	1	3:00 PM	0	0	0	1	1	3:00 PM	0	0	1	0	1
3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	2	2	3:15 PM	0	0	0	2	2
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	1	1	3:30 PM	0	0	0	0	0
3:45 PM	0	0	1	0	1	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
Count Total	0	0	2	0	2	Count Total	0	0	0	4	4	Count Total	0	0	1	2	3
Peak Hour	0	0	2	0	2	Peak Hour	0	0	0	4	4	Peak Hour	0	0	1	2	3

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 6 SITE ACCESS & FRONTAGE RD PM
Date: Wednesday, March 27, 2024
Peak Hour: 03:00 PM - 04:00 PM
Peak 15-Minutes: 03:30 PM - 03:45 PM

Peak Hour

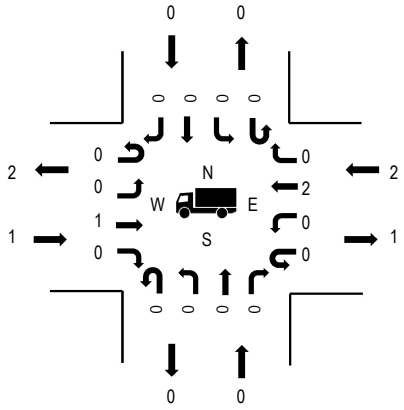
Motorized Vehicles



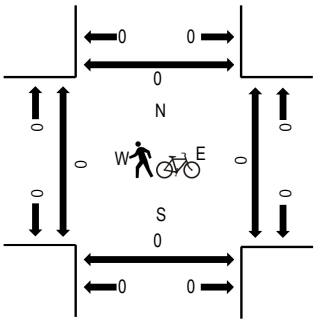
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	2.3%	0.67
WB	6.5%	0.55
NB	0.0%	0.43
SB	0.0%	0.57
All	2.6%	0.84

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	FRONTAGE RD Eastbound				FRONTAGE RD Westbound				SITE ACCESS Northbound				SITE ACCESS Southbound					Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total	
3:00 PM	0	3	5	5	0	1	4	0	0	1	0	1	0	0	0	7	27	114
3:15 PM	0	0	4	2	0	0	8	1	0	2	0	0	0	1	0	1	19	
3:30 PM	0	1	3	4	0	0	11	3	0	6	0	0	0	0	0	6	34	
3:45 PM	0	0	1	15	0	0	3	0	0	14	0	0	0	0	0	1	34	
Count Total	0	4	13	26	0	1	26	4	0	23	0	1	0	1	0	15	114	
Peak Hour	0	4	13	26	0	1	26	4	0	23	0	1	0	1	0	15	114	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

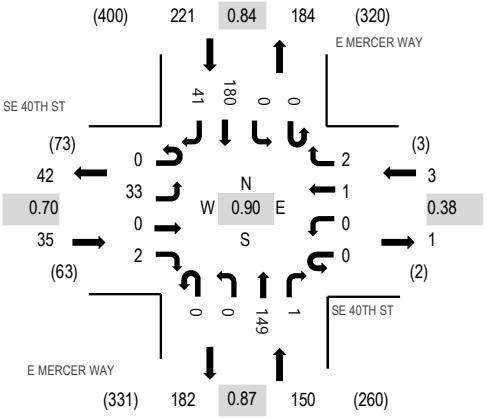
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
3:00 PM	1	0	1	0	2	3:00 PM	0	0	0	0	0	3:00 PM	0	0	0	0	0
3:15 PM	0	0	1	0	1	3:15 PM	0	0	0	0	0	3:15 PM	0	0	0	0	0
3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
Count Total	1	0	2	0	3	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	1	0	2	0	3	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 E MERCER WAY & SE 40TH ST PM
Date: Wednesday, March 27, 2024
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour

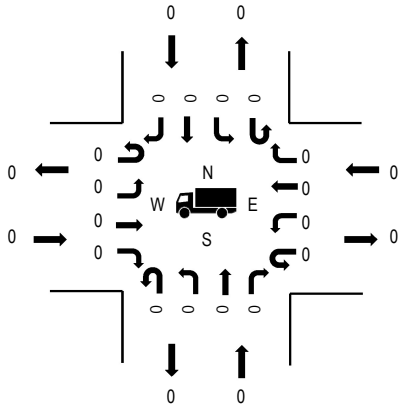
Motorized Vehicles



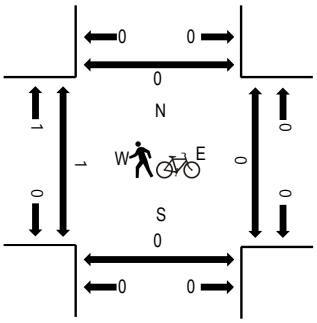
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.70
WB	0.0%	0.38
NB	0.0%	0.87
SB	0.0%	0.84
All	0.0%	0.90

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	SE 40TH ST Eastbound				SE 40TH ST Westbound				E MERCER WAY Northbound				E MERCER WAY 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	5	0	0	0	0	0	0	0	0	35	0	0	0	30	4	74	342
4:15 PM	0	2	0	0	0	0	0	0	0	0	29	0	0	0	35	7	73	382
4:30 PM	0	7	0	1	0	0	0	1	0	0	31	0	0	0	40	11	91	409
4:45 PM	0	9	0	0	0	0	0	0	0	0	39	0	0	0	44	12	104	405
5:00 PM	0	8	0	1	0	0	1	1	0	0	36	1	0	0	56	10	114	384
5:15 PM	0	9	0	0	0	0	0	0	0	0	43	0	0	0	40	8	100	
5:30 PM	0	7	0	0	0	0	0	0	0	0	27	0	0	1	41	11	87	
5:45 PM	0	12	0	2	0	0	0	0	0	0	19	0	0	0	41	9	83	
Count Total	0	59	0	4	0	0	1	2	0	0	259	1	0	1	327	72	726	
Peak Hour	0	33	0	2	0	0	1	2	0	0	149	1	0	0	180	41	409	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

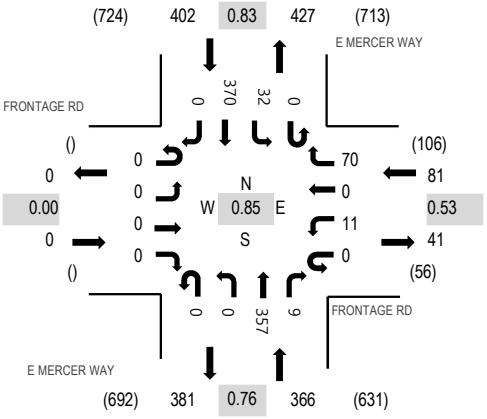
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	1	0	0	0	1	4:15 PM	0	0	0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

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 E MERCER WAY & FRONTAGE RD PM
Date: Wednesday, March 27, 2024
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour

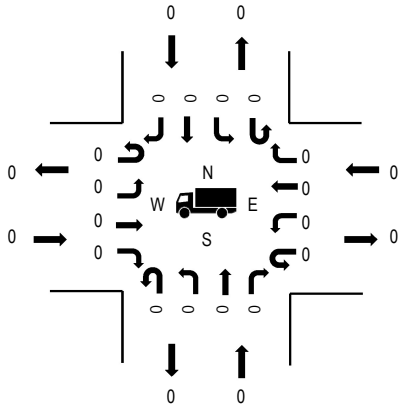
Motorized Vehicles



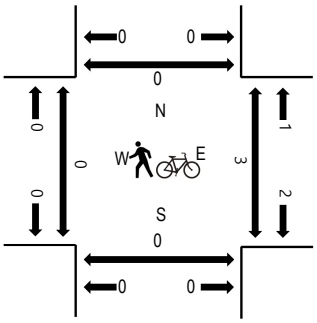
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.53
NB	0.0%	0.76
SB	0.0%	0.83
All	0.0%	0.85

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	FRONTAGE RD Eastbound				FRONTAGE RD Westbound				E MERCER WAY Northbound				E MERCER WAY 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	0	0	0	2	0	14	0	0	64	0	0	4	67	0	151	711
4:15 PM	0	0	0	0	0	1	0	3	0	0	52	0	0	3	77	0	136	809
4:30 PM	0	0	0	0	0	0	0	6	0	0	73	1	0	7	93	0	180	849
4:45 PM	0	0	0	0	0	7	0	31	0	0	77	8	0	17	104	0	244	845
5:00 PM	0	0	0	0	0	3	0	27	0	0	125	0	0	6	88	0	249	750
5:15 PM	0	0	0	0	0	1	0	6	0	0	82	0	0	2	85	0	176	
5:30 PM	0	0	0	0	0	1	0	3	0	0	88	0	0	3	81	0	176	
5:45 PM	0	0	0	0	0	0	0	1	0	0	61	0	0	5	82	0	149	
Count Total	0	0	0	0	0	15	0	91	0	0	622	9	0	47	677	0	1,461	
Peak Hour	0	0	0	0	0	11	0	70	0	0	357	9	0	32	370	0	849	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

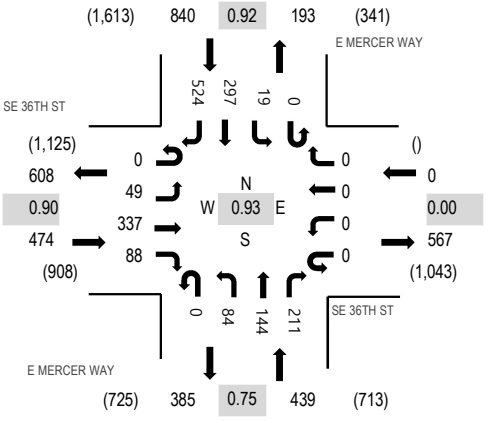
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	1	0	0	1	4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0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

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 3 E MERCER WAY & SE 36TH ST PM
Date: Wednesday, March 27, 2024
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour

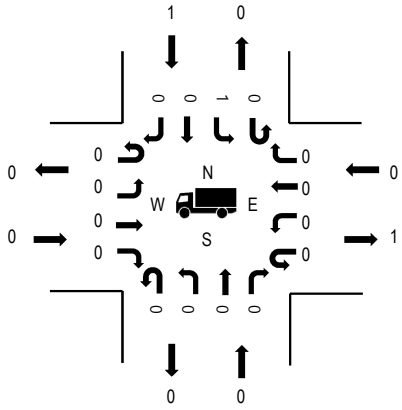
Motorized Vehicles



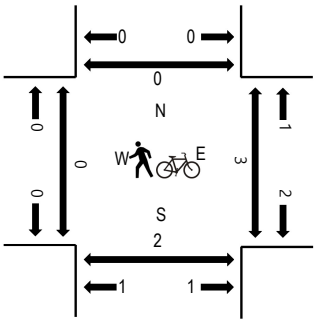
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.90
WB	0.0%	0.00
NB	0.0%	0.75
SB	0.1%	0.92
All	0.1%	0.93

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	SE 36TH ST Eastbound				SE 36TH ST Westbound				E MERCER WAY Northbound				E MERCER WAY 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	16	97	11	0	0	0	0	0	18	25	35	0	3	62	90	357	1,576
4:15 PM	0	23	75	13	0	0	0	0	0	11	9	35	0	6	65	125	362	1,692
4:30 PM	0	19	72	11	0	0	0	0	0	13	28	37	0	5	90	121	396	1,747
4:45 PM	0	11	69	39	0	0	0	0	0	27	33	49	0	3	86	144	461	1,753
5:00 PM	0	16	95	20	0	0	0	0	0	26	49	71	0	3	72	121	473	1,658
5:15 PM	0	13	80	13	0	0	0	0	0	19	29	46	0	6	73	138	417	
5:30 PM	0	9	93	16	0	0	0	0	0	12	33	45	0	7	66	121	402	
5:45 PM	0	8	72	17	0	0	0	0	0	13	20	30	0	9	71	126	366	
Count Total	0	115	653	140	0	0	0	0	0	139	226	348	0	42	585	986	3,234	
Peak Hour	0	49	337	88	0	0	0	0	0	84	144	211	0	19	297	524	1,753	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

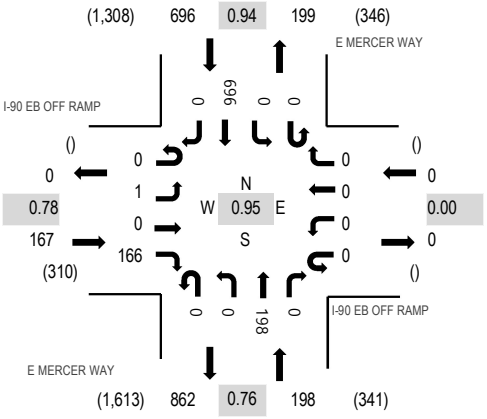
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	1	1	0	1	3	4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	1	1	4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	1	0	0	0	1	4:45 PM	0	1	2	0	3
5:00 PM	0	0	0	0	0	5:00 PM	0	1	0	1	2	5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	2	2	0	3	7	5:15 PM	0	1	1	0	2
5:30 PM	0	0	0	1	1	5:30 PM	2	0	0	1	3	5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	1	2	0	0	3	5:45 PM	0	0	4	0	4
Count Total	0	0	0	1	1	Count Total	7	6	0	7	20	Count Total	0	2	7	0	9
Peak Hour	0	0	0	1	1	Peak Hour	5	3	0	5	13	Peak Hour	0	2	3	0	5

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 E MERCER WAY & I-90 EB OFF RAMP PM
Date: Wednesday, March 27, 2024
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour

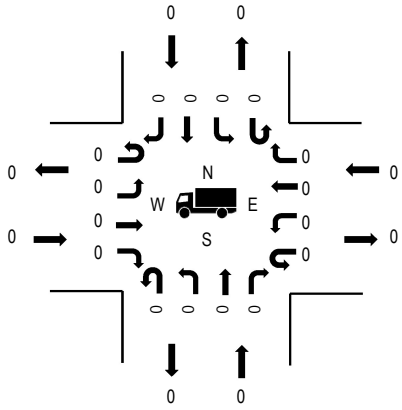
Motorized Vehicles



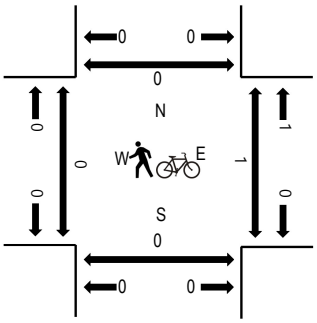
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.78
WB	0.0%	0.00
NB	0.0%	0.76
SB	0.0%	0.94
All	0.0%	0.95

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	I-90 EB OFF RAMP Eastbound				I-90 EB OFF RAMP Westbound				E MERCER WAY Northbound				E MERCER WAY 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	1	0	40	0	0	0	0	0	0	41	0	0	0	115	0	197	967
4:15 PM	0	1	0	40	0	0	0	0	0	0	32	0	0	0	156	0	229	1,031
4:30 PM	0	0	0	40	0	0	0	0	0	0	47	0	0	0	176	0	263	1,061
4:45 PM	0	1	0	57	0	0	0	0	0	0	44	0	0	0	176	0	278	1,034
5:00 PM	0	0	0	38	0	0	0	0	0	0	65	0	0	0	158	0	261	992
5:15 PM	0	0	0	31	0	0	0	0	0	0	42	0	0	0	186	0	259	
5:30 PM	0	0	0	31	0	0	0	0	0	0	42	0	0	0	163	0	236	
5:45 PM	0	2	0	28	0	0	0	0	0	0	28	0	0	0	178	0	236	
Count Total	0	5	0	305	0	0	0	0	0	0	341	0	0	0	1,308	0	1,959	
Peak Hour	0	1	0	166	0	0	0	0	0	0	198	0	0	0	696	0	1,061	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

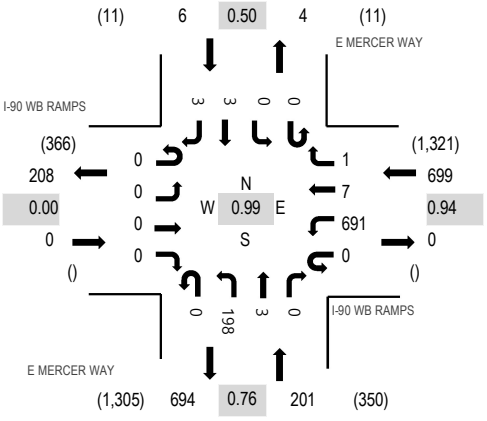
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	2	0	1	3	4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	1	1	4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	1	0	0	1	4:45 PM	0	0	1	0	1
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	1	1	5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	1	0	3	4	5:15 PM	0	0	0	0	0
5:30 PM	0	0	0	1	1	5:30 PM	0	1	0	1	2	5:30 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	2	0	0	2	5:45 PM	0	0	0	0	0
Count Total	0	0	0	1	1	Count Total	0	7	0	7	14	Count Total	0	0	1	0	1
Peak Hour	0	0	0	0	0	Peak Hour	0	2	0	5	7	Peak Hour	0	0	1	0	1

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 5 E MERCER WAY & I-90 WB RAMPS PM
Date: Wednesday, March 27, 2024
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:00 PM - 05:15 PM

Peak Hour

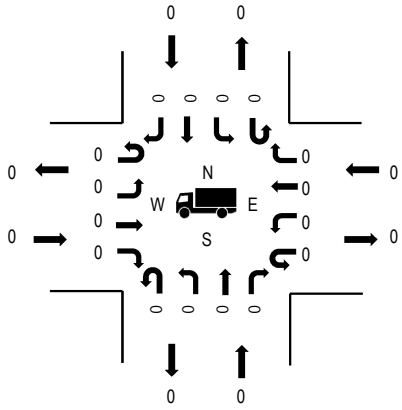
Motorized Vehicles



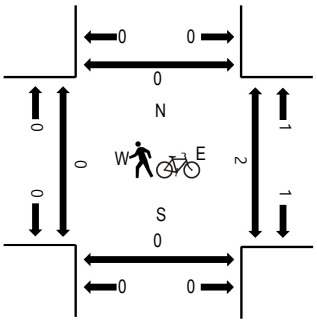
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	0.0%	0.94
NB	0.0%	0.76
SB	0.0%	0.50
All	0.0%	0.99

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	I-90 WB RAMPS Eastbound				I-90 WB RAMPS Westbound				E MERCER WAY Northbound				E MERCER WAY 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	0	0	0	0	116	1	0	0	45	0	0	0	0	0	0	162	802
4:15 PM	0	0	0	0	0	153	1	2	0	31	1	0	0	0	1	0	189	868
4:30 PM	0	0	0	0	0	174	3	1	0	45	1	0	0	0	0	0	224	906
4:45 PM	0	0	0	0	0	178	0	0	0	46	1	0	0	0	0	2	227	892
5:00 PM	0	0	0	0	0	156	2	0	0	66	0	0	0	0	3	1	228	880
5:15 PM	0	0	0	0	0	183	2	0	0	41	1	0	0	0	0	0	227	
5:30 PM	0	0	0	0	0	163	3	1	0	42	0	0	0	0	0	1	210	
5:45 PM	0	0	0	0	0	176	5	1	0	28	2	0	0	0	2	1	215	
Count Total	0	0	0	0	0	1,299	17	5	0	344	6	0	0	0	6	5	1,682	
Peak Hour	0	0	0	0	0	691	7	1	0	198	3	0	0	0	3	3	906	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

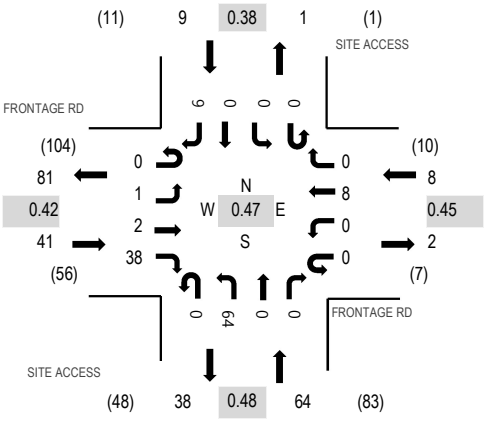
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	0	0	0	0	0	4:00 PM	0	1	0	1	2	4:00 PM	0	0	0	0	0
4:15 PM	0	0	0	0	0	4:15 PM	0	1	0	0	1	4:15 PM	0	0	0	0	0
4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	1	1	4:30 PM	0	0	0	0	0
4:45 PM	0	0	0	0	0	4:45 PM	0	1	0	0	1	4:45 PM	0	0	1	0	1
5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	1	1	5:00 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	1	0	3	4	5:15 PM	0	0	1	0	1
5:30 PM	0	0	1	0	1	5:30 PM	0	1	0	1	2	5:30 PM	0	0	1	1	2
5:45 PM	0	0	0	0	0	5:45 PM	0	2	0	0	2	5:45 PM	0	0	1	0	1
Count Total	0	0	1	0	1	Count Total	0	7	0	7	14	Count Total	0	0	4	1	5
Peak Hour	0	0	0	0	0	Peak Hour	0	2	0	5	7	Peak Hour	0	0	2	0	2

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 6 SITE ACCESS & FRONTAGE RD PM
Date: Wednesday, March 27, 2024
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour

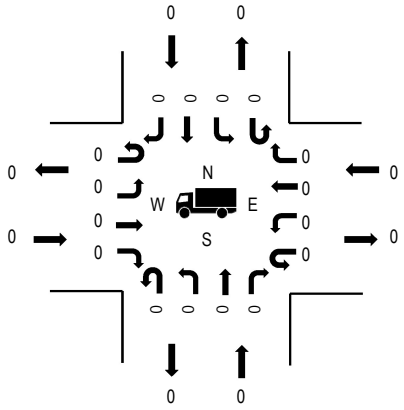
Motorized Vehicles



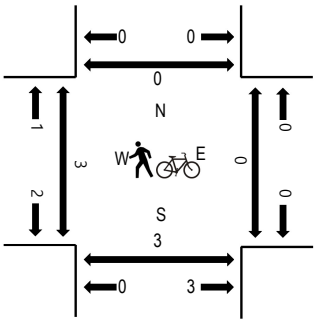
Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.42
WB	0.0%	0.45
NB	0.0%	0.48
SB	0.0%	0.38
All	0.0%	0.47

Heavy Vehicles



Pedestrians/Bicycles in Crosswalk



Traffic Counts - Motorized Vehicles

Interval Start Time	FRONTAGE RD Eastbound				FRONTAGE RD Westbound				SITE ACCESS Northbound				SITE ACCESS 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	0	0	4	0	0	0	0	0	13	0	0	0	0	0	1	18	105
4:15 PM	0	0	2	1	0	0	0	0	0	3	0	0	0	0	0	1	7	120
4:30 PM	0	1	0	7	0	0	1	0	0	6	0	0	0	0	0	0	15	122
4:45 PM	0	0	1	24	0	0	5	0	0	33	0	0	0	0	0	2	65	114
5:00 PM	0	0	0	6	0	0	1	0	0	20	0	0	0	0	0	6	33	55
5:15 PM	0	0	1	1	0	0	1	0	0	5	0	0	0	0	0	1	9	
5:30 PM	0	0	2	1	0	0	2	0	0	2	0	0	0	0	0	0	7	
5:45 PM	0	0	1	4	0	0	0	0	0	1	0	0	0	0	0	0	6	
Count Total	0	1	7	48	0	0	10	0	0	83	0	0	0	0	0	11	160	
Peak Hour	0	1	2	38	0	0	8	0	0	64	0	0	0	0	0	9	122	

Traffic Counts - Heavy Vehicles, Bicycles on Road, and Pedestrians/Bicycles in Crosswalk

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

Appendix B: LOS Definitions

Highway Capacity Manual 7th Edition

Signalized intersection level of service (LOS) is defined in terms of a weighted average control delay for the entire intersection. Control delay quantifies the increase in travel time that a vehicle experiences due to the traffic signal control as well as provides a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average control delay per vehicle (in seconds) during a specified time period (e.g., weekday PM peak hour). Control delay is a complex measure based on many variables, including signal phasing and coordination (i.e., progression of movements through the intersection and along the corridor), signal cycle length, and traffic volumes with respect to intersection capacity and resulting queues. Table 1 summarizes the LOS criteria for signalized intersections, as described in the *Highway Capacity Manual* 7th Edition (Transportation Research Board, 2022).

Table 1. Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)	General Description
A	≤10	Free Flow
B	>10 – 20	Stable Flow (slight delays)
C	>20 – 35	Stable flow (acceptable delays)
D	>35 – 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 – 80	Unstable flow (intolerable delay)
F[1]	>80	Forced flow (congested and queues fail to clear)

Source: *Highway Capacity Manual 7th Edition*, Transportation Research Board, 2022, respectively.
1. If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0 LOS F is assigned to the individual lane group. LOS for overall approach or intersection is determined solely by the control delay.

Unsignalized intersection LOS criteria can be further reduced into two intersection types: all-way stop and two-way stop controlled. All-way stop controlled intersection LOS is expressed in terms of the weighted average control delay of the overall intersection or by approach. Two-way stop-controlled intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. This approach is because major-street through vehicles are assumed to experience zero delay, a weighted average of all movements results in very low overall average delay, and this calculated low delay could mask deficiencies of minor movements. Table 2 shows LOS criteria for unsignalized intersections.

Table 2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (seconds/vehicle)
A	0 – 10
B	>10 – 15
C	>15 – 25
D	>25 – 35
E	>35 – 50
F[1]	>50

Source: *Highway Capacity Manual 7th Edition*, Transportation Research Board, 2022, respectively.
1. If the volume-to-capacity (v/c) ratio exceeds 1.0, LOS F is assigned an individual lane group for all unsignalized intersections, or minor street approach at two-way stop-controlled intersections. Overall intersection LOS is determined solely by control delay.

Highway Capacity Manual, 2000

Signalized intersection level of service (LOS) is defined in terms of the average total vehicle delay of all movements through an intersection. Vehicle delay is a method of quantifying several intangible factors, including driver discomfort, frustration, and lost travel time. Specifically, LOS criteria are stated in terms of average delay per vehicle during a specified time period (for example, the PM peak hour). Vehicle delay is a complex measure based on many variables, including signal phasing (i.e., progression of movements through the intersection), signal cycle length, and traffic volumes with respect to intersection capacity. Table 1 shows LOS criteria for signalized intersections, as described in the *Highway Capacity Manual* (Transportation Research Board, Special Report 209, 2000).

Table 1. Level of Service Criteria for Signalized Intersections

Level of Service	Average Control Delay (sec/veh)	General Description (Signalized Intersections)
A	≤10	Free Flow
B	>10 - 20	Stable Flow (slight delays)
C	>20 - 35	Stable flow (acceptable delays)
D	>35 - 55	Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding)
E	>55 - 80	Unstable flow (intolerable delay)
F	>80	Forced flow (jammed)

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000.

Unsignalized intersection LOS criteria can be further reduced into two intersection types: all-way stop-controlled and two-way stop-controlled. All-way, stop-controlled intersection LOS is expressed in terms of the average vehicle delay of all of the movements, much like that of a signalized intersection. Two-way, stop-controlled intersection LOS is defined in terms of the average vehicle delay of an individual movement(s). This is because the performance of a two-way, stop-controlled intersection is more closely reflected in terms of its individual movements, rather than its performance overall. For this reason, LOS for a two-way, stop-controlled intersection is defined in terms of its individual movements. With this in mind, total average vehicle delay (i.e., average delay of all movements) for a two-way, stop-controlled intersection should be viewed with discretion. Table 2 shows LOS criteria for unsignalized intersections (both all-way and two-way, stop-controlled).

Table 2. Level of Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay (sec/veh)
A	0 - 10
B	>10 - 15
C	>15 - 25
D	>25 - 35
E	>35 - 50
F	>50

Source: *Highway Capacity Manual*, Transportation Research Board, Special Report 209, 2000.

Appendix C: LOS Worksheets

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	15	0	0	0	0	10	0	195	0	4	145	10
Future Vol, veh/h	15	0	0	0	0	10	0	195	0	4	145	10
Conflicting Peds, #/hr	2	0	2	0	0	0	2	0	0	0	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	15	0	0	0	0	10	0	195	0	4	145	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	357	355	154	350	360	197	157	0	0	195	0	0
Stage 1	160	160	-	195	195	-	-	-	-	-	-	-
Stage 2	197	195	-	155	165	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	602	574	897	608	570	849	1435	-	-	1390	-	-
Stage 1	847	769	-	811	743	-	-	-	-	-	-	-
Stage 2	809	743	-	852	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	591	571	894	605	567	848	1432	-	-	1390	-	-
Mov Cap-2 Maneuver	591	571	-	605	567	-	-	-	-	-	-	-
Stage 1	843	765	-	811	743	-	-	-	-	-	-	-
Stage 2	798	743	-	848	762	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.25	9.3	0	0.19
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1432	-	-	591	848	45	-	-
HCM Lane V/C Ratio	-	-	-	0.025	0.012	0.003	-	-
HCM Control Delay (s/veh)	0	-	-	11.3	9.3	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	420	0	30	505
Future Vol, veh/h	0	25	420	0	30	505
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	11	11	0	0	1	1
Mvmt Flow	0	25	420	0	30	505

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	991	426	0	0	423	0
Stage 1	423	-	-	-	-	-
Stage 2	568	-	-	-	-	-
Critical Hdwy	6.51	6.31	-	-	4.11	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.399	-	-	2.209	-
Pot Cap-1 Maneuver	263	610	-	-	1142	-
Stage 1	642	-	-	-	-	-
Stage 2	550	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	252	606	-	-	1138	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	528	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.19	0	0.46
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	606	101	-
HCM Lane V/C Ratio	-	-	0.041	0.026	-
HCM Control Delay (s/veh)	-	-	11.2	8.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	390	75	0	0	0	75	110	270	45	460	580
Future Volume (vph)	40	390	75	0	0	0	75	110	270	45	460	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.97		1.00	1.00	0.97
Flpb, ped/bikes		0.99	1.00				0.99	1.00		0.99	1.00	1.00
Frt		1.00	0.85				1.00	0.89		1.00	1.00	0.85
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1890	1570				1779	1633		1803	1900	1576
Flt Permitted		0.99	1.00				0.49	1.00		0.23	1.00	1.00
Satd. Flow (perm)		1890	1570				933	1633		452	1900	1576
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	390	75	0	0	0	75	110	270	45	460	580
RTOR Reduction (vph)	0	0	49	0	0	0	0	84	0	0	0	299
Lane Group Flow (vph)	0	430	26	0	0	0	75	296	0	45	460	281
Confl. Peds. (#/hr)	2		4	8		6	4		8	6		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		32.9	32.9				24.2	24.2		41.3	41.3	41.3
Effective Green, g (s)		29.9	29.9				24.2	24.2		41.3	41.3	41.3
Actuated g/C Ratio		0.35	0.35				0.28	0.28		0.48	0.48	0.48
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		663	550				265	463		396	921	763
v/s Ratio Prot								c0.18		0.01	c0.24	
v/s Ratio Perm		0.23	0.02				0.08			0.04		0.18
v/c Ratio		0.64	0.04				0.28	0.63		0.11	0.49	0.36
Uniform Delay, d1		23.2	18.2				23.7	26.6		13.3	14.9	13.7
Progression Factor		1.00	1.00				1.00	1.00		0.89	0.86	0.62
Incremental Delay, d2		3.5	0.1				0.5	2.9		0.1	0.4	0.2
Delay (s)		26.8	18.3				24.3	29.5		12.0	13.2	8.8
Level of Service		C	B				C	C		B	B	A
Approach Delay (s/veh)		25.5			0.0			28.7			10.8	
Approach LOS		C			A			C			B	

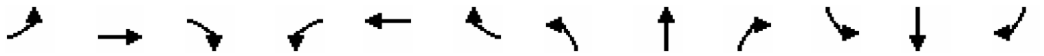
Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	19.9
Intersection Capacity Utilization	75.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	320	0	150	765	0
Future Volume (vph)	0	320	0	150	765	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9		5.5	5.5	
Lane Util. Factor		1.00		1.00	0.95	
Frpb, ped/bikes		0.98		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00	
Frt		0.85		1.00	1.00	
Flt Protected		1.00		1.00	1.00	
Satd. Flow (prot)		1592		1900	3610	
Flt Permitted		1.00		1.00	1.00	
Satd. Flow (perm)		1592		1900	3610	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	320	0	150	765	0
RTOR Reduction (vph)	0	208	0	0	0	0
Lane Group Flow (vph)	0	112	0	150	765	0
Confl. Peds. (#/hr)	1	1	1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)		11.2		62.6	62.6	
Effective Green, g (s)		11.2		62.6	62.6	
Actuated g/C Ratio		0.13		0.73	0.73	
Clearance Time (s)		5.9				
Vehicle Extension (s)		3.0				
Lane Grp Cap (vph)		209		1396	2652	
v/s Ratio Prot				0.08	c0.21	
v/s Ratio Perm		c0.07				
v/c Ratio		0.53		0.10	0.28	
Uniform Delay, d1		34.5		3.2	3.8	
Progression Factor		1.00		0.19	1.00	
Incremental Delay, d2		2.6		0.0	0.0	
Delay (s)		37.1		0.6	3.8	
Level of Service		D		A	A	
Approach Delay (s/veh)	37.1			0.6	3.8	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	85.2	Sum of lost time (s)	16.9
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	780	50	0	165	0	0	0	10	4
Future Volume (veh/h)	0	0	0	780	50	0	165	0	0	0	10	4
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				780	50	0	165	0	0	0	10	4
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				880	56	0	380	0	0	0	207	83
Arrive On Green				0.58	0.52	0.00	0.16	0.00	0.00	0.00	0.16	0.16
Sat Flow, veh/h				1705	109	0	1364	0	0	0	1291	516
Grp Volume(v), veh/h				830	0	0	165	0	0	0	0	14
Grp Sat Flow(s),veh/h/ln				1815	0	0	1364	0	0	0	0	1807
Q Serve(g_s), s				17.6	0.0	0.0	4.9	0.0	0.0	0.0	0.0	0.3
Cycle Q Clear(g_c), s				17.6	0.0	0.0	5.2	0.0	0.0	0.0	0.0	0.3
Prop In Lane				0.94		0.00	1.00		0.00	0.00		0.29
Lane Grp Cap(c), veh/h				937	0	0	380	0	0	0	0	289
V/C Ratio(X)				0.89	0.00	0.00	0.43	0.00	0.00	0.00	0.00	0.05
Avail Cap(c_a), veh/h				1269	0	0	936	0	0	0	0	995
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				8.2	0.0	0.0	18.0	0.0	0.0	0.0	0.0	15.8
Incr Delay (d2), s/veh				6.5	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.4	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				14.7	0.0	0.0	18.8	0.0	0.0	0.0	0.0	15.9
LnGrp LOS				B			B					B
Approach Vol, veh/h					830			165			14	
Approach Delay, s/veh					14.7			18.8			15.9	
Approach LOS					B			B			B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	12.6	31.9	12.6
Change Period (Y+Rc), s	5.5	5.9	5.5
Max Green Setting (Gmax), s	24.5	34.1	24.5
Max Q Clear Time (g_c+I1), s	2.3	19.6	7.2
Green Ext Time (p_c), s	0.0	6.4	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	15.4
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	0	4	0	0	0	0	200	0	0	150	30
Future Vol, veh/h	45	0	4	0	0	0	0	200	0	0	150	30
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	45	0	4	0	0	0	0	200	0	0	150	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	367	367	167	352	382	202	181	0	0	201	0	0
Stage 1	166	166	-	201	201	-	-	-	-	-	-	-
Stage 2	201	201	-	151	181	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	593	565	882	607	554	844	1407	-	-	1383	-	-
Stage 1	841	765	-	805	739	-	-	-	-	-	-	-
Stage 2	805	739	-	856	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	592	564	881	603	553	842	1405	-	-	1382	-	-
Mov Cap-2 Maneuver	592	564	-	603	553	-	-	-	-	-	-	-
Stage 1	840	764	-	805	738	-	-	-	-	-	-	-
Stage 2	805	738	-	852	753	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.44	0	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1405	-	-	608	-	1382	-	-
HCM Lane V/C Ratio	-	-	-	0.081	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	11.4	0	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	-	0	-	-

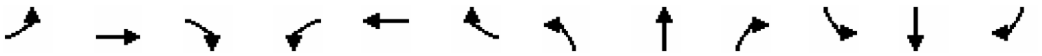
Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	40	490	10	15	360
Future Vol, veh/h	4	40	490	10	15	360
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	0	0	0	0
Mvmt Flow	4	40	490	10	15	360

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	887	497	0	0	501	0
Stage 1	496	-	-	-	-	-
Stage 2	391	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	313	571	-	-	1074	-
Stage 1	610	-	-	-	-	-
Stage 2	681	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	307	570	-	-	1073	-
Mov Cap-2 Maneuver	307	-	-	-	-	-
Stage 1	609	-	-	-	-	-
Stage 2	669	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.42	0	0.34
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	529	72	-
HCM Lane V/C Ratio	-	-	0.083	0.014	-
HCM Control Delay (s/veh)	-	-	12.4	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-



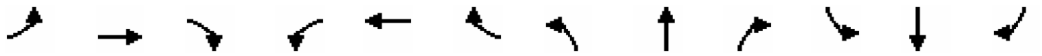
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	390	50	0	0	0	55	180	285	15	335	420
Future Volume (vph)	80	390	50	0	0	0	55	180	285	15	335	420
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.97		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00				0.99	1.00		1.00	1.00	1.00
Frt		1.00	0.85				1.00	0.90		1.00	1.00	0.85
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1884	1573				1798	1688		1805	1900	1615
Flt Permitted		0.99	1.00				0.55	1.00		0.22	1.00	1.00
Satd. Flow (perm)		1884	1573				1058	1688		425	1900	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	390	50	0	0	0	55	180	285	15	335	420
RTOR Reduction (vph)	0	0	33	0	0	0	0	49	0	0	0	210
Lane Group Flow (vph)	0	470	17	0	0	0	55	416	0	15	335	210
Confl. Peds. (#/hr)			3	6		3	3		6	3		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		33.7	33.7				31.5	31.5		44.6	44.6	44.6
Effective Green, g (s)		30.7	30.7				31.5	31.5		44.6	44.6	44.6
Actuated g/C Ratio		0.34	0.34				0.35	0.35		0.50	0.50	0.50
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		647	540				373	595		323	948	806
v/s Ratio Prot								c0.25		0.00	c0.18	
v/s Ratio Perm		0.25	0.01				0.05			0.02		0.13
v/c Ratio		0.72	0.03				0.14	0.69		0.04	0.35	0.26
Uniform Delay, d1		25.6	19.4				19.7	24.8		13.6	13.5	12.8
Progression Factor		1.00	1.00				1.00	1.00		0.97	0.93	0.77
Incremental Delay, d2		5.6	0.0				0.1	3.6		0.0	0.2	0.1
Delay (s)		31.3	19.5				19.9	28.4		13.3	12.9	10.1
Level of Service		C	B				B	C		B	B	B
Approach Delay (s/veh)		30.1			0.0			27.5			11.4	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	19.9
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	160	0	260	610	0
Future Volume (vph)	4	160	0	260	610	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1615		1900	3610	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1615		1900	3610	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	160	0	260	610	0
RTOR Reduction (vph)	0	147	0	0	0	0
Lane Group Flow (vph)	4	13	0	260	610	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)	7.2	7.2		70.7	70.7	
Effective Green, g (s)	7.2	7.2		70.7	70.7	
Actuated g/C Ratio	0.08	0.08		0.79	0.79	
Clearance Time (s)	5.9	5.9				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	145	130		1504	2858	
v/s Ratio Prot	0.00			0.14	c0.17	
v/s Ratio Perm		c0.01				
v/c Ratio	0.02	0.09		0.17	0.21	
Uniform Delay, d1	37.8	38.0		2.2	2.3	
Progression Factor	1.00	1.00		0.10	1.00	
Incremental Delay, d2	0.0	0.3		0.0	0.0	
Delay (s)	37.9	38.3		0.2	2.3	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	38.3			0.2	2.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	89.3	Sum of lost time (s)	16.9
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	610	10	4	250	4	0	0	4	0
Future Volume (veh/h)	0	0	0	610	10	4	250	4	0	0	4	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				610	10	4	250	4	0	0	4	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				719	12	5	509	5	0	0	451	0
Arrive On Green				0.48	0.41	0.48	0.24	0.24	0.00	0.00	0.24	0.00
Sat Flow, veh/h				1769	29	12	1402	22	0	0	1900	0
Grp Volume(v), veh/h				624	0	0	254	0	0	0	4	0
Grp Sat Flow(s),veh/h/ln				1809	0	0	1425	0	0	0	1900	0
Q Serve(g_s), s				12.2	0.0	0.0	6.6	0.0	0.0	0.0	0.1	0.0
Cycle Q Clear(g_c), s				12.2	0.0	0.0	6.7	0.0	0.0	0.0	0.1	0.0
Prop In Lane				0.98		0.01	0.98		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				735	0	0	515	0	0	0	451	0
V/C Ratio(X)				0.85	0.00	0.00	0.49	0.00	0.00	0.00	0.01	0.00
Avail Cap(c_a), veh/h				1394	0	0	1045	0	0	0	1153	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				9.4	0.0	0.0	14.3	0.0	0.0	0.0	11.8	0.0
Incr Delay (d2), s/veh				3.4	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.6	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				12.8	0.0	0.0	15.1	0.0	0.0	0.0	11.8	0.0
LnGrp LOS				B			B				B	
Approach Vol, veh/h					624			254			4	
Approach Delay, s/veh					12.8			15.1			11.8	
Approach LOS					B			B			B	

Timer - Assigned Phs				4		6		8				
Phs Duration (G+Y+Rc), s				15.1		25.3		15.1				
Change Period (Y+Rc), s				5.5		5.9		5.5				
Max Green Setting (Gmax), s				24.5		34.1		24.5				
Max Q Clear Time (g_c+I1), s				2.1		14.2		8.7				
Green Ext Time (p_c), s				0.0		5.2		1.2				

Intersection Summary		
HCM 7th Control Delay, s/veh	13.5	
HCM 7th LOS	B	

Notes
User approved pedestrian interval to be less than phase max green.

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	35	0	2	0	1	2	0	150	1	0	180	40
Future Vol, veh/h	35	0	2	0	1	2	0	150	1	0	180	40
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	39	0	2	0	1	2	0	167	1	0	200	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	391	391	224	368	413	168	245	0	0	168	0	0
Stage 1	223	223	-	167	167	-	-	-	-	-	-	-
Stage 2	168	168	-	201	245	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	571	548	820	592	533	881	1332	-	-	1422	-	-
Stage 1	784	723	-	839	764	-	-	-	-	-	-	-
Stage 2	838	763	-	805	707	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	568	547	819	590	532	880	1331	-	-	1422	-	-
Mov Cap-2 Maneuver	568	547	-	590	532	-	-	-	-	-	-	-
Stage 1	783	722	-	839	764	-	-	-	-	-	-	-
Stage 2	834	763	-	803	706	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.7	10	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1331	-	-	577	723	1422	-	-
HCM Lane V/C Ratio	-	-	-	0.071	0.005	-	-	-
HCM Control Delay (s/veh)	0	-	-	11.7	10	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

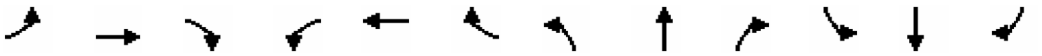
Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	70	355	10	30	370
Future Vol, veh/h	10	70	355	10	30	370
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	82	418	12	35	435

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	935	430	0	0	432	0
Stage 1	427	-	-	-	-	-
Stage 2	509	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	297	630	-	-	1138	-
Stage 1	663	-	-	-	-	-
Stage 2	608	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	283	626	-	-	1135	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	581	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13	0	0.62
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	544	135	-
HCM Lane V/C Ratio	-	-	0.173	0.031	-
HCM Control Delay (s/veh)	-	-	13	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	335	90	0	0	0	85	145	210	20	295	525
Future Volume (vph)	50	335	90	0	0	0	85	145	210	20	295	525
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.98		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00				0.99	1.00		0.99	1.00	1.00
Frt		1.00	0.85				1.00	0.91		1.00	1.00	0.85
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1888	1576				1800	1698		1804	1900	1615
Flt Permitted		0.99	1.00				0.56	1.00		0.29	1.00	1.00
Satd. Flow (perm)		1888	1576				1077	1698		556	1900	1615
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	360	97	0	0	0	91	156	226	22	317	565
RTOR Reduction (vph)	0	0	52	0	0	0	0	46	0	0	0	288
Lane Group Flow (vph)	0	414	45	0	0	0	91	336	0	22	317	277
Confl. Peds. (#/hr)			2	5		3	2		5	3		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		33.0	33.0				29.0	29.0		42.2	42.2	42.2
Effective Green, g (s)		30.0	30.0				29.0	29.0		42.2	42.2	42.2
Actuated g/C Ratio		0.35	0.35				0.34	0.34		0.49	0.49	0.49
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		657	548				362	571		377	930	790
v/s Ratio Prot								c0.20		0.00	0.17	
v/s Ratio Perm		0.22	0.03				0.08			0.02		c0.17
v/c Ratio		0.63	0.08				0.25	0.58		0.05	0.34	0.35
Uniform Delay, d1		23.4	18.8				20.7	23.6		12.8	13.4	13.5
Progression Factor		1.00	1.00				1.00	1.00		0.97	0.93	0.95
Incremental Delay, d2		3.2	0.1				0.3	1.5		0.0	0.2	0.2
Delay (s)		26.7	19.0				21.0	25.2		12.5	12.8	13.2
Level of Service		C	B				C	C		B	B	B
Approach Delay (s/veh)		25.2			0.0			24.4			13.0	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	19.9
Intersection Capacity Utilization	68.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	165	0	200	695	0
Future Volume (vph)	1	165	0	200	695	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1615		1900	3610	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1615		1900	3610	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	174	0	211	732	0
RTOR Reduction (vph)	0	159	0	0	0	0
Lane Group Flow (vph)	1	15	0	211	732	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)	7.3	7.3		67.5	67.5	
Effective Green, g (s)	7.3	7.3		67.5	67.5	
Actuated g/C Ratio	0.08	0.08		0.78	0.78	
Clearance Time (s)	5.9	5.9				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	152	136		1487	2826	
v/s Ratio Prot	0.00			0.11	c0.20	
v/s Ratio Perm		c0.01				
v/c Ratio	0.00	0.10		0.14	0.25	
Uniform Delay, d1	36.1	36.4		2.2	2.5	
Progression Factor	1.00	1.00		0.12	1.00	
Incremental Delay, d2	0.0	0.3		0.0	0.0	
Delay (s)	36.1	36.7		0.3	2.5	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	36.7			0.3	2.5	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	86.2	Sum of lost time (s)	16.9
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	690	5	1	200	3	0	0	3	3
Future Volume (veh/h)	0	0	0	690	5	1	200	3	0	0	3	3
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				697	5	1	202	3	0	0	3	3
Peak Hour Factor				0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				815	6	1	443	4	0	0	167	167
Arrive On Green				0.53	0.45	0.53	0.19	0.19	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1794	13	3	1396	21	0	0	872	872
Grp Volume(v), veh/h				703	0	0	205	0	0	0	0	6
Grp Sat Flow(s),veh/h/ln				1810	0	0	1416	0	0	0	0	1743
Q Serve(g_s), s				13.6	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s				13.6	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.1
Prop In Lane				0.99		0.00	0.99		0.00	0.00		0.50
Lane Grp Cap(c), veh/h				822	0	0	447	0	0	0	0	334
V/C Ratio(X)				0.86	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.02
Avail Cap(c_a), veh/h				1385	0	0	1039	0	0	0	0	1051
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				8.5	0.0	0.0	15.6	0.0	0.0	0.0	0.0	13.3
Incr Delay (d2), s/veh				3.4	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.8	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				11.8	0.0	0.0	16.3	0.0	0.0	0.0	0.0	13.3
LnGrp LOS				B			B					B
Approach Vol, veh/h					703			205			6	
Approach Delay, s/veh					11.8			16.3			13.3	
Approach LOS					B			B			B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	13.3	27.3	13.3
Change Period (Y+Rc), s	5.5	5.9	5.5
Max Green Setting (Gmax), s	24.5	34.1	24.5
Max Q Clear Time (g_c+I1), s	2.1	15.6	7.6
Green Ext Time (p_c), s	0.0	5.9	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	12.8
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

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	15	0	0	0	0	10	0	195	0	4	145	10
Future Vol, veh/h	15	0	0	0	0	10	0	195	0	4	145	10
Conflicting Peds, #/hr	2	0	2	0	0	0	2	0	0	0	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	15	0	0	0	0	10	0	195	0	4	145	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	357	355	154	350	360	197	157	0	0	195	0	0
Stage 1	160	160	-	195	195	-	-	-	-	-	-	-
Stage 2	197	195	-	155	165	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	602	574	897	608	570	849	1435	-	-	1390	-	-
Stage 1	847	769	-	811	743	-	-	-	-	-	-	-
Stage 2	809	743	-	852	766	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	591	571	894	605	567	848	1432	-	-	1390	-	-
Mov Cap-2 Maneuver	591	571	-	605	567	-	-	-	-	-	-	-
Stage 1	843	765	-	811	743	-	-	-	-	-	-	-
Stage 2	798	743	-	848	762	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.25	9.3	0	0.19
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1432	-	-	591	848	45	-	-
HCM Lane V/C Ratio	-	-	-	0.025	0.012	0.003	-	-
HCM Control Delay (s/veh)	0	-	-	11.3	9.3	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

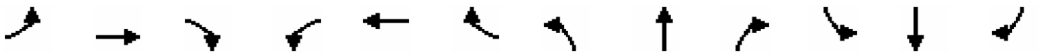
Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	425	0	30	510
Future Vol, veh/h	0	25	425	0	30	510
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	11	11	0	0	1	1
Mvmt Flow	0	25	425	0	30	510

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1001	431	0	0	428	0
Stage 1	428	-	-	-	-	-
Stage 2	573	-	-	-	-	-
Critical Hdwy	6.51	6.31	-	-	4.11	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.399	-	-	2.209	-
Pot Cap-1 Maneuver	259	606	-	-	1137	-
Stage 1	639	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	248	602	-	-	1134	-
Mov Cap-2 Maneuver	248	-	-	-	-	-
Stage 1	637	-	-	-	-	-
Stage 2	525	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.24	0	0.46
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	602	100	-
HCM Lane V/C Ratio	-	-	0.042	0.026	-
HCM Control Delay (s/veh)	-	-	11.2	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	395	75	0	0	0	75	110	275	45	465	585
Future Volume (vph)	40	395	75	0	0	0	75	110	275	45	465	585
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.97		1.00	1.00	0.97
Flpb, ped/bikes		0.99	1.00				0.99	1.00		1.00	1.00	1.00
Frt		1.00	0.85				1.00	0.89		1.00	1.00	0.85
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1891	1570				1779	1632		1805	1900	1576
Flt Permitted		0.99	1.00				0.49	1.00		0.23	1.00	1.00
Satd. Flow (perm)		1891	1570				929	1632		442	1900	1576
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	395	75	0	0	0	75	110	275	45	465	585
RTOR Reduction (vph)	0	0	49	0	0	0	0	85	0	0	0	299
Lane Group Flow (vph)	0	435	26	0	0	0	75	300	0	45	465	286
Confl. Peds. (#/hr)	2		4	8		6	4		8	6		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		33.0	33.0				24.5	24.5		42.1	42.1	42.1
Effective Green, g (s)		30.0	30.0				24.5	24.5		42.1	42.1	42.1
Actuated g/C Ratio		0.35	0.35				0.28	0.28		0.49	0.49	0.49
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		658	547				264	464		401	929	770
v/s Ratio Prot								c0.18		0.02	c0.24	
v/s Ratio Perm		0.23	0.02				0.08			0.04		0.18
v/c Ratio		0.66	0.04				0.28	0.64		0.11	0.50	0.37
Uniform Delay, d1		23.7	18.5				23.9	27.0		13.3	14.8	13.7
Progression Factor		1.00	1.00				1.00	1.00		0.89	0.85	0.60
Incremental Delay, d2		3.9	0.1				0.5	3.0		0.1	0.4	0.2
Delay (s)		27.6	18.6				24.5	30.0		12.0	13.1	8.5
Level of Service		C	B				C	C		B	B	A
Approach Delay (s/veh)		26.3			0.0			29.1			10.6	
Approach LOS		C			A			C			B	

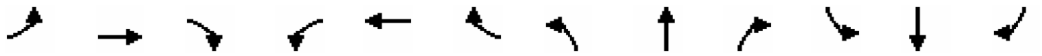
Intersection Summary			
HCM 2000 Control Delay (s/veh)	18.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	19.9
Intersection Capacity Utilization	76.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	325	0	150	775	0
Future Volume (vph)	0	325	0	150	775	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9		5.5	5.5	
Lane Util. Factor		1.00		1.00	0.95	
Frpb, ped/bikes		0.98		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00	
Frt		0.85		1.00	1.00	
Flt Protected		1.00		1.00	1.00	
Satd. Flow (prot)		1592		1900	3610	
Flt Permitted		1.00		1.00	1.00	
Satd. Flow (perm)		1592		1900	3610	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	325	0	150	775	0
RTOR Reduction (vph)	0	204	0	0	0	0
Lane Group Flow (vph)	0	121	0	150	775	0
Confl. Peds. (#/hr)	1	1	1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)		11.7		63.0	63.0	
Effective Green, g (s)		11.7		63.0	63.0	
Actuated g/C Ratio		0.14		0.73	0.73	
Clearance Time (s)		5.9				
Vehicle Extension (s)		3.0				
Lane Grp Cap (vph)		216		1390	2641	
v/s Ratio Prot				0.08	c0.21	
v/s Ratio Perm		c0.08				
v/c Ratio		0.56		0.10	0.29	
Uniform Delay, d1		34.7		3.3	3.9	
Progression Factor		1.00		0.19	1.00	
Incremental Delay, d2		3.3		0.0	0.0	
Delay (s)		38.0		0.6	4.0	
Level of Service		D		A	A	
Approach Delay (s/veh)	38.0			0.6	4.0	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	12.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	86.1	Sum of lost time (s)	16.9
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	790	50	0	165	0	0	0	10	4
Future Volume (veh/h)	0	0	0	790	50	0	165	0	0	0	10	4
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				790	50	0	165	0	0	0	10	4
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				888	56	0	378	0	0	0	206	83
Arrive On Green				0.59	0.52	0.00	0.16	0.00	0.00	0.00	0.16	0.16
Sat Flow, veh/h				1707	108	0	1364	0	0	0	1291	516
Grp Volume(v), veh/h				840	0	0	165	0	0	0	0	14
Grp Sat Flow(s),veh/h/ln				1815	0	0	1364	0	0	0	0	1807
Q Serve(g_s), s				18.1	0.0	0.0	5.0	0.0	0.0	0.0	0.0	0.3
Cycle Q Clear(g_c), s				18.1	0.0	0.0	5.3	0.0	0.0	0.0	0.0	0.3
Prop In Lane				0.94		0.00	1.00		0.00	0.00		0.29
Lane Grp Cap(c), veh/h				944	0	0	378	0	0	0	0	289
V/C Ratio(X)				0.89	0.00	0.00	0.44	0.00	0.00	0.00	0.00	0.05
Avail Cap(c_a), veh/h				1254	0	0	925	0	0	0	0	984
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				8.3	0.0	0.0	18.2	0.0	0.0	0.0	0.0	16.0
Incr Delay (d2), s/veh				6.9	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.1
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				5.6	0.0	0.0	1.5	0.0	0.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				15.2	0.0	0.0	19.0	0.0	0.0	0.0	0.0	16.1
LnGrp LOS				B			B					B
Approach Vol, veh/h					840			165			14	
Approach Delay, s/veh					15.2			19.0			16.1	
Approach LOS					B			B			B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	12.7	32.3	12.7
Change Period (Y+Rc), s	5.5	5.9	5.5
Max Green Setting (Gmax), s	24.5	34.1	24.5
Max Q Clear Time (g_c+I1), s	2.3	20.1	7.3
Green Ext Time (p_c), s	0.0	6.3	0.8

Intersection Summary	
HCM 7th Control Delay, s/veh	15.8
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	45	0	4	0	0	0	0	200	0	0	150	30
Future Vol, veh/h	45	0	4	0	0	0	0	200	0	0	150	30
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	45	0	4	0	0	0	0	200	0	0	150	30

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	367	367	167	352	382	202	181	0	0	201	0	0
Stage 1	166	166	-	201	201	-	-	-	-	-	-	-
Stage 2	201	201	-	151	181	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	593	565	882	607	554	844	1407	-	-	1383	-	-
Stage 1	841	765	-	805	739	-	-	-	-	-	-	-
Stage 2	805	739	-	856	754	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	592	564	881	603	553	842	1405	-	-	1382	-	-
Mov Cap-2 Maneuver	592	564	-	603	553	-	-	-	-	-	-	-
Stage 1	840	764	-	805	738	-	-	-	-	-	-	-
Stage 2	805	738	-	852	753	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.44	0	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1405	-	-	608	-	1382	-	-
HCM Lane V/C Ratio	-	-	-	0.081	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	11.4	0	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	-	0	-	-

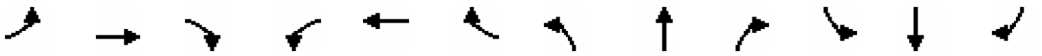
Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	40	495	10	15	365
Future Vol, veh/h	4	40	495	10	15	365
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	0	0	0	0
Mvmt Flow	4	40	495	10	15	365

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	897	502	0	0	506	0
Stage 1	501	-	-	-	-	-
Stage 2	396	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	309	567	-	-	1069	-
Stage 1	607	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	303	566	-	-	1068	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	606	-	-	-	-	-
Stage 2	665	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.49	0	0.33
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	525	71	-
HCM Lane V/C Ratio	-	-	0.084	0.014	-
HCM Control Delay (s/veh)	-	-	12.5	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-



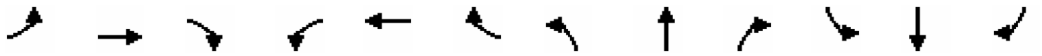
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	395	50	0	0	0	55	180	290	15	340	425
Future Volume (vph)	80	395	50	0	0	0	55	180	290	15	340	425
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.97		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00				0.99	1.00		1.00	1.00	1.00
Frt		1.00	0.85				1.00	0.90		1.00	1.00	0.85
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1884	1573				1798	1686		1805	1900	1615
Flt Permitted		0.99	1.00				0.55	1.00		0.22	1.00	1.00
Satd. Flow (perm)		1884	1573				1053	1686		419	1900	1615
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	80	395	50	0	0	0	55	180	290	15	340	425
RTOR Reduction (vph)	0	0	33	0	0	0	0	50	0	0	0	212
Lane Group Flow (vph)	0	475	17	0	0	0	55	420	0	15	340	213
Confl. Peds. (#/hr)			3	6		3	3		6	3		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		33.9	33.9				31.9	31.9		45.0	45.0	45.0
Effective Green, g (s)		30.9	30.9				31.9	31.9		45.0	45.0	45.0
Actuated g/C Ratio		0.34	0.34				0.35	0.35		0.50	0.50	0.50
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		647	540				373	598		320	951	808
v/s Ratio Prot								c0.25		0.00	c0.18	
v/s Ratio Perm		0.25	0.01				0.05			0.02		0.13
v/c Ratio		0.73	0.03				0.14	0.70		0.04	0.35	0.26
Uniform Delay, d1		25.8	19.5				19.7	24.9		13.7	13.6	12.9
Progression Factor		1.00	1.00				1.00	1.00		0.97	0.93	0.78
Incremental Delay, d2		5.9	0.0				0.1	3.7		0.0	0.2	0.1
Delay (s)		31.7	19.6				19.9	28.6		13.4	12.9	10.2
Level of Service		C	B				B	C		B	B	B
Approach Delay (s/veh)		30.6			0.0			27.7			11.5	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	19.9
Intersection Capacity Utilization	80.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	160	0	265	615	0
Future Volume (vph)	4	160	0	265	615	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1615		1900	3610	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1615		1900	3610	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	4	160	0	265	615	0
RTOR Reduction (vph)	0	147	0	0	0	0
Lane Group Flow (vph)	4	13	0	265	615	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)	7.2	7.2		71.3	71.3	
Effective Green, g (s)	7.2	7.2		71.3	71.3	
Actuated g/C Ratio	0.08	0.08		0.79	0.79	
Clearance Time (s)	5.9	5.9				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	144	129		1506	2863	
v/s Ratio Prot	0.00			0.14	c0.17	
v/s Ratio Perm		c0.01				
v/c Ratio	0.02	0.09		0.17	0.21	
Uniform Delay, d1	38.1	38.3		2.2	2.3	
Progression Factor	1.00	1.00		0.12	1.00	
Incremental Delay, d2	0.0	0.3		0.0	0.0	
Delay (s)	38.2	38.6		0.3	2.3	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	38.6			0.3	2.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.22		
Actuated Cycle Length (s)	89.9	Sum of lost time (s)	16.9
Intersection Capacity Utilization	36.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	615	10	4	255	4	0	0	4	0
Future Volume (veh/h)	0	0	0	615	10	4	255	4	0	0	4	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				615	10	4	255	4	0	0	4	0
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				722	12	5	512	5	0	0	457	0
Arrive On Green				0.48	0.41	0.48	0.24	0.24	0.00	0.00	0.24	0.00
Sat Flow, veh/h				1769	29	12	1403	22	0	0	1900	0
Grp Volume(v), veh/h				629	0	0	259	0	0	0	4	0
Grp Sat Flow(s),veh/h/ln				1809	0	0	1425	0	0	0	1900	0
Q Serve(g_s), s				12.5	0.0	0.0	6.9	0.0	0.0	0.0	0.1	0.0
Cycle Q Clear(g_c), s				12.5	0.0	0.0	6.9	0.0	0.0	0.0	0.1	0.0
Prop In Lane				0.98		0.01	0.98		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				738	0	0	517	0	0	0	457	0
V/C Ratio(X)				0.85	0.00	0.00	0.50	0.00	0.00	0.00	0.01	0.00
Avail Cap(c_a), veh/h				1372	0	0	1029	0	0	0	1135	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				9.6	0.0	0.0	14.5	0.0	0.0	0.0	11.8	0.0
Incr Delay (d2), s/veh				3.5	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.8	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				13.0	0.0	0.0	15.2	0.0	0.0	0.0	11.9	0.0
LnGrp LOS				B			B				B	
Approach Vol, veh/h					629			259			4	
Approach Delay, s/veh					13.0			15.2			11.9	
Approach LOS					B			B			B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	15.4	25.6	15.4
Change Period (Y+Rc), s	5.5	5.9	5.5
Max Green Setting (Gmax), s	24.5	34.1	24.5
Max Q Clear Time (g_c+I1), s	2.1	14.5	8.9
Green Ext Time (p_c), s	0.0	5.2	1.3

Intersection Summary	
HCM 7th Control Delay, s/veh	13.7
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

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	35	0	2	0	1	2	0	150	1	0	180	40
Future Vol, veh/h	35	0	2	0	1	2	0	150	1	0	180	40
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	39	0	2	0	1	2	0	167	1	0	200	44

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	391	391	224	368	413	168	245	0	0	168	0	0
Stage 1	223	223	-	167	167	-	-	-	-	-	-	-
Stage 2	168	168	-	201	245	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	571	548	820	592	533	881	1332	-	-	1422	-	-
Stage 1	784	723	-	839	764	-	-	-	-	-	-	-
Stage 2	838	763	-	805	707	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	568	547	819	590	532	880	1331	-	-	1422	-	-
Mov Cap-2 Maneuver	568	547	-	590	532	-	-	-	-	-	-	-
Stage 1	783	722	-	839	764	-	-	-	-	-	-	-
Stage 2	834	763	-	803	706	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.7	10	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1331	-	-	577	723	1422	-	-
HCM Lane V/C Ratio	-	-	-	0.071	0.005	-	-	-
HCM Control Delay (s/veh)	0	-	-	11.7	10	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

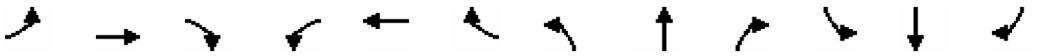
Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	70	360	10	30	375
Future Vol, veh/h	10	70	360	10	30	375
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	12	82	424	12	35	441

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	947	435	0	0	438	0
Stage 1	432	-	-	-	-	-
Stage 2	515	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	292	625	-	-	1132	-
Stage 1	659	-	-	-	-	-
Stage 2	604	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	278	621	-	-	1129	-
Mov Cap-2 Maneuver	278	-	-	-	-	-
Stage 1	657	-	-	-	-	-
Stage 2	577	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	13.09	0	0.61
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	539	133	-
HCM Lane V/C Ratio	-	-	0.175	0.031	-
HCM Control Delay (s/veh)	-	-	13.1	8.3	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	340	90	0	0	0	85	145	210	20	300	530
Future Volume (vph)	50	340	90	0	0	0	85	145	210	20	300	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.98		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00				0.99	1.00		0.99	1.00	1.00
Frt		1.00	0.85				1.00	0.91		1.00	1.00	0.85
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1888	1576				1800	1698		1804	1900	1615
Flt Permitted		0.99	1.00				0.56	1.00		0.29	1.00	1.00
Satd. Flow (perm)		1888	1576				1071	1698		556	1900	1615
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	366	97	0	0	0	91	156	226	22	323	570
RTOR Reduction (vph)	0	0	52	0	0	0	0	46	0	0	0	291
Lane Group Flow (vph)	0	420	45	0	0	0	91	336	0	22	323	279
Confl. Peds. (#/hr)			2	5		3	2		5	3		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		33.1	33.1				29.1	29.1		42.3	42.3	42.3
Effective Green, g (s)		30.1	30.1				29.1	29.1		42.3	42.3	42.3
Actuated g/C Ratio		0.35	0.35				0.34	0.34		0.49	0.49	0.49
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		657	549				360	571		377	930	790
v/s Ratio Prot								c0.20		0.00	0.17	
v/s Ratio Perm		0.22	0.03				0.08			0.02		c0.17
v/c Ratio		0.63	0.08				0.25	0.58		0.05	0.34	0.35
Uniform Delay, d1		23.5	18.8				20.7	23.7		12.8	13.5	13.6
Progression Factor		1.00	1.00				1.00	1.00		0.97	0.93	0.95
Incremental Delay, d2		3.4	0.1				0.3	1.5		0.0	0.2	0.2
Delay (s)		27.0	19.0				21.1	25.2		12.6	12.9	13.2
Level of Service		C	B				C	C		B	B	B
Approach Delay (s/veh)		25.5			0.0			24.4			13.1	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	19.9
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	165	0	200	700	0
Future Volume (vph)	1	165	0	200	700	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1615		1900	3610	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1615		1900	3610	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	174	0	211	737	0
RTOR Reduction (vph)	0	159	0	0	0	0
Lane Group Flow (vph)	1	15	0	211	737	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)	7.3	7.3		67.7	67.7	
Effective Green, g (s)	7.3	7.3		67.7	67.7	
Actuated g/C Ratio	0.08	0.08		0.78	0.78	
Clearance Time (s)	5.9	5.9				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	152	136		1488	2828	
v/s Ratio Prot	0.00			0.11	c0.20	
v/s Ratio Perm		c0.01				
v/c Ratio	0.00	0.10		0.14	0.26	
Uniform Delay, d1	36.2	36.5		2.2	2.5	
Progression Factor	1.00	1.00		0.12	1.00	
Incremental Delay, d2	0.0	0.3		0.0	0.0	
Delay (s)	36.2	36.8		0.3	2.5	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	36.8			0.3	2.5	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	86.4	Sum of lost time (s)	16.9
Intersection Capacity Utilization	39.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	695	5	1	200	3	0	0	3	3
Future Volume (veh/h)	0	0	0	695	5	1	200	3	0	0	3	3
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				702	5	1	202	3	0	0	3	3
Peak Hour Factor				0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				819	6	1	442	4	0	0	167	167
Arrive On Green				0.53	0.46	0.53	0.19	0.19	0.00	0.00	0.19	0.19
Sat Flow, veh/h				1794	13	3	1396	21	0	0	872	872
Grp Volume(v), veh/h				708	0	0	205	0	0	0	0	6
Grp Sat Flow(s),veh/h/ln				1810	0	0	1416	0	0	0	0	1743
Q Serve(g_s), s				13.8	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s				13.8	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.1
Prop In Lane				0.99		0.00	0.99		0.00	0.00		0.50
Lane Grp Cap(c), veh/h				826	0	0	446	0	0	0	0	334
V/C Ratio(X)				0.86	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.02
Avail Cap(c_a), veh/h				1376	0	0	1032	0	0	0	0	1044
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				8.5	0.0	0.0	15.7	0.0	0.0	0.0	0.0	13.4
Incr Delay (d2), s/veh				3.5	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				3.9	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				12.0	0.0	0.0	16.4	0.0	0.0	0.0	0.0	13.4
LnGrp LOS				B			B					B
Approach Vol, veh/h					708			205			6	
Approach Delay, s/veh					12.0			16.4			13.4	
Approach LOS					B			B			B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	13.3	27.6	13.3
Change Period (Y+Rc), s	5.5	5.9	5.5
Max Green Setting (Gmax), s	24.5	34.1	24.5
Max Q Clear Time (g_c+I1), s	2.1	15.8	7.6
Green Ext Time (p_c), s	0.0	5.9	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	13.0
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

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	28	0	0	0	0	10	0	213	0	4	157	18
Future Vol, veh/h	28	0	0	0	0	10	0	213	0	4	157	18
Conflicting Peds, #/hr	2	0	2	0	0	0	2	0	0	0	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	28	0	0	0	0	10	0	213	0	4	157	18

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	391	389	170	380	398	215	177	0	0	213	0	0
Stage 1	176	176	-	213	213	-	-	-	-	-	-	-
Stage 2	215	213	-	167	185	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	572	549	879	581	543	830	1411	-	-	1369	-	-
Stage 1	831	757	-	794	730	-	-	-	-	-	-	-
Stage 2	792	730	-	840	751	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	561	546	876	578	540	828	1409	-	-	1369	-	-
Mov Cap-2 Maneuver	561	546	-	578	540	-	-	-	-	-	-	-
Stage 1	826	753	-	794	730	-	-	-	-	-	-	-
Stage 2	781	730	-	835	747	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.75	9.4	0	0.17
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1409	-	-	561	828	39	-	-
HCM Lane V/C Ratio	-	-	-	0.05	0.012	0.003	-	-
HCM Control Delay (s/veh)	0	-	-	11.8	9.4	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

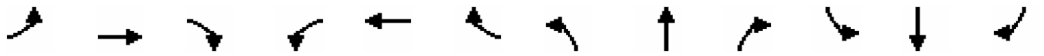
Intersection	
Int Delay, s/veh	7.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	228	425	31	308	510
Future Vol, veh/h	20	228	425	31	308	510
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	11	11	0	0	1	1
Mvmt Flow	20	228	425	31	308	510

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1573	447	0	0	459	0
Stage 1	444	-	-	-	-	-
Stage 2	1129	-	-	-	-	-
Critical Hdwy	6.51	6.31	-	-	4.11	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.399	-	-	2.209	-
Pot Cap-1 Maneuver	116	593	-	-	1107	-
Stage 1	628	-	-	-	-	-
Stage 2	296	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	70	590	-	-	1104	-
Mov Cap-2 Maneuver	70	-	-	-	-	-
Stage 1	626	-	-	-	-	-
Stage 2	181	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	32.53	0	3.58
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	369	678	-
HCM Lane V/C Ratio	-	-	0.671	0.279	-
HCM Control Delay (s/veh)	-	-	32.5	9.5	0
HCM Lane LOS	-	-	D	A	A
HCM 95th %tile Q(veh)	-	-	4.7	1.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	395	76	0	0	0	75	167	421	45	742	585
Future Volume (vph)	40	395	76	0	0	0	75	167	421	45	742	585
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.96		1.00	1.00	0.97
Flpb, ped/bikes		0.99	1.00				0.99	1.00		1.00	1.00	1.00
Frt		1.00	0.85				1.00	0.89		1.00	1.00	0.85
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1890	1567				1781	1627		1805	1900	1575
Flt Permitted		0.99	1.00				0.38	1.00		0.11	1.00	1.00
Satd. Flow (perm)		1890	1567				719	1627		214	1900	1575
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	40	395	76	0	0	0	75	167	421	45	742	585
RTOR Reduction (vph)	0	0	53	0	0	0	0	85	0	0	0	261
Lane Group Flow (vph)	0	435	23	0	0	0	75	503	0	45	742	324
Confl. Peds. (#/hr)	2		4	8		6	4		8	6		2
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		34.4	34.4				29.6	29.6		56.3	56.3	56.3
Effective Green, g (s)		31.4	31.4				29.6	29.6		56.3	56.3	56.3
Actuated g/C Ratio		0.31	0.31				0.29	0.29		0.55	0.55	0.55
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		583	483				209	473		443	1051	871
v/s Ratio Prot								c0.31		0.02	c0.39	
v/s Ratio Perm		0.23	0.01				0.10			0.04		0.21
v/c Ratio		0.74	0.04				0.35	1.06		0.10	0.70	0.37
Uniform Delay, d1		31.5	24.6				28.5	36.0		15.3	16.6	12.7
Progression Factor		1.00	1.00				1.00	1.00		0.81	0.72	0.19
Incremental Delay, d2		6.9	0.1				1.0	59.2		0.0	1.8	0.2
Delay (s)		38.4	24.7				29.5	95.2		12.5	13.9	2.7
Level of Service		D	C				C	F		B	B	A
Approach Delay (s/veh)		36.4			0.0			87.8			9.1	
Approach LOS		D			A			F			A	

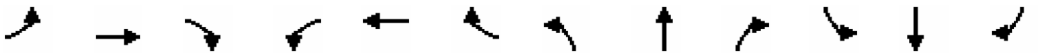
Intersection Summary			
HCM 2000 Control Delay (s/veh)	35.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	19.9
Intersection Capacity Utilization	90.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	407	0	207	970	0
Future Volume (vph)	0	407	0	207	970	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9		5.5	5.5	
Lane Util. Factor		1.00		1.00	0.95	
Frpb, ped/bikes		0.98		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00	
Frt		0.85		1.00	1.00	
Flt Protected		1.00		1.00	1.00	
Satd. Flow (prot)		1593		1900	3610	
Flt Permitted		1.00		1.00	1.00	
Satd. Flow (perm)		1593		1900	3610	
Peak-hour factor, PHF	1.00	1.00	1.00	1.00	1.00	1.00
Adj. Flow (vph)	0	407	0	207	970	0
RTOR Reduction (vph)	0	126	0	0	0	0
Lane Group Flow (vph)	0	281	0	207	970	0
Confl. Peds. (#/hr)	1	1	1			1
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)		20.8		69.5	69.5	
Effective Green, g (s)		20.8		69.5	69.5	
Actuated g/C Ratio		0.20		0.68	0.68	
Clearance Time (s)		5.9				
Vehicle Extension (s)		3.0				
Lane Grp Cap (vph)		325		1298	2467	
v/s Ratio Prot				0.11	c0.27	
v/s Ratio Perm		c0.18				
v/c Ratio		0.86		0.15	0.39	
Uniform Delay, d1		39.0		5.7	6.9	
Progression Factor		1.00		0.16	1.00	
Incremental Delay, d2		20.6		0.0	0.1	
Delay (s)		59.7		0.9	7.0	
Level of Service		E		A	A	
Approach Delay (s/veh)	59.7			0.9	7.0	
Approach LOS	E			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	101.7	Sum of lost time (s)	16.9
Intersection Capacity Utilization	61.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	985	50	0	222	0	0	0	10	4
Future Volume (veh/h)	0	0	0	985	50	0	222	0	0	0	10	4
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				985	50	0	222	0	0	0	10	4
Peak Hour Factor				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				938	48	0	406	0	0	0	261	105
Arrive On Green				0.60	0.54	0.00	0.20	0.00	0.00	0.00	0.20	0.20
Sat Flow, veh/h				1726	88	0	1378	0	0	0	1291	516
Grp Volume(v), veh/h				1035	0	0	222	0	0	0	0	14
Grp Sat Flow(s),veh/h/ln				1814	0	0	1378	0	0	0	0	1807
Q Serve(g_s), s				30.8	0.0	0.0	8.4	0.0	0.0	0.0	0.0	0.4
Cycle Q Clear(g_c), s				30.8	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.4
Prop In Lane				0.95		0.00	1.00		0.00	0.00		0.29
Lane Grp Cap(c), veh/h				986	0	0	406	0	0	0	0	366
V/C Ratio(X)				1.05	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.04
Avail Cap(c_a), veh/h				995	0	0	733	0	0	0	0	781
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				11.5	0.0	0.0	21.7	0.0	0.0	0.0	0.0	18.2
Incr Delay (d2), s/veh				42.8	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				19.6	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				54.3	0.0	0.0	22.8	0.0	0.0	0.0	0.0	18.2
LnGrp LOS				F			C					B
Approach Vol, veh/h					1035			222			14	
Approach Delay, s/veh					54.3			22.8			18.2	
Approach LOS					D			C			B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	17.0	39.7	17.0
Change Period (Y+Rc), s	5.5	5.9	5.5
Max Green Setting (Gmax), s	24.5	34.1	24.5
Max Q Clear Time (g_c+I1), s	2.4	32.8	10.8
Green Ext Time (p_c), s	0.0	1.0	1.0

Intersection Summary	
HCM 7th Control Delay, s/veh	48.4
HCM 7th LOS	D

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	4.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	20	313	0	15	230	0
Future Vol, veh/h	20	313	0	15	230	0
Conflicting Peds, #/hr	0	8	5	0	8	5
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	100	100	100	100	100	100
Heavy Vehicles, %	3	3	3	3	0	0
Mvmt Flow	20	313	0	15	230	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	341	0	208	190
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	23	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1213	-	785	857
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	1005	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1203	-	773	847
Mov Cap-2 Maneuver	-	-	-	-	773	-
Stage 1	-	-	-	-	845	-
Stage 2	-	-	-	-	997	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	11.61
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	773	-	-	1203	-
HCM Lane V/C Ratio	0.297	-	-	-	-
HCM Control Delay (s/veh)	11.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.2	-	-	0	-

Intersection: 2: E Mercer Way & Frontage Rd

Movement	WB	NB	B18	SB
Directions Served	LR	TR	T	LT
Maximum Queue (ft)	91	81	22	185
Average Queue (ft)	18	11	1	24
95th Queue (ft)	70	55	18	109
Link Distance (ft)	66	90	184	256
Upstream Blk Time (%)	5	1		0
Queuing Penalty (veh)	11	2		1
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	12	0	1	0	0	0	0	52	0	0	43	13
Future Vol, veh/h	12	0	1	0	0	0	0	52	0	0	43	13
Conflicting Peds, #/hr	1	0	1	1	0	1	1	0	1	1	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	25	25	25	25	25	25	25	25	25	25	25	25
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	48	0	4	0	0	0	0	208	0	0	172	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	408	408	200	382	434	210	225	0	0	209	0	0
Stage 1	199	199	-	209	209	-	-	-	-	-	-	-
Stage 2	209	209	-	173	225	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	557	536	846	580	518	835	1356	-	-	1374	-	-
Stage 1	807	740	-	798	733	-	-	-	-	-	-	-
Stage 2	798	733	-	834	721	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	556	535	844	576	517	834	1354	-	-	1373	-	-
Mov Cap-2 Maneuver	556	535	-	576	517	-	-	-	-	-	-	-
Stage 1	807	739	-	797	732	-	-	-	-	-	-	-
Stage 2	797	732	-	829	721	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.93	0	0	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1354	-	-	571	-	1373	-	-
HCM Lane V/C Ratio	-	-	-	0.091	-	-	-	-
HCM Control Delay (s/veh)	0	-	-	11.9	0	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.3	-	0	-	-

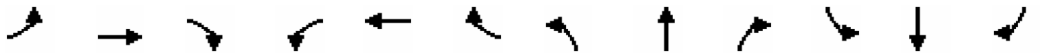
Intersection	
Int Delay, s/veh	5.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	57	120	6	46	90
Future Vol, veh/h	6	57	120	6	46	90
Conflicting Peds, #/hr	1	1	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	25	25	25	25
Heavy Vehicles, %	3	3	0	0	0	0
Mvmt Flow	24	228	480	24	184	360

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1222	494	0	0	505	0
Stage 1	493	-	-	-	-	-
Stage 2	729	-	-	-	-	-
Critical Hdwy	6.43	6.23	-	-	4.1	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.327	-	-	2.2	-
Pot Cap-1 Maneuver	197	573	-	-	1070	-
Stage 1	612	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	155	572	-	-	1069	-
Mov Cap-2 Maneuver	155	-	-	-	-	-
Stage 1	611	-	-	-	-	-
Stage 2	373	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	22.29	0	3.07
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	455	609	-
HCM Lane V/C Ratio	-	-	0.554	0.172	-
HCM Control Delay (s/veh)	-	-	22.3	9.1	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	3.3	0.6	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	95	15	0	0	0	10	49	108	10	122	105
Future Volume (vph)	30	95	15	0	0	0	10	49	108	10	122	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.97		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00				0.99	1.00		1.00	1.00	1.00
Frt		1.00	0.85				1.00	0.89		1.00	1.00	0.85
Flt Protected		0.98	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1877	1572				1799	1660		1805	1900	1615
Flt Permitted		0.98	1.00				0.48	1.00		0.12	1.00	1.00
Satd. Flow (perm)		1877	1572				919	1660		237	1900	1615
Peak-hour factor, PHF	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Adj. Flow (vph)	120	380	60	0	0	0	40	196	432	40	488	420
RTOR Reduction (vph)	0	0	41	0	0	0	0	63	0	0	0	194
Lane Group Flow (vph)	0	500	19	0	0	0	40	565	0	40	488	226
Confl. Peds. (#/hr)			3	6		3	3		6	3		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		34.5	34.5				39.5	39.5		53.2	53.2	53.2
Effective Green, g (s)		31.5	31.5				39.5	39.5		53.2	53.2	53.2
Actuated g/C Ratio		0.32	0.32				0.40	0.40		0.54	0.54	0.54
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		599	501				367	664		251	1024	870
v/s Ratio Prot								c0.34		0.01	c0.26	
v/s Ratio Perm		0.27	0.01				0.04			0.07		0.14
v/c Ratio		0.83	0.03				0.10	0.85		0.15	0.47	0.26
Uniform Delay, d1		31.1	23.1				18.5	26.9		16.2	14.1	12.1
Progression Factor		1.00	1.00				1.00	1.00		0.96	0.90	0.71
Incremental Delay, d2		11.2	0.0				0.1	10.2		0.2	0.3	0.1
Delay (s)		42.4	23.2				18.6	37.1		15.9	13.1	8.8
Level of Service		D	C				B	D		B	B	A
Approach Delay (s/veh)		40.4			0.0			36.0			11.3	
Approach LOS		D			A			D			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	26.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	19.9
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	52	0	79	185	0
Future Volume (vph)	1	52	0	79	185	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1615		1900	3610	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1615		1900	3610	
Peak-hour factor, PHF	0.25	0.25	0.25	0.25	0.25	0.25
Adj. Flow (vph)	4	208	0	316	740	0
RTOR Reduction (vph)	0	192	0	0	0	0
Lane Group Flow (vph)	4	16	0	316	740	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)	7.8	7.8		79.5	79.5	
Effective Green, g (s)	7.8	7.8		79.5	79.5	
Actuated g/C Ratio	0.08	0.08		0.81	0.81	
Clearance Time (s)	5.9	5.9				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	142	127		1530	2907	
v/s Ratio Prot	0.00			0.17	c0.20	
v/s Ratio Perm		c0.01				
v/c Ratio	0.02	0.12		0.20	0.25	
Uniform Delay, d1	41.9	42.2		2.2	2.3	
Progression Factor	1.00	1.00		0.09	1.00	
Incremental Delay, d2	0.0	0.4		0.0	0.0	
Delay (s)	42.0	42.7		0.2	2.3	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	42.7			0.2	2.3	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	8.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.26		
Actuated Cycle Length (s)	98.7	Sum of lost time (s)	16.9
Intersection Capacity Utilization	19.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	185	2	1	74	1	0	0	1	0
Future Volume (veh/h)	0	0	0	185	2	1	74	1	0	0	1	0
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				740	8	4	296	4	0	0	4	0
Peak Hour Factor				0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				817	9	4	507	5	0	0	498	0
Arrive On Green				0.52	0.46	0.52	0.26	0.26	0.00	0.00	0.26	0.00
Sat Flow, veh/h				1780	19	10	1407	19	0	0	1900	0
Grp Volume(v), veh/h				752	0	0	300	0	0	0	4	0
Grp Sat Flow(s),veh/h/ln				1809	0	0	1426	0	0	0	1900	0
Q Serve(g_s), s				19.5	0.0	0.0	10.1	0.0	0.0	0.0	0.1	0.0
Cycle Q Clear(g_c), s				19.5	0.0	0.0	10.2	0.0	0.0	0.0	0.1	0.0
Prop In Lane				0.98		0.01	0.99		0.00	0.00		0.00
Lane Grp Cap(c), veh/h				830	0	0	512	0	0	0	498	0
V/C Ratio(X)				0.91	0.00	0.00	0.59	0.00	0.00	0.00	0.01	0.00
Avail Cap(c_a), veh/h				1091	0	0	818	0	0	0	903	0
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	1.00	0.00
Uniform Delay (d), s/veh				11.5	0.0	0.0	17.8	0.0	0.0	0.0	14.1	0.0
Incr Delay (d2), s/veh				9.3	0.0	0.0	1.1	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				7.4	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				20.8	0.0	0.0	18.9	0.0	0.0	0.0	14.1	0.0
LnGrp LOS				C			B				B	
Approach Vol, veh/h					752			300			4	
Approach Delay, s/veh					20.8			18.9			14.1	
Approach LOS					C			B			B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	19.0	32.5	19.0
Change Period (Y+Rc), s	5.5	5.9	5.5
Max Green Setting (Gmax), s	24.5	34.1	24.5
Max Q Clear Time (g_c+I1), s	2.1	21.5	12.2
Green Ext Time (p_c), s	0.0	5.2	1.4

Intersection Summary	
HCM 7th Control Delay, s/veh	20.2
HCM 7th LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	3	50	0	10	57	0
Future Vol, veh/h	3	50	0	10	57	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	25	25	25	25	25	25
Heavy Vehicles, %	2	2	7	7	0	0
Mvmt Flow	12	200	0	40	228	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	212	0	152	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	40	-
Critical Hdwy	-	-	4.17	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.263	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1329	-	844	947
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	988	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1329	-	844	947
Mov Cap-2 Maneuver	-	-	-	-	844	-
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	988	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	10.83
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	844	-	-	1329	-
HCM Lane V/C Ratio	0.27	-	-	-	-
HCM Control Delay (s/veh)	10.8	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Intersection: 2: E Mercer Way & Frontage Rd

Movement	WB	NB	B18	SB
Directions Served	LR	TR	T	LT
Maximum Queue (ft)	80	89	3	156
Average Queue (ft)	16	10	0	18
95th Queue (ft)	64	54	3	84
Link Distance (ft)	66	90	184	256
Upstream Blk Time (%)	4	0		0
Queuing Penalty (veh)	12	1		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

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	36	0	2	0	1	2	0	152	1	0	182	42
Future Vol, veh/h	36	0	2	0	1	2	0	152	1	0	182	42
Conflicting Peds, #/hr	1	0	1	0	0	0	1	0	0	0	0	1
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	40	0	2	0	1	2	0	169	1	0	202	47

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	397	397	228	373	419	170	250	0	0	170	0	0
Stage 1	227	227	-	169	169	-	-	-	-	-	-	-
Stage 2	170	170	-	203	250	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	567	544	817	588	528	879	1327	-	-	1420	-	-
Stage 1	781	720	-	837	762	-	-	-	-	-	-	-
Stage 2	836	762	-	803	704	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	563	543	815	586	528	878	1326	-	-	1420	-	-
Mov Cap-2 Maneuver	563	543	-	586	528	-	-	-	-	-	-	-
Stage 1	780	719	-	837	762	-	-	-	-	-	-	-
Stage 2	832	762	-	800	703	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.79	10.03	0	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1326	-	-	572	719	1420	-	-
HCM Lane V/C Ratio	-	-	-	0.074	0.005	-	-	-
HCM Control Delay (s/veh)	0	-	-	11.8	10	0	-	-
HCM Lane LOS	A	-	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

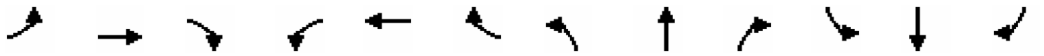
Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	111	360	13	50	375
Future Vol, veh/h	14	111	360	13	50	375
Conflicting Peds, #/hr	3	3	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	16	131	424	15	59	441

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	996	437	0	0	442	0
Stage 1	434	-	-	-	-	-
Stage 2	562	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	273	624	-	-	1129	-
Stage 1	657	-	-	-	-	-
Stage 2	575	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	253	620	-	-	1126	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	533	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.3	0	0.99
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	533	212	-
HCM Lane V/C Ratio	-	-	0.276	0.052	-
HCM Control Delay (s/veh)	-	-	14.3	8.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.1	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	340	90	0	0	0	86	160	235	20	320	530
Future Volume (vph)	50	340	90	0	0	0	86	160	235	20	320	530
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		8.5	8.5				5.5	5.5		5.9	5.5	5.5
Lane Util. Factor		1.00	1.00				1.00	1.00		1.00	1.00	1.00
Frpb, ped/bikes		1.00	0.97				1.00	0.98		1.00	1.00	1.00
Flpb, ped/bikes		1.00	1.00				0.99	1.00		1.00	1.00	1.00
Frt		1.00	0.85				1.00	0.91		1.00	1.00	0.85
Flt Protected		0.99	1.00				0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)		1888	1576				1800	1697		1805	1900	1615
Flt Permitted		0.99	1.00				0.55	1.00		0.26	1.00	1.00
Satd. Flow (perm)		1888	1576				1050	1697		497	1900	1615
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	54	366	97	0	0	0	92	172	253	22	344	570
RTOR Reduction (vph)	0	0	53	0	0	0	0	45	0	0	0	284
Lane Group Flow (vph)	0	420	44	0	0	0	92	380	0	22	344	286
Confl. Peds. (#/hr)			2	5		3	2		5	3		
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Turn Type	Perm	NA	Perm				Perm	NA		pm+pt	NA	Perm
Protected Phases		4						2		1	6	
Permitted Phases	4		4				2			6		6
Actuated Green, G (s)		33.1	33.1				31.0	31.0		44.3	44.3	44.3
Effective Green, g (s)		30.1	30.1				31.0	31.0		44.3	44.3	44.3
Actuated g/C Ratio		0.34	0.34				0.35	0.35		0.50	0.50	0.50
Clearance Time (s)		5.5	5.5				5.5	5.5		5.9	5.5	5.5
Vehicle Extension (s)		6.0	6.0				3.0	3.0		3.0	3.0	3.0
Lane Grp Cap (vph)		642	536				368	595		358	952	809
v/s Ratio Prot								c0.22		0.01	c0.18	
v/s Ratio Perm		0.22	0.03				0.09			0.03		0.18
v/c Ratio		0.65	0.08				0.25	0.63		0.06	0.36	0.35
Uniform Delay, d1		24.7	19.7				20.4	24.0		13.0	13.4	13.3
Progression Factor		1.00	1.00				1.00	1.00		0.97	0.93	0.94
Incremental Delay, d2		3.8	0.1				0.3	2.2		0.0	0.2	0.2
Delay (s)		28.5	19.9				20.7	26.2		12.8	12.7	12.8
Level of Service		C	B				C	C		B	B	B
Approach Delay (s/veh)		26.9			0.0			25.2			12.8	
Approach LOS		C			A			C			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	19.9
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	1	171	0	215	714	0
Future Volume (vph)	1	171	0	215	714	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9		5.5	5.5	
Lane Util. Factor	1.00	1.00		1.00	0.95	
Frt	1.00	0.85		1.00	1.00	
Flt Protected	0.95	1.00		1.00	1.00	
Satd. Flow (prot)	1805	1615		1900	3610	
Flt Permitted	0.95	1.00		1.00	1.00	
Satd. Flow (perm)	1805	1615		1900	3610	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	1	180	0	226	752	0
RTOR Reduction (vph)	0	165	0	0	0	0
Lane Group Flow (vph)	1	15	0	226	752	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%
Turn Type	Prot	Perm		NA	NA	
Protected Phases	1			2 4	2 4	
Permitted Phases		1				
Actuated Green, G (s)	7.4	7.4		69.6	69.6	
Effective Green, g (s)	7.4	7.4		69.6	69.6	
Actuated g/C Ratio	0.08	0.08		0.79	0.79	
Clearance Time (s)	5.9	5.9				
Vehicle Extension (s)	3.0	3.0				
Lane Grp Cap (vph)	151	135		1495	2842	
v/s Ratio Prot	0.00			0.12	c0.21	
v/s Ratio Perm		c0.01				
v/c Ratio	0.00	0.11		0.15	0.26	
Uniform Delay, d1	37.1	37.4		2.2	2.5	
Progression Factor	1.00	1.00		0.11	1.00	
Incremental Delay, d2	0.0	0.3		0.0	0.0	
Delay (s)	37.1	37.8		0.2	2.5	
Level of Service	D	D		A	A	
Approach Delay (s/veh)	37.8			0.2	2.5	
Approach LOS	D			A	A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	7.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.27		
Actuated Cycle Length (s)	88.4	Sum of lost time (s)	16.9
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	0	0	709	5	1	215	3	0	0	3	3
Future Volume (veh/h)	0	0	0	709	5	1	215	3	0	0	3	3
Initial Q (Qb), veh				0	0	0	0	0	0	0	0	0
Lane Width Adj.				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)				1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach					No			No			No	
Adj Sat Flow, veh/h/ln				1900	1900	1900	1900	1900	0	0	1900	1900
Adj Flow Rate, veh/h				716	5	1	217	3	0	0	3	3
Peak Hour Factor				0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
Percent Heavy Veh, %				0	0	0	0	0	0	0	0	0
Cap, veh/h				826	6	1	452	4	0	0	177	177
Arrive On Green				0.53	0.46	0.53	0.20	0.20	0.00	0.00	0.20	0.20
Sat Flow, veh/h				1795	13	3	1398	19	0	0	872	872
Grp Volume(v), veh/h				722	0	0	220	0	0	0	0	6
Grp Sat Flow(s),veh/h/ln				1810	0	0	1418	0	0	0	0	1743
Q Serve(g_s), s				14.9	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.1
Cycle Q Clear(g_c), s				14.9	0.0	0.0	6.3	0.0	0.0	0.0	0.0	0.1
Prop In Lane				0.99		0.00	0.99		0.00	0.00		0.50
Lane Grp Cap(c), veh/h				833	0	0	456	0	0	0	0	355
V/C Ratio(X)				0.87	0.00	0.00	0.48	0.00	0.00	0.00	0.00	0.02
Avail Cap(c_a), veh/h				1314	0	0	985	0	0	0	0	997
HCM Platoon Ratio				1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)				1.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	1.00
Uniform Delay (d), s/veh				8.9	0.0	0.0	16.2	0.0	0.0	0.0	0.0	13.6
Incr Delay (d2), s/veh				4.4	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0
Initial Q Delay(d3), s/veh				0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln				4.4	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh				13.3	0.0	0.0	16.9	0.0	0.0	0.0	0.0	13.7
LnGrp LOS				B			B					B
Approach Vol, veh/h					722			220			6	
Approach Delay, s/veh					13.3			16.9			13.7	
Approach LOS					B			B			B	

Timer - Assigned Phs	4	6	8
Phs Duration (G+Y+Rc), s	14.2	28.6	14.2
Change Period (Y+Rc), s	5.5	5.9	5.5
Max Green Setting (Gmax), s	24.5	34.1	24.5
Max Q Clear Time (g_c+I1), s	2.1	16.9	8.3
Green Ext Time (p_c), s	0.0	5.9	1.1

Intersection Summary	
HCM 7th Control Delay, s/veh	14.2
HCM 7th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	2	63	0	10	110	0
Future Vol, veh/h	2	63	0	10	110	0
Conflicting Peds, #/hr	0	6	3	0	6	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	47	47	47	47	47	47
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	4	134	0	21	234	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	144	0	105	80
Stage 1	-	-	-	-	77	-
Stage 2	-	-	-	-	27	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1450	-	898	985
Stage 1	-	-	-	-	951	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1442	-	888	977
Mov Cap-2 Maneuver	-	-	-	-	888	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	995	-

Approach	EB	WB	NB
HCM Control Delay, s/v	0	0	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	888	-	-	1442	-
HCM Lane V/C Ratio	0.264	-	-	-	-
HCM Control Delay (s/veh)	10.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	1.1	-	-	0	-

Appendix D: Trip Generation Calculations

Attachment B: Trip Generation

Herzl Private School

Proposed Use									Gross Trips			Total Net New		
Land Use	**Setting**	**Size**	**Units**	**Model**	**Equation**	**Rate**	**Units**	**Inbound %**	**Inbound**	**Outbound**	**Subtotal**	**Inbound**	**Outbound**	**Total**
Private School (K-8) (LU 530)		**150**	students											
School Peak Hour				Equation (log)	ln(T) = 0.98*ln(x)-0.38	-	-	47%	44	50	94	44	50	94
AM Peak Hour				Equation (lin)	T = 1.11x - 40.99	-	-	56%	71	55	126	71	55	126
PM Peak Hour				Rate	-	0.26	per student	46%	18	21	39	18	21	39
General Office Building (LU 710)		**12,300**	sf											
School Peak Hour				Equation (log)	ln(T) = 0.87*ln(x)+3.05	-	-	50%	7	8	15	7	8	15
AM Peak Hour				Equation (log)	ln(T) = 0.86*ln(x)+1.16	-	-	88%	25	3	28	25	3	28
PM Peak Hour				Equation (log)	ln(T) = 0.83*ln(x)+1.29	-	-	17%	5	24	29	5	24	29
Subtotal														
PM Peak Hour of Generator									51	58	109	51	58	109
AM Peak Hour									96	58	154	96	58	154
PM Peak Hour									23	45	68	23	45	68

Net New Trips			
PM Peak Hour of Generator	51	58	109
AM Peak Hour	96	58	154
PM Peak Hour	23	45	68

Notes:

1. Trip rates based on Institute of Transportation Engineers' (ITE) *Trip Generation* 11th Edition equation and average trip rate as shown above.
2. AVO = average vehicle occupancy. Retail and Residential AVO based on NCHRP 365 for urban areas with populations over 1 million people. No AVO rate if trips calculated based on person trip rate

3. School Peak Hour trips for LU 530 based on PM peak hour of generator. School Peak Hour trips for LU 710 calculated based on time of day distributions at 3-4 pm given in ITE Trip Generation 11th Edition appendices, and daily trips given from equation. Inbound trips for school peak hour are 7.3% of 94 daily inbound trips. Outbound school peak hour trips are 8.4% of 94 daily outbound trips. Total school peak hour trips are 7.8% of 188 total daily trips

Appendix E: North Carolina Department of Transportation (NCDOT) in *NCDOT Research Project 2021-15*

Queue Length and Trip Generation Results

School Traffic Data Analysis

The proposed calculator dataset consists of partial or complete data at 85 schools, including 33 morning (AM) carpool queues, 63 afternoon (PM) carpool queues, and 28 full-day arrival and departure counts. All schools in the proposed calculator were observed during the first and second phases of this study. The tables below compare this dataset to the existing MSTA calculator.

Several schools generated queues with parallel lines of vehicles throughout some length of the queue. Additionally, some schools served afternoon carpool traffic with multiple separate loading zones. In both cases, the maximum queue lengths in feet from all component queues were added together, under the assumption that a length of queue equivalent to the combined maximums would be generated if only a single loading zone was available (i.e. a worst-case combination was created, regardless of time offsets).

Table 6, below, shows the predicted maximum queue length in feet per student for the proposed calculator AM and PM queue. By default, a 30% factor of safety is added in the calculator; the factor of safety has not been applied in the table below. Sample sizes are given as weights, where the total weights across all grade categories adds up to the total number of schools visited (or surveyed), and as sites visited, where every distinct location that was visited and contributed to a grade category is counted as an observation.

Table 6. Predicted maximum queue length in feet per student

Category	Sample Size AM Queue	Max AM Queue (Feet/Student)	Sample Size PM Queue	Max PM Queue (Feet/Student)
Public Elem	3.000 (3)	0.771	16.000 (16)	2.710
Public Middle	4.000 (4)	1.077	12.000 (12)	1.923
Public High	6.000 (6)	0.904	11.000 (11)	0.995
Private PK-K	0.811 (6)	2.215	1.234 (8)	4.952
Private Grades 1-10	5.617 (7)	1.653	7.834 (10)	3.758
Private Grade 11	0.339 (4)	0.921	0.519 (6)	3.448
Private Grade 12	0.233 (4)	1.142	0.413 (6)	3.487
Urban Charter Grades K-10	11.917 (13)	2.360	12.917 (14)	4.629
Urban Charter Grade 11	0.644 (3)	1.764	0.644 (3)	1.715
Urban Charter Grade 12	0.438 (3)	1.778	0.438 (3)	1.719

Table 7, below, compares the predicted maximum queue lengths from the existing and proposed calculator. For this table, the default 30% factor of safety is applied, and for the existing MSTA calculator,

Appendix F: Joint Transportation Management Plan

Joint Transportation Management Plan

Herzl-Ner Tamid Conservative Congregation (HNT) and Frankel Religious School (FRS)

Jewish Day School of Metropolitan Seattle (JDS)

1. HNT and JDS will each appoint a Transportation Coordinator. The two Transportation Coordinators shall meet annually to review the Joint Transportation Management Plan (JTMP) and make adjustments as needed to ensure smooth operation.

2. Daily Schedule (weekends and Jewish holidays are reserved for HNT/FRS use except by prior, scheduled arrangement):

	Mon	Tues	Wed	Thu	Fri
8:00-8:30	JDS K-8 drop-off	JDS K-8 drop-off	JDS K-8 drop-off	JDS K-8 drop-off	JDS K-8 drop-off
8:30-8:45	JDS preschool drop-off	JDS preschool drop-off	JDS preschool drop-off	JDS preschool drop-off	JDS preschool drop-off
3:00-3:30	JDS preschool pick-up	JDS preschool pick-up	JDS preschool pick-up	JDS preschool pick-up	JDS preschool pick-up
3:30-3:45	JDS K-8 pick-up	JDS K-8 pick-up	JDS K-8 pick-up	JDS K-8 pick-up	JDS K-8 pick-up
after 3:45	Scheduled HNT/MP room activities, with coordinated start times	Scheduled HNT/MP room activities, with coordinated start times	Scheduled HNT/MP room activities, with coordinated start times	Scheduled HNT/MP room activities, with coordinated start times	Scheduled HNT/MP room activities, with coordinated start times
4:15-4:45		FRS drop-off;			
5:00-5:15	JDS K-8 activity pick-up	JDS K-8 activity pick-up	JDS K-8 activity pick-up	JDS K-8 activity pick-up	JDS K-8 activity pick-up
4-6 PM	JDS aftercare staggered pick-up	JDS aftercare staggered pick-up	JDS aftercare staggered pick-up	JDS aftercare staggered pick-up	JDS aftercare staggered pick-up
6:00-6:15		6 PM FRS pick-up			

3. Pick-up and drop-off
    a. JDS
        i. JDS drop-off and pick-up will occur in front of their main entrance.
        ii. Caregivers/parents will drive along the full loop before they drop-off/pick-up and exit.

iii. 4-5 staff members will be outside to maintain traffic flow.
iv. JDS staff will use bollards and stanchions to create a safe area for K-8 drop-off; preschool families will park and exit their cars.

b. FRS
i. FRS drop-off and pick-up will occur in front of the JDS main entrance.
ii. Caregivers/parents will drive along the full loop before they drop-off/pick-up and exit.
iii. 1-2 staff members will be outside to maintain traffic flow.
iv. FRS staff will use bollards and stanchions to create a safe area for drop-off.
v. Caregivers/parents wishing to park and stay on site may do so.
vi. Based on current numbers, there are up to 40 students at any time in the FRS.

4. Carpooling
   a. 4 carpool-priority spots shall be identified for JDS and FRS use.
   b. JDS and FRS will each create a school-specific signup for carpooling and include a link to the signup in each written and electronic newsletter that is distributed to parents/students.

5. Bussing
   a. JDS will have 3 bus routes that will be used to reduce individual car trips:
      i. Bellevue/Kirkland/Redmond: 30 students projected
      ii. Issaquah/Sammamish: 15 students projected
      iii. Seattle: 15 students projected

6. Transit
   a. JDS offers teaching staff the option of Orca cards at no cost.
   b. HNT offers staff the options of Orca cards at no cost.

7. Bike
   a. Bike parking is available outside the school.