

Transportation Impact Analysis

SKYLINE ELEMENTARY SCHOOL

Prepared for:
SRG Partnership, INC

December, 2020

Prepared by:



12131 113th Avenue NE, Suite 203
Kirkland, WA 98034-7120
Phone: 425-821-3665
Fax: 425-825-8434
www.transpogroup.com

20192.00

Table of Contents

Introduction	1
Project Description.....	1
Study Scope.....	1
Existing & Future Without-Project Conditions	4
Roadway Network.....	4
Traffic Volumes	4
Traffic Operations	8
Traffic Safety.....	9
Non-Motorized Facilities	9
Transit Service	11
Project Impacts	12
Trip Generation	12
Trip Distribution & Assignment	13
Traffic Volumes	13
Traffic Operations Impact	20
Site Access Analysis.....	20
Parking Demand	21
Transit Impacts	23
Non-Motorized Impacts.....	23
Mitigation	24
Signal Warrant Analysis.....	24
Findings and Recommendations	25

Appendix

Appendix A: Existing Skyline Elementary Trip Distribution and Assignment
Appendix B: Detailed Traffic Counts
Appendix C: LOS Definitions
Appendix D: LOS Worksheets
Appendix E: Left Turn Lane Warrants
Appendix F: Parking Demand
Appendix G: Signal Warrant Worksheets

Figures

Figure 1.	Site Vicinity and Study Intersections	2
Figure 2.	Preliminary Site Plan	3
Figure 3.	Existing Weekday Peak Hour Traffic Volumes.....	6
Figure 4.	Future (2025) Without-Project Weekday Peak Hour Traffic Volumes.....	7
Figure 5.	Existing Non-Motorized Facilities	10
Figure 6.	New Elementary School/Preschool Project Trip Distribution	15
Figure 7.	New Elementary School/Preschool Project Trip Assignment	16
Figure 8.	Swing School Project Trip Distribution	17
Figure 9.	Swing School Project Trip Assignment	18
Figure 10.	Future (2025) With-Project Weekday Peak Hour Traffic Volumes.....	19
Figure 11.	New Elementary School/Professional Development Center Parking Layout....	23

Tables

Table 1.	Study Area Existing Roadway Network Summary	4
Table 2.	Existing & Future Without-Project Weekday School Peak Hour Intersection LOS Summary	8
Table 3.	Three- Year Collision Summary – 2017 to 2019	9
Table 4.	Existing Transit Service	11
Table 5.	Estimated Weekday Vehicle Trip Generation	13
Table 6.	Future Without-Project & With-Project Weekday Peak Hour Intersection LOS Summary	20
Table 7.	Future With-Project Site Access Weekday Peak Hour Intersection LOS Summary	21
Table 8.	Estimated Weekday Parking Demand.....	22

Introduction

This transportation impact analysis (TIA) identifies potential traffic-related impacts associated with the proposed creation of a new elementary school on the Skyline Elementary School campus. As necessary, mitigation measures were identified that offset or reduce significant impacts.

Project Description

Skyline Elementary school is located in Tacoma, Washington west of SR 163, south of N 26th Street. The proposed Skyline Elementary School site expansion includes construction of a new elementary school and repurposing of the existing Skyline Elementary School building. With the development of the new Skyline Elementary school, the existing building would be used as a swing school for other schools in Tacoma undergoing construction. The swing school could accommodate elementary or middle school populations. The new elementary school is expected to have an elementary student capacity of 389 and a preschool student capacity of 32 students. The preschool would operate in two sessions, one during the morning and one during the afternoon. The swing school is expected to have a maximum student capacity of 450. The existing professional development center on-site is proposed to continue to operate, with no changes. The project location and study intersections are shown in Figure 1 and a preliminary site plan is shown in Figure 2. Access to the swing school is proposed via two existing driveways and access to the new elementary school is proposed via two new driveways. The eastern driveway would accommodate bus access for the site as well as minimal amount of staff parking. The western access to the new site would provide access to on-site parent and staff parking. A horizon year of 2025 was utilized for the forecast analysis.

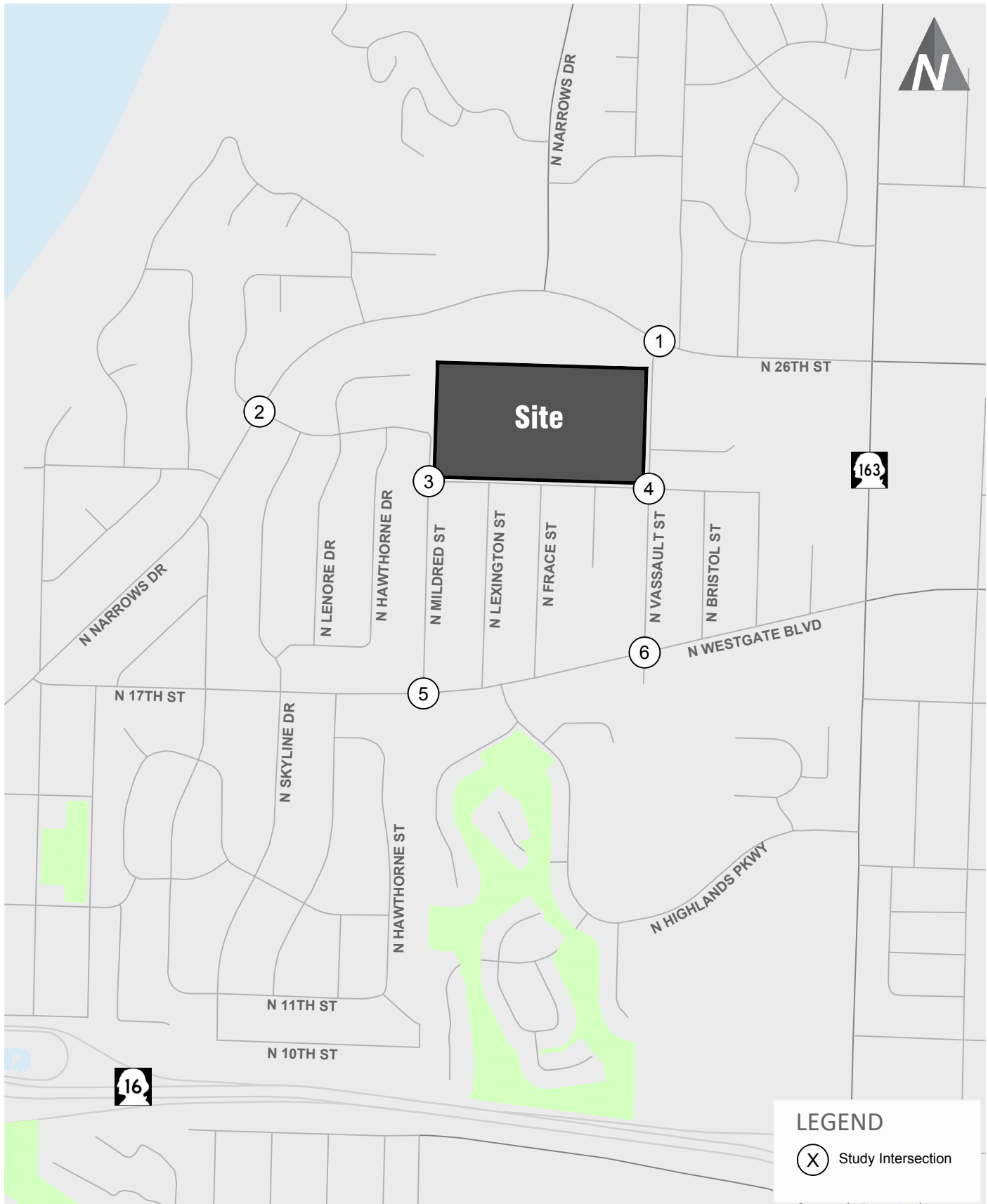
Study Scope

The scope of this analysis is based on coordination with City of Tacoma staff. Based on anticipated travel patterns for project traffic, six intersections were included within the study area.

1. N Vassault Street / N 26th Street
2. N Narrows Drive / N 24th Street
3. N Mildred Street / N 23rd Street
4. N Vassault Street / N 23rd Street
5. N Vassault Street / N 17th Street
6. N Vassault Street / N Westgate Boulevard

Counts at these intersections were conducted during the weekday AM School Peak hour (between 8:00 a.m. and 10:00 a.m.) and PM School Peak Hour (between 2:00 p.m. and 4:00 p.m.) in October 2020. Traffic counts collected in July 2020 were adjusted to account for COVID-19 impacts. This is discussed in more detail in the Traffic Volumes section of this report.

This report includes a description of conditions in the vicinity of the project site, including the roadway network, existing and future without-project (2025) peak hour traffic volumes, traffic operations, traffic safety, non-motorized facilities, and transit service. Future (2025) without-project conditions were evaluated and then compared to future without-project conditions to identify the relative impacts of the proposed project on the surrounding transportation system.



Site Vicinity

Skyline Elementary

FIGURE

1

Existing & Future Without-Project Conditions

This section describes both existing and future (2025) without-project conditions within the study area. Study area characteristics are provided for the roadway network and are followed by sections describing planned improvements, existing and forecast without-project traffic volumes, traffic operations, traffic safety, non-motorized facilities, and transit service.

Roadway Network

The following sections describe the existing roadway network within the vicinity of the proposed project and any anticipated changes resulting from planned improvements.

Existing Inventory

The existing roadway characteristics in the proposed project vicinity are described in detail in Table 1.

Roadway	Arterial Classification¹	Posted Speed Limit	Number of Travel Lanes	Parking?	Sidewalks?	Bicycle Facilities?
N 17th Street/N Westgate Boulevard	Principal Arterial	35 mph	2	Yes	Yes	Yes
N 23rd Street	Local Road	20 mph	2	Yes	Yes	No
N 24th Street	Local Road	25 mph	2	Yes	No	No
N 26th Street	Collector	30 mph	3	No	Yes	Yes
N Mildred Street	Local Road	25 mph	2	Yes	Yes	No
N Narrows Drive	Minor Arterial ²	30 mph	3	No	Yes	Yes
N Vassault Street	Local Road	25 mph	2	Yes	Yes	No

1. Per City of Tacoma Transportation Master Plan, December 2015
2. Principal Arterial south of N 17th Street

Planned Improvements

Based on a review of the City of Tacoma's DRAFT Six-Year Comprehensive Transportation Improvement Program Amended 2020 and 2021-2026, no planned improvements in the project vicinity were identified.

Traffic Volumes

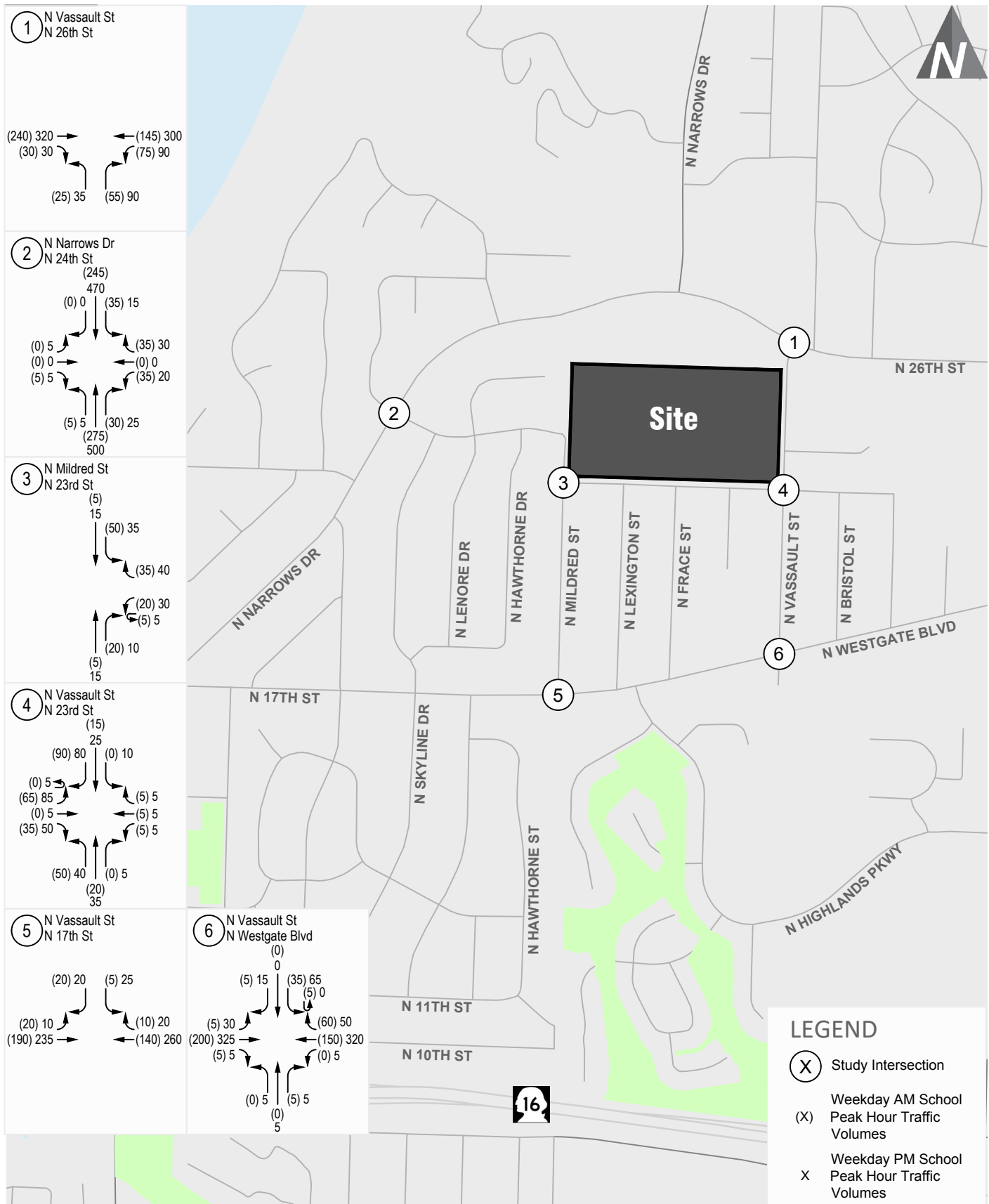
Existing traffic volumes were collected in October 2020. Given that travel patterns are currently impacted by the ongoing COVID-19 pandemic, adjustments were made to existing traffic counts to account for these impacts.

Volumes from the WSDOT Permanent Traffic Recorder (PTR) site along SR 16 at milepost 1.63 were analyzed to better understand the impacts on typical travel behavior throughout Tacoma. As expected, typical weekday volumes (Tuesday to Thursday) were noted to be lower in 2020 than in 2019 for this time frame. From April to July¹, the largest percent change in volumes from 2019 to 2020, were noted to be in April and the lowest percent change was noted to be in July. From July 2019 to July 2020, there was shown to be 5.6 percent less volume during typical weekdays in 2020. Given that the percent change in volumes is noted to be trending down, a 5.6 percent increase was added to all existing counts, to account for

¹ Most recent WSDOT PTR data includes up to July 2020.

the current decrease in traffic volumes as a result of the COVID-19 pandemic. Additionally, since the school is in a remote learning condition, trips from the existing Skyline Elementary School were estimated based on trips rates identified in the Institute of Transportation Engineers (ITE) Trip Generation Manual. These trips were based on a trip generation for a 389-student elementary school and 16-student preschool and were assigned based on the same trip distribution for the proposed new elementary school. The assumed trip distribution and assignment for the existing Skyline Elementary School trips is provided in Appendix A. Additionally, trips from the existing on-site professional development center were estimated and added to the study network. Trip generation was estimated based on average classroom occupancy numbers provided by the school district and assuming an average vehicle occupancy of 1.20. During the AM school peak hour, all trips were assumed to be entering the site. During the PM school peak hour, all trips were assumed to be exiting the site. The existing adjusted AM and PM school peak hour volumes are summarized in Figure 3. Detailed traffic counts are provided in Appendix B.

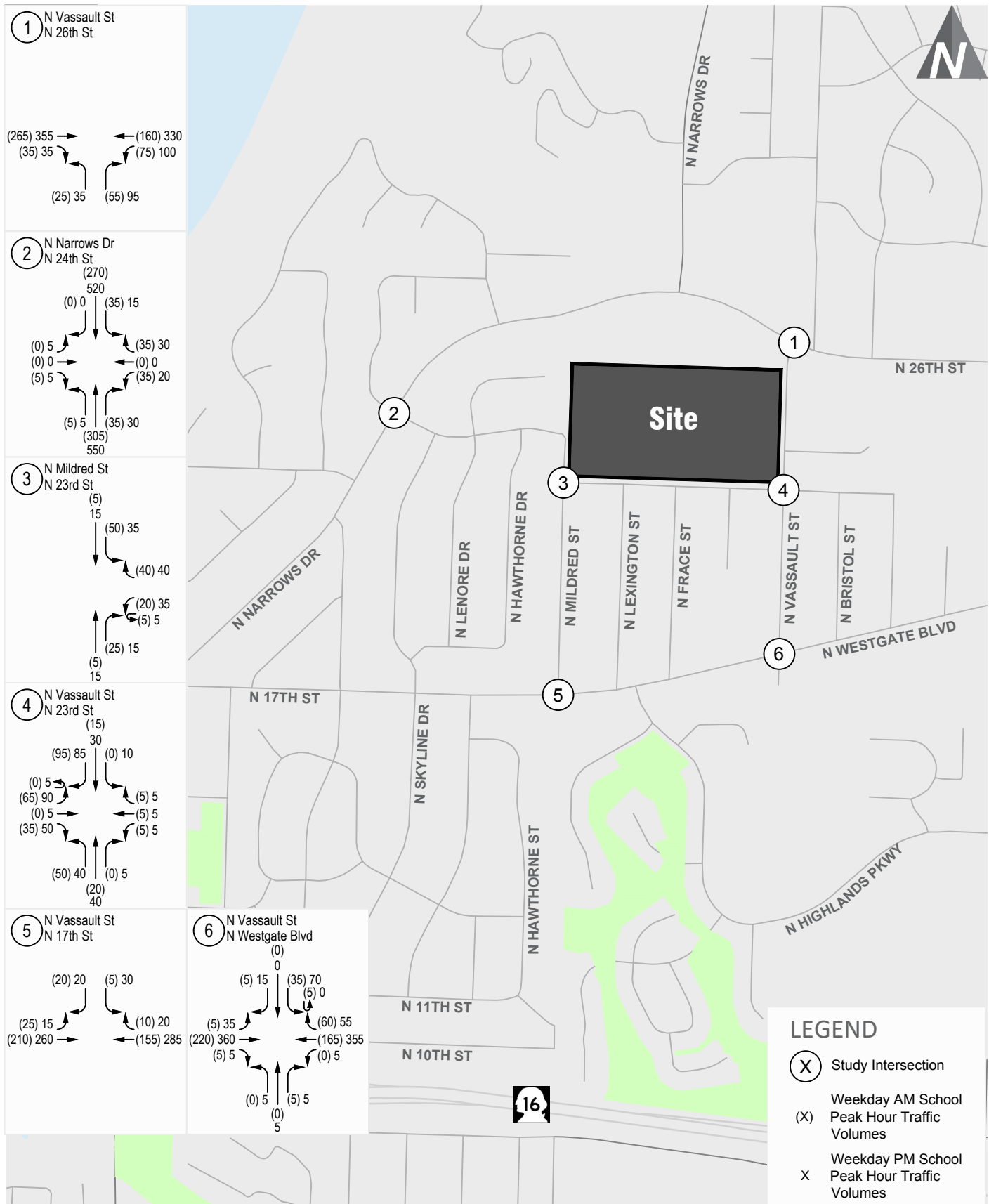
Future without-project volumes were estimated by applying an annual growth rate of 2 percent per year to existing volumes to forecast 2025 without-project conditions. Note that the annual growth rates were applied to the adjusted existing volumes only and were not applied to the Skyline Elementary and professional development center existing trip generation estimates. This growth rate is based on coordination with City staff. Future (2025) without-project traffic volumes are summarized in Figure 4.



Existing Weekday Peak Hour Traffic Volumes

FIGURE

3



Future (2025) Without-Project Weekday Peak Hour Traffic Volumes **FIGURE**

Traffic Operations

The operational characteristics of an intersection are determined by calculating the intersection level of service (LOS). Weekday AM and PM school peak hour traffic operations for existing and without-project conditions were evaluated at the study intersections based on the procedures identified in the *Highway Capacity Manual* (HCM 6th Edition) and were evaluated using Synchro 10. At signalized and all-way stop-controlled intersections, LOS is measured in average control delay per vehicle and is typically reported for the intersection as a whole. At side-street stop-controlled intersections, LOS is measured in delay per vehicle and reported for the worst operating movement.

Traffic operations for an intersection can be described alphabetically with a range of levels of service (LOS A through F), with LOS A indicating free-flowing traffic and LOS F indicating extreme congestion and long vehicle delays. Appendix C contains a detailed explanation of LOS criteria and definitions.

Existing and future without-project traffic operation results at the study intersections are summarized in Table 2. Detailed LOS worksheets for each intersection analysis are included in Appendix D. Traffic control, and intersection channelization was maintained between existing and future (2025) without-project conditions. The City of Tacoma has a LOS D standard.

Table 2. Existing & Future Without-Project Weekday School Peak Hour Intersection LOS Summary

Intersection	2020 Existing			2025 Without-Project		
	LOS ¹	Delay ²	WM ³	LOS	Delay	WM
<u>AM School Peak Hour</u>						
1. N Vassault Street/N 26th Street	B	11.7	NB	B	12.0	NB
2. N Narrows Drive/N 24th Street	C	15.7	WB	C	17.0	WB
3. N Mildred Street/N 23rd Street	A	9.5	WB	A	9.5	WB
4. N Vassault Street/N 23rd Street	B	10.8	EB	B	10.9	EB
5. N Vassault Street/N 17th Street	A	9.7	SB	A	9.8	SB
6. N Vassault Street/N Westgate Boulevard	B	12.8	SB	B	13.3	SB
<u>PM School Peak Hour</u>						
1. N Vassault Street/N 26th Street	B	13.5	NB	B	14.3	NB
2. N Narrows Drive/N 24th Street	C	20.2	WB	C	23.2	WB
3. N Mildred Street/N 23rd Street	A	9.4	WB	A	9.5	WB
4. N Vassault Street/N 23rd Street	B	11.5	EB	B	11.9	EB
5. N Vassault Street/N 17th Street	B	12.6	SB	B	13.6	SB
6. N Vassault Street/N Westgate Boulevard	D	26.4	SB	D	34.2	SB
^{1.} Level of Service (A – F) as defined by the <i>Highway Capacity Manual</i> (HCM), 6th Edition) ^{2.} Average delay per vehicle in seconds. ^{3.} Worst movement reported for unsignalized intersections. Not applicable for all-way stop-controlled intersections.						

As shown in Table 2, all study intersections currently operate at LOS C or better during the weekday AM and PM school peak hours.

Under 2025 without-project conditions, all study intersections are anticipated to continue to operate at the same LOS as existing conditions with little increase in calculated delay. All intersections are forecast to meet LOS standards.

Traffic Safety

Collision records for the most recent complete three-year period were reviewed for the off-site study intersections. Historical safety data was collected from the City of Tacoma's website for the period of January 1, 2017 to December 31, 2019. A review of historical collisions was completed to identify potential safety issues. Table 3 summarizes the collision history at the study intersections.

Table 3. Three- Year Collision Summary – 2017 to 2019

Location	Number of Collisions				Annual Average	Collisions per MEV ¹
	2017	2018	2019	Total		
1. N Vassault Street/N 26th Street	0	0	0	0	0.0	0.0
2. N Narrows Drive/N 24th Street	0	0	1	1	0.3	0.1
3. N Mildred Street/N 23rd Street	0	0	0	0	0.0	0.0
4. N Vassault Street/N 23rd Street	0	0	0	0	0.0	0.0
5. N Vassault Street/N 17th Street	0	0	0	0	0.0	0.0
6. N Vassault Street/N Westgate Boulevard	0	0	0	0	0.0	0.0

Source: City of Tacoma, 2020

1. MEV = Million entering vehicles

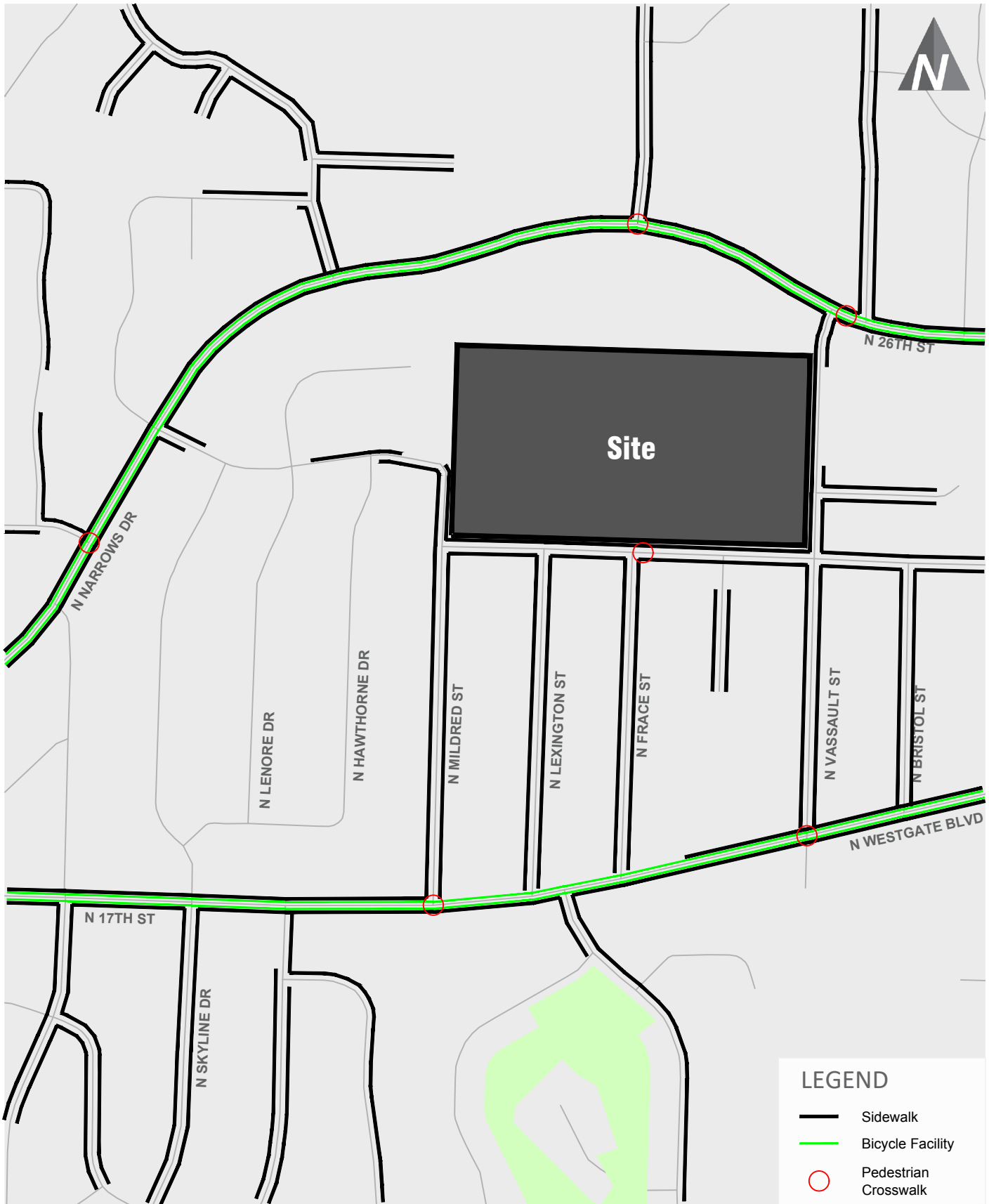
As shown in Table 3, there was only one collision recorded in the last three years, occurring at the N Narrows Drive/N 24th Street intersection. The one collision resulted in injury and involved a cyclist. The collision was a result of inattention from the driver. Due to the low number of crashes in the site vicinity, it was determined that no further safety analysis was required.

Non-Motorized Facilities

Within the study area, sidewalks are provided along both sides of N 23rd Street, fronting the school. Most of the study area provides sidewalks on at least one side. Crosswalks are provided at the N Mildred Street/N 23rd Street and N Vassault Street/N 17th Street intersections. Flashing crosswalks are provided at the N Vassault Street/N 26th Street and N Mildred Street/N 17th Street intersections.

Additionally, there is a crosswalk across N 23rd Street at N Frace Street and N Mildred Street at N 24th Street leading to Skyline Elementary School.

There are dedicated bicycle facilities within the study area along N 17th Street/N Westgate Boulevard, N 26th Street and N Narrows Drive. The existing non-motorized facilities described are shown in Figure 5.



Existing Non-Motorized Facilities

Skyline Elementary

FIGURE

5

Transit Service

Transit service in the study area is operated by Pierce Transit. There is one bus route adjacent to the project site (Route 10), with multiple stops located along N Vassault Street. The nearest stop to the school is less than a quarter mile away. There is also a bus route that runs along SR 163 (Route 16). The nearest stop is at N Westgate Boulevard, a little over half a mile away. Table 4 summarizes the bus route that operates in the project vicinity.

Table 4. Existing Transit Service

Route	Area Served	Approximate Operating Hours	AM and PM Peak headway
10	Point Defiance Ferry Terminal to Tacoma Community College TC	Mon-Fri: 7:00 a.m. to 9:45 p.m.	30 Minutes
		Sat: 9:15 a.m. to 7:35 p.m.	
		Sun: 9:45 a.m. to 4:15 p.m.	
16	10th & Commerce TC - Zone C to Tacoma Community College TC	Mon-Fri: 6:15 a.m. to 9:15 p.m.	30 Minutes
		Sat: 8:15 a.m. to 7:30 p.m.	
		Sun: 10:45 a.m. to 7:15 p.m.	

Source: Pierce Transit (November 2020)

Project Impacts

This section of the analysis documents the proposed project's impacts on the surrounding roadway network and study intersections. First, weekday AM and PM school peak hour traffic volumes were estimated, distributed, and assigned to adjacent roadways and intersections within the study area. Next, project trips were added to background traffic and potential impacts to off-site traffic volumes and traffic operations were forecasted. Potential impacts to non-motorized facilities, and transit, and safety are also identified.

The impacts of the Skyline Elementary school project reflect the addition of the new school as well as the repurposing of the current school and related change in student capacity. All assumptions related to the PDC are consistent between the with and without-project conditions as no changes are proposed as part of the Skyline Elementary project.

Trip Generation

Project trip generation estimates were developed for the Skyline Elementary school based on the Institute of Transportation Engineers (ITE) Trip Generation, 10th Edition, 2017. The ITE Trip Generation manual is a nationally recognized and locally accepted compilation of studies used for estimating trip generation for new developments.

The new elementary school is projected to have an enrollment of 389 students. It would also include a preschool with an enrollment of 32 students. The preschool would operate with two sessions, with one in the morning, starting at the same time as the elementary school. The second session would be in the afternoon, with the ending around the same time as the elementary school. Trip generation for the new elementary school and the existing Skyline Elementary School were estimated using Land Use # 520 (Elementary School) and the preschool was estimated using Land Use # 565 (Day-Care).

With completion of the project, the existing Skyline Elementary School building would be repurposed and utilized as a swing school building. This would mean surrounding area schools undergoing construction would be temporarily moved to this building. To estimate the trip generation for the swing school, schools that would utilize this building in the next five years were considered. The swing school use was assumed to be a kindergarten to eighth grade school. This would represent the largest trip generation of the schools that would utilize the swing school building in the next five years, providing a conservative analysis. Based on the number of kindergarten to fifth grade students and sixth to eighth grade students, the trip generation was broken into two land uses. The kindergarten to fifth grade students were estimated using Land Use # 520 (Elementary School) and the sixth to eighth grade students were estimated using Land Use # 522 (Middle School/Junior High School). The percentage of sixth to eighth grade students (approximately 25 percent), was based on the current split at Bryant Montessori School; one of the schools anticipated to occupy the swing space in the future. A maximum of 450 students was assumed for the swing school trip generation.

Table 5 summarizes trip generation for each of the time periods, as well as the number of net new trips the project generates.

Table 5. Estimated Weekday Vehicle Trip Generation

Land Use	Size	Daily Trips	AM Peak Hour Trips			PM School Peak Hour Trips		
			In	Out	Total	In	Out	Total
Proposed Project								
Elementary School – New Building	389 students	735	137	116	253	59	73	132
Preschool – New Building	32 students	131	13	12	25	12	14	26
Swing School Use								
Elementary school population	337 students	637	118	101	219	52	63	115
Middle school Population	113 students	241	43	36	79	18	22	40
<u>Proposed Project Subtotal</u>		<u>1,744</u>	<u>311</u>	<u>265</u>	<u>576</u>	<u>141</u>	<u>172</u>	<u>313</u>
Existing School								
Elementary School	389 students	735	137	116	253	59	73	132
Preschool	16 students	131	13	12	25	12	14	26
Net New Vehicle Trips		878	161	137	298	70	85	155

As shown in Table 5, the proposed project is anticipated to generate approximately 1,744 daily trips, 576 weekday AM school peak hour gross trips and 313 weekday PM school peak hour gross trips. It is anticipated to generate 878 net new daily trips, 298 weekday AM school peak hour net new trips and 155 weekday PM school peak hour trips.

Trip Distribution & Assignment

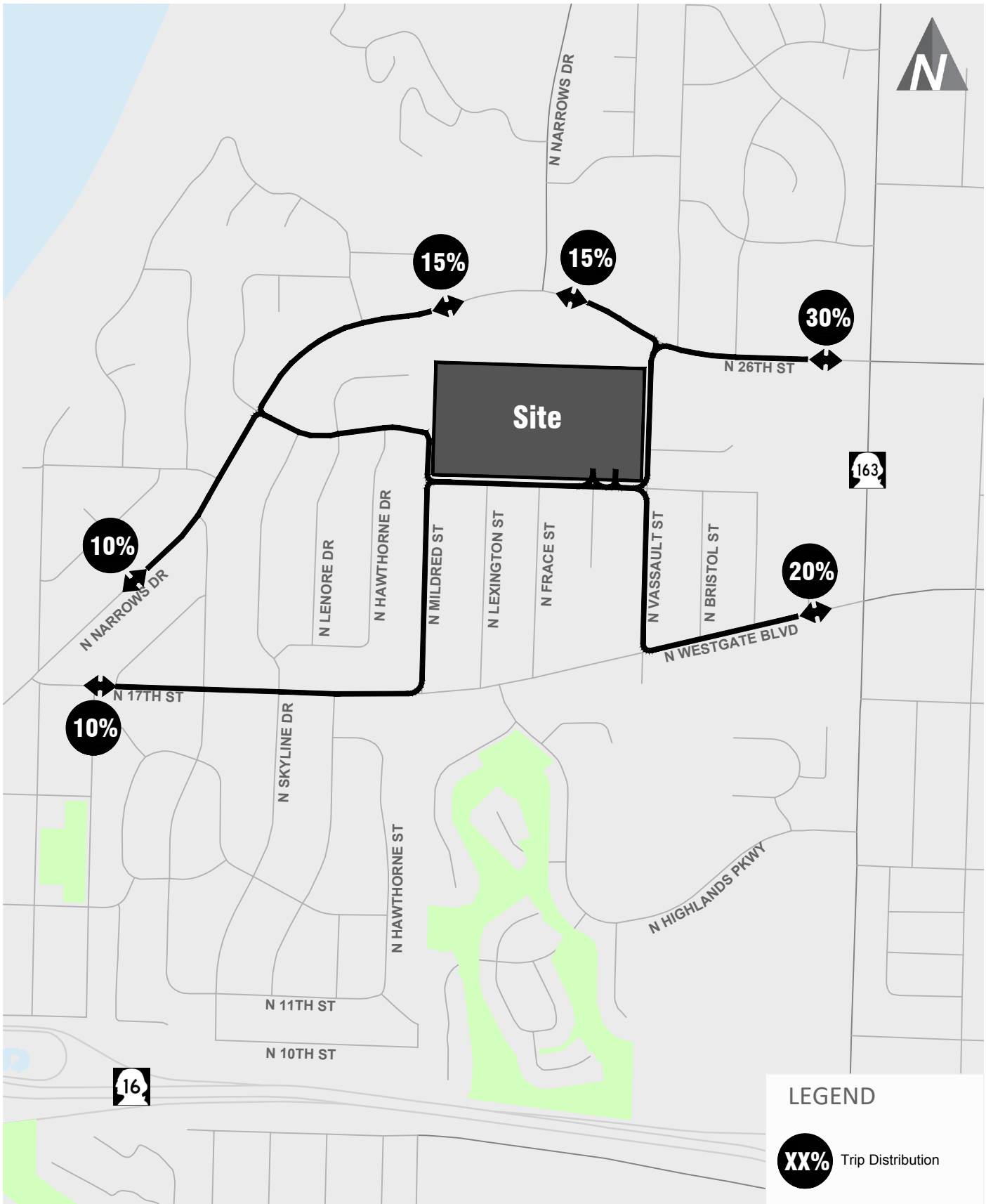
Travel patterns for vehicular traffic to and from the proposed new elementary school and preschool site were based on a review of existing travel patterns and the anticipated service area of the school. The anticipated new elementary school and preschool project trip distribution can be seen in Figure 6 and the project trip assignment can be seen in Figure 7.

The vehicular traffic to and from the proposed swing school was assumed to be different than the proposed new elementary school site. The swing school student population would be coming from a different and less local geographic location, then that of the proposed new elementary school. A majority of the trips were assumed to be going east via N Westgate Boulevard or N 26th Street. These trips are assumed to either continue east or connect to SR 163 to travel north or south. A small percentage of the trips were assumed to go west to connect to SR 16. The anticipated swing school project trip distribution can be seen in Figure 8 and trip assignment can be seen in Figure 9.

Traffic Volumes

As previously mentioned, existing counts do not include the volumes from the existing Skyline Elementary School, due to school closures from the COVID-19 pandemic. To determine existing and future without-project volumes, the trip generation for the existing 389-student Skyline Elementary School and 16-student preschool was estimated and distributed to the study intersections. To determine future with-project volumes, a similar process was taken to that of the future without-project volumes. However, the existing 389-student Skyline Elementary School and 16-student preschool trips were not included in future with-project volumes. Instead, the gross project trips associated with the cumulative uses on the campus were assigned to study intersections, to account for the different distribution and trip generation of the proposed new elementary school and swing school. Consistent with the existing traffic volumes, a COVID-19 factor of 5.6 percent was added to existing counts, an

annual growth rate of 2 percent per year was applied and the gross project trips were added. The future (2025) with-project volumes can be seen in Figure 10.



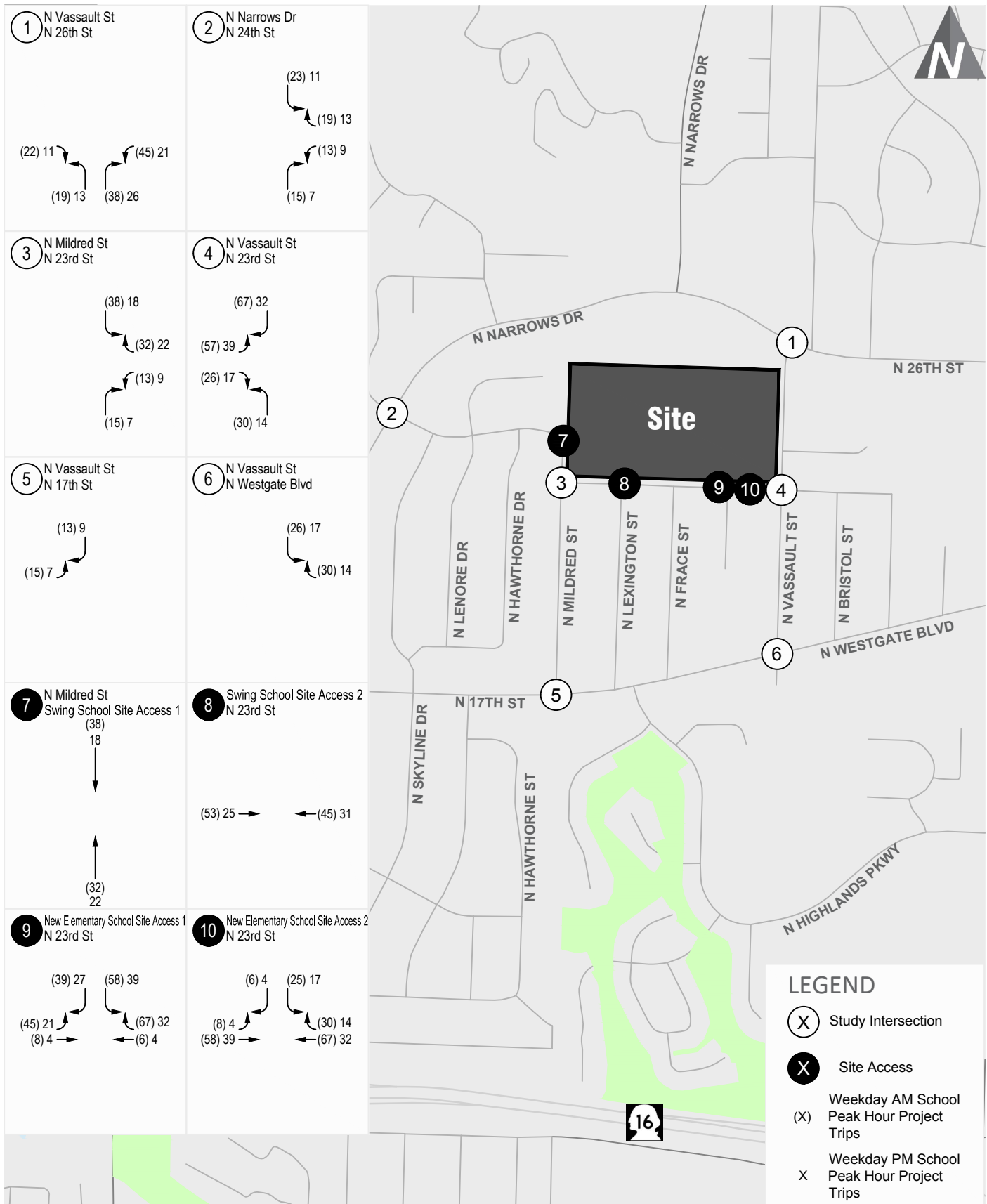
New Elementary School/Preschool Project Trip Distribution

FIGURE

Skyline Elementary

transpogroup 

6

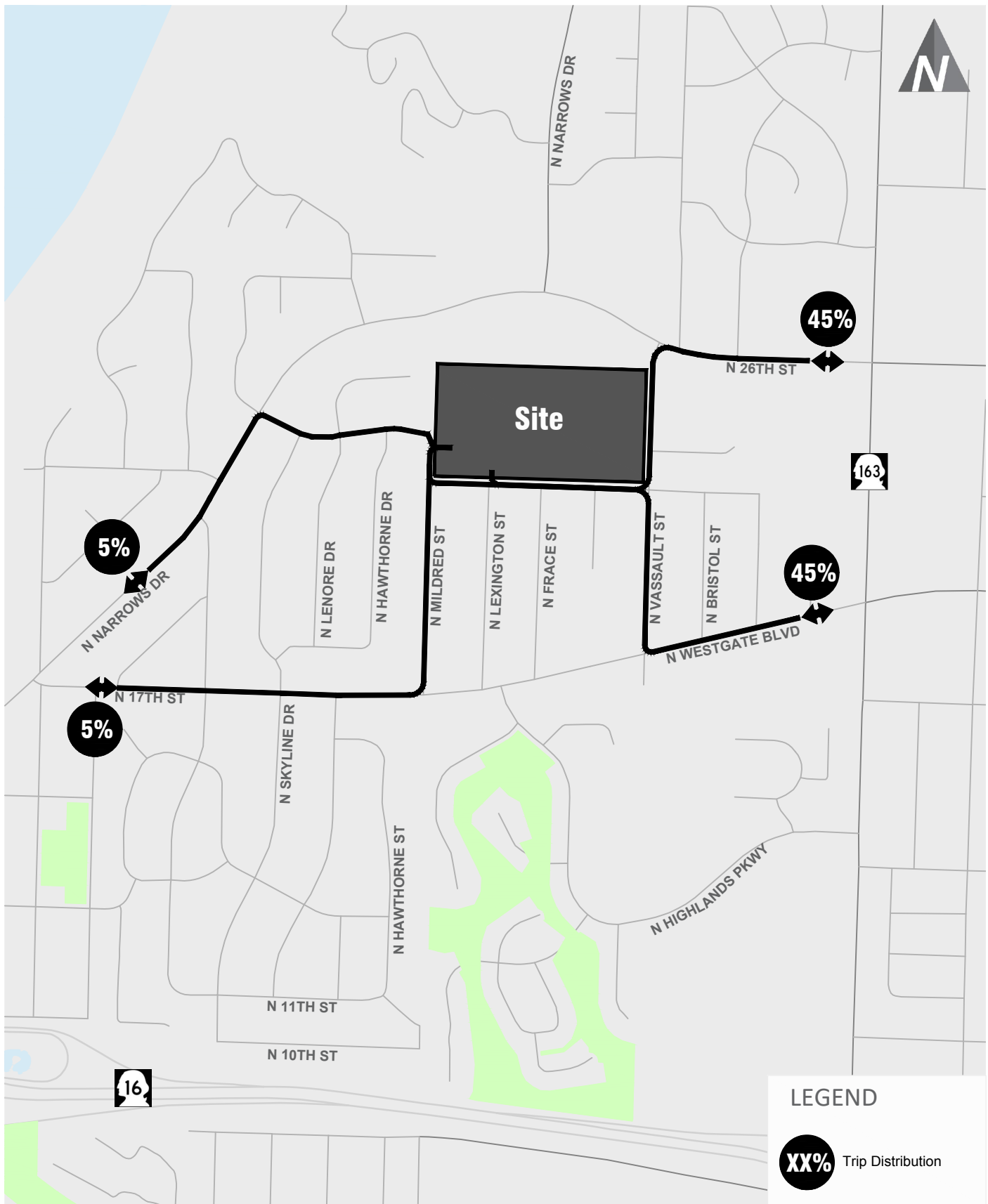


New Elementary School/Preschool Project Trip Assignment **FIGURE**

Skyline Elementary

transpogroup 

7



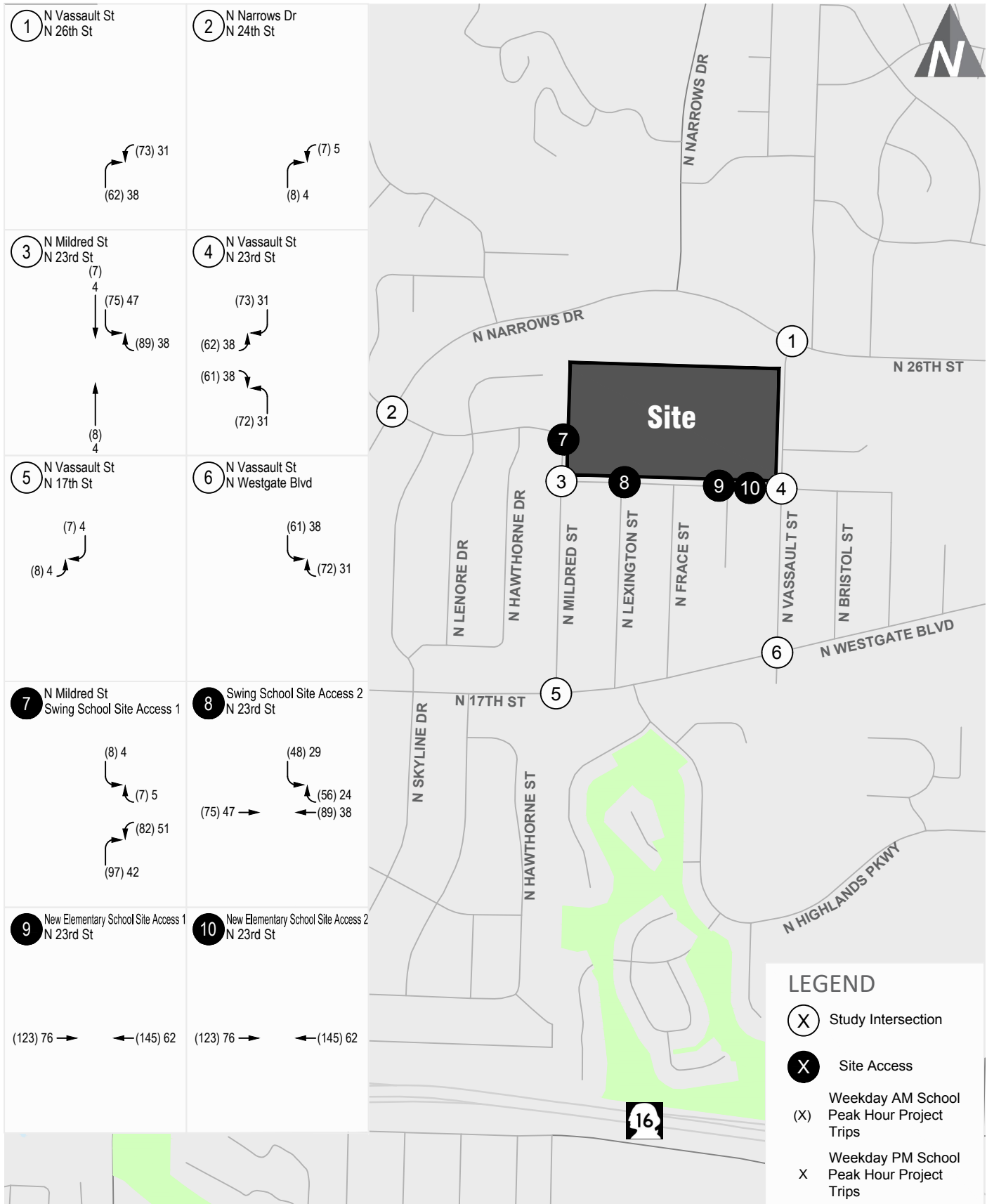
Swing School Project Trip Distribution

Skyline Elementary

transpogroup **7**

FIGURE

8



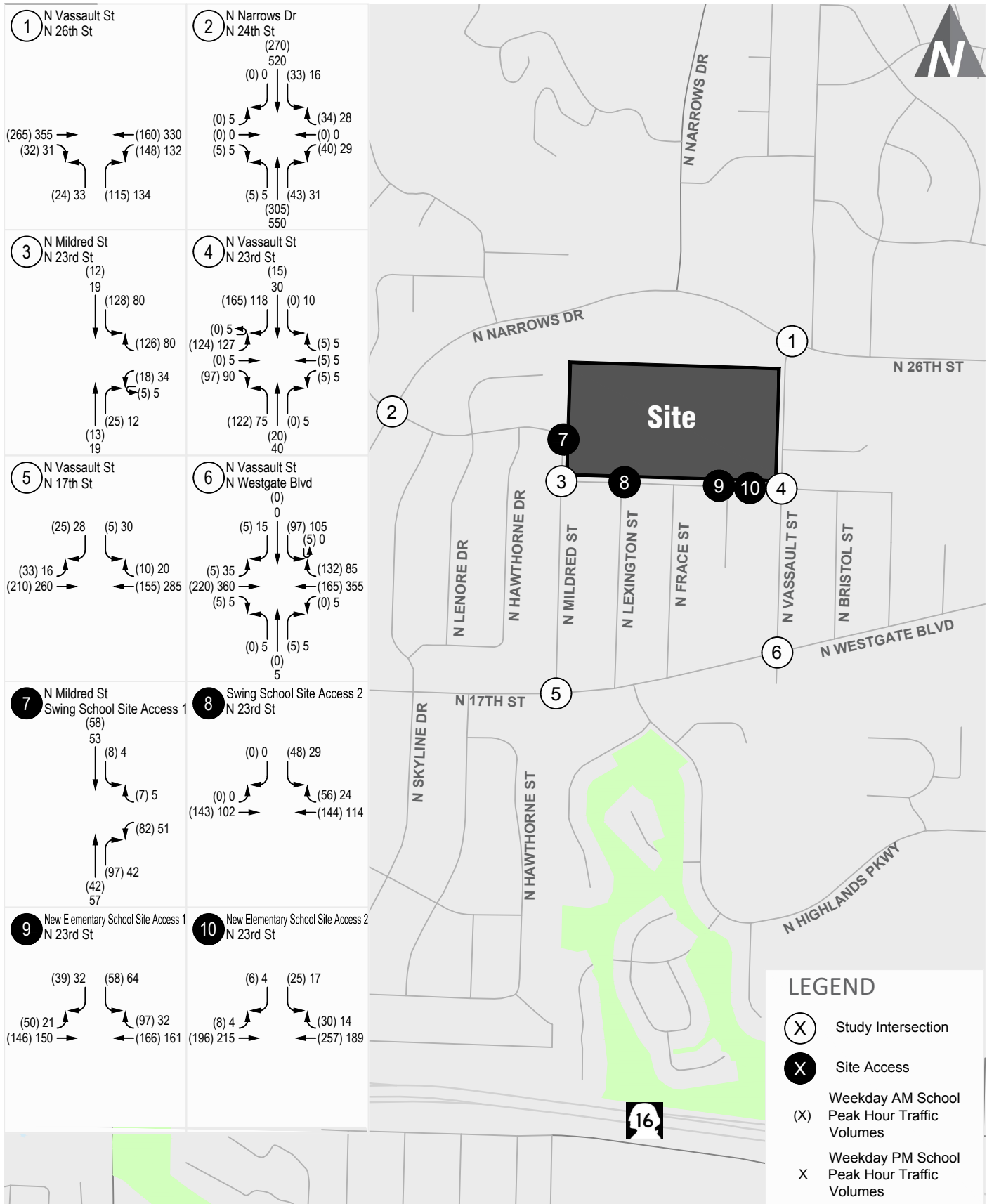
Swing School Project Trip Assignment

Skyline Elementary

transpogroup 

FIGURE

9



Future (2025) With-Project Weekday Peak Hour Traffic Volumes

FIGURE

Traffic Operations Impact

A future (2025) with-project level-of-service analysis was conducted for the weekday AM and PM school peak hours to analyze traffic impacts of the proposed project. The same methodologies were applied and all intersection parameters such as channelization and intersection control were consistent with those used in the evaluation of existing and future without-project conditions. A comparison of future (2025) without-project and future with-project weekday AM and PM school peak hour traffic operations are summarized in Table 6. Detailed LOS worksheets are provided in Appendix D.

Table 6. Future Without-Project & With-Project Weekday Peak Hour Intersection LOS Summary

Intersection	2025 Without-Project			2025 With-Project		
	LOS ¹	Delay ²	WM ³	LOS	Delay	WM
<u>AM School Peak Hour</u>						
1. N Vassault Street/N 26th Street	B	12.0	NB	B	13.0	NB
2. N Narrows Drive/N 24th Street	C	17.0	WB	C	17.7	WB
3. N Mildred Street/N 23rd Street	A	9.5	WB	B	10.3	WB
4. N Vassault Street/N 23rd Street	B	10.9	EB	C	17.0	EB
5. N Vassault Street/N 17th Street	A	9.8	SB	A	9.8	SB
6. N Vassault Street/N Westgate Boulevard	B	13.3	SB	C	16.2	SB
<u>PM School Peak Hour</u>						
1. N Vassault Street/N 26th Street	B	14.3	NB	C	15.1	NB
2. N Narrows Drive/N 24th Street	C	23.2	WB	D	27.3	WB
3. N Mildred Street/N 23rd Street	A	9.5	WB	B	10.1	WB
4. N Vassault Street/N 23rd Street	B	11.9	EB	C	15.3	EB
5. N Vassault Street/N 17th Street	B	13.6	SB	B	13.4	SB
6. N Vassault Street/N Westgate Boulevard	D	34.2	SB	F	54.3	SB

1. Level of Service (A – F) as defined by the *Highway Capacity Manual (HCM)*, 6th Edition)

2. Average delay per vehicle in seconds.

3. Worst movement reported for unsignalized intersections. Not applicable for all-way stop-controlled intersections.

With the addition of project generated traffic, all study intersections would continue to operate at LOS D or better, with the exception of the N Vassault Street/N Westgate Boulevard intersection. With the addition of the proposed project, the N Vassault Street/N Westgate Boulevard intersection is forecast to operate at LOS F during the PM school peak hour.

Site Access Analysis

Traffic Operations

Weekday AM and PM school peak hour traffic operations for future with-project conditions were evaluated at site access locations based on the procedures identified in the Highway Capacity Manual (HCM 6th) (6th Edition) and were evaluated using the Synchro 10 software program. The swing school is proposed to maintain the two existing driveways at the existing Skyline Elementary School building. The proposed new elementary school building is proposed to have two driveways for staff and parents. The AM and PM future with-project site access operations are shown in Table 7.

Table 7. Future With-Project Site Access Weekday Peak Hour Intersection LOS Summary

Intersection	2025 With-Project AM School Peak Hour			2025 With-Project PM School Peak Hour		
	LOS ¹	Delay ²	WM ³	LOS	Delay	WM
7. N Mildred Street/Swing School Site Access 1	B	10.0	WB	A	9.6	WB
8. Swing School Site Access 2/N 23rd Street	B	11.0	SB	B	10.1	SB
9. New Elementary School Site Access 1/N 23rd Street	B	12.3	SB	B	11.5	SB
10 New Elementary School Site Access 2/N 23rd Street	B	12.1	SB	B	11.3	SB

1. Level of Service (A – F) as defined by the *Highway Capacity Manual (HCM)*, 6th Edition)

2. Average delay per vehicle in seconds.

3. Worst movement reported for unsignalized intersections. Not applicable for all-way stop-controlled intersections.

As shown in Table 7, the site access locations are forecast to operate at LOS B or better under both AM and PM future (2025) with-project conditions.

Turn Lane Warrant Analysis

Left-turn lane needs and storage requirements for the unsignalized site driveways were estimated based on Pierce County guidelines using Highway Research Record #211². Appendix E shows the left turn lanes for the site access locations. The analysis shows left-turn lanes are not needed at any of the four site access driveways.

Parking Demand

The following sections describe the proposed parking supply and estimated peak parking demand of the proposed project. The following analysis is based on estimates for the swing school and new Skyline Elementary school only.

The parking for the professional development center was not included in this analysis. Given that it is not open to in-person activities, parking counts to accurately determine the demand were unable to be performed. At such time when the professional development center reopens, a detailed parking study can be performed. This study would be used to determine what amount, if any of the temporary overflow parking identified in this study should be considered for long-term operations. It is noted that operations for the professional development center remain unchanged as a part of this project. Previously, there was noted to be overflow parking on the field for larger events. This will no longer be useable, with the proposed new elementary school. However, with the proposed project, there will be a gravel overflow parking lot, north of the building that can serve the same purpose. This is shown in Figure 11.

Supply

The proposed project would include a total of 85 parking stalls. The new elementary school is proposed to have 50 parking stalls and the swing school is proposed to have 35 parking stalls.

² Left-turn lanes evaluated using Volume Warrants for Left-turn Storage Lanes at Unsignalized Grade Intersections, Harmelink, M.D., Highway Research Record #211, 1967

Demand

Since it is not feasible to collect existing parking demand observations and local rates, the peak parking demand for the proposed project was estimated based on data provided in ITE *Parking Generation* (5th Edition). The parking rate used to estimate the peak parking demand for the proposed project is based on the ITE *Parking Generation* rate of an elementary school (#520), middle school (#522) and day-care (#565). The resulting peak parking demand for the proposed project can be seen in Table 8. Detailed calculations are provided in Appendix F.

Table 8. Estimated Weekday Parking Demand

Propose Land Use	Size	Peak parking Demand¹
Elementary School – New Building	389 students	51 vehicles
Preschool – New Building	32 students	8 vehicles
Swing School Use		
Elementary school population	337 students	44 vehicles
Middle school Population	113 students	10 vehicles
<i>Proposed Project Total</i>		113 vehicles
1. Based on ITE Parking Generation (5th Edition, 2019)		

As shown in Table 8, the new elementary school has a peak parking demand of 59 vehicles and the swing school use has a peak parking demand of 54 vehicles. Based on a proposed supply of 50 parking stalls at the new elementary school, the peak demand could result in an overspill of 9 vehicles. Based on a proposed supply of 35 parking stalls for the swing school, the peak demand could result in an overspill of 19 vehicles. The parking overspill is anticipated to be accommodated by the gravel overflow lot on the project site, shown in Figure 11.

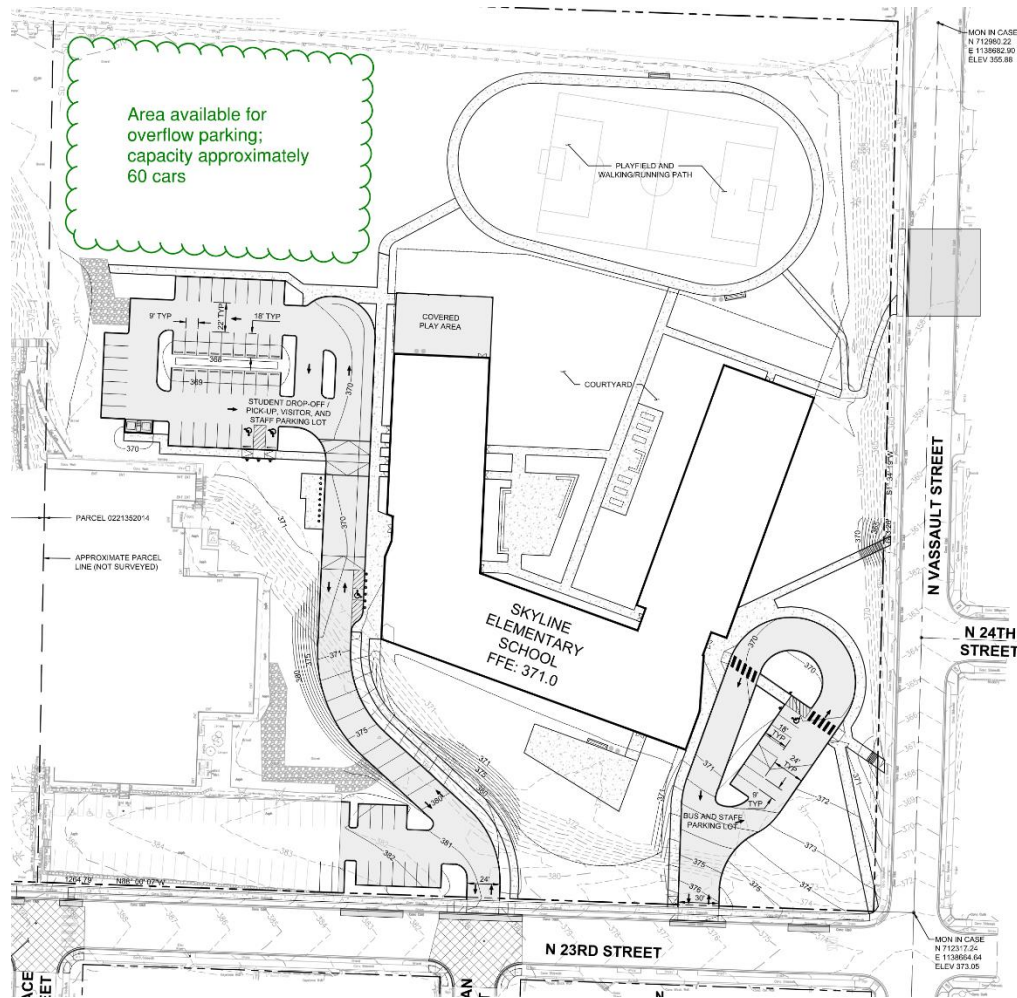


Figure 11. New Elementary School/Professional Development Center Parking Layout

Transit Impacts

Transit service currently operating in the area is anticipated to accommodate any anticipated increase in ridership demand due to the proposed project. The existing transit stops and routes in the immediate area should provide adequate transit access for residents and visitors to the project site.

Non-Motorized Impacts

There are currently adequate pedestrian and bicycle facilities in the surrounding vicinity of the school. However, there are number of improvements being constructed by the project:

- Construction of curb bulbs at pedestrian crossing locations
- Removal of two existing driveways along N 23rd Street at N Lexington Street
- Construction of new sidewalk along N 23rd Street along the north side of the street and N Whitman Street.

Mitigation

As discussed previously, under future 2025 conditions, the southbound movement of the N Vassault Street/N Westgate Boulevard intersection is forecast to operate at LOS F during the weekday PM school peak hour under future with-project conditions. All other locations are forecast to operate at LOS D or better. The following sections review signal warrant analysis completed for the N Vassault Street/N Westgate Boulevard intersection and reviews forecast operations with potential mitigation measures.

Signal Warrant Analysis

A signal warrant analysis was completed at the N Vassault Street/N Westgate Boulevard intersection to evaluate the need for a traffic signal. Signal warrants were evaluated for future with-project conditions. For this signal warrant analysis, the weekday PM peak hour volumes at the intersection are distributed based on percentages determined by the National Cooperative Highway Research Program (NCHRP) Report 365.

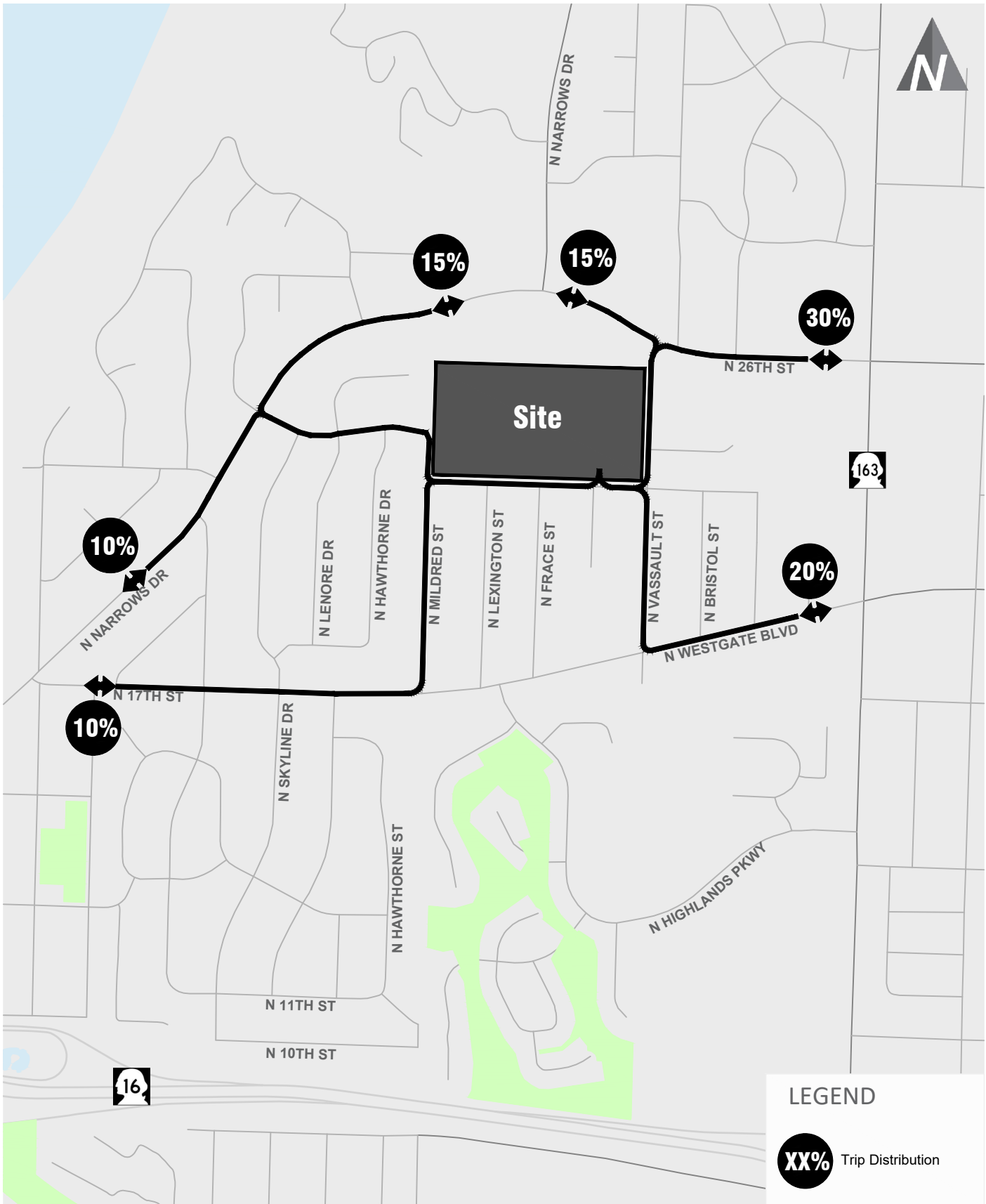
Based on the MUTCD signal warrant analysis, the intersection does not meet the four-hour and eight-hour signal warrants under future (2025) with-project conditions. The projects pro-rata share at the intersection is approximately 10.2 percent. Signal warrant analysis worksheets are provided in Appendix G.

Findings and Recommendations

This transportation impact study summarizes the project traffic impacts of the proposed Skyline Elementary School Redevelopment. General findings and recommendations include:

- The proposed project would redevelop the existing Skyline Elementary School, building a new 389 student elementary school building with a 32-student preschool and repurposing the existing building to be used as a swing school.
- The development is anticipated to generate approximately 251 net new weekday AM school peak hour vehicle trips and 143 net new weekday PM school peak hour vehicle trips.
- All off-site study intersections are anticipated to operate at LOS D or better under future with-project conditions meeting standards, with the exception of the N Vassault Street/N Westgate Boulevard intersection. This intersection is forecast to operate at LOS F during the PM school peak hour. Signal warrants were reviewed at the N Vassault Street/N Westgate Boulevard intersection under future (2025) with-project conditions and noted to not be met.
- We recommend a comprehensive parking study be completed upon occupancy and normal operations of the PDC and existing elementary school. This study would be used to confirm the future needs of the temporary overflow parking identified in this study. Due to the current COVID-19 pandemic it is not feasible to collect existing data to confirm the current parking demands for the PDC and the existing Skyline Elementary school.
- Peak parking demand for the project is anticipated to be approximately 113 vehicles, 59 associated with the new elementary school and 54 associated with the swing school. The elementary school parking demand could result in an overspill of 9 vehicles. The swing school parking demand could result in an overspill of 19 vehicles and is forecast to be accommodated by the on-site overflow gravel parking lot.

Appendix A: Existing Skyline Elementary Trip Distribution and Assignment

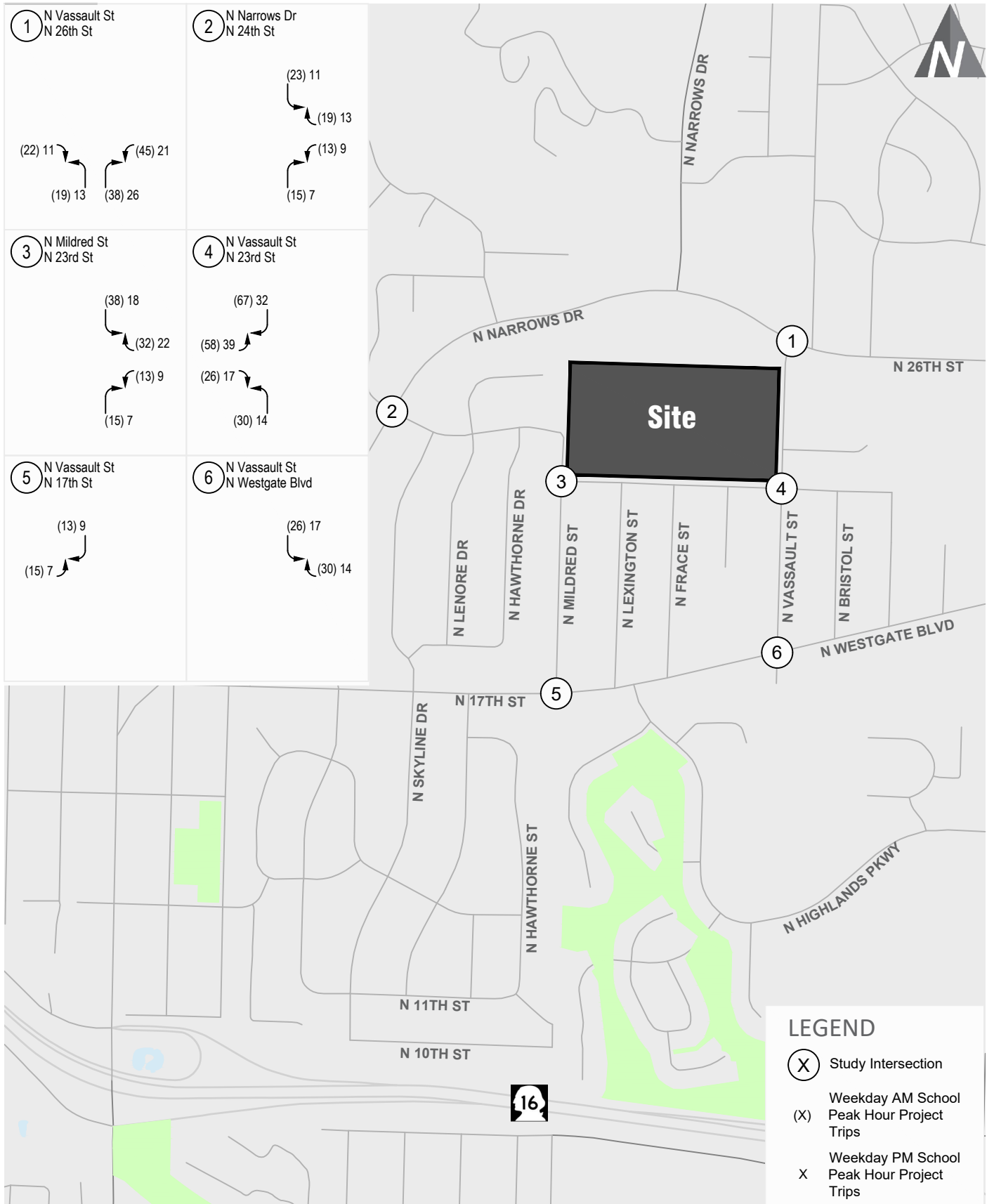


Existing Skyline Elementary School Project Trip Distribution Appendix

Skyline Elementary

transpogroup 

A-1



Existing Skyline Elementary School Project Trip Assignment Appendix

Skyline Elementary

transpogroup 

A-2

Appendix B: Detailed Traffic Counts

N Vassault St N 26th St

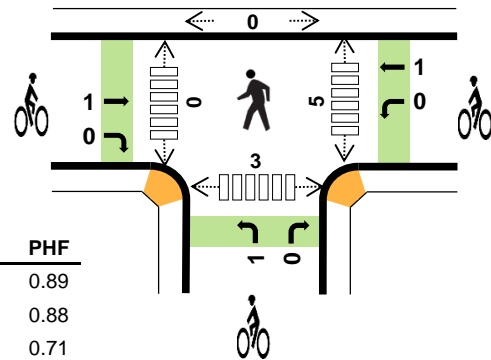
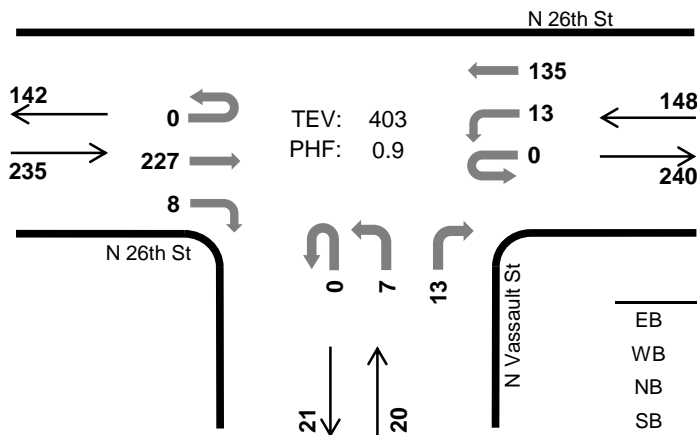


Peak Hour

Date: 10/06/2020

Count Period: 8:00 AM to 10:00 AM

Peak Hour: 8:00 AM to 9:00 AM



	HV %:	PHF
EB	4.3%	0.89
WB	2.0%	0.88
NB	10.0%	0.71
SB	-	-
TOTAL	3.7%	0.90

Two-Hour Count Summaries

Interval Start		N 26th St				N 26th St				N Vassault St				0				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	0	52	3	0	2	23	0	0	1	0	4	0	0	0	0	85	0
8:15 AM		0	0	64	2	0	9	30	0	0	4	0	3	0	0	0	0	112	0
8:30 AM		0	0	52	1	0	1	41	0	0	0	0	4	0	0	0	0	99	0
8:45 AM		0	0	59	2	0	1	41	0	0	2	0	2	0	0	0	0	107	403
9:00 AM		0	0	45	0	0	4	17	0	0	3	0	3	0	0	0	0	72	390
9:15 AM		0	0	59	2	0	3	33	0	0	4	0	9	0	0	0	0	110	388
9:30 AM		0	0	47	4	0	2	42	0	0	0	0	7	0	0	0	0	102	391
9:45 AM		0	0	62	1	0	10	28	0	0	0	0	6	0	0	0	0	107	391
Count Total		0	0	440	15	0	32	255	0	0	14	0	38	0	0	0	0	794	0
Peak Hour	All	0	0	227	8	0	13	135	0	0	7	0	13	0	0	0	0	403	0
	HV	0	0	10	0	0	2	1	0	0	0	0	2	0	0	0	0	15	0
	HV%	-	-	4%	0%	-	15%	1%	-	-	0%	-	15%	-	-	-	-	4%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	3	0	1	0	4	0	0	0	0	0	4	0	0	2	6
8:15 AM	2	1	0	0	3	1	1	1	0	3	0	0	0	0	0
8:30 AM	3	1	1	0	5	0	0	0	0	0	0	0	0	0	0
8:45 AM	2	1	0	0	3	0	0	0	0	0	1	0	0	1	2
9:00 AM	5	2	0	0	7	0	0	0	0	0	0	0	0	2	2
9:15 AM	5	1	0	0	6	1	0	1	0	2	1	0	0	1	2
9:30 AM	2	0	1	0	3	0	0	0	0	0	1	0	0	0	1
9:45 AM	2	3	1	0	6	0	0	0	0	0	1	0	0	1	2
Count Total	24	9	4	0	37	2	1	2	0	5	8	0	0	7	15
Peak Hr	10	3	2	0	15	1	1	1	0	3	5	0	0	3	8

Two-Hour Count Summaries - Heavy Vehicles

Interval Start	N 26th St				N 26th St				N Vassault St				0				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	0	4	0
8:15 AM	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0
8:30 AM	0	0	3	0	0	0	1	0	0	0	0	1	0	0	0	0	5	0
8:45 AM	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	3	15
9:00 AM	0	0	5	0	0	1	1	0	0	0	0	0	0	0	0	0	7	18
9:15 AM	0	0	4	1	0	1	0	0	0	0	0	0	0	0	0	0	6	21
9:30 AM	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	3	19
9:45 AM	0	0	2	0	0	2	1	0	0	0	0	1	0	0	0	0	6	22
Count Total	0	0	23	1	0	6	3	0	0	0	0	4	0	0	0	0	37	0
Peak Hour	0	0	10	0	0	2	1	0	0	0	0	2	0	0	0	0	15	0

Two-Hour Count Summaries - Bikes

Interval Start	N 26th St			N 26th St			N Vassault St			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	1	0	1	0	0	0	0	0	3	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3
9:15 AM	0	1	0	0	0	0	1	0	0	0	0	0	2	2
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Count Total	0	2	0	0	1	0	2	0	0	0	0	0	5	0
Peak Hour	0	1	0	0	1	0	1	0	0	0	0	0	3	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

N Vassault St N 26th St

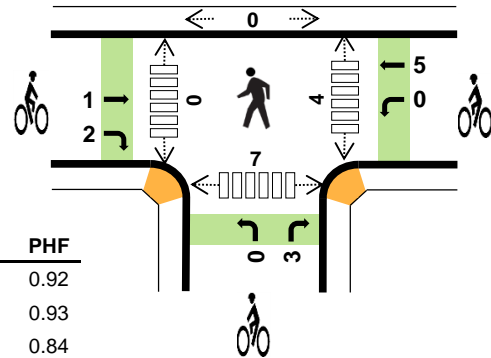
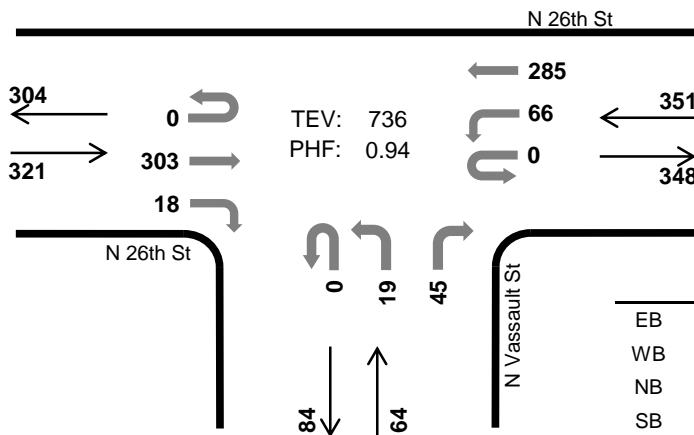


Peak Hour

Date: 10/06/2020

Count Period: 2:00 PM to 4:00 PM

Peak Hour: 3:00 PM to 4:00 PM



	HV %:	PHF
EB	1.2%	0.92
WB	2.0%	0.93
NB	3.1%	0.84
SB	-	-
TOTAL	1.8%	0.94

Two-Hour Count Summaries

Interval Start	N 26th St Eastbound				N 26th St Westbound				N Vassault St Northbound				N Vassault St Southbound				15-min Total	Rolling One Hour
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	71	4	0	7	61	0	0	5	0	8	0	0	0	0	156	0
2:15 PM	0	0	86	6	0	13	51	0	0	4	0	8	0	0	0	0	168	0
2:30 PM	1	0	73	7	0	8	72	0	0	8	0	13	0	0	0	0	182	0
2:45 PM	0	0	67	6	0	11	75	0	0	3	0	7	0	0	0	0	169	675
3:00 PM	0	0	71	6	0	9	76	0	0	3	0	10	0	0	0	0	175	694
3:15 PM	0	0	76	7	0	17	77	0	0	7	0	12	0	0	0	0	196	722
3:30 PM	0	0	74	0	0	18	74	0	0	5	0	10	0	0	0	0	181	721
3:45 PM	0	0	82	5	0	22	58	0	0	4	0	13	0	0	0	0	184	736
Count Total	1	0	600	41	0	105	544	0	0	39	0	81	0	0	0	0	1,411	0
Peak Hour	All	0	0	303	18	0	66	285	0	0	19	0	45	0	0	0	736	0
	HV	0	0	4	0	0	3	4	0	0	0	2	0	0	0	0	13	0
	HV%	-	-	1%	0%	-	5%	1%	-	-	0%	-	4%	-	-	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	1	0	1	0	2	1	1	0	0	2	1	0	0	4	5
2:15 PM	3	1	0	0	4	0	0	0	0	0	0	0	0	2	2
2:30 PM	1	0	1	0	2	1	0	0	0	1	1	0	0	4	5
2:45 PM	2	1	0	0	3	0	3	0	0	3	0	0	0	3	3
3:00 PM	3	1	1	0	5	2	1	0	0	3	0	0	0	1	1
3:15 PM	0	3	0	0	3	1	2	2	0	5	2	0	0	1	3
3:30 PM	1	2	1	0	4	0	1	1	0	2	1	0	0	2	3
3:45 PM	0	1	0	0	1	0	1	0	0	1	1	0	0	3	4
Count Total	11	9	4	0	24	5	9	3	0	17	6	0	0	20	26
Peak Hr	4	7	2	0	13	3	5	3	0	11	4	0	0	7	11

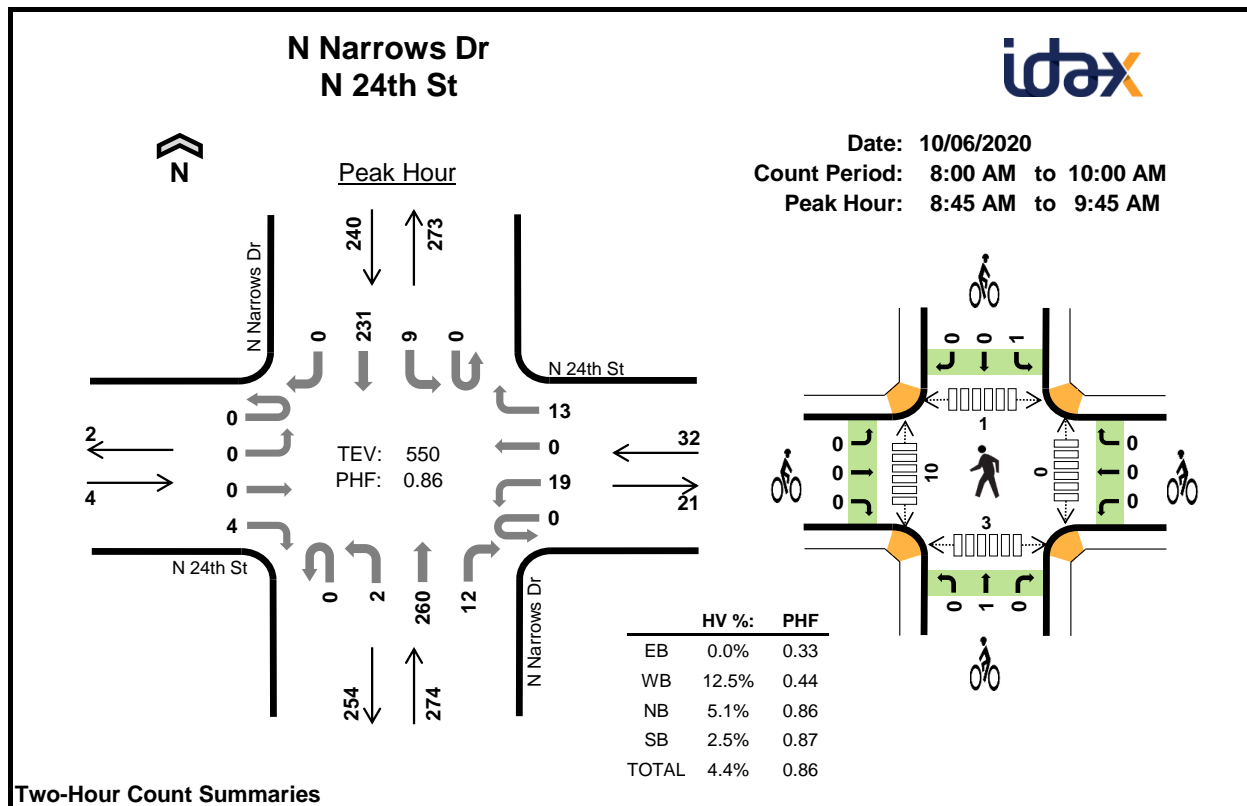
Two-Hour Count Summaries - Heavy Vehicles

Interval Start	N 26th St				N 26th St				N Vassault St				0				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
2:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
2:15 PM	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4	0
2:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2	0
2:45 PM	0	0	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3	11
3:00 PM	0	0	3	0	0	0	1	0	0	0	0	0	1	0	0	0	0	5	14
3:15 PM	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3	13
3:30 PM	0	0	1	0	0	0	2	0	0	0	0	0	1	0	0	0	0	4	15
3:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	13
Count Total	0	0	11	0	0	5	4	0	0	0	0	0	4	0	0	0	0	24	0
Peak Hour	0	0	4	0	0	3	4	0	0	0	0	0	2	0	0	0	0	13	0

Two-Hour Count Summaries - Bikes

Interval Start	N 26th St			N 26th St			N Vassault St			0			15-min Total	Rolling One Hour
	Eastbound			Westbound			Northbound			Southbound				
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT		
2:00 PM	0	1	0	1	0	0	0	0	0	0	0	0	2	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1	0
2:45 PM	0	0	0	1	2	0	0	0	0	0	0	0	3	6
3:00 PM	0	1	1	0	1	0	0	0	0	0	0	0	3	7
3:15 PM	0	0	1	0	2	0	0	0	2	0	0	0	5	12
3:30 PM	0	0	0	0	1	0	0	0	1	0	0	0	2	13
3:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1	11
Count Total	0	3	2	2	7	0	0	0	3	0	0	0	17	0
Peak Hour	0	1	2	0	5	0	0	0	3	0	0	0	11	0

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		N 24th St				N 24th St				N Narrows Dr				N Narrows Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	8:00 AM	0	0	0	2	0	1	0	2	0	2	59	3	0	1	54	0	124	0
	8:15 AM	0	0	0	0	0	1	0	2	0	1	94	1	0	1	57	0	157	0
	8:30 AM	0	1	0	1	0	0	0	4	0	1	53	3	0	1	50	0	114	0
	8:45 AM	0	0	0	1	0	1	0	3	0	0	77	3	0	2	58	0	145	540
	9:00 AM	0	0	0	3	0	1	0	2	0	0	69	2	0	2	47	0	126	542
	9:15 AM	0	0	0	0	0	12	0	6	0	2	64	6	0	2	67	0	159	544
	9:30 AM	0	0	0	0	0	5	0	2	0	0	50	1	0	3	59	0	120	550
	9:45 AM	0	0	0	0	0	0	0	3	0	0	76	2	0	0	55	0	136	541
Count Total		0	1	0	7	0	21	0	24	0	6	542	21	0	12	447	0	1,081	0
Peak Hour	All	0	0	0	4	0	19	0	13	0	2	260	12	0	9	231	0	550	0
	HV	0	0	0	0	0	0	0	4	0	0	11	3	0	0	6	0	24	0
	HV%	-	-	-	0%	-	0%	-	31%	-	0%	4%	25%	-	0%	3%	-	4%	0

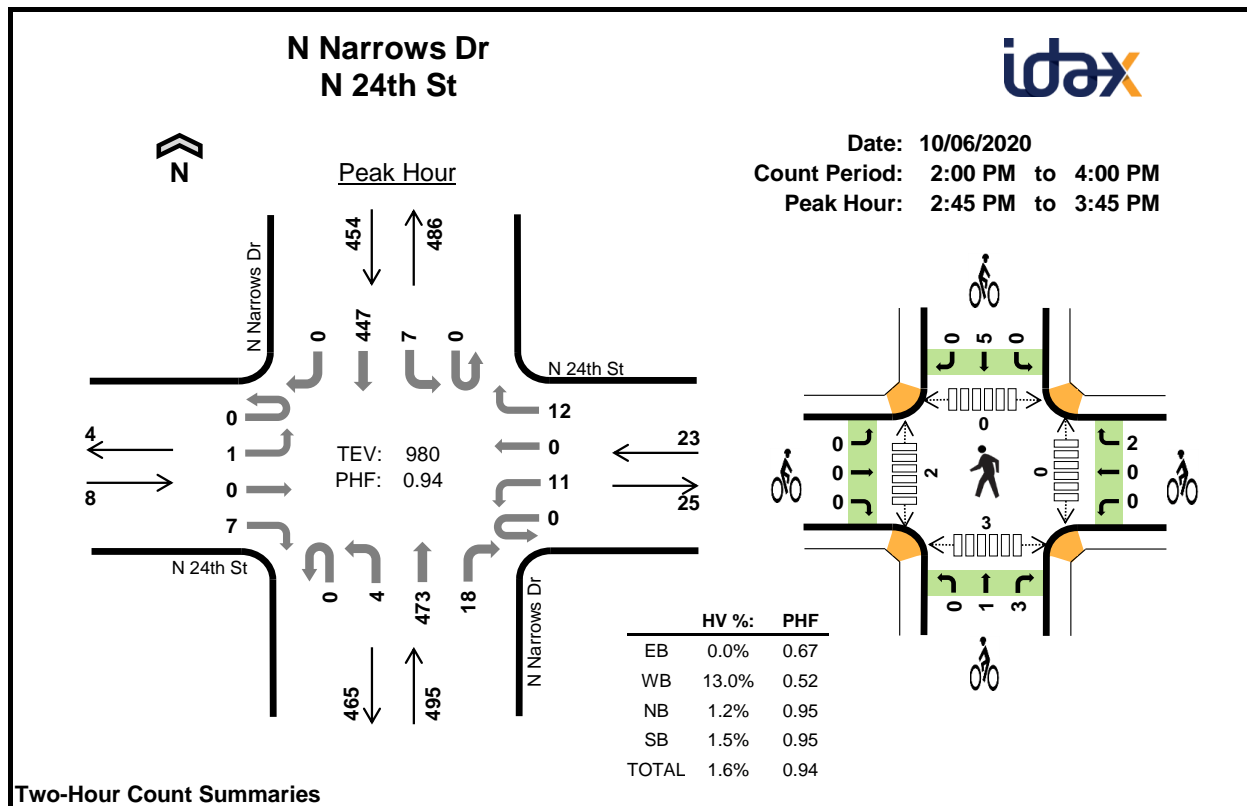
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	1	0	3	0	4	0	0	0	0	0	0	2	0	0	2
8:15 AM	0	0	4	1	5	0	0	1	1	2	0	0	0	0	0
8:30 AM	0	1	0	0	1	0	0	0	1	1	0	1	0	0	1
8:45 AM	0	1	2	2	5	0	0	0	0	0	0	7	1	1	9
9:00 AM	0	0	4	1	5	0	0	0	0	0	0	1	0	2	3
9:15 AM	0	2	6	2	10	0	0	1	0	1	0	0	0	0	0
9:30 AM	0	1	2	1	4	0	0	0	1	1	0	2	0	0	2
9:45 AM	0	1	2	0	3	0	0	0	0	0	0	0	0	0	0
Count Total	1	6	23	7	37	0	0	2	3	5	0	13	1	3	17
Peak Hour	0	4	14	6	24	0	0	1	1	2	0	10	1	3	14

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N 24th St				N 24th St				N Narrows Dr				N Narrows Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	0	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	4	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	5	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	2	0	5	15
9:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	5	16
9:15 AM	0	0	0	0	0	0	0	2	0	0	3	3	0	0	2	0	10	21
9:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	4	24
9:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	3	22
Count Total	0	0	0	1	0	0	0	6	0	0	20	3	0	0	7	0	37	0
Peak Hour	0	0	0	0	0	0	0	4	0	0	11	3	0	0	6	0	24	0

Two-Hour Count Summaries - Bikes																	
Interval Start	N 24th St			N 24th St			N Narrows Dr			N Narrows Dr			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2	0			
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
9:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	2			
9:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	2			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
Count Total	0	0	0	0	0	0	0	2	0	1	2	0	5	0			
Peak Hour	0	0	0	0	0	0	0	1	0	1	0	0	2	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		N 24th St				N 24th St				N Narrows Dr				N Narrows Dr				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM		0	0	1	0	0	1	0	7	0	0	87	1	0	2	84	0	183	0
2:15 PM		0	2	0	1	0	1	0	2	0	1	118	2	0	4	78	1	210	0
2:30 PM		0	0	0	1	0	1	0	2	0	1	98	0	0	3	123	0	229	0
2:45 PM		0	0	0	3	0	2	0	0	0	1	113	3	0	4	116	0	242	864
3:00 PM		0	1	0	0	0	2	0	2	0	1	113	5	0	1	101	0	226	907
3:15 PM		0	0	0	1	0	3	0	3	0	1	125	4	0	1	113	0	251	948
3:30 PM		0	0	0	3	0	4	0	7	0	1	122	6	0	1	117	0	261	980
3:45 PM		0	0	0	0	0	1	0	3	0	2	131	3	0	1	94	1	236	974
Count Total		0	3	1	9	0	15	0	26	0	8	907	24	0	17	826	2	1,838	0
Peak Hour	All	0	1	0	7	0	11	0	12	0	4	473	18	0	7	447	0	980	0
	HV	0	0	0	0	0	2	0	1	0	0	6	0	0	0	7	0	16	0
	HV%	-	0%	-	0%	-	18%	-	8%	-	0%	1%	0%	-	0%	2%	-	2%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	0	0	2	0	2	0	1	1	0	2	1	1	1	0	3
2:15 PM	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	4	1	5	0	0	0	0	0	0	0	0	3	3
2:45 PM	0	1	1	1	3	0	0	0	2	2	0	1	0	3	4
3:00 PM	0	0	3	1	4	0	0	1	1	2	0	0	0	0	0
3:15 PM	0	1	0	2	3	0	1	1	2	4	0	1	0	0	1
3:30 PM	0	1	2	3	6	0	1	2	0	3	0	0	0	0	0
3:45 PM	0	1	1	1	3	0	0	0	2	2	0	1	0	0	1
Count Total	0	4	15	10	29	0	3	5	7	15	1	4	1	6	12
Peak Hour	0	3	6	7	16	0	2	4	5	11	0	2	0	3	5

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N 24th St				N 24th St				N Narrows Dr				N Narrows Dr				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	5	0
2:45 PM	0	0	0	0	0	1	0	0	0	0	1	0	0	0	1	0	3	13
3:00 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0	4	15
3:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	3	15
3:30 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	3	0	6	16
3:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0	3	16
Count Total	0	0	0	0	0	2	0	2	0	0	15	0	0	0	10	0	29	0
Peak Hour	0	0	0	0	0	2	0	1	0	0	6	0	0	0	7	0	16	0

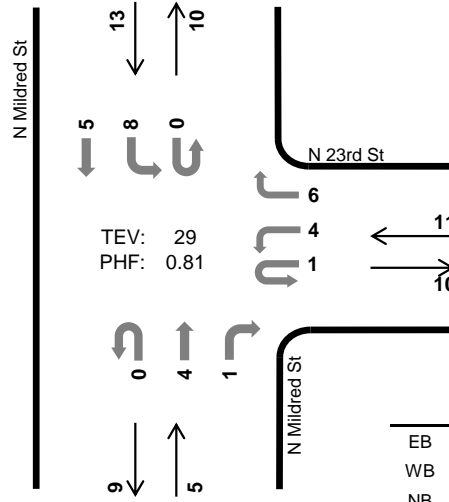
Two-Hour Count Summaries - Bikes																	
Interval Start	N 24th St			N 24th St			N Narrows Dr			N Narrows Dr			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
2:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	2	0			
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	4			
3:00 PM	0	0	0	0	0	0	0	0	1	0	1	0	2	4			
3:15 PM	0	0	0	0	0	1	0	0	1	0	2	0	4	8			
3:30 PM	0	0	0	0	0	1	0	1	1	0	0	0	3	11			
3:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	11			
Count Total	0	0	0	0	0	3	0	2	3	0	7	0	15	0			
Peak Hour	0	0	0	0	0	2	0	1	3	0	5	0	11	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

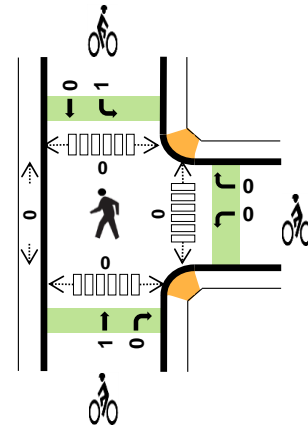
N Mildred St N 23rd St



Peak Hour



Date: 10/06/2020
Count Period: 8:00 AM to 10:00 AM
Peak Hour: 9:00 AM to 10:00 AM



	HV %:	PHF
EB	-	-
WB	36.4%	0.69
NB	20.0%	0.63
SB	23.1%	0.65
TOTAL	27.6%	0.81

Two-Hour Count Summaries

Interval Start		0				N 23rd St				N Mildred St				N Mildred St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	0	0	0	0	1	0	5	0	0	4	0	0	2	1	0	13	0
8:15 AM		0	0	0	0	0	0	0	3	0	0	4	0	0	1	0	0	8	0
8:30 AM		0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	3	0
8:45 AM		0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	3	27
9:00 AM		0	0	0	0	0	1	0	1	0	0	2	0	0	0	2	0	6	20
9:15 AM		0	0	0	0	0	1	0	3	0	0	0	0	0	1	1	0	6	18
9:30 AM		0	0	0	0	1	1	0	0	0	0	1	1	0	5	0	0	9	24
9:45 AM		0	0	0	0	0	1	0	2	0	0	1	0	0	2	2	0	8	29
Count Total		0	0	0	0	1	5	0	16	0	0	12	2	0	13	7	0	56	0
Peak Hour	All	0	0	0	0	1	4	0	6	0	0	4	1	0	8	5	0	29	0
	HV	0	0	0	0	0	1	0	3	0	0	1	0	0	2	1	0	8	0
	HV%	-	-	-	-	0%	25%	-	50%	-	-	25%	0%	-	25%	20%	-	28%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
9:00 AM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0
9:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	1	1	2	0	0	0	1	1	0	0	0	0	0
9:45 AM	0	1	0	2	3	0	0	0	0	0	0	0	0	0	0
Count Total	0	5	2	3	10	0	0	1	1	2	1	0	0	0	1
Peak Hr	0	4	1	3	8	0	0	1	1	2	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	0				N 23rd St				N Mildred St				N Mildred St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
9:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
9:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	3
9:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	5
9:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	3	8
Count Total	0	0	0	0	0	1	0	4	0	0	2	0	0	2	1	0	10	0
Peak Hour	0	0	0	0	0	1	0	3	0	0	1	0	0	2	1	0	8	0

Two-Hour Count Summaries - Bikes																		
Interval Start	0			N 23rd St			N Mildred St			N Mildred St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
9:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1			
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
9:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	2			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
Count Total	0	0	0	0	0	0	0	1	0	1	0	0	2	0	0			
Peak Hour	0	0	0	0	0	0	0	1	0	1	0	0	2	0	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

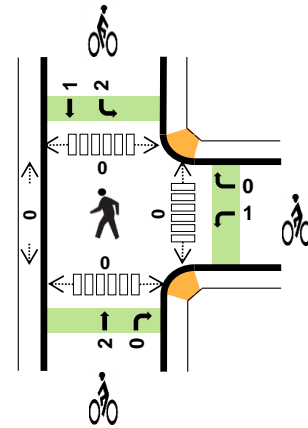
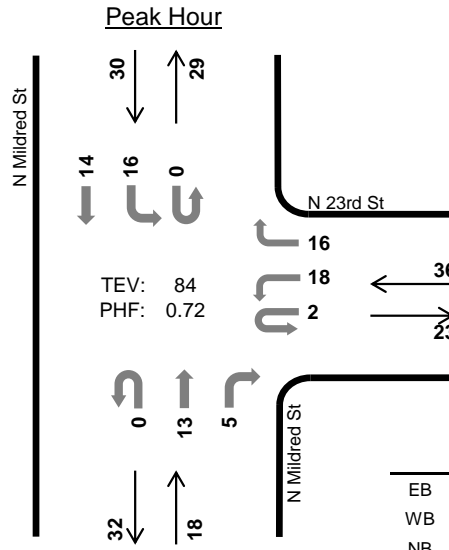
N Mildred St N 23rd St



Date: 10/06/2020

Count Period: 2:00 PM to 4:00 PM

Peak Hour: 2:45 PM to 3:45 PM



	HV %:	PHF
EB	-	-
WB	11.1%	0.64
NB	0.0%	0.64
SB	0.0%	0.58
TOTAL	4.8%	0.72

Two-Hour Count Summaries

Interval Start		0				N 23rd St				N Mildred St				N Mildred St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
	2:00 PM	0	0	0	0	0	0	0	7	0	0	0	1	0	1	1	0	10	0
	2:15 PM	0	0	0	0	0	1	0	2	0	0	3	0	0	2	0	0	8	0
	2:30 PM	0	0	0	0	0	8	0	1	0	0	1	2	0	2	0	0	14	0
	2:45 PM	0	0	0	0	0	5	0	0	0	0	2	2	0	1	3	0	13	45
	3:00 PM	0	0	0	0	1	1	0	2	0	0	4	0	0	3	4	0	15	50
	3:15 PM	0	0	0	0	1	7	0	6	0	0	4	3	0	5	1	0	27	69
	3:30 PM	0	0	0	0	0	5	0	8	0	0	3	0	0	7	6	0	29	84
	3:45 PM	0	0	0	0	0	4	0	3	0	0	2	0	0	1	2	0	12	83
Count Total		0	0	0	0	2	31	0	29	0	0	19	8	0	22	17	0	128	0
Peak Hour	All	0	0	0	0	2	18	0	16	0	0	13	5	0	16	14	0	84	0
	HV	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	4	0
	HV%	-	-	-	-	0%	6%	-	19%	-	-	0%	0%	-	0%	0%	-	5%	0

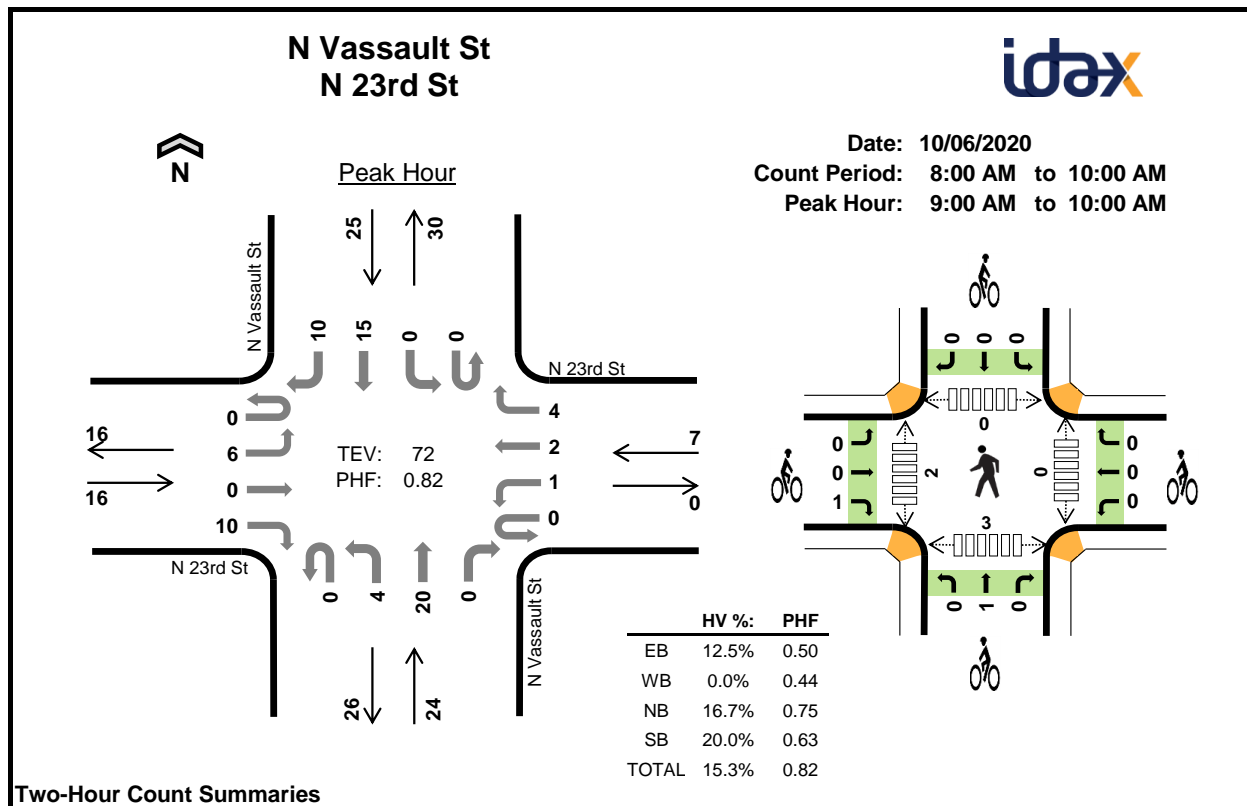
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2
2:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	1	1
2:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
3:15 PM	0	2	0	0	2	0	0	1	1	2	0	0	0	0	0
3:30 PM	0	2	0	0	2	0	0	1	1	2	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Count Total	0	4	1	0	5	0	4	2	3	9	1	0	1	1	3
Peak Hr	0	4	0	0	4	0	1	2	3	6	0	0	0	0	0

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	0				N 23rd St				N Mildred St				N Mildred St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	2
3:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	4
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Count Total	0	0	0	0	0	1	0	3	0	0	1	0	0	0	0	0	5	0
Peak Hour	0	0	0	0	0	1	0	3	0	0	0	0	0	0	0	0	4	0

Two-Hour Count Summaries - Bikes																		
Interval Start	0			N 23rd St			N Mildred St			N Mildred St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
2:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1	0				
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2:30 PM	0	0	0	2	0	0	0	0	0	0	0	0	2	0				
2:45 PM	0	0	0	1	0	0	0	0	0	0	0	0	1	4				
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	4				
3:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	2	6				
3:30 PM	0	0	0	0	0	0	0	1	0	1	0	0	2	6				
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5				
Count Total	0	0	0	3	0	1	0	2	0	2	1	0	9	0				
Peak Hour	0	0	0	1	0	0	0	2	0	2	1	0	6	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		N 23rd St				N 23rd St				N Vassault St				N Vassault St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	2	0	0	0	0	0	0	0	2	2	0	0	0	2	6	14	0
8:15 AM		0	3	0	1	0	0	0	0	0	0	4	0	0	1	4	4	17	0
8:30 AM		0	1	0	0	0	1	0	0	0	3	4	1	0	0	3	2	15	0
8:45 AM		0	0	0	0	0	0	0	0	0	2	2	0	0	0	2	1	7	53
9:00 AM		0	0	0	1	0	1	0	1	0	2	6	0	0	0	2	2	15	54
9:15 AM		0	2	0	3	0	0	2	2	0	0	8	0	0	0	2	3	22	59
9:30 AM		0	4	0	4	0	0	0	0	0	0	4	0	0	0	4	2	18	62
9:45 AM		0	0	0	2	0	0	0	1	0	2	2	0	0	0	7	3	17	72
Count Total		0	12	0	11	0	2	2	4	0	11	32	1	0	1	26	23	125	0
Peak Hour	All	0	6	0	10	0	1	2	4	0	4	20	0	0	0	15	10	72	0
	HV	0	0	0	2	0	0	0	0	0	2	2	0	0	0	3	2	11	0
	HV%	-	0%	-	20%	-	0%	0%	0%	-	50%	10%	-	-	-	20%	20%	15%	0

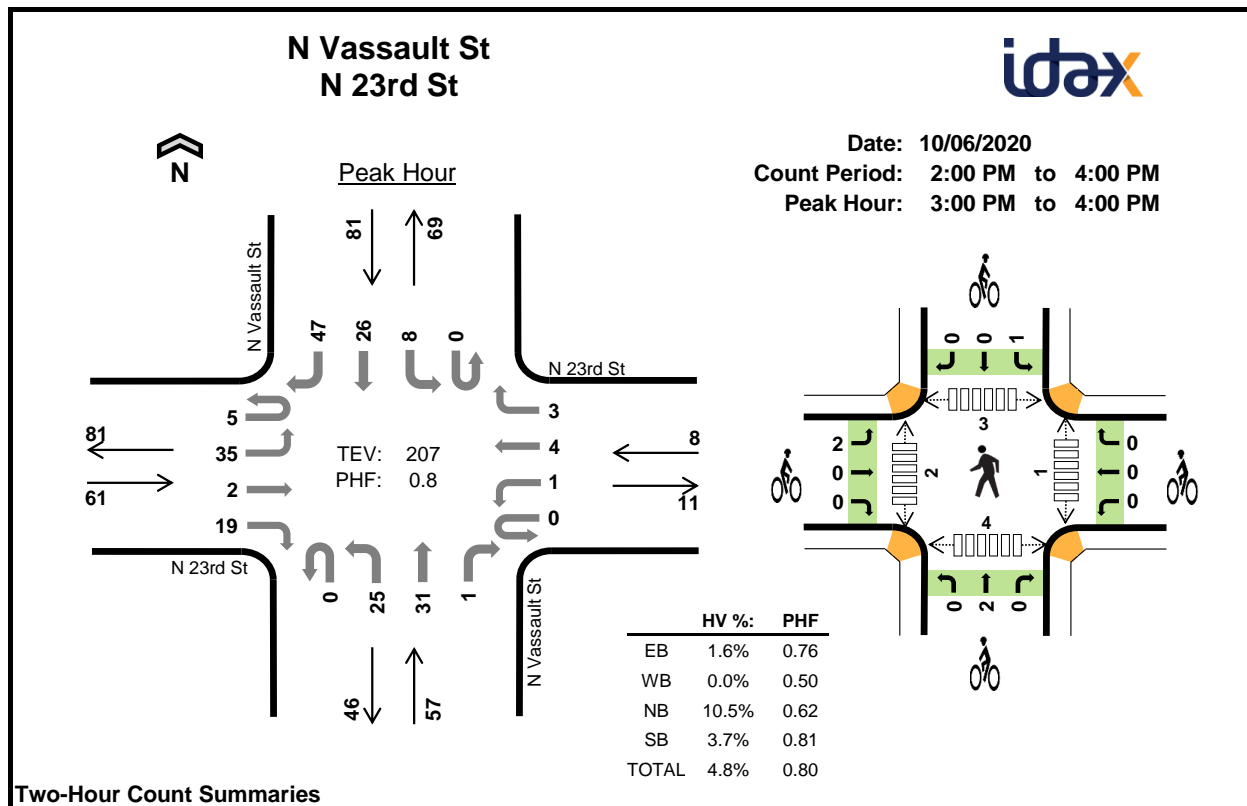
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	0	0	1	1	2	0	0	0	0	0	1	1	0	0	2
8:15 AM	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3
8:30 AM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1
8:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	2	1	3	0	0	0	0	0	0	1	0	0	1
9:15 AM	0	0	0	2	2	0	0	1	0	1	0	0	0	3	3
9:30 AM	0	0	1	1	2	1	0	0	0	1	0	1	0	0	1
9:45 AM	2	0	1	1	4	0	0	0	0	0	0	0	0	0	0
Count Total	2	0	6	7	15	1	0	2	0	3	1	7	0	3	11
Peak Hour	2	0	4	5	11	1	0	1	0	2	0	2	0	3	5

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N 23rd St				N 23rd St				N Vassault St				N Vassault St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
9:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1	3	5
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	7
9:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	2	8
9:45 AM	0	0	0	2	0	0	0	0	0	1	0	0	0	0	1	0	4	11
Count Total	0	0	0	2	0	0	0	0	0	2	4	0	0	0	4	3	15	0
Peak Hour	0	0	0	2	0	0	0	0	0	2	2	0	0	0	3	2	11	0

Two-Hour Count Summaries - Bikes																	
Interval Start	N 23rd St			N 23rd St			N Vassault St			N Vassault St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	0			
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1			
9:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	1	1			
9:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	1	2			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2			
Count Total	0	0	1	0	0	0	0	2	0	0	0	0	3	0			
Peak Hour	0	0	1	0	0	0	0	1	0	0	0	0	2	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		N 23rd St				N 23rd St				N Vassault St				N Vassault St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM		0	5	1	2	0	0	0	1	0	2	5	0	0	0	7	6	29	0
2:15 PM		0	4	0	1	0	0	0	1	0	1	6	1	0	0	16	3	33	0
2:30 PM		0	4	0	5	0	1	0	0	0	2	14	0	0	1	7	10	44	0
2:45 PM		0	1	1	0	0	0	0	1	0	3	3	0	0	0	6	8	23	129
3:00 PM		0	5	0	3	0	0	0	2	0	4	7	0	0	1	5	9	36	136
3:15 PM		1	10	1	4	0	0	1	0	0	12	10	1	0	4	12	9	65	168
3:30 PM		3	10	1	3	0	0	3	1	0	6	8	0	0	1	1	15	52	176
3:45 PM		1	10	0	9	0	1	0	0	0	3	6	0	0	2	8	14	54	207
Count Total		5	49	4	27	0	2	4	6	0	33	59	2	0	9	62	74	336	0
Peak Hour	All	5	35	2	19	0	1	4	3	0	25	31	1	0	8	26	47	207	0
	HV	0	0	0	1	0	0	0	0	0	4	2	0	0	0	2	1	10	0
	HV%	0%	0%	0%	5%	-	0%	0%	0%	-	16%	6%	0%	-	0%	8%	2%	5%	0

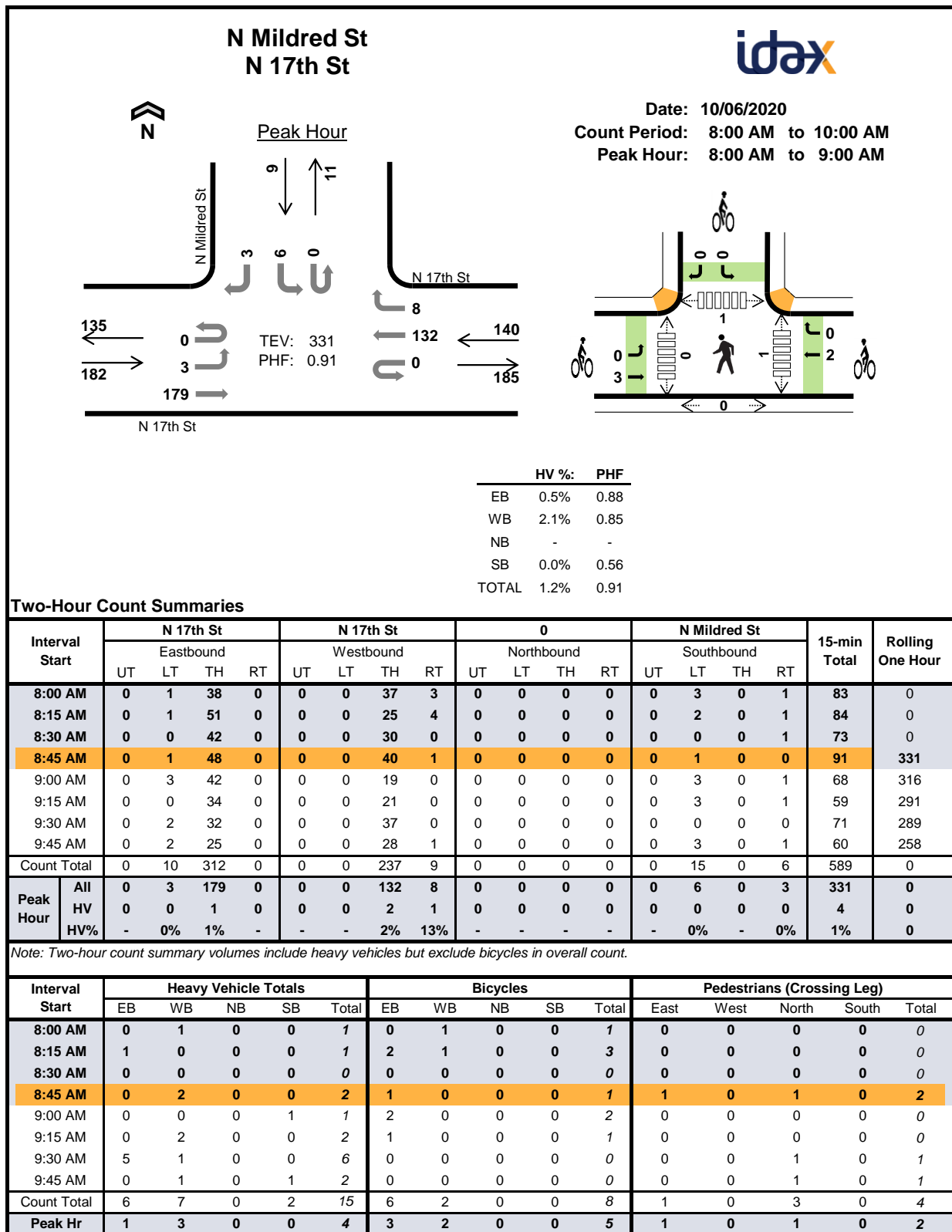
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	0	0	1	0	1	0	0	0	1	1	0	1	0	0	1
2:15 PM	0	0	0	1	1	0	0	0	1	1	0	1	0	0	1
2:30 PM	0	0	1	0	1	0	0	0	2	2	0	2	0	0	2
2:45 PM	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0
3:00 PM	0	0	3	0	3	0	0	0	0	0	0	0	0	2	2
3:15 PM	1	0	1	2	4	1	0	1	1	3	0	1	2	2	5
3:30 PM	0	0	1	0	1	1	0	1	0	2	0	1	0	0	1
3:45 PM	0	0	1	1	2	0	0	0	0	0	1	0	1	0	2
Count Total	1	0	8	5	14	2	0	2	6	10	1	6	3	4	14
Peak Hour	1	0	6	3	10	2	0	2	1	5	1	2	3	4	10

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N 23rd St				N 23rd St				N Vassault St				N Vassault St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	4
3:00 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	3	6
3:15 PM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	1	1	4	9
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	9
3:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	10
Count Total	0	0	0	1	0	0	0	0	0	4	4	0	0	0	4	1	14	0
Peak Hour	0	0	0	1	0	0	0	0	0	4	2	0	0	0	2	1	10	0

Two-Hour Count Summaries - Bikes																	
Interval Start	N 23rd St			N 23rd St			N Vassault St			N Vassault St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0			
2:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0			
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	2	0			
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	5			
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4			
3:15 PM	1	0	0	0	0	0	0	1	0	1	0	0	3	6			
3:30 PM	1	0	0	0	0	0	0	1	0	0	0	0	2	6			
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5			
Count Total	2	0	0	0	0	0	0	2	0	1	1	4	10	0			
Peak Hour	2	0	0	0	0	0	0	2	0	1	0	0	5	0			

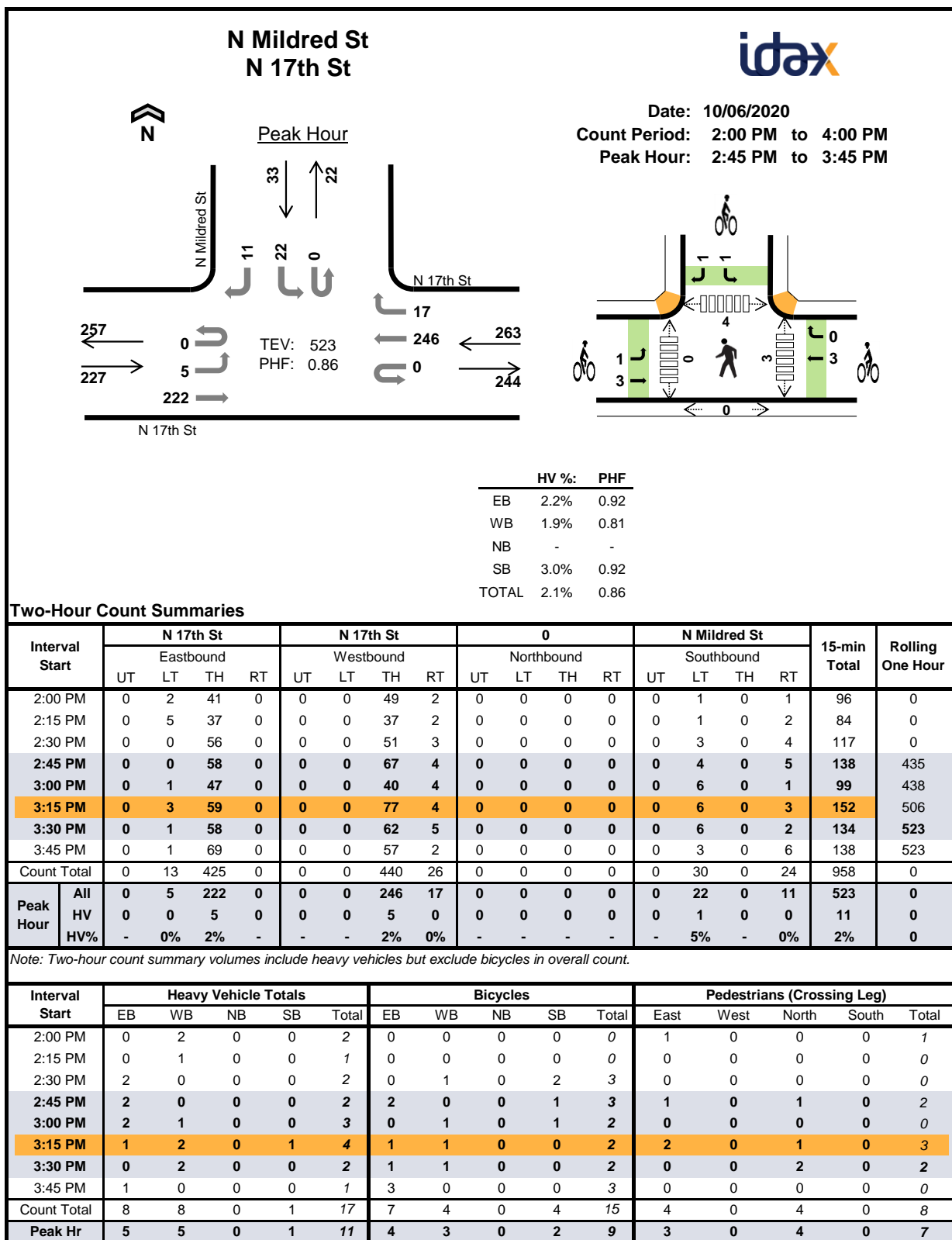
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N 17th St				N 17th St				0				N Mildred St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	4
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
9:15 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	5
9:30 AM	0	1	4	0	0	0	1	0	0	0	0	0	0	0	0	0	6	11
9:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	11
Count Total	0	1	5	0	0	0	6	1	0	0	0	0	0	2	0	0	15	0
Peak Hour	0	0	1	0	0	0	2	1	0	0	0	0	0	0	0	0	4	0

Two-Hour Count Summaries - Bikes																		
Interval Start	N 17th St			N 17th St			0			N Mildred St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0				
8:15 AM	0	2	0	0	1	0	0	0	0	0	0	0	3	0				
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	5				
9:00 AM	1	1	0	0	0	0	0	0	0	0	0	0	2	6				
9:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	4				
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4				
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3				
Count Total	1	5	0	0	2	0	0	0	0	0	0	0	8	0				
Peak Hour	0	3	0	0	2	0	0	0	0	0	0	0	5	0				

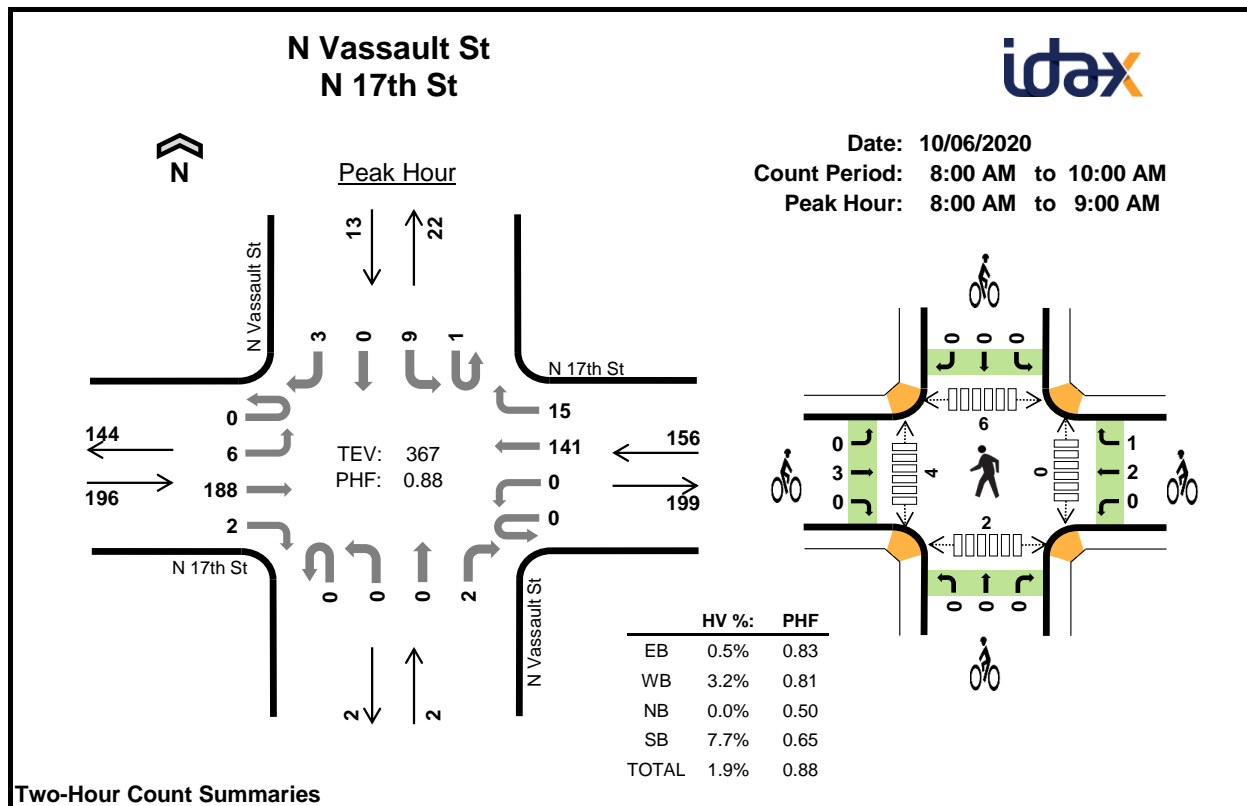
Note: U-Turn volumes for bikes are included in Left-Turn, if any.



Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N 17th St				N 17th St				0				N Mildred St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	0
2:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0
2:30 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
2:45 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7
3:00 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	3	8
3:15 PM	0	0	1	0	0	0	2	0	0	0	0	0	0	0	1	0	4	11
3:30 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2	11
3:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	10
Count Total	0	0	8	0	0	0	7	1	0	0	0	0	0	1	0	0	17	0
Peak Hour	0	0	5	0	0	0	5	0	0	0	0	0	0	1	0	0	11	0

Two-Hour Count Summaries - Bikes																		
Interval Start	N 17th St			N 17th St			0			N Mildred St			15-min Total	Rolling One Hour				
	Eastbound			Westbound			Northbound			Southbound								
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT						
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
2:30 PM	0	0	0	0	1	0	0	0	0	0	0	2	3	0				
2:45 PM	0	2	0	0	0	0	0	0	0	0	0	1	3	6				
3:00 PM	0	0	0	0	1	0	0	0	0	0	0	1	2	8				
3:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	2	10				
3:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	2	9				
3:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	3	9				
Count Total	1	6	0	0	4	0	0	0	0	0	0	1	15	0				
Peak Hour	1	3	0	0	3	0	0	0	0	0	0	1	9	0				

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		N 17th St				N 17th St				N Vassault St				N Vassault St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
8:00 AM		0	1	44	1	0	0	39	3	0	0	0	0	1	0	0	2	91	0
8:15 AM		0	1	57	1	0	0	26	4	0	0	0	1	0	3	0	0	93	0
8:30 AM		0	2	36	0	0	0	33	3	0	0	0	0	0	4	0	1	79	0
8:45 AM		0	2	51	0	0	0	43	5	0	0	0	1	0	2	0	0	104	367
9:00 AM		0	4	42	0	0	0	21	2	0	0	0	1	0	2	1	1	74	350
9:15 AM		0	4	41	1	0	0	21	1	0	0	0	3	0	4	0	1	76	333
9:30 AM		0	2	29	0	0	0	34	3	0	1	0	0	6	2	0	3	80	334
9:45 AM		0	1	34	0	0	0	31	1	0	0	0	0	0	5	0	4	76	306
Count Total		0	17	334	3	0	0	248	22	0	1	0	6	7	22	1	12	673	0
Peak Hour	All	0	6	188	2	0	0	141	15	0	0	0	2	1	9	0	3	367	0
	HV	0	0	1	0	0	0	3	2	0	0	0	0	0	1	0	0	7	0
	HV%	-	0%	1%	0%	-	-	2%	13%	-	-	-	0%	0%	11%	-	0%	2%	0

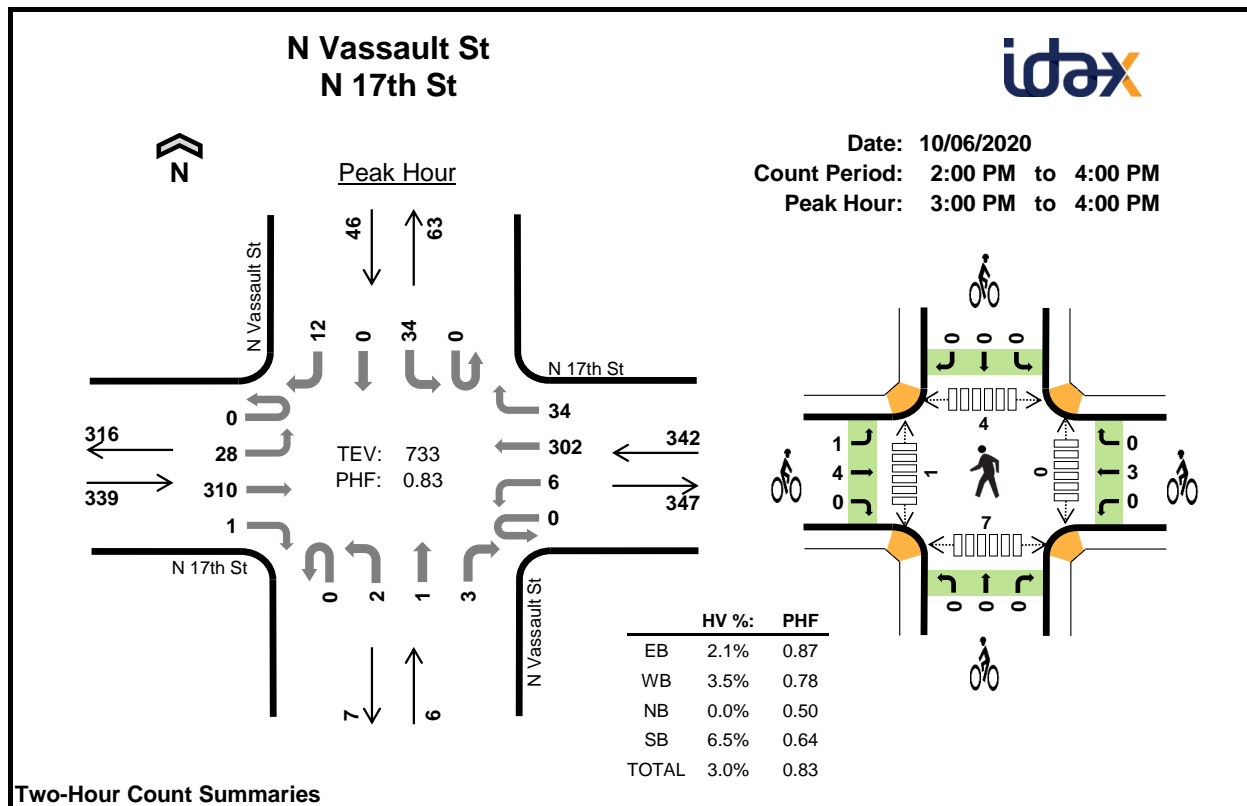
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
8:00 AM	0	1	0	0	1	0	1	0	0	1	0	1	3	2	6
8:15 AM	1	0	0	0	1	2	2	0	0	4	0	2	1	0	3
8:30 AM	0	1	0	1	2	0	0	0	0	0	0	1	1	0	2
8:45 AM	0	3	0	0	3	1	0	0	0	1	0	0	1	0	1
9:00 AM	2	3	0	1	6	1	0	0	0	1	0	0	0	0	0
9:15 AM	1	1	0	1	3	1	0	0	0	1	0	1	0	8	9
9:30 AM	2	2	0	1	5	0	0	0	1	1	0	0	0	1	1
9:45 AM	1	0	0	2	3	0	0	0	0	0	0	0	0	1	1
Count Total	7	11	0	6	24	5	3	0	1	9	0	5	6	12	23
Peak Hour	1	5	0	1	7	3	3	0	0	6	0	4	6	2	12

Two-Hour Count Summaries - Heavy Vehicles																			
Interval Start	N 17th St				N 17th St				N Vassault St				N Vassault St				15-min Total	Rolling One Hour	
	Eastbound				Westbound				Northbound				Southbound						
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT			
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	2	0
8:45 AM	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	3	7
9:00 AM	0	1	1	0	0	0	2	1	0	0	0	0	0	0	1	0	0	6	12
9:15 AM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	3	14
9:30 AM	0	1	1	0	0	0	1	1	0	0	0	0	0	0	1	0	0	5	17
9:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	3	17
Count Total	0	2	5	0	0	0	7	4	0	0	0	0	0	0	6	0	0	24	0
Peak Hour	0	0	1	0	0	0	3	2	0	0	0	0	0	0	1	0	0	7	0

Two-Hour Count Summaries - Bikes																	
Interval Start	N 17th St			N 17th St			N Vassault St			N Vassault St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0			
8:15 AM	0	2	0	0	1	1	0	0	0	0	0	0	4	0			
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	6			
9:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	6			
9:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1	3			
9:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	4			
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	3			
Count Total	0	5	0	0	2	1	0	0	0	1	0	0	9	0			
Peak Hour	0	3	0	0	2	1	0	0	0	0	0	0	6	0			

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

**Two-Hour Count Summaries**

Interval Start		N 17th St				N 17th St				N Vassault St				N Vassault St				15-min Total	Rolling One Hour
		Eastbound				Westbound				Northbound				Southbound					
		UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM		0	4	38	0	0	3	53	6	0	0	0	2	0	8	0	3	117	0
2:15 PM		0	1	42	1	0	2	39	7	0	3	1	2	0	6	1	10	115	0
2:30 PM		0	6	58	0	0	0	49	9	0	0	0	1	0	9	0	7	139	0
2:45 PM		0	3	61	0	0	2	62	5	0	0	0	2	0	3	0	5	143	514
3:00 PM		0	4	55	0	0	2	55	9	0	1	0	2	0	7	0	2	137	534
3:15 PM		0	6	91	0	0	2	92	15	0	0	0	0	0	12	0	4	222	641
3:30 PM		0	13	78	0	0	1	88	4	0	0	1	0	0	2	0	1	188	690
3:45 PM		0	5	86	1	0	1	67	6	0	1	0	1	0	13	0	5	186	733
Count Total		0	42	509	2	0	13	505	61	0	5	2	10	0	60	1	37	1,247	0
Peak Hour	All	0	28	310	1	0	6	302	34	0	2	1	3	0	34	0	12	733	0
	HV	0	1	6	0	0	1	6	5	0	0	0	0	0	3	0	0	22	0
	HV%	-	4%	2%	0%	-	17%	2%	15%	-	0%	0%	0%	-	9%	-	0%	3%	0

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

Interval Start	Heavy Vehicle Totals					Bicycles					Pedestrians (Crossing Leg)				
	EB	WB	NB	SB	Total	EB	WB	NB	SB	Total	East	West	North	South	Total
2:00 PM	1	2	0	0	3	0	0	0	0	0	0	0	0	1	1
2:15 PM	0	0	0	0	0	0	0	0	1	1	0	1	0	2	3
2:30 PM	3	0	0	1	4	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	1	1	2	0	0	0	2	0	0	0	0	0
3:00 PM	1	3	0	0	4	1	2	0	0	3	0	0	1	3	4
3:15 PM	3	6	0	1	10	0	0	0	0	0	0	0	2	2	4
3:30 PM	1	2	0	0	3	1	1	0	0	2	0	0	1	1	2
3:45 PM	2	1	0	2	5	3	0	0	0	3	0	1	0	1	2
Count Total	11	14	0	5	30	7	3	0	1	11	0	2	4	10	16
Peak Hour	7	12	0	3	22	5	3	0	0	8	0	1	4	7	12

Two-Hour Count Summaries - Heavy Vehicles																		
Interval Start	N 17th St				N 17th St				N Vassault St				N Vassault St				15-min Total	Rolling One Hour
	Eastbound				Westbound				Northbound				Southbound					
	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT	UT	LT	TH	RT		
2:00 PM	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0	4	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	8
3:00 PM	0	0	1	0	0	0	1	2	0	0	0	0	0	0	0	0	4	9
3:15 PM	0	0	3	0	0	1	2	3	0	0	0	0	0	1	0	0	10	19
3:30 PM	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	3	18
3:45 PM	0	0	2	0	0	0	1	0	0	0	0	0	0	2	0	0	5	22
Count Total	0	3	8	0	0	1	8	5	0	0	0	0	0	4	0	1	30	0
Peak Hour	0	1	6	0	0	1	6	5	0	0	0	0	0	3	0	0	22	0

Two-Hour Count Summaries - Bikes																	
Interval Start	N 17th St			N 17th St			N Vassault St			N Vassault St			15-min Total	Rolling One Hour			
	Eastbound			Westbound			Northbound			Southbound							
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT					
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0		
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
2:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2	3	0		
3:00 PM	0	1	0	0	2	0	0	0	0	0	0	0	3	6	0		
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0		
3:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	2	7	0		
3:45 PM	0	3	0	0	0	0	0	0	0	0	0	0	3	8	0		
Count Total	1	6	0	0	3	0	0	0	0	0	0	1	11	0	0		
Peak Hour	1	4	0	0	3	0	0	0	0	0	0	0	8	0	0		

Note: U-Turn volumes for bikes are included in Left-Turn, if any.

Appendix C: LOS Definitions

Highway Capacity Manual 2010/6th 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 2010* and 6th Edition (Transportation Research Board, 2010 and 2016, respectively).

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 2010 and 6th Edition*, Transportation Research Board, 2010 and 2016, 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 control. All-way stop control 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 2010 and 6th Edition*, Transportation Research Board, 2010 and 2016, 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.

Appendix D: LOS Worksheets

Intersection						
Int Delay, s/veh	2.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	240	30	75	145	25	55
Future Vol, veh/h	240	30	75	145	25	55
Conflicting Peds, #/hr	0	3	8	0	3	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	4	2	2	10	10
Mvmt Flow	267	33	83	161	28	61
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	308	0	622	300
Stage 1	-	-	-	-	292	-
Stage 2	-	-	-	-	330	-
Critical Hdwy	-	-	4.12	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.218	-	3.59	3.39
Pot Cap-1 Maneuver	-	-	1253	-	438	721
Stage 1	-	-	-	-	740	-
Stage 2	-	-	-	-	711	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1243	-	404	710
Mov Cap-2 Maneuver	-	-	-	-	501	-
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	661	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.8		11.7	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	628	-	-	1243	-	
HCM Lane V/C Ratio	0.142	-	-	0.067	-	
HCM Control Delay (s)	11.7	-	-	8.1	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-	




Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	0	0	5	35	0	35	5	275	30	35	245	0
Future Vol, veh/h	0	0	5	35	0	35	5	275	30	35	245	0
Conflicting Peds, #/hr	11	0	13	3	0	1	13	0	3	1	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	13	13	13	5	5	5	3	3	3
Mvmt Flow	0	0	6	41	0	41	6	320	35	41	285	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	761	750	311	736	733	352	298	0	0	358	0	0
Stage 1	380	380	-	353	353	-	-	-	-	-	-	-
Stage 2	381	370	-	383	380	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.23	6.63	6.33	4.15	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.617	4.117	3.417	2.245	-	-	2.227	-	-
Pot Cap-1 Maneuver	325	342	734	321	335	667	1246	-	-	1195	-	-
Stage 1	646	617	-	642	612	-	-	-	-	-	-	-
Stage 2	645	624	-	618	595	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	289	324	716	304	317	658	1231	-	-	1192	-	-
Mov Cap-2 Maneuver	289	324	-	304	317	-	-	-	-	-	-	-
Stage 1	635	589	-	637	607	-	-	-	-	-	-	-
Stage 2	596	619	-	585	568	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.1		15.7		0.1		1					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1231	-	-	716	416	1192	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.008	0.196	0.034	-	-				
HCM Control Delay (s)	7.9	-	-	10.1	15.7	8.1	-	-				
HCM Lane LOS	A	-	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.7	0.1	-	-				

Intersection								
Int Delay, s/veh	6.8							
Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations								
Traffic Vol, veh/h	5	20	35	5	20	50	5	
Future Vol, veh/h	5	20	35	5	20	50	5	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	
Sign Control	Stop	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	81	81	81	81	81	81	81	
Heavy Vehicles, %	36	36	36	20	20	23	23	
Mvmt Flow	6	25	43	6	25	62	6	
Major/Minor	Minor1	Major1		Major2				
Conflicting Flow All	0	149	19	0	0	31	0	
Stage 1	0	19	-	-	-	-	-	
Stage 2	0	130	-	-	-	-	-	
Critical Hdwy	-	6.76	6.56	-	-	4.33	-	
Critical Hdwy Stg 1	-	5.76	-	-	-	-	-	
Critical Hdwy Stg 2	-	5.76	-	-	-	-	-	
Follow-up Hdwy	-	3.824	3.624	-	-	2.407	-	
Pot Cap-1 Maneuver	0	769	969	-	-	1456	-	
Stage 1	0	922	-	-	-	-	-	
Stage 2	0	819	-	-	-	-	-	
Platoon blocked, %	-			-	-		-	
Mov Cap-1 Maneuver	0	736	969	-	-	1456	-	
Mov Cap-2 Maneuver	0	736	-	-	-	-	-	
Stage 1	0	922	-	-	-	-	-	
Stage 2	0	784	-	-	-	-	-	
Approach	WB	NB		SB				
HCM Control Delay, s	9.5	0		6.9				
HCM LOS	A							
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT				
Capacity (veh/h)	-	-	869	1456	-			
HCM Lane V/C Ratio	-	-	0.078	0.042	-			
HCM Control Delay (s)	-	-	9.5	7.6	0			
HCM Lane LOS	-	-	A	A	A			
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-			

Intersection												
Int Delay, s/veh	5.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	65	0	35	5	5	5	50	20	0	0	15	90
Future Vol, veh/h	65	0	35	5	5	5	50	20	0	0	15	90
Conflicting Peds, #/hr	2	0	5	3	0	0	5	0	3	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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	13	13	13	0	0	0	17	17	17	20	20	20
Mvmt Flow	79	0	43	6	6	6	61	24	0	0	18	110
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	232	227	83	249	282	29	133	0	0	27	0	0
Stage 1	78	78	-	149	149	-	-	-	-	-	-	-
Stage 2	154	149	-	100	133	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.63	6.33	7.1	6.5	6.2	4.27	-	-	4.3	-	-
Critical Hdwy Stg 1	6.23	5.63	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.63	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.117	3.417	3.5	4	3.3	2.353	-	-	2.38	-	-
Pot Cap-1 Maneuver	700	654	947	709	630	1052	1364	-	-	1478	-	-
Stage 1	904	809	-	858	778	-	-	-	-	-	-	-
Stage 2	823	753	-	911	790	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	662	619	938	648	596	1047	1358	-	-	1474	-	-
Mov Cap-2 Maneuver	662	619	-	648	596	-	-	-	-	-	-	-
Stage 1	858	805	-	816	740	-	-	-	-	-	-	-
Stage 2	773	716	-	865	786	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	10.8		10.1			5.6			0			
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1358	-	-	738	718	1474	-	-				
HCM Lane V/C Ratio	0.045	-	-	0.165	0.025	-	-	-				
HCM Control Delay (s)	7.8	0	-	10.8	10.1	0	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0	-	-				







HCM 6th TWSC
5: N 17th St/N Westgate Blvd & N Mildred St

Skyline Elementary School
Existing AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	190	140	10	5	20
Future Vol, veh/h	20	190	140	10	5	20
Conflicting Peds, #/hr	1	0	0	2	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	22	209	154	11	5	22
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	167	0	-	0	417	163
Stage 1	-	-	-	-	162	-
Stage 2	-	-	-	-	255	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1417	-	-	-	596	887
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	792	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1414	-	-	-	583	884
Mov Cap-2 Maneuver	-	-	-	-	583	-
Stage 1	-	-	-	-	855	-
Stage 2	-	-	-	-	790	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.7	0		9.7		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1414	-	-	-	801	
HCM Lane V/C Ratio	0.016	-	-	-	0.034	
HCM Control Delay (s)	7.6	0	-	-	9.7	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

HCM 6th TWSC
6: N Westgate Blvd & N Vassault St





Skyline Elementary School
Existing AM Peak Hour

Intersection													
Int Delay, s/veh	1.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	5	200	5	0	150	60	0	0	5	5	35	0	5
Future Vol, veh/h	5	200	5	0	150	60	0	0	5	5	35	0	5
Conflicting Peds, #/hr	10	0	6	2	0	6	6	0	2	0	6	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	125	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	3	3	3	0	0	0	8	8	8	8
Mvmt Flow	6	227	6	0	170	68	0	0	6	6	40	0	6




Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	248	0	0	239	0	0	465	496	242	0	465	465	224
Stage 1	-	-	-	-	-	-	248	248	-	0	214	214	-
Stage 2	-	-	-	-	-	-	217	248	-	0	251	251	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.1	6.5	6.2	-	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	6.18	5.58	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.5	4	3.3	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	1324	-	-	1322	-	-	511	478	802	0	498	486	801
Stage 1	-	-	-	-	-	-	760	705	-	0	775	714	-
Stage 2	-	-	-	-	-	-	790	705	-	0	740	688	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1311	-	-	1314	-	-	498	468	793	0	485	476	786
Mov Cap-2 Maneuver	-	-	-	-	-	-	498	468	-	0	485	476	-
Stage 1	-	-	-	-	-	-	752	697	-	0	764	707	-
Stage 2	-	-	-	-	-	-	777	698	-	0	727	680	-

Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.2			0			9.6			12.8			
HCM LOS							A			B			

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	793	1311	-	-	1314	-	-	509
HCM Lane V/C Ratio	0.007	0.004	-	-	-	-	-	0.089
HCM Control Delay (s)	9.6	7.8	-	-	0	-	-	12.8
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	320	30	90	300	35	90
Future Vol, veh/h	320	30	90	300	35	90
Conflicting Peds, #/hr	0	7	11	0	7	11
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	2	2	3	3
Mvmt Flow	340	32	96	319	37	96
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	383	0	885	378
Stage 1	-	-	-	-	367	-
Stage 2	-	-	-	-	518	-
Critical Hdwy	-	-	4.12	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1175	-	314	667
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	596	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1163	-	283	653
Mov Cap-2 Maneuver	-	-	-	-	403	-
Stage 1	-	-	-	-	692	-
Stage 2	-	-	-	-	543	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.9		13.5	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	556	-	-	1163	-	
HCM Lane V/C Ratio	0.239	-	-	0.082	-	
HCM Control Delay (s)	13.5	-	-	8.4	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.9	-	-	0.3	-	

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	5	0	5	20	0	30	5	500	25	15	470	0
Future Vol, veh/h	5	0	5	20	0	30	5	500	25	15	470	0
Conflicting Peds, #/hr	2	0	5	3	0	0	5	0	3	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	-	-	-	-	-	-	25	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	13	13	13	1	1	1	2	2	2
Mvmt Flow	5	0	5	21	0	32	5	532	27	16	500	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1111	1109	510	1099	1096	551	505	0	0	562	0	0
Stage 1	537	537	-	559	559	-	-	-	-	-	-	-
Stage 2	574	572	-	540	537	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.23	6.63	6.33	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.617	4.117	3.417	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	188	211	567	181	204	513	1065	-	-	1009	-	-
Stage 1	532	526	-	494	494	-	-	-	-	-	-	-
Stage 2	507	508	-	507	505	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	172	205	562	175	198	511	1060	-	-	1006	-	-
Mov Cap-2 Maneuver	172	205	-	175	198	-	-	-	-	-	-	-
Stage 1	527	515	-	490	490	-	-	-	-	-	-	-
Stage 2	472	504	-	492	494	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	19.3		20.2		0.1		0.3					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1060	-	-	263	289	1006	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.04	0.184	0.016	-	-				
HCM Control Delay (s)	8.4	-	-	19.3	20.2	8.6	-	-				
HCM Lane LOS	A	-	-	C	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.7	0	-	-				

Intersection								
Int Delay, s/veh	6.4							
Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations								
Traffic Vol, veh/h	5	30	40	15	10	35	15	
Future Vol, veh/h	5	30	40	15	10	35	15	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	
Sign Control	Stop	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	72	72	72	72	72	72	72	
Heavy Vehicles, %	11	11	11	0	0	0	0	
Mvmt Flow	7	42	56	21	14	49	21	
Major/Minor	Minor1	Major1		Major2				
Conflicting Flow All	0	147	28	0	0	35	0	
Stage 1	0	28	-	-	-	-	-	
Stage 2	0	119	-	-	-	-	-	
Critical Hdwy	-	6.51	6.31	-	-	4.1	-	
Critical Hdwy Stg 1	-	5.51	-	-	-	-	-	
Critical Hdwy Stg 2	-	5.51	-	-	-	-	-	
Follow-up Hdwy	-	3.599	3.399	-	-	2.2	-	
Pot Cap-1 Maneuver	0	825	1022	-	-	1589	-	
Stage 1	0	972	-	-	-	-	-	
Stage 2	0	884	-	-	-	-	-	
Platoon blocked, %	-			-	-		-	
Mov Cap-1 Maneuver	0	799	1022	-	-	1589	-	
Mov Cap-2 Maneuver	0	799	-	-	-	-	-	
Stage 1	0	972	-	-	-	-	-	
Stage 2	0	857	-	-	-	-	-	
Approach	WB	NB		SB				
HCM Control Delay, s	9.4	0		5.1				
HCM LOS	A							
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT				
Capacity (veh/h)	-	-	913	1589	-			
HCM Lane V/C Ratio	-	-	0.106	0.031	-			
HCM Control Delay (s)	-	-	9.4	7.3	0			
HCM Lane LOS	-	-	A	A	A			
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-			

Intersection													
Int Delay, s/veh	6.2												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↕			↕			↕			↕	
Traffic Vol, veh/h	5	85	5	50	5	5	5	40	35	5	10	25	80
Future Vol, veh/h	5	85	5	50	5	5	5	40	35	5	10	25	80
Conflicting Peds, #/hr	0	5	0	6	5	0	4	6	0	5	4	0	5
Sign Control	Stop	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	80	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	0	0	0	11	11	11	4	4	4
Mvmt Flow	6	106	6	63	6	6	6	50	44	6	13	31	100
Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	0	271	268	93	300	315	57	137	0	0	55	0	0
Stage 1	0	113	113	-	152	152	-	-	-	-	-	-	-
Stage 2	0	158	155	-	148	163	-	-	-	-	-	-	-
Critical Hdwy	-	7.12	6.52	6.22	7.1	6.5	6.2	4.21	-	-	4.14	-	-
Critical Hdwy Stg 1	-	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	4.018	3.318	3.5	4	3.3	2.299	-	-	2.236	-	-
Pot Cap-1 Maneuver	0	682	638	964	656	604	1015	1393	-	-	1537	-	-
Stage 1	0	892	802	-	855	775	-	-	-	-	-	-	-
Stage 2	0	844	769	-	859	767	-	-	-	-	-	-	-
Platoon blocked, %	-								-	-		-	-
Mov Cap-1 Maneuver	0	642	602	953	581	570	1005	1385	-	-	1530	-	-
Mov Cap-2 Maneuver	0	642	602	-	581	570	-	-	-	-	-	-	-
Stage 1	0	854	790	-	819	742	-	-	-	-	-	-	-
Stage 2	0	797	737	-	785	755	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	11.5			10.5			3.8			0.6			
HCM LOS	B			B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1385	-	-	725	671	1530	-	-					
HCM Lane V/C Ratio	0.036	-	-	0.241	0.028	0.008	-	-					
HCM Control Delay (s)	7.7	0	-	11.5	10.5	7.4	0	-					
HCM Lane LOS	A	A	-	B	B	A	A	-					
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.1	0	-	-					

HCM 6th TWSC
5: N 17th St/N Westgate Blvd & N Mildred St

Skyline Elementary School
Existing PM Peak Hour

Intersection

Int Delay, s/veh 1.1

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 10 235 260 20 25 20

Future Vol, veh/h 10 235 260 20 25 20

Conflicting Peds, #/hr 4 0 0 7 7 4

Sign Control Free Free Free Free Stop Stop

RT Channelized - None - None - None

Storage Length - - - - 0 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 86 86 86 86 86 86

Heavy Vehicles, % 2 2 2 2 3 3

Mvmt Flow 12 273 302 23 29 23

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 332 0 - 0 625 325

Stage 1 - - - - 321 -

Stage 2 - - - - 304 -

Critical Hdwy 4.12 - - - 6.43 6.23

Critical Hdwy Stg 1 - - - - 5.43 -

Critical Hdwy Stg 2 - - - - 5.43 -

Follow-up Hdwy 2.218 - - - 3.527 3.327

Pot Cap-1 Maneuver 1227 - - - 447 714

Stage 1 - - - - 733 -

Stage 2 - - - - 746 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1219 - - - 435 707

Mov Cap-2 Maneuver - - - - 435 -

Stage 1 - - - - 719 -

Stage 2 - - - - 741 -

Approach EB WB SB

HCM Control Delay, s 0.3 0 12.6

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1219 - - - 525

HCM Lane V/C Ratio 0.01 - - - 0.1







HCM Control Delay (s) 8 0 - - 12.6

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.3





HCM 6th TWSC
6: N Westgate Blvd & N Vassault St

Skyline Elementary School
Existing PM Peak Hour

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	325	5	5	320	50	5	5	5	65	0	15
Future Vol, veh/h	30	325	5	5	320	50	5	5	5	65	0	15
Conflicting Peds, #/hr	5	0	8	7	0	4	8	0	7	4	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	4	4	4	0	0	0	7	7	7
Mvmt Flow	36	392	6	6	386	60	6	6	6	78	0	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	451	0	0	406	0	0	920	938	410	913	911	429
Stage 1	-	-	-	-	-	-	475	475	-	433	433	-
Stage 2	-	-	-	-	-	-	445	463	-	480	478	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.1	6.5	6.2	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.17	5.57	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.5	4	3.3	3.563	4.063	3.363
Pot Cap-1 Maneuver	1109	-	-	1142	-	-	254	266	646	249	269	615
Stage 1	-	-	-	-	-	-	574	561	-	591	573	-
Stage 2	-	-	-	-	-	-	596	568	-	558	547	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1104	-	-	1133	-	-	236	253	637	233	256	607
Mov Cap-2 Maneuver	-	-	-	-	-	-	236	253	-	233	256	-
Stage 1	-	-	-	-	-	-	551	538	-	569	567	-
Stage 2	-	-	-	-	-	-	571	562	-	525	525	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.1			17.5			26.4		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	307	1104	-	-	1133	-	-	263				
HCM Lane V/C Ratio	0.059	0.033	-	-	0.005	-	-	0.366				
HCM Control Delay (s)	17.5	8.4	-	-	8.2	-	-	26.4				
HCM Lane LOS	C	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.6				

HCM 6th TWSC
1: N Vassault St & N 26th St




Skyline Elementary School
Future (2025) Without-Project AM Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	265	35	75	160	25	55
Future Vol, veh/h	265	35	75	160	25	55
Conflicting Peds, #/hr	0	3	8	0	3	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	4	2	2	10	10
Mvmt Flow	294	39	83	178	28	61
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	341	0	669	330
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	-	-	4.12	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.218	-	3.59	3.39
Pot Cap-1 Maneuver	-	-	1218	-	411	693
Stage 1	-	-	-	-	717	-
Stage 2	-	-	-	-	698	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1209	-	379	682
Mov Cap-2 Maneuver	-	-	-	-	482	-
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	648	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.6		12	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	604	-	-	1209	-	
HCM Lane V/C Ratio	0.147	-	-	0.069	-	
HCM Control Delay (s)	12	-	-	8.2	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	0.5	-	-	0.2	-	

HCM 6th TWSC
2: N Narrows Dr & N 24th St

Skyline Elementary School
Future (2025) Without-Project AM Peak Hour

Intersection												
Int Delay, s/veh	2.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	0	0	5	35	0	35	5	305	35	35	270	0
Future Vol, veh/h	0	0	5	35	0	35	5	305	35	35	270	0
Conflicting Peds, #/hr	11	0	13	3	0	1	13	0	3	1	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	13	13	13	5	5	5	3	3	3
Mvmt Flow	0	0	6	41	0	41	6	355	41	41	314	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	828	820	340	803	800	390	327	0	0	399	0	0
Stage 1	409	409	-	391	391	-	-	-	-	-	-	-
Stage 2	419	411	-	412	409	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.23	6.63	6.33	4.15	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.617	4.117	3.417	2.245	-	-	2.227	-	-
Pot Cap-1 Maneuver	293	312	707	289	306	635	1216	-	-	1154	-	-
Stage 1	623	600	-	612	588	-	-	-	-	-	-	-
Stage 2	616	598	-	596	577	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	260	295	690	273	289	627	1201	-	-	1151	-	-
Mov Cap-2 Maneuver	260	295	-	273	289	-	-	-	-	-	-	-
Stage 1	612	571	-	607	583	-	-	-	-	-	-	-
Stage 2	567	593	-	563	549	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.3		17		0.1		0.9					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1201	-	-	690	380	1151	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.008	0.214	0.035	-	-				
HCM Control Delay (s)	8	-	-	10.3	17	8.2	-	-				
HCM Lane LOS	A	-	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.8	0.1	-	-				

Intersection								
Int Delay, s/veh	6.6							
Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT	
Lane Configurations								
Traffic Vol, veh/h	5	20	40	5	25	50	5	
Future Vol, veh/h	5	20	40	5	25	50	5	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	
Sign Control	Stop	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	81	81	81	81	81	81	81	
Heavy Vehicles, %	36	36	36	20	20	23	23	
Mvmt Flow	6	25	49	6	31	62	6	
Major/Minor	Minor1	Major1		Major2				
Conflicting Flow All	0	152	22	0	0	37	0	
Stage 1	0	22	-	-	-	-	-	
Stage 2	0	130	-	-	-	-	-	
Critical Hdwy	-	6.76	6.56	-	-	4.33	-	
Critical Hdwy Stg 1	-	5.76	-	-	-	-	-	
Critical Hdwy Stg 2	-	5.76	-	-	-	-	-	
Follow-up Hdwy	-	3.824	3.624	-	-	2.407	-	
Pot Cap-1 Maneuver	0	766	965	-	-	1448	-	
Stage 1	0	920	-	-	-	-	-	
Stage 2	0	819	-	-	-	-	-	
Platoon blocked, %	-			-	-		-	
Mov Cap-1 Maneuver	0	733	965	-	-	1448	-	
Mov Cap-2 Maneuver	0	733	-	-	-	-	-	
Stage 1	0	920	-	-	-	-	-	
Stage 2	0	784	-	-	-	-	-	
Approach	WB	NB		SB				
HCM Control Delay, s	9.5	0		6.9				
HCM LOS	A							
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT				
Capacity (veh/h)	-	-	873	1448	-			
HCM Lane V/C Ratio	-	-	0.085	0.043	-			
HCM Control Delay (s)	-	-	9.5	7.6	0			
HCM Lane LOS	-	-	A	A	A			
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-			




HCM 6th TWSC
4: N Vassault St & N 23rd St

Skyline Elementary School
Future (2025) Without-Project AM Peak Hour

Intersection												
Int Delay, s/veh	5.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	65	0	35	5	5	5	50	20	0	0	15	95
Future Vol, veh/h	65	0	35	5	5	5	50	20	0	0	15	95
Conflicting Peds, #/hr	2	0	5	3	0	0	5	0	3	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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	13	13	13	0	0	0	17	17	17	20	20	20
Mvmt Flow	79	0	43	6	6	6	61	24	0	0	18	116
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	235	230	86	252	288	29	139	0	0	27	0	0
Stage 1	81	81	-	149	149	-	-	-	-	-	-	-
Stage 2	154	149	-	103	139	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.63	6.33	7.1	6.5	6.2	4.27	-	-	4.3	-	-
Critical Hdwy Stg 1	6.23	5.63	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.63	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.117	3.417	3.5	4	3.3	2.353	-	-	2.38	-	-
Pot Cap-1 Maneuver	697	651	943	706	625	1052	1357	-	-	1478	-	-
Stage 1	901	807	-	858	778	-	-	-	-	-	-	-
Stage 2	823	753	-	908	785	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	659	616	934	645	591	1047	1351	-	-	1474	-	-
Mov Cap-2 Maneuver	659	616	-	645	591	-	-	-	-	-	-	-
Stage 1	855	803	-	816	740	-	-	-	-	-	-	-
Stage 2	773	716	-	862	781	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	10.9		10.2		5.6			0				
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1351	-	-	735	715	1474	-	-				
HCM Lane V/C Ratio	0.045	-	-	0.166	0.026	-	-	-				
HCM Control Delay (s)	7.8	0	-	10.9	10.2	0	-	-				
HCM Lane LOS	A	A	-	B	B	A	-	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.6	0.1	0	-	-				







HCM 6th TWSC
5: N 17th St/N Westgate Blvd & N Mildred St

Skyline Elementary School
Future (2025) Without-Project AM Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	210	155	10	5	20
Future Vol, veh/h	25	210	155	10	5	20
Conflicting Peds, #/hr	1	0	0	2	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	27	231	170	11	5	22
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	183	0	-	0	465	179
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	287	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1398	-	-	-	559	869
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	766	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1395	-	-	-	544	867
Mov Cap-2 Maneuver	-	-	-	-	544	-
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	764	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.8	0		9.8		
HCM LOS				A		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1395	-	-	-	775	
HCM Lane V/C Ratio	0.02	-	-	-	0.035	
HCM Control Delay (s)	7.6	0	-	-	9.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

HCM 6th TWSC
6: N Westgate Blvd & N Vassault St






Skyline Elementary School
Future (2025) Without-Project AM Peak Hour

Intersection													
Int Delay, s/veh	1.4												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	5	220	5	0	165	60	0	0	5	5	35	0	5
Future Vol, veh/h	5	220	5	0	165	60	0	0	5	5	35	0	5
Conflicting Peds, #/hr	10	0	6	2	0	6	6	0	2	0	6	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	125	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	3	3	3	0	0	0	8	8	8	8
Mvmt Flow	6	250	6	0	188	68	0	0	6	6	40	0	6

Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	266	0	0	262	0	0	506	537	265	0	506	506	242
Stage 1	-	-	-	-	-	-	271	271	-	0	232	232	-
Stage 2	-	-	-	-	-	-	235	266	-	0	274	274	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.1	6.5	6.2	-	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	6.18	5.58	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.5	4	3.3	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	1304	-	-	1296	-	-	480	453	779	0	467	460	782
Stage 1	-	-	-	-	-	-	739	689	-	0	758	702	-
Stage 2	-	-	-	-	-	-	773	692	-	0	719	672	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1292	-	-	1289	-	-	468	443	770	0	455	450	767
Mov Cap-2 Maneuver	-	-	-	-	-	-	468	443	-	0	455	450	-
Stage 1	-	-	-	-	-	-	732	681	-	0	747	695	-
Stage 2	-	-	-	-	-	-	760	685	-	0	706	665	-







Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.2			0			9.7			13.3			
HCM LOS							A			B			




Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	770	1292	-	-	1289	-	-	479
HCM Lane V/C Ratio	0.007	0.004	-	-	-	-	-	0.095
HCM Control Delay (s)	9.7	7.8	-	-	0	-	-	13.3
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Intersection						
Int Delay, s/veh	2.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	355	35	100	330	35	95
Future Vol, veh/h	355	35	100	330	35	95
Conflicting Peds, #/hr	0	7	11	0	7	11
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	2	2	3	3
Mvmt Flow	378	37	106	351	37	101
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	426	0	978	419
Stage 1	-	-	-	-	408	-
Stage 2	-	-	-	-	570	-
Critical Hdwy	-	-	4.12	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1133	-	277	632
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	564	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1121	-	247	619
Mov Cap-2 Maneuver	-	-	-	-	371	-
Stage 1	-	-	-	-	662	-
Stage 2	-	-	-	-	507	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2		14.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	525	-	-	1121	-	
HCM Lane V/C Ratio	0.263	-	-	0.095	-	
HCM Control Delay (s)	14.3	-	-	8.5	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1.1	-	-	0.3	-	

HCM 6th TWSC
2: N Narrows Dr & N 24th St

Skyline Elementary School
Future (2025) Without-Project PM Peak Hour

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	5	0	5	20	0	30	5	550	30	15	520	0
Future Vol, veh/h	5	0	5	20	0	30	5	550	30	15	520	0
Conflicting Peds, #/hr	2	0	5	3	0	0	5	0	3	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	-	-	-	-	-	-	25	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	13	13	13	1	1	1	2	2	2
Mvmt Flow	5	0	5	21	0	32	5	585	32	16	553	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1219	1220	563	1207	1204	606	558	0	0	620	0	0
Stage 1	590	590	-	614	614	-	-	-	-	-	-	-
Stage 2	629	630	-	593	590	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.23	6.63	6.33	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.617	4.117	3.417	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	159	182	530	152	175	477	1018	-	-	960	-	-
Stage 1	497	498	-	461	466	-	-	-	-	-	-	-
Stage 2	474	478	-	473	478	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	145	177	525	147	170	475	1013	-	-	957	-	-
Mov Cap-2 Maneuver	145	177	-	147	170	-	-	-	-	-	-	-
Stage 1	492	487	-	457	462	-	-	-	-	-	-	-
Stage 2	439	474	-	458	467	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	21.6		23.2		0.1		0.2					
HCM LOS	C		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1013	-	-	227	251	957	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.047	0.212	0.017	-	-				
HCM Control Delay (s)	8.6	-	-	21.6	23.2	8.8	-	-				
HCM Lane LOS	A	-	-	C	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	0.8	0.1	-	-				

Intersection							
Int Delay, s/veh	6.3						
Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	5	35	40	15	15	35	15
Future Vol, veh/h	5	35	40	15	15	35	15
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	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	72	72	72	72	72	72	72
Heavy Vehicles, %	11	11	11	0	0	0	0
Mvmt Flow	7	49	56	21	21	49	21
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	0	151	32	0	0	42	0
Stage 1	0	32	-	-	-	-	-
Stage 2	0	119	-	-	-	-	-
Critical Hdwy	-	6.51	6.31	-	-	4.1	-
Critical Hdwy Stg 1	-	5.51	-	-	-	-	-
Critical Hdwy Stg 2	-	5.51	-	-	-	-	-
Follow-up Hdwy	-	3.599	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	0	820	1017	-	-	1580	-
Stage 1	0	968	-	-	-	-	-
Stage 2	0	884	-	-	-	-	-
Platoon blocked, %	-			-	-		-
Mov Cap-1 Maneuver	0	795	1017	-	-	1580	-
Mov Cap-2 Maneuver	0	795	-	-	-	-	-
Stage 1	0	968	-	-	-	-	-
Stage 2	0	857	-	-	-	-	-
Approach	WB	NB		SB			
HCM Control Delay, s	9.5	0		5.1			
HCM LOS	A						
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT			
Capacity (veh/h)	-	-	900	1580			
HCM Lane V/C Ratio	-	-	0.116	0.031			
HCM Control Delay (s)	-	-	9.5	7.4	0		
HCM Lane LOS	-	-	A	A	A		
HCM 95th %tile Q(veh)	-	-	0.4	0.1			





HCM 6th TWSC
4: N Vassault St & N 23rd St

Skyline Elementary School
Future (2025) Without-Project PM Peak Hour

Intersection													
Int Delay, s/veh	6.2												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↕			↕			↕			↕	
Traffic Vol, veh/h	5	90	5	50	5	5	5	40	40	5	10	30	85
Future Vol, veh/h	5	90	5	50	5	5	5	40	40	5	10	30	85
Conflicting Peds, #/hr	0	5	0	6	5	0	4	6	0	5	4	0	5
Sign Control	Stop	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	80	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	0	0	0	11	11	11	4	4	4
Mvmt Flow	6	113	6	63	6	6	6	50	50	6	13	38	106
Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	0	287	284	103	316	334	63	150	0	0	61	0	0
Stage 1	0	123	123	-	158	158	-	-	-	-	-	-	-
Stage 2	0	164	161	-	158	176	-	-	-	-	-	-	-
Critical Hdwy	-	7.12	6.52	6.22	7.1	6.5	6.2	4.21	-	-	4.14	-	-
Critical Hdwy Stg 1	-	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	4.018	3.318	3.5	4	3.3	2.299	-	-	2.236	-	-
Pot Cap-1 Maneuver	0	665	625	952	641	589	1007	1378	-	-	1530	-	-
Stage 1	0	881	794	-	849	771	-	-	-	-	-	-	-
Stage 2	0	838	765	-	849	757	-	-	-	-	-	-	-
Platoon blocked, %	-								-	-		-	-
Mov Cap-1 Maneuver	0	625	589	941	567	555	997	1370	-	-	1523	-	-
Mov Cap-2 Maneuver	0	625	589	-	567	555	-	-	-	-	-	-	-
Stage 1	0	843	782	-	812	738	-	-	-	-	-	-	-
Stage 2	0	791	732	-	775	746	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	11.9			10.6			3.6			0.6			
HCM LOS	B			B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR						
Capacity (veh/h)	1370	-	-	705	657	1523	-	-					
HCM Lane V/C Ratio	0.036	-	-	0.257	0.029	0.008	-	-					
HCM Control Delay (s)	7.7	0	-	11.9	10.6	7.4	0	-					
HCM Lane LOS	A	A	-	B	B	A	A	-					
HCM 95th %tile Q(veh)	0.1	-	-	1	0.1	0	-	-					







HCM 6th TWSC
5: N 17th St/N Westgate Blvd & N Mildred St






Skyline Elementary School
Future (2025) Without-Project PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	260	285	20	30	20
Future Vol, veh/h	15	260	285	20	30	20
Conflicting Peds, #/hr	4	0	0	7	7	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	17	302	331	23	35	23
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	361	0	-	0	693	354
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	343	-
Critical Hdwy	4.12	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.218	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1198	-	-	-	408	688
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	716	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1190	-	-	-	395	681
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	694	-
Stage 2	-	-	-	-	711	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.4	0		13.6		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1190	-	-	-	475	
HCM Lane V/C Ratio	0.015	-	-	-	0.122	
HCM Control Delay (s)	8.1	0	-	-	13.6	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.4	

HCM 6th TWSC
6: N Westgate Blvd & N Vassault St







Skyline Elementary School
Future (2025) Without-Project PM Peak Hour




Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	360	5	5	355	55	5	5	5	70	0	15
Future Vol, veh/h	35	360	5	5	355	55	5	5	5	70	0	15
Conflicting Peds, #/hr	5	0	8	7	0	4	8	0	7	4	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	4	4	4	0	0	0	7	7	7
Mvmt Flow	42	434	6	6	428	66	6	6	6	84	0	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	499	0	0	448	0	0	1019	1040	452	1012	1010	474
Stage 1	-	-	-	-	-	-	529	529	-	478	478	-
Stage 2	-	-	-	-	-	-	490	511	-	534	532	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.1	6.5	6.2	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.17	5.57	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.5	4	3.3	3.563	4.063	3.363
Pot Cap-1 Maneuver	1065	-	-	1102	-	-	217	232	612	213	235	580
Stage 1	-	-	-	-	-	-	537	530	-	559	547	-
Stage 2	-	-	-	-	-	-	564	540	-	521	517	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1060	-	-	1094	-	-	200	219	603	197	222	573
Mov Cap-2 Maneuver	-	-	-	-	-	-	200	219	-	197	222	-
Stage 1	-	-	-	-	-	-	512	505	-	534	542	-
Stage 2	-	-	-	-	-	-	539	535	-	486	492	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.1			19.5			34.2		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	267	1060	-	-	1094	-	-	223				
HCM Lane V/C Ratio	0.068	0.04	-	-	0.006	-	-	0.459				
HCM Control Delay (s)	19.5	8.5	-	-	8.3	-	-	34.2				
HCM Lane LOS	C	A	-	-	A	-	-	D				
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	2.2				

Intersection						
Int Delay, s/veh	4.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	265	32	148	160	24	115
Future Vol, veh/h	265	32	148	160	24	115
Conflicting Peds, #/hr	0	3	8	0	3	8
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	4	2	2	10	10
Mvmt Flow	294	36	164	178	27	128
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	338	0	829	328
Stage 1	-	-	-	-	320	-
Stage 2	-	-	-	-	509	-
Critical Hdwy	-	-	4.12	-	6.5	6.3
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.218	-	3.59	3.39
Pot Cap-1 Maneuver	-	-	1221	-	330	695
Stage 1	-	-	-	-	718	-
Stage 2	-	-	-	-	588	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1212	-	282	684
Mov Cap-2 Maneuver	-	-	-	-	392	-
Stage 1	-	-	-	-	712	-
Stage 2	-	-	-	-	507	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		4.1		13	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	606	-	-	1212	-	
HCM Lane V/C Ratio	0.255	-	-	0.136	-	
HCM Control Delay (s)	13	-	-	8.4	-	
HCM Lane LOS	B	-	-	A	-	
HCM 95th %tile Q(veh)	1	-	-	0.5	-	

HCM 6th TWSC
2: N Narrows Dr & N 24th St

Skyline Elementary School
Future (2025) With-Project AM Peak Hour

Intersection												
Int Delay, s/veh	2.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	5	40	0	34	5	305	43	33	270	0
Future Vol, veh/h	0	0	5	40	0	34	5	305	43	33	270	0
Conflicting Peds, #/hr	11	0	13	3	0	1	13	0	3	1	0	11
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	25	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	13	13	13	5	5	5	3	3	3
Mvmt Flow	0	0	6	47	0	40	6	355	50	38	314	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	826	823	340	801	798	394	327	0	0	408	0	0
Stage 1	403	403	-	395	395	-	-	-	-	-	-	-
Stage 2	423	420	-	406	403	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.23	6.63	6.33	4.15	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.617	4.117	3.417	2.245	-	-	2.227	-	-
Pot Cap-1 Maneuver	293	311	707	290	307	632	1216	-	-	1145	-	-
Stage 1	628	603	-	609	586	-	-	-	-	-	-	-
Stage 2	613	593	-	600	581	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	260	295	690	275	291	624	1201	-	-	1142	-	-
Mov Cap-2 Maneuver	260	295	-	275	291	-	-	-	-	-	-	-
Stage 1	617	576	-	604	581	-	-	-	-	-	-	-
Stage 2	565	588	-	568	555	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	10.3		17.7		0.1		0.9					
HCM LOS	B		C									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1201	-	-	690	370	1142	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.008	0.233	0.034	-	-				
HCM Control Delay (s)	8	-	-	10.3	17.7	8.3	-	-				
HCM Lane LOS	A	-	-	B	C	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0	0.9	0.1	-	-				

Intersection							
Int Delay, s/veh	7.7						
Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	5	18	126	13	25	128	12
Future Vol, veh/h	5	18	126	13	25	128	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	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	81	81	81	81	81	81	81
Heavy Vehicles, %	36	36	36	20	20	23	23
Mvmt Flow	6	22	156	16	31	158	15
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	0	363	32	0	0	47	0
Stage 1	0	32	-	-	-	-	-
Stage 2	0	331	-	-	-	-	-
Critical Hdwy	-	6.76	6.56	-	-	4.33	-
Critical Hdwy Stg 1	-	5.76	-	-	-	-	-
Critical Hdwy Stg 2	-	5.76	-	-	-	-	-
Follow-up Hdwy	-	3.824	3.624	-	-	2.407	-
Pot Cap-1 Maneuver	0	574	952	-	-	1436	-
Stage 1	0	910	-	-	-	-	-
Stage 2	0	657	-	-	-	-	-
Platoon blocked, %	-			-	-		-
Mov Cap-1 Maneuver	0	510	952	-	-	1436	-
Mov Cap-2 Maneuver	0	510	-	-	-	-	-
Stage 1	0	910	-	-	-	-	-
Stage 2	0	584	-	-	-	-	-
Approach	WB	NB		SB			
HCM Control Delay, s	10.3	0		7.1			
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT			
Capacity (veh/h)	-	-	859	1436	-		
HCM Lane V/C Ratio	-	-	0.207	0.11	-		
HCM Control Delay (s)	-	-	10.3	7.8	0		
HCM Lane LOS	-	-	B	A	A		
HCM 95th %tile Q(veh)	-	-	0.8	0.4	-		




HCM 6th TWSC
4: N Vassault St & N 23rd St

Skyline Elementary School
Future (2025) With-Project AM Peak Hour

Intersection												
Int Delay, s/veh	8.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	124	0	97	5	5	5	122	20	0	0	15	165
Future Vol, veh/h	124	0	97	5	5	5	122	20	0	0	15	165
Conflicting Peds, #/hr	2	0	5	3	0	0	5	0	3	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	82	82	82	82	82	82	82	82	82	82	82	82
Heavy Vehicles, %	13	13	13	0	0	0	17	17	17	20	20	20
Mvmt Flow	151	0	118	6	6	6	149	24	0	0	18	201
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	454	449	129	508	549	29	224	0	0	27	0	0
Stage 1	124	124	-	325	325	-	-	-	-	-	-	-
Stage 2	330	325	-	183	224	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.63	6.33	7.1	6.5	6.2	4.27	-	-	4.3	-	-
Critical Hdwy Stg 1	6.23	5.63	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.63	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.117	3.417	3.5	4	3.3	2.353	-	-	2.38	-	-
Pot Cap-1 Maneuver	498	489	892	479	446	1052	1261	-	-	1478	-	-
Stage 1	854	773	-	692	653	-	-	-	-	-	-	-
Stage 2	661	630	-	823	722	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	441	427	884	374	389	1047	1255	-	-	1474	-	-
Mov Cap-2 Maneuver	441	427	-	374	389	-	-	-	-	-	-	-
Stage 1	748	769	-	607	573	-	-	-	-	-	-	-
Stage 2	571	553	-	709	718	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	17		12.7		7.1		0					
HCM LOS	C		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1255	-	-	565	484	1474	-	-				
HCM Lane V/C Ratio	0.119	-	-	0.477	0.038	-	-	-				
HCM Control Delay (s)	8.3	0	-	17	12.7	0	-	-				
HCM Lane LOS	A	A	-	C	B	A	-	-				
HCM 95th %tile Q(veh)	0.4	-	-	2.6	0.1	0	-	-				







HCM 6th TWSC
5: N 17th St/N Westgate Blvd & N Mildred St

Skyline Elementary School
Future (2025) With-Project AM Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	33	210	155	10	5	25
Future Vol, veh/h	33	210	155	10	5	25
Conflicting Peds, #/hr	1	0	0	2	2	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	2	2	0	0
Mvmt Flow	36	231	170	11	5	27
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	183	0	-	0	483	179
Stage 1	-	-	-	-	178	-
Stage 2	-	-	-	-	305	-
Critical Hdwy	4.11	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.209	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	1398	-	-	-	546	869
Stage 1	-	-	-	-	858	-
Stage 2	-	-	-	-	752	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1395	-	-	-	527	867
Mov Cap-2 Maneuver	-	-	-	-	527	-
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	750	-
Approach	EB	WB		SB		
HCM Control Delay, s	1	0		9.8		
HCM LOS	A					
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1395	-	-	-	783	
HCM Lane V/C Ratio	0.026	-	-	-	0.042	
HCM Control Delay (s)	7.7	0	-	-	9.8	
HCM Lane LOS	A	A	-	-	A	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	

HCM 6th TWSC
6: N Westgate Blvd & N Vassault St

Skyline Elementary School
Future (2025) With-Project AM Peak Hour

Intersection													
Int Delay, s/veh	2.9												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Lane Configurations													
Traffic Vol, veh/h	5	220	5	0	165	132	0	0	5	5	97	0	5
Future Vol, veh/h	5	220	5	0	165	132	0	0	5	5	97	0	5
Conflicting Peds, #/hr	10	0	6	2	0	6	6	0	2	0	6	0	10
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	-	None
Storage Length	125	-	-	150	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	1	1	1	3	3	3	0	0	0	8	8	8	8
Mvmt Flow	6	250	6	0	188	150	0	0	6	6	110	0	6




Major/Minor	Major1			Major2			Minor1			Minor2			
Conflicting Flow All	348	0	0	262	0	0	547	619	265	0	547	547	283
Stage 1	-	-	-	-	-	-	271	271	-	0	273	273	-
Stage 2	-	-	-	-	-	-	276	348	-	0	274	274	-
Critical Hdwy	4.11	-	-	4.13	-	-	7.1	6.5	6.2	-	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	-	6.18	5.58	-
Follow-up Hdwy	2.209	-	-	2.227	-	-	3.5	4	3.3	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	1216	-	-	1296	-	-	451	407	779	0	439	436	742
Stage 1	-	-	-	-	-	-	739	689	-	0	720	673	-
Stage 2	-	-	-	-	-	-	735	638	-	0	719	672	-
Platoon blocked, %		-	-		-	-				-			
Mov Cap-1 Maneuver	1204	-	-	1289	-	-	439	398	770	0	428	427	728
Mov Cap-2 Maneuver	-	-	-	-	-	-	439	398	-	0	428	427	-
Stage 1	-	-	-	-	-	-	731	681	-	0	710	666	-
Stage 2	-	-	-	-	-	-	722	632	-	0	706	665	-




Approach	EB			WB			NB			SB			
HCM Control Delay, s	0.2			0			9.7			16.2			
HCM LOS							A			C			

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	770	1204	-	-	1289	-	-	437
HCM Lane V/C Ratio	0.007	0.005	-	-	-	-	-	0.265
HCM Control Delay (s)	9.7	8	-	-	0	-	-	16.2
HCM Lane LOS	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	1.1

HCM 6th TWSC
7: N Mildred St & Swing School Site Access 1




Skyline Elementary School
Future (2025) With-Project AM Peak Hour

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	82	7	42	97	8	58
Future Vol, veh/h	82	7	42	97	8	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	89	8	46	105	9	63
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	180	99	0	0	151	0
Stage 1	99	-	-	-	-	-
Stage 2	81	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	810	957	-	-	1430	-
Stage 1	925	-	-	-	-	-
Stage 2	942	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	804	957	-	-	1430	-
Mov Cap-2 Maneuver	804	-	-	-	-	-
Stage 1	925	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		0.9		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	-		814	1430	
HCM Lane V/C Ratio	-	-		0.119	0.006	
HCM Control Delay (s)	-	-		10	7.5	
HCM Lane LOS	-	-		B	A	
HCM 95th %tile Q(veh)	-	-		0.4	0	

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	143	144	56	48	0
Future Vol, veh/h	0	143	144	56	48	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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	155	157	61	52	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	218	0	-	0	343	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	155	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1352	-	-	-	653	854
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	873	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1352	-	-	-	653	854
Mov Cap-2 Maneuver	-	-	-	-	653	-
Stage 1	-	-	-	-	844	-
Stage 2	-	-	-	-	873	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		11		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1352	-	-	-	653	
HCM Lane V/C Ratio	-	-	-	-	0.08	
HCM Control Delay (s)	0	-	-	-	11	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.3	




HCM 6th TWSC
9: N 23rd St & New Elementary School Site Access 1






Skyline Elementary School
Future (2025) With-Project AM Peak Hour

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	146	166	97	58	39
Future Vol, veh/h	50	146	166	97	58	39
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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	54	159	180	105	63	42
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	285	0	-	0	500	233
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	267	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1277	-	-	-	530	806
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	778	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1277	-	-	-	506	806
Mov Cap-2 Maneuver	-	-	-	-	506	-
Stage 1	-	-	-	-	769	-
Stage 2	-	-	-	-	778	-
Approach	EB	WB		SB		
HCM Control Delay, s	2	0		12.3		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1277	-	-	-	595	
HCM Lane V/C Ratio	0.043	-	-	-	0.177	
HCM Control Delay (s)	7.9	0	-	-	12.3	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	

HCM 6th TWSC
10: N 23rd St & New Elementary School Site Access 2

Skyline Elementary School
Future (2025) With-Project AM Peak Hour




Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	196	257	30	25	6
Future Vol, veh/h	8	196	257	30	25	6
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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	213	279	33	27	7
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	312	0	-	0	527	296
Stage 1	-	-	-	-	296	-
Stage 2	-	-	-	-	231	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1248	-	-	-	512	743
Stage 1	-	-	-	-	755	-
Stage 2	-	-	-	-	807	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1248	-	-	-	508	743
Mov Cap-2 Maneuver	-	-	-	-	508	-
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	807	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.3	0		12.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1248	-	-	-	541	
HCM Lane V/C Ratio	0.007	-	-	-	0.062	
HCM Control Delay (s)	7.9	0	-	-	12.1	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.2	

Intersection						
Int Delay, s/veh	3.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	355	31	132	330	33	134
Future Vol, veh/h	355	31	132	330	33	134
Conflicting Peds, #/hr	0	7	11	0	7	11
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	25	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	1	1	2	2	3	3
Mvmt Flow	378	33	140	351	35	143
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	422	0	1044	417
Stage 1	-	-	-	-	406	-
Stage 2	-	-	-	-	638	-
Critical Hdwy	-	-	4.12	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	-	-	2.218	-	3.527	3.327
Pot Cap-1 Maneuver	-	-	1137	-	253	634
Stage 1	-	-	-	-	671	-
Stage 2	-	-	-	-	524	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1125	-	218	621
Mov Cap-2 Maneuver	-	-	-	-	341	-
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	456	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.5		15.1	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	534	-	-	1125	-	
HCM Lane V/C Ratio	0.333	-	-	0.125	-	
HCM Control Delay (s)	15.1	-	-	8.7	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.4	-	-	0.4	-	

HCM 6th TWSC
2: N Narrows Dr & N 24th St

Skyline Elementary School
Future (2025) With-Project PM Peak Hour




Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↵	↵		↵	↵	
Traffic Vol, veh/h	5	0	5	29	0	28	5	550	31	16	520	0
Future Vol, veh/h	5	0	5	29	0	28	5	550	31	16	520	0
Conflicting Peds, #/hr	2	0	5	3	0	0	5	0	3	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	-	-	-	-	-	-	25	-	-	25	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	0	0	0	13	13	13	1	1	1	2	2	2
Mvmt Flow	5	0	5	31	0	30	5	585	33	17	553	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1221	1223	563	1210	1207	607	558	0	0	621	0	0
Stage 1	592	592	-	615	615	-	-	-	-	-	-	-
Stage 2	629	631	-	595	592	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.23	6.63	6.33	4.11	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.23	5.63	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.617	4.117	3.417	2.209	-	-	2.218	-	-
Pot Cap-1 Maneuver	158	181	530	151	175	477	1018	-	-	960	-	-
Stage 1	496	497	-	460	465	-	-	-	-	-	-	-
Stage 2	474	477	-	472	477	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	145	175	525	146	170	475	1013	-	-	957	-	-
Mov Cap-2 Maneuver	145	175	-	146	170	-	-	-	-	-	-	-
Stage 1	491	486	-	456	461	-	-	-	-	-	-	-
Stage 2	441	473	-	457	466	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	21.6		27.3		0.1		0.3					
HCM LOS	C		D									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1013	-	-	227	221	957	-	-				
HCM Lane V/C Ratio	0.005	-	-	0.047	0.274	0.018	-	-				
HCM Control Delay (s)	8.6	-	-	21.6	27.3	8.8	-	-				
HCM Lane LOS	A	-	-	C	D	A	-	-				
HCM 95th %tile Q(veh)	0	-	-	0.1	1.1	0.1	-	-				

Intersection							
Int Delay, s/veh	7.2						
Movement	WBU	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	5	34	80	19	12	80	19
Future Vol, veh/h	5	34	80	19	12	80	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	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	72	72	72	72	72	72	72
Heavy Vehicles, %	11	11	11	0	0	0	0
Mvmt Flow	7	47	111	26	17	111	26
Major/Minor	Minor1	Major1		Major2			
Conflicting Flow All	0	283	35	0	0	43	0
Stage 1	0	35	-	-	-	-	-
Stage 2	0	248	-	-	-	-	-
Critical Hdwy	-	6.51	6.31	-	-	4.1	-
Critical Hdwy Stg 1	-	5.51	-	-	-	-	-
Critical Hdwy Stg 2	-	5.51	-	-	-	-	-
Follow-up Hdwy	-	3.599	3.399	-	-	2.2	-
Pot Cap-1 Maneuver	0	688	1013	-	-	1579	-
Stage 1	0	965	-	-	-	-	-
Stage 2	0	773	-	-	-	-	-
Platoon blocked, %	-			-	-		-
Mov Cap-1 Maneuver	0	639	1013	-	-	1579	-
Mov Cap-2 Maneuver	0	639	-	-	-	-	-
Stage 1	0	965	-	-	-	-	-
Stage 2	0	718	-	-	-	-	-
Approach	WB	NB		SB			
HCM Control Delay, s	10.1	0		6			
HCM LOS	B						
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT			
Capacity (veh/h)	-	-	862	1579	-		
HCM Lane V/C Ratio	-	-	0.184	0.07	-		
HCM Control Delay (s)	-	-	10.1	7.5	0		
HCM Lane LOS	-	-	B	A	A		
HCM 95th %tile Q(veh)	-	-	0.7	0.2	-		

Intersection													
Int Delay, s/veh	8.3												
Movement	EBU	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↕			↕			↕			↕	
Traffic Vol, veh/h	5	127	5	90	5	5	5	75	40	5	10	30	118
Future Vol, veh/h	5	127	5	90	5	5	5	75	40	5	10	30	118
Conflicting Peds, #/hr	0	5	0	6	5	0	4	6	0	5	4	0	5
Sign Control	Stop	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	80	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	0	0	0	11	11	11	4	4	4
Mvmt Flow	6	159	6	113	6	6	6	94	50	6	13	38	148
Major/Minor	Minor2			Minor1			Major1			Major2			
Conflicting Flow All	0	396	393	124	450	464	63	192	0	0	61	0	0
Stage 1	0	144	144	-	246	246	-	-	-	-	-	-	-
Stage 2	0	252	249	-	204	218	-	-	-	-	-	-	-
Critical Hdwy	-	7.12	6.52	6.22	7.1	6.5	6.2	4.21	-	-	4.14	-	-
Critical Hdwy Stg 1	-	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	6.12	5.52	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	-	3.518	4.018	3.318	3.5	4	3.3	2.299	-	-	2.236	-	-
Pot Cap-1 Maneuver	0	564	543	927	523	498	1007	1329	-	-	1530	-	-
Stage 1	0	859	778	-	762	706	-	-	-	-	-	-	-
Stage 2	0	752	701	-	803	726	-	-	-	-	-	-	-
Platoon blocked, %	-								-	-		-	-
Mov Cap-1 Maneuver	0	514	493	916	421	452	997	1321	-	-	1523	-	-
Mov Cap-2 Maneuver	0	514	493	-	421	452	-	-	-	-	-	-	-
Stage 1	0	791	766	-	703	650	-	-	-	-	-	-	-
Stage 2	0	682	646	-	688	714	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB			
HCM Control Delay, s	15.3			11.9			5			0.5			
HCM LOS	C			B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1321	-	-	625	537	1523	-	-					
HCM Lane V/C Ratio	0.071	-	-	0.444	0.035	0.008	-	-					
HCM Control Delay (s)	7.9	0	-	15.3	11.9	7.4	0	-					
HCM Lane LOS	A	A	-	C	B	A	A	-					
HCM 95th %tile Q(veh)	0.2	-	-	2.3	0.1	0	-	-					







HCM 6th TWSC
5: N 17th St/N Westgate Blvd & N Mildred St

Skyline Elementary School
Future (2025) With-Project PM Peak Hour

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	260	285	20	30	28
Future Vol, veh/h	16	260	285	20	30	28
Conflicting Peds, #/hr	4	0	0	7	7	4
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	3	3
Mvmt Flow	19	302	331	23	35	33
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	361	0	-	0	697	354
Stage 1	-	-	-	-	350	-
Stage 2	-	-	-	-	347	-
Critical Hdwy	4.12	-	-	-	6.43	6.23
Critical Hdwy Stg 1	-	-	-	-	5.43	-
Critical Hdwy Stg 2	-	-	-	-	5.43	-
Follow-up Hdwy	2.218	-	-	-	3.527	3.327
Pot Cap-1 Maneuver	1198	-	-	-	406	688
Stage 1	-	-	-	-	711	-
Stage 2	-	-	-	-	713	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1190	-	-	-	393	681
Mov Cap-2 Maneuver	-	-	-	-	393	-
Stage 1	-	-	-	-	693	-
Stage 2	-	-	-	-	708	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.5	0		13.4		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1190	-	-	-	494	
HCM Lane V/C Ratio	0.016	-	-	-	0.137	
HCM Control Delay (s)	8.1	0	-	-	13.4	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.5	




HCM 6th TWSC
6: N Westgate Blvd & N Vassault St

Skyline Elementary School
Future (2025) With-Project PM Peak Hour

Intersection												
Int Delay, s/veh	7.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	35	360	5	5	355	85	5	5	5	105	0	15
Future Vol, veh/h	35	360	5	5	355	85	5	5	5	105	0	15
Conflicting Peds, #/hr	5	0	8	7	0	4	8	0	7	4	0	5
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	125	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	83	83	83	83	83	83	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	4	4	4	0	0	0	7	7	7
Mvmt Flow	42	434	6	6	428	102	6	6	6	127	0	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	535	0	0	448	0	0	1037	1076	452	1030	1028	492
Stage 1	-	-	-	-	-	-	529	529	-	496	496	-
Stage 2	-	-	-	-	-	-	508	547	-	534	532	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.1	6.5	6.2	7.17	6.57	6.27
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.17	5.57	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.17	5.57	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.5	4	3.3	3.563	4.063	3.363
Pot Cap-1 Maneuver	1033	-	-	1102	-	-	211	221	612	207	229	567
Stage 1	-	-	-	-	-	-	537	530	-	546	537	-
Stage 2	-	-	-	-	-	-	551	521	-	521	517	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1028	-	-	1094	-	-	194	208	603	191	216	560
Mov Cap-2 Maneuver	-	-	-	-	-	-	194	208	-	191	216	-
Stage 1	-	-	-	-	-	-	511	504	-	521	532	-
Stage 2	-	-	-	-	-	-	526	516	-	486	492	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.8			0.1			20			54.3		
HCM LOS							C			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	258	1028	-	-	1094	-	-	208				
HCM Lane V/C Ratio	0.07	0.041	-	-	0.006	-	-	0.695				
HCM Control Delay (s)	20	8.7	-	-	8.3	-	-	54.3				
HCM Lane LOS	C	A	-	-	A	-	-	F				
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	4.4				




HCM 6th TWSC
7: N Mildred St & Swing School Site Access 1




Skyline Elementary School
Future (2025) With-Project PM Peak Hour

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	51	5	57	42	4	53
Future Vol, veh/h	51	5	57	42	4	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	55	5	62	46	4	58
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	151	85	0	0	108	0
Stage 1	85	-	-	-	-	-
Stage 2	66	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	841	974	-	-	1483	-
Stage 1	938	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	838	974	-	-	1483	-
Mov Cap-2 Maneuver	838	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.6	0		0.5		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	849	1483	-	
HCM Lane V/C Ratio	-	-	0.072	0.003	-	
HCM Control Delay (s)	-	-	9.6	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

HCM 6th TWSC
8: N 23rd St & Swing School Site Access 2

Skyline Elementary School
Future (2025) With-Project PM Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	0	102	114	24	29	0
Future Vol, veh/h	0	102	114	24	29	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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	111	124	26	32	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	150	0	-	0	248	137
Stage 1	-	-	-	-	137	-
Stage 2	-	-	-	-	111	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1431	-	-	-	740	911
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	914	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1431	-	-	-	740	911
Mov Cap-2 Maneuver	-	-	-	-	740	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	914	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		10.1		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1431	-	-	-	740	
HCM Lane V/C Ratio	-	-	-	-	0.043	
HCM Control Delay (s)	0	-	-	-	10.1	
HCM Lane LOS	A	-	-	-	B	
HCM 95th %tile Q(veh)	0	-	-	-	0.1	

Intersection						
Int Delay, s/veh	2.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	21	150	161	32	64	32
Future Vol, veh/h	21	150	161	32	64	32
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	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	163	175	35	70	35
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	210	0	-	0	402	193
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	209	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1361	-	-	-	604	849
Stage 1	-	-	-	-	840	-
Stage 2	-	-	-	-	826	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1361	-	-	-	593	849
Mov Cap-2 Maneuver	-	-	-	-	593	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	826	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.9	0		11.5		
HCM LOS				B		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1361	-	-	-	659	
HCM Lane V/C Ratio	0.017	-	-	-	0.158	
HCM Control Delay (s)	7.7	0	-	-	11.5	
HCM Lane LOS	A	A	-	-	B	
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6	

HCM 6th TWSC
10: N 23rd St & New Elementary School Site Access 2

Skyline Elementary School
Future (2025) With-Project PM Peak Hour

Intersection

Int Delay, s/veh 0.6

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 4 215 189 14 17 4

Future Vol, veh/h 4 215 189 14 17 4

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 -

Veh in Median Storage, # - 0 0 - 0 -

Grade, % - 0 0 - 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 4 234 205 15 18 4

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 220 0 - 0 455 213

Stage 1 - - - - 213 -

Stage 2 - - - - 242 -

Critical Hdwy 4.12 - - - 6.42 6.22

Critical Hdwy Stg 1 - - - - 5.42 -

Critical Hdwy Stg 2 - - - - 5.42 -

Follow-up Hdwy 2.218 - - - 3.518 3.318

Pot Cap-1 Maneuver 1349 - - - 563 827

Stage 1 - - - - 823 -

Stage 2 - - - - 798 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1349 - - - 561 827

Mov Cap-2 Maneuver - - - - 561 -

Stage 1 - - - - 821 -

Stage 2 - - - - 798 -

Approach EB WB SB

HCM Control Delay, s 0.1 0 11.3

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1349 - - - 598

HCM Lane V/C Ratio 0.003 - - - 0.038

HCM Control Delay (s) 7.7 0 - - 11.3

HCM Lane LOS A A - - B

HCM 95th %tile Q(veh) 0 - - - 0.1

Appendix E: Left Turn Lane Warrants

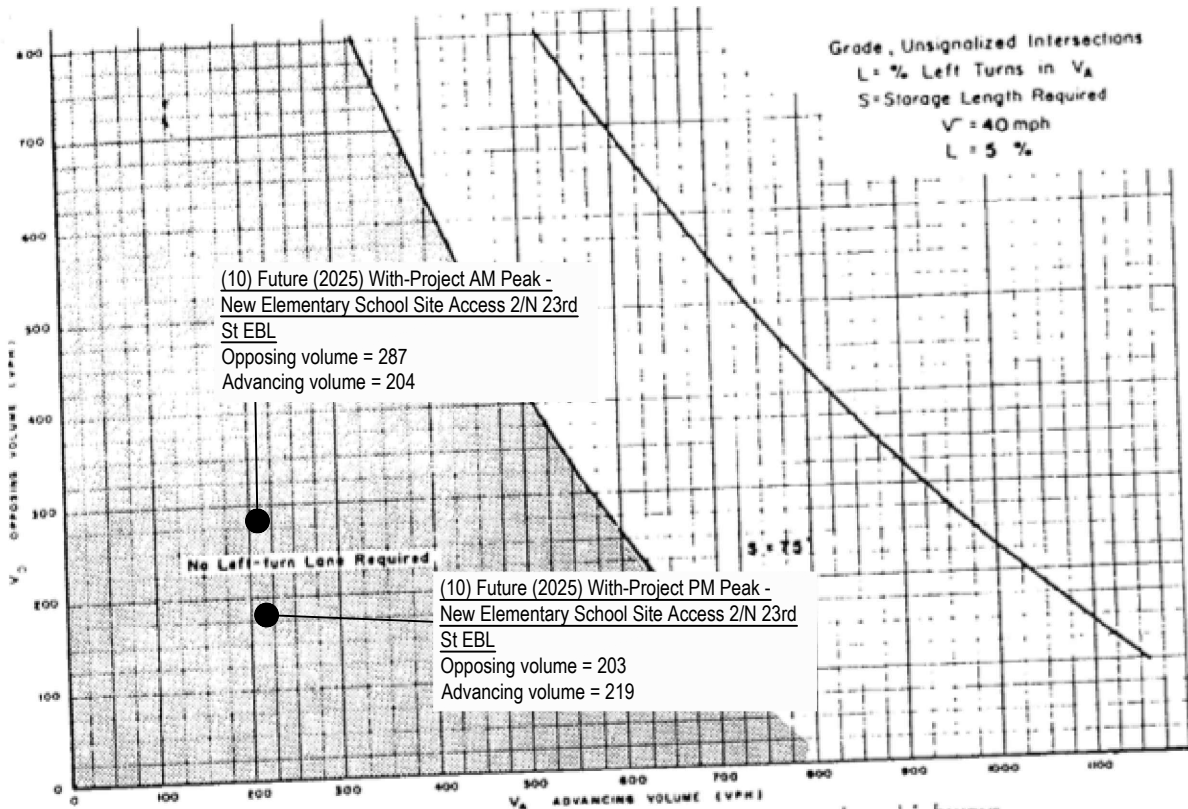


Figure 2. Warrant for left-turn storage lanes on two-lane highways.

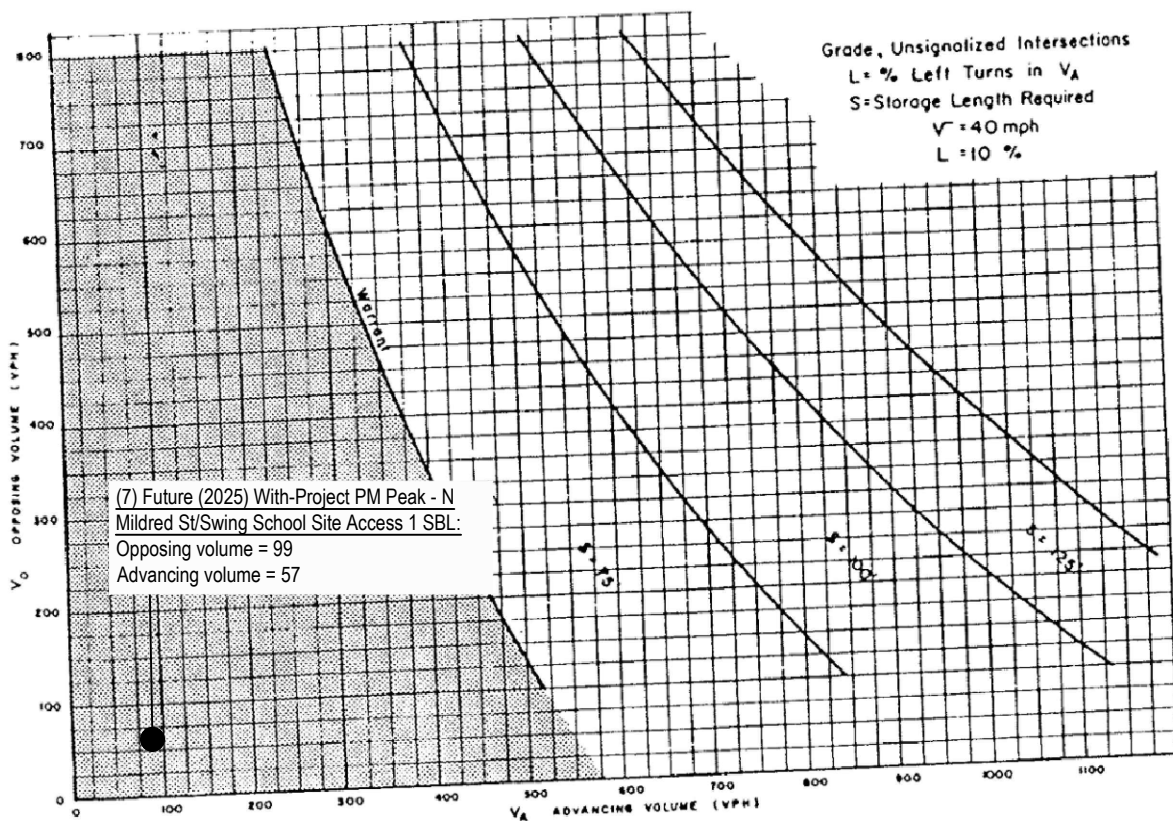


Figure 3. Warrant for left-turn storage lanes on two-lane highways.

Notes:

- EBL = EASTBOUND LEFT-TURN
- SBL = SOUTHBOUND LEFT-TURN

SOURCE: Volume Warrants for Left-Turn Storage Lanes at Unsignalized Grade Intersections; Harmelink, M.D., Highway Research Record #211, 1967.

Left Turn Lane Warrant - 5% and 10% Left Turn Roadways

Appendix

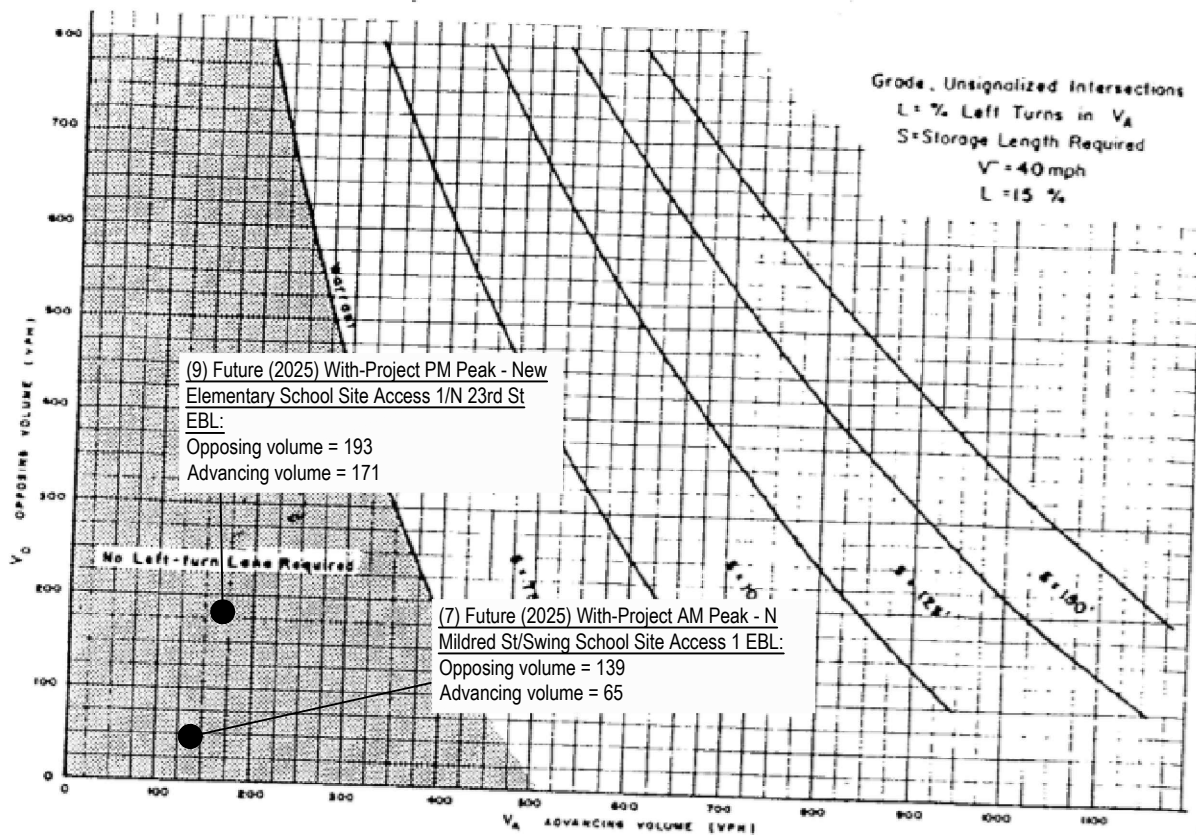


Figure 4. Warrant for left-turn storage lanes on two-lane highways.

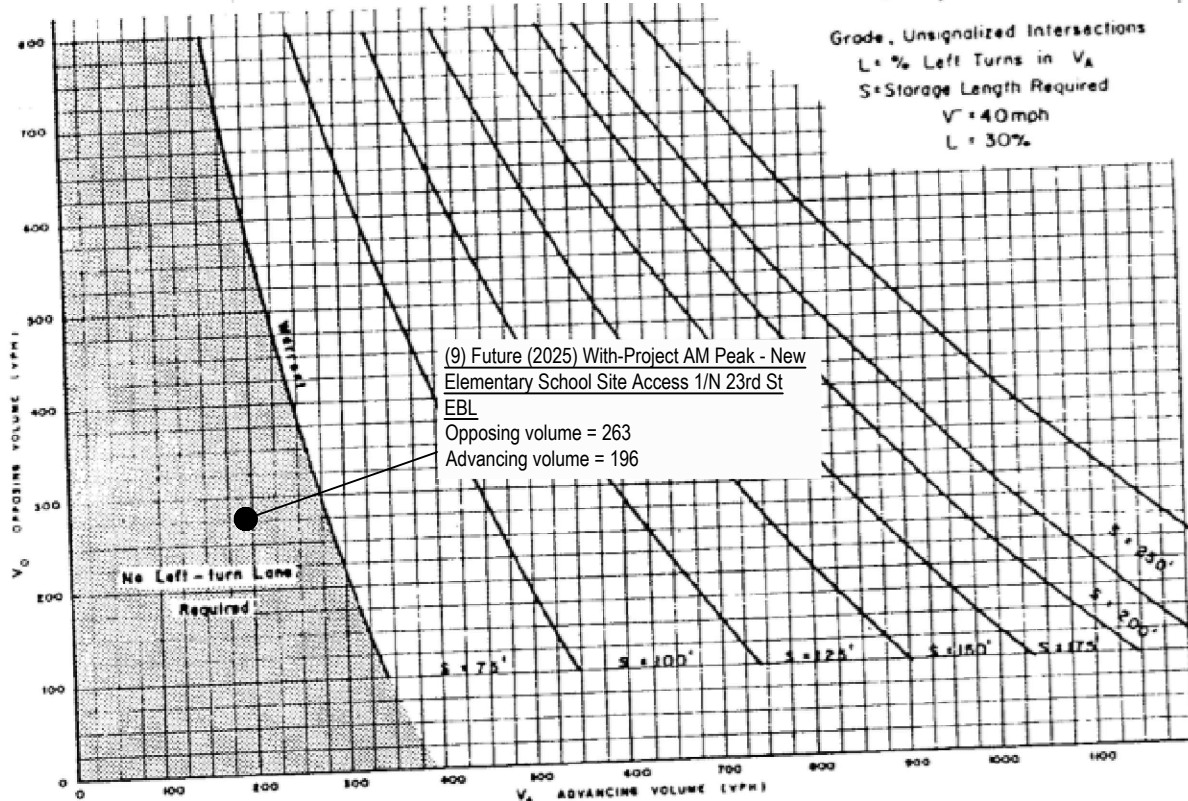


Figure 6. Warrant for left-turn storage lanes on two-lane highways.

Notes:

- EBL = EASTBOUND LEFT-TURN
- SBL = SOUTHBOUND LEFT-TURN

SOURCE: Volume Warrants for Left-Turn Storage Lanes at Unsignalized Grade Intersections; Harmelink, M.D., Highway Research Record #211, 1967.

Left Turn Lane Warrant - 15% and 30% Left Turn Roadways

Attachment

Appendix F: Parking Demand

Peak Parking Generation, ITE 10th Edition				
Skyline Elementary			Peak Parking Hour	
Land Use	Intensity	Units	Rate ¹	Total
<i>Proposed</i>				
Elementary School (LU #520)	389	Students	0.13	51
Pre-School (LU #565)	32	Students	0.24	8
Swing School - Elementary School Portion (LU #520)	337	Students	0.13	44
Swing School - Middle School Portion (LU #522)	113	Students	0.09	10
<u>Proposed Total</u>				113

1. Avg. parking rates based on ITE Parking Generation (5th Edition, 2019)

Appendix G: Signal Warrant Worksheets

Warrants Summary												
Information												
Analyst Agency/Co Date Performed Project ID East/West Street File Name			Transpo Group 12/3/2020 Skyline Elementary N Westgate Blvd Int 6 WP.xhy			Intersection Jurisdiction Units Time Period Analyzed North/South Street Major Street			U.S. Customary PM Peak Hour N Vassault St North-South			
Project Description <i>Skyline Elementary</i>												
General						Roadway Network						
Major Street Speed (mph)	35	<input type="checkbox"/>	Population < 10,000			Two Major Routes			<input type="checkbox"/>			
Nearest Signal (ft)	1250	<input type="checkbox"/>	Coordinated Signal System			Weekend Count			<input type="checkbox"/>			
Crashes (per year)	0	<input type="checkbox"/>	Adequate Trials of Alternatives			5-yr Growth Factor			0			
Geometry and Traffic	EB			WB			NB			SB		
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT
Number of lanes, N	1	1	0	1	1	0	0	1	0	0	1	0
Lane usage	L	TR		L	TR			LTR			LTR	
Vehicle Volume Averages (vph)	25	265	3	3	262	62	3	3	3	77	0	11
Peds (ped/h) / Gaps (gaps/h)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Delay (s/veh) / (veh-hr)	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--	--	0 / 0	--
Warrant 1: Eight-Hour Vehicular Volume												<input type="checkbox"/>
1 A. Minimum Vehicular Volumes (Both major approaches --and-- higher minor approach) --or--												<input type="checkbox"/>
1 B. Interruption of Continuous Traffic (Both major approaches --and-- higher minor approach) --or--												<input type="checkbox"/>
1 (80%) Vehicular --and-- Interruption Volumes (Both major approaches --and-- higher minor approach)												<input type="checkbox"/>
Warrant 2: Four-Hour Vehicular Volume												<input type="checkbox"/>
2 A. Four-Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)												<input type="checkbox"/>
Warrant 3: Peak Hour												<input type="checkbox"/>
3 A. Peak-Hour Conditions (Minor delay --and-- minor volume --and-- total volume) --or--												<input type="checkbox"/>
3 B. Peak- Hour Vehicular Volumes (Both major approaches --and-- higher minor approach)												<input type="checkbox"/>
Warrant 4: Pedestrian Volume												<input type="checkbox"/>
4 A. Four Hour Volumes --or--												<input type="checkbox"/>
4 B. One-Hour Volumes												<input type="checkbox"/>
Warrant 5: School Crossing												<input type="checkbox"/>
5. Student Volumes --and--												<input type="checkbox"/>
5. Gaps Same Period												<input type="checkbox"/>
Warrant 6: Coordinated Signal System												<input type="checkbox"/>
6. Degree of Platooning (Predominant direction or both directions)												<input type="checkbox"/>
Warrant 7: Crash Experience												<input type="checkbox"/>
7 A. Adequate trials of alternatives, observance and enforcement failed --and--												<input type="checkbox"/>
7 B. Reported crashes susceptible to correction by signal (12-month period) --and--												<input type="checkbox"/>
7 C. (80%) Volumes for Warrants 1A, 1B --or-- 4 are satisfied												<input type="checkbox"/>

Warrant 8: Roadway Network	<input type="checkbox"/>
8 A. Weekday Volume (Peak hour total --and-- projected warrants 1, 2 or 3) --or--	<input type="checkbox"/>
8 B. Weekend Volume (Five hours total)	<input type="checkbox"/>
Warrant 9: Grade Crossing	<input type="checkbox"/>
9 A. Grade Crossing within 140 ft --and--	<input type="checkbox"/>
9 B. Peak-Hour Vehicular Volumes	<input type="checkbox"/>

Warrants Volume

Information

Analyst Transpo Group
 Agency/Co
 Date Performed 12/3/2020
 Project ID Skyline Elementary
 East/West Street N Westgate Blvd
 File Name Int 6 WP.xhy

Intersection
 Jurisdiction
 Units U.S. Customary
 Time Period Analyzed PM Peak Hour
 North/South Street N Vassault St
 Major Street North-South

Project Description Skyline Elementary

Warrant 1

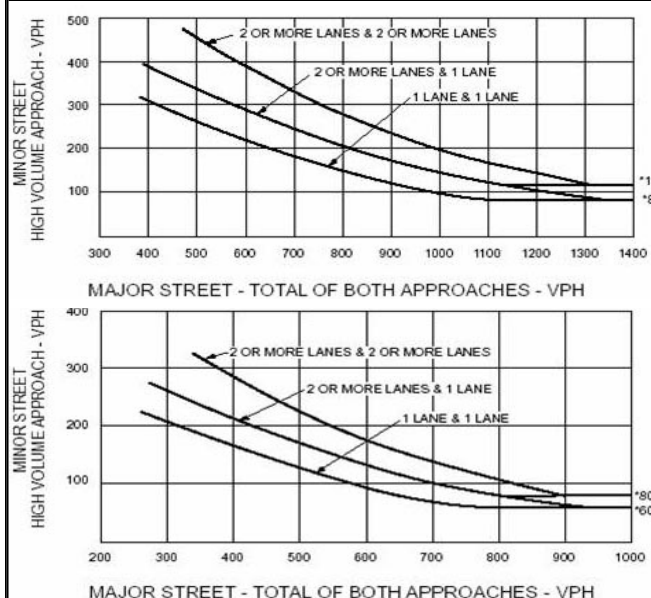
Condition A—Minimum Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112

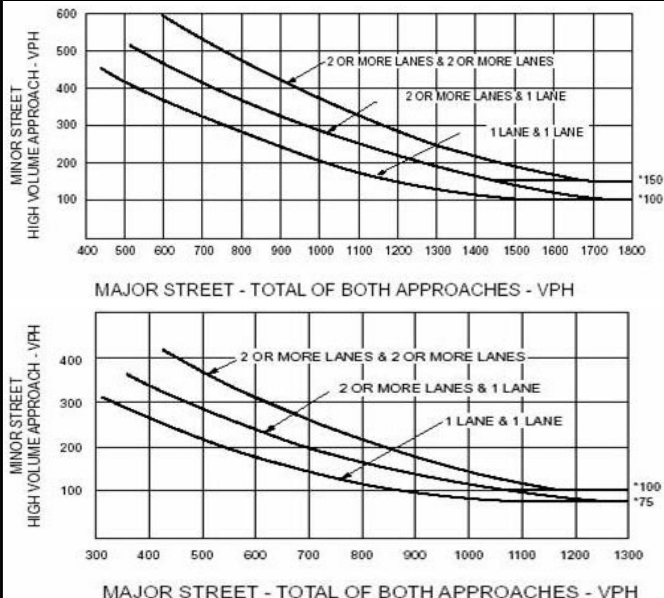
Condition B—Interruption of Continuous Traffic

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%	80%	70%	56%	100%	80%	70%	56%
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

Warrant 2



Warrant 3



Volume Summary

Major Street Lanes 1			Minor Street Lanes 2+		Speed		35		Population		10000+
Hours	Major Volume	Minor Volume	Total Volume	1A (100%)	1A (80%)	1B (100%)	1B (80%)	2 (100%)	3A (100%)	3B (100%)	
07-08	107	351	774	No	No	No	No	No	No	No	
08-09	80	261	576	No	No	No	No	No	No	No	
09-10	57	189	416	No	No	No	No	No	No	No	
10-11	72	233	514	No	No	No	No	No	No	No	
11-12	82	271	596	No	No	No	No	No	No	No	
12-13	108	355	782	No	No	No	No	No	No	No	
13-14	91	304	668	No	No	No	No	No	No	No	
14-15	102	334	736	No	No	No	No	No	No	No	
15-16	132	433	954	No	No	No	No	No	No	No	
16-17	135	445	980	No	No	No	No	No	No	No	
17-18	134	440	970	No	No	No	No	No	No	No	
18-19	100	326	719	No	No	No	No	No	No	No	
Totals	1200	3942	8685	0	0	0	0	0	0	0	