

TRAFFIC IMPACT ANALYSIS

FOR

CREEKSIDE VILLAGE 60 SINGLE FAMILY HOMES

Prepared By

DN Traffic Consultants, Inc.
PO Box 547
Preston, Washington 98050-0547

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INTRODUCTION

The following report was prepared to address the traffic related impacts of a proposed single family residential development located in the city of Marysville, in the southeast area of the city limits. This study was prepared in conformance to the City's Traffic Impact Analysis guidelines.

To comply with City of Marysville requirements, an intersection analysis is required for all intersections impacted by 25 or more weekday PM peak hour trips. This analysis is conducted for a "Year of Opening" condition (typically 2 years out), and a "Horizon Year" condition (typically 8 years out).

This study includes analysis of weekday PM peak hour level of service (LOS) for the existing conditions (year 2022), Year of Opening conditions (2024) without and with the project, and Horizon Year conditions (2030) with and with the project at the following intersection:

1. 79th Avenue NE / Soper Hill Road

In addition, analysis of the project's site access is included.

2. 44th Street NE / North Site Access
3. 79th Avenue NE / 40th Street NE plus South Site Access Extension, and
4. 40th Street NE / South Site Access (Horizon Year Analysis only).

PROJECT DESCRIPTION

The proposed project includes the construction of a 60-unit residential single family development. The site is located on the west side of 79th Avenue NE between 44th Street NE and 40th Street NE within the city of Marysville. A vicinity map is provided in Figure 1.

The site is located on three parcels: Parcel #29050200100300, Parcel #29050200100200, and Parcel #29050200100500. The site area is approximately 10 acres excluding the existing home. The zoning is R6.5 and is located in the East Sunnyside/Whiskey Ridge Master Plan Subarea. The allowed number of units is 78 based on MMC 22G.080.080. The proposed number of units is 60 single family detached homes. The site plan is shown in Figure 2.

Access to the site includes 44th Street NE, and one to the proposed realignment of 40th Street NE. The 40th Street NE realignment is shown in Figure 2. This roadway would connect to 79th Avenue NE at the existing tee-intersection with 40th Street NE (east leg). The existing west leg, 40th Street NE, would be terminated, and a new 4-way intersection is proposed with the site development.

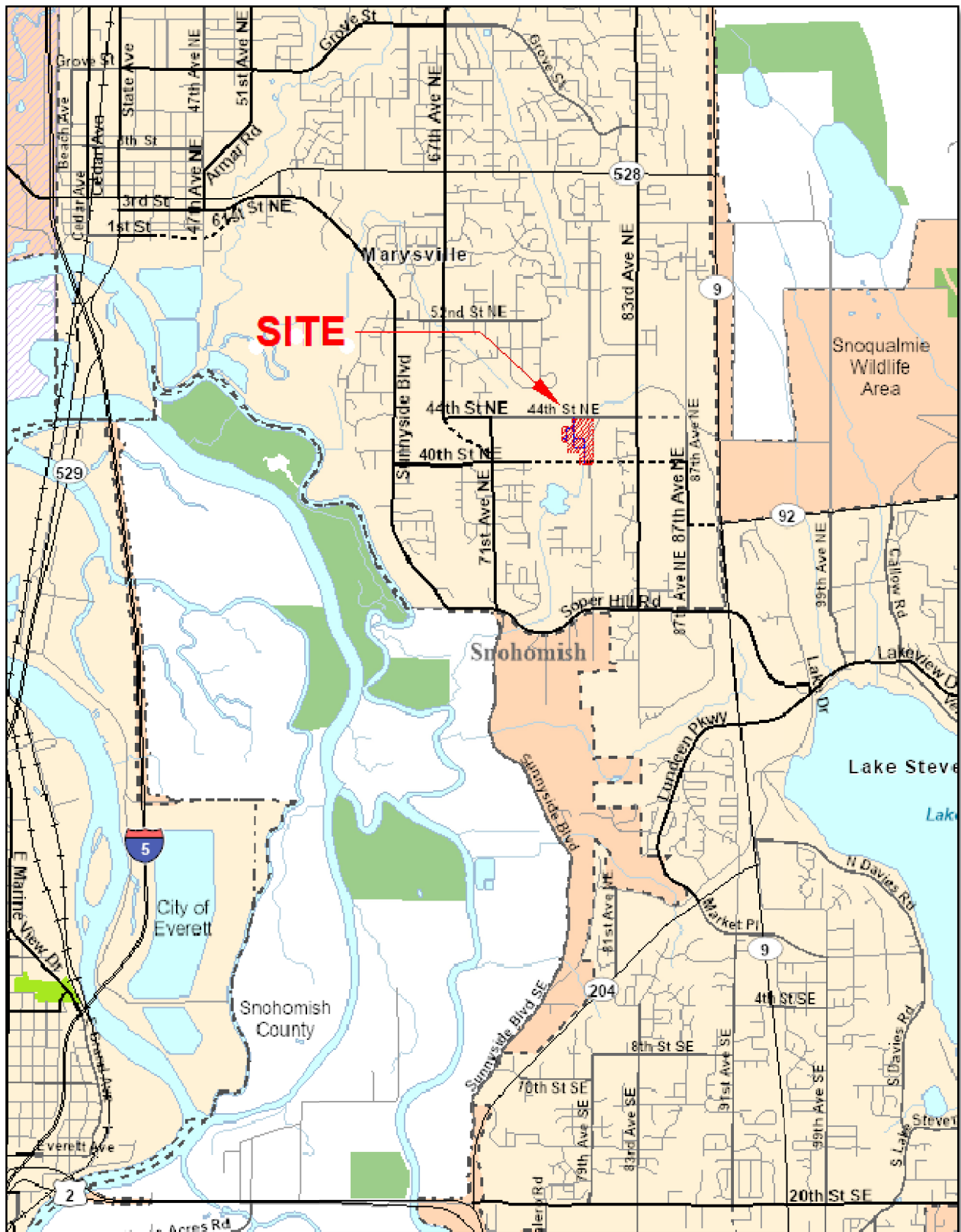


Figure 1: Vicinity Map with Site (north is up)

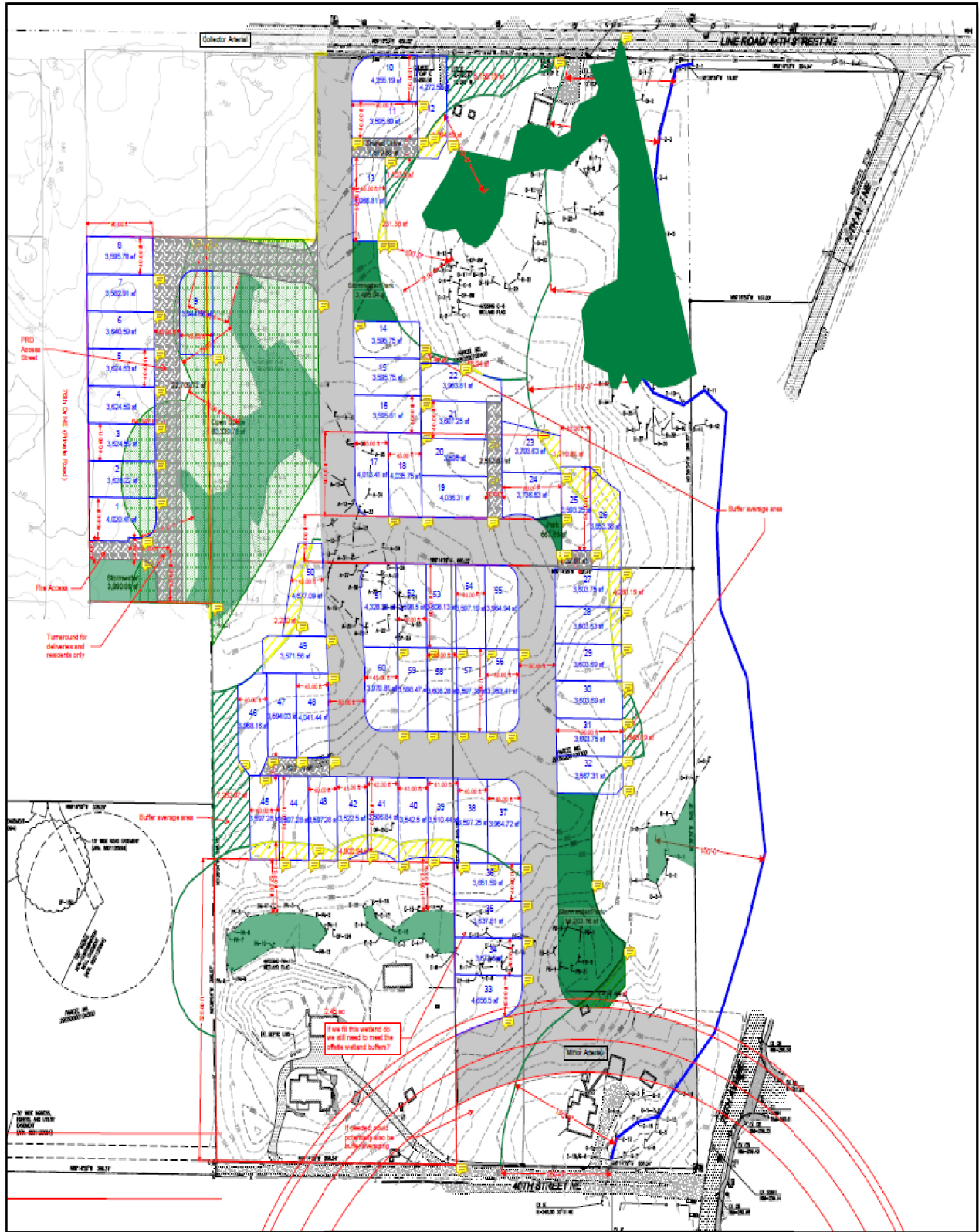


Figure 2: Site Plan (north is up)

METHODOLOGY

The analysis contained in this report is based on the City of Marysville traffic impact analysis guidelines, which identify analysis for intersections impacted with 25 or more peak-hour trips. The trip generation calculations are based on average trip generation rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The trip distribution is based on existing and horizon year trip distributions provided by the City of Marysville.

Intersection analysis has been performed for the existing conditions, and the 2024 opening year at the intersection of 79th Avenue NE at Soper Hill Road. No intersections are impacted by 25 or more in the 2030 Horizon Year. This study also includes analysis at the site access at 44th Street NE and the access to 79th Avenue NE at 40th Street NE. The level of service analysis at the study intersections were performed in accordance with the *Highway Capacity Manual (HCM) 6th Edition*.

EXISTING TRAFFIC COUNTS

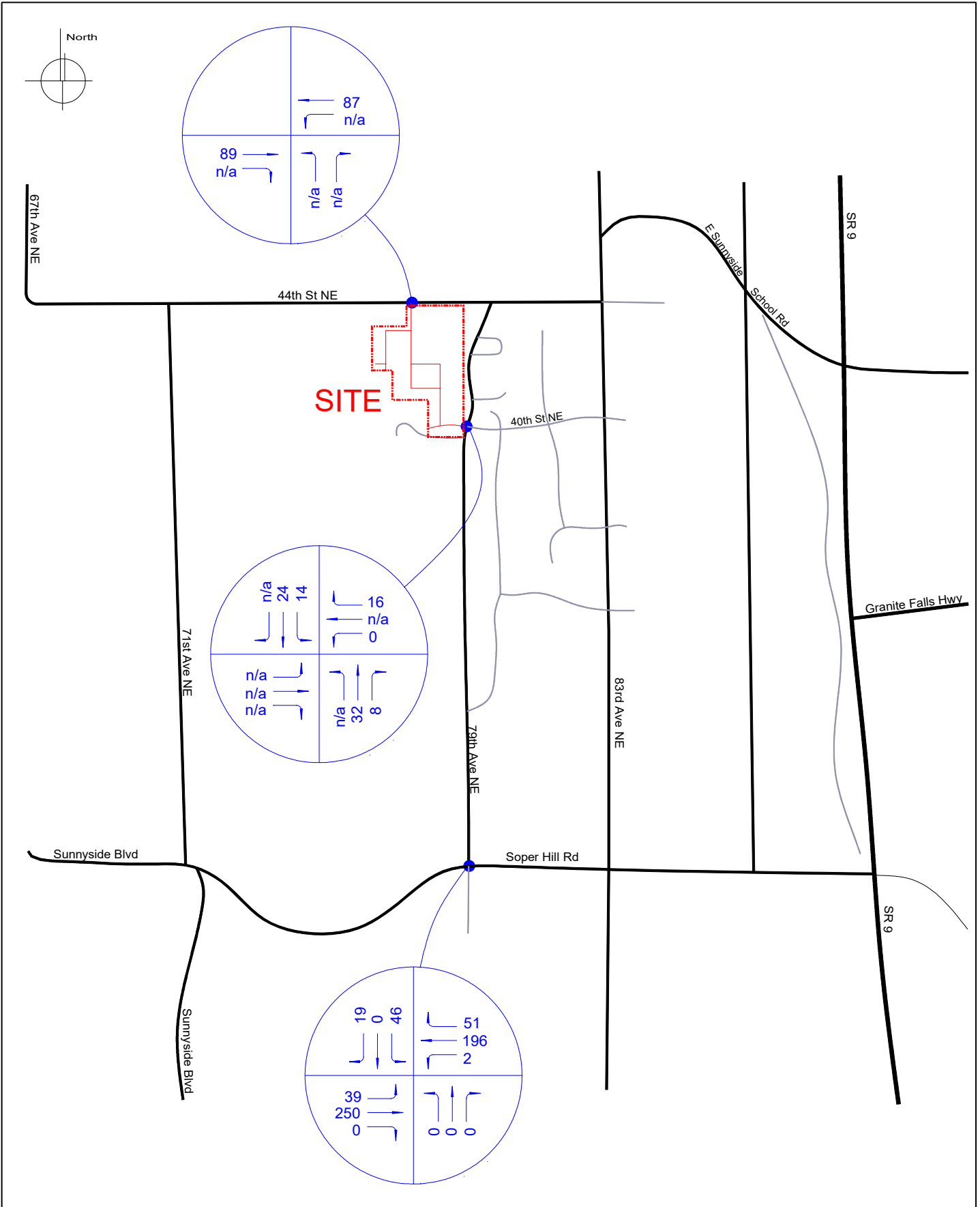
Weekday PM Peak Hour turning movement counts were conducted in November of 2022 at the following four intersections:

1. Soper Hill Road/Sunnyside Boulevard
2. Soper Hill Road/79th Ave NE
3. 44th St NE/79th Ave NE
4. 44th St NE/71st Ave NE

All counts were conducted between 4:00 and 6:00 PM. The peak hour was found to be between 4:00 and 5:00 PM for all intersections. The percent truck/busses were also recorded by approach, as well as pedestrian activity. Based on the project trip assignment, only one intersection, Soper Hill Road/79th Ave NE was found to be impacted by 25 or more PM peak hour project trips. Figure 3 shows the PM peak hour volume at this intersection, plus the PM peak hour volume on the major street at the two future site access intersections.

PROJECT TRIP GENERATION

Trip generation rates, for the project, are based on the ITE *Trip Generation Manual 11th Edition*. The project is comprised of 60 single family detached residential homes. The trip generation is based on rates per Land Use Code (LUC) 210. Per ITE definitions, Land Use Code 210, Single-Family Detached Housing (sfdu), is defined as a single-family detached housing site that includes any single-family detached home on an individual lot. A typical site surveyed is a suburban subdivision. Even though these proposed lots are relatively small, this analysis does not use the newly defined “patio home” ITE definition for this project.



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EXISTING PM PEAK HOUR VOLUMES
Figure 3

CREEKSIDE VILLAGE
60 units (SFDU's)

The property currently has two (2) existing single family detached homes on it. Trip generation rates for single family detached housing is also based on ITE LUC 210. Trip generation for the existing units, since they will not remain, are deducted from the site generated traffic volume.

Table 1 identifies project vehicular trip generation for the average weekday (24-hour) volume as well as the AM and PM peak hour volumes. The AM peak hours are assumed to occur between 7 AM and 9 AM whereas the PM peak hour occurs between 4 PM and 6 PM.

Table 1. Project Trip Generation

	AWDT	AM Peak			PM Peak		
		Total	In	Out	Total	In	Out
60 Single Family Homes ¹							
ITE LUC 210: Single-Family Detached Housing							
Rates	9.43	0.7	26%	74%	0.94	63%	37%
60 units	566	42	11	31	56	35	21
Existing Use ²							
ITE LUC 210: Single Family Dwelling Units							
Rates	9.43	0.7	26%	74%	0.94	63%	37%
2 SFDU's	-19	-1	0	-1	-2	-1	-1
NET NEW ³							
	547	41	11	30	54	34	20
T11							

a per ITE Trip Generation 11th Edition; LUC 210.
 b The site has two existing home currently occupied that will be removed
 c NET NEW is the estimated project trips minus the existing site use trips.

As shown in Table 1, the project is estimated to generate a total of 566 daily trips, 42 AM peak hour and 56 PM peak hour trips. This volume of PM peak hour trips is estimated to be added to the street network in the 2024 horizon year. The net new trips, as a result of site redevelopment would result in 547 daily, 41 AM, and 54 PM peak hour trips on the surrounding street system.

Trip Distribution/Traffic Assignment

The trip distribution/traffic assignment for the project was based on the traffic distribution percentages provided by the City of Marysville. This analysis assumes a trip distribution pattern for the Year of Opening (2024) condition, as well as one for the Horizon Year (2030) condition. A summary of each is presented below.

Year of Opening (2024) Distribution Percentages:

• 67 th Street NE	to/from the northwest	41%
• 83 rd Avenue NE	to/from the north	4%
• Local area	southwest area (71 st and 79 th)	1%
• Sunnyside Blvd	to/from the southwest	31%
• SR 9	to/from the south	17%
• Soper Hill Road	to/from east of SR 9	2%
• <u>SR 92</u>	to/from east of SR 9	4%
<hr/>		
Total		100%

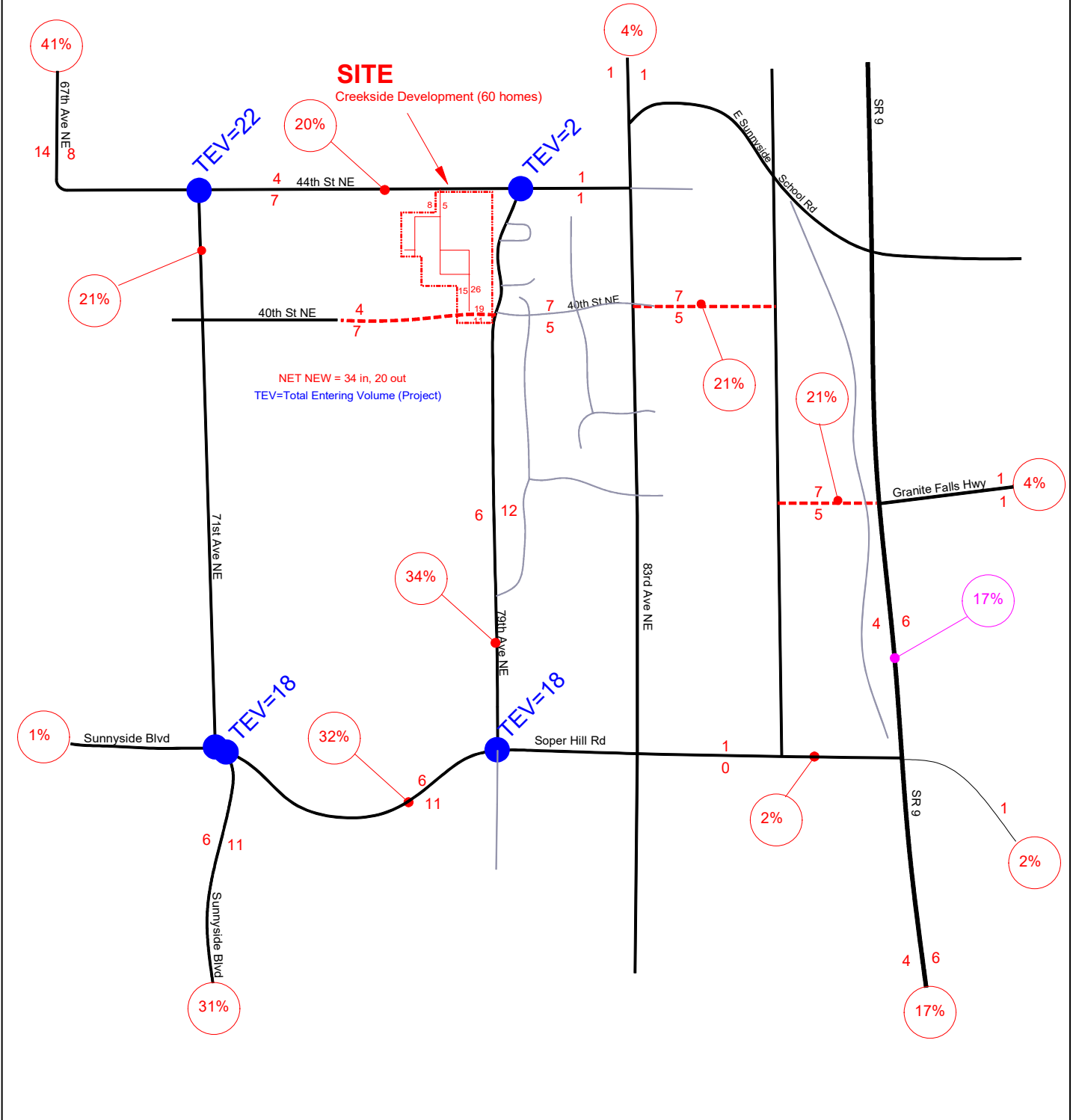
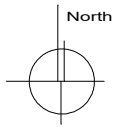
Horizon Year (2030) Distribution Percentages:

• 67 th Street NE (via 44 th Street NE)	to/from the northwest	20%
• 67 th Street NE (via new 40 th Street NE)	to/from the northwest	21%
• 83 rd Avenue NE	to/from the north	4%
• local area	southwest area	1%
• Sunnyside Blvd	to/from the southwest	31%
• SR 9	to/from the south	17%
• Soper Hill Road	to/from east of SR 9	2%
• <u>SR 92</u>	to/from east of SR 9	4%
<hr/>		
Total		100%

Based on the overall percentages, it was determined that approximately 60 percent of the project trips would have origins and destinations east and south of the site, and 40 percent would have origins and destinations northwest of the site.

The project traffic assignment for the Year of Opening (2024) is presented in Figure 4, and the project traffic assignment for the Horizon Year (2030) is presented in Figure 5.

The interlocal agreement between the City of Marysville and Snohomish County requires detailed development trip turning movement data at Snohomish County key intersections impacted with three or more directional trips on an approach or departure. The development will impact two (2) key intersections during the AM and PM peak-hours. The AM and PM peak-hour key intersection impacts are shown in tabular form in Table 2 and 3, respectively.



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**PROJECT TRIP DISTRIBUTION & ASSIGNMENT
2030 HORIZON YEAR (PM PEAK HOUR)**
Figure 5

**CREEKSIDE VILLAGE
60 units (SFU's)**

Table 2: AM Peak-Hour Key Intersection Volumes (Snohomish County)

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#116: Soper Hill Road at 71 st Avenue NE	0	0	0	9	0	0	0	0	2	0	0	0
#297: SR-204 at Sunnyside Boulevard SE	0	0	9	0	0	0	3	0	0	0	0	0
#147 SR 9/S Lake Stevens Road	0	0	0	0	0	0	0	2	0	0	4	0
#420 SR 9/32 nd Street SE	0	0	0	0	0	0	0	2	0	0	4	0

Table 3: PM Peak-Hour Key Intersection Volumes (Snohomish County)

Intersection	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
#116: Soper Hill Road at 71 st Avenue NE	0	0	0	6	0	0	0	0	11	0	0	0
#297: SR-204 at Sunnyside Boulevard SE	0	0	6	0	0	0	11	0	0	0	0	0
#147 SR 9/S Lake Stevens Road	0	0	0	0	0	0	0	5	0	0	2	0
#420 SR 9/32 nd Street SE	0	0	0	0	0	0	0	5	0	0	2	0

The key intersection impacts are also shown in graphical form in Figure 6 below for the AM and PM peak-hours.

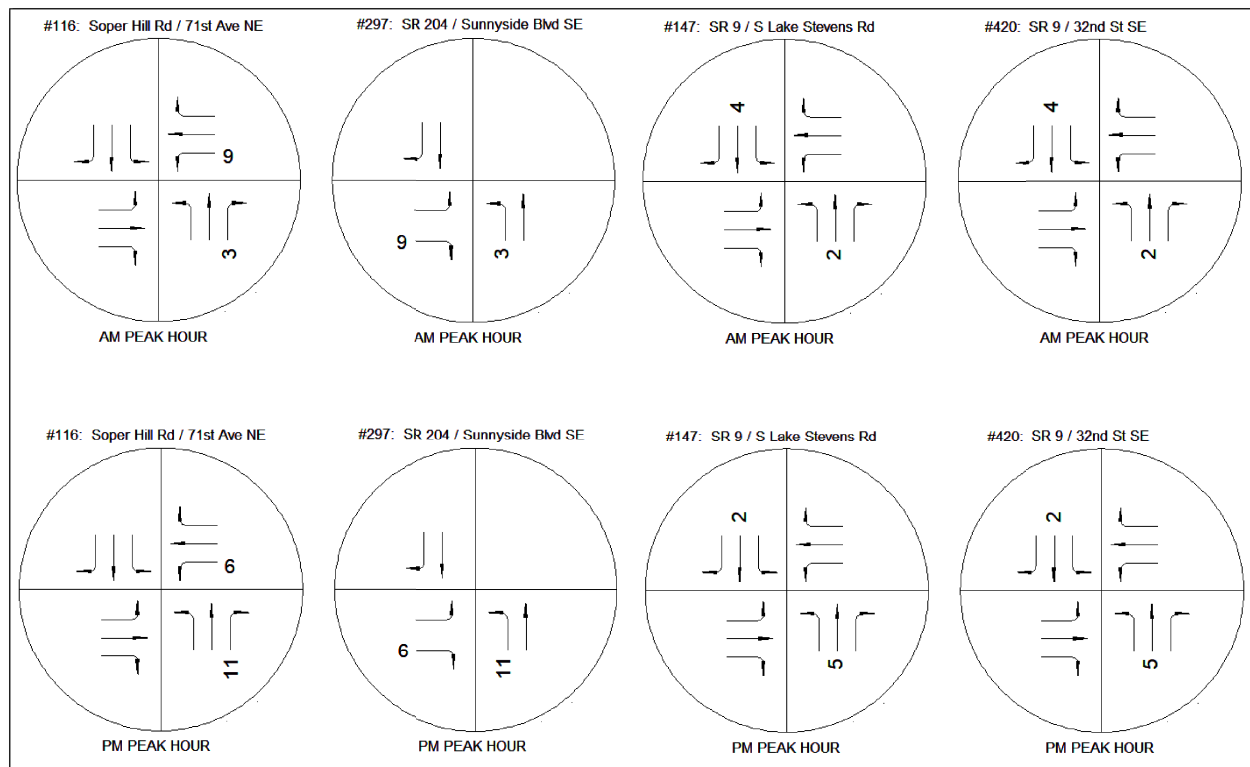


Figure 6: Snohomish County Key Intersections (north is up)

Level of Service

Level of service (LOS) is used to describe the degree of traffic congestion and driver comfort on streets or at intersections. The Highway Capacity Manual (HCM) describes the methodologies for calculating LOS on street segments and at signalized and unsignalized intersections.

According to the HCM (TRB Special Report #209), there are six (6) levels of service by which the operational performance of the roadway system may be described. The levels of service range from LOS A, which indicates a relatively free-flowing condition, to LOS F, which indicates operational breakdown.

The level of service for a two-way stop controlled (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. Level of service is not defined for the intersection as a whole. Average control delay less than or equal to 10 seconds per vehicle is defined as LOS A. For LOS F, the average control delay is greater than 50 seconds per vehicle.

The level of service for an all-way stop controlled (AWSC) intersection is defined in terms of average control delay per vehicle. Level of service is defined for the intersection as a whole. Average control delay less than or equal to 10 seconds per vehicle is defined as LOS A. For LOS F, the average control delay is greater than 50 seconds per vehicle. A summary of the Level of Service Criteria is presented in Table 2.

Table 2. Level of service Criteria ¹

Level of Service	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized	Signalized
A	Little/No Delay	≤ 10	≤ 10
B	Short Delays	> 10 and ≤ 15	> 10 and ≤ 20
C	Average Delays	> 15 and ≤ 25	> 20 and ≤ 35
D	Long Delays	> 25 and ≤ 35	> 35 and ≤ 55
E	Very Long Delays	> 35 and ≤ 50	> 55 and ≤ 80
F	Extreme Delays	> 50	> 80

¹ per Highway Capacity Manual (HCM)

Level of service (LOS) for this report was calculated using Synchro, the intersection level of service based on the HCM 6. The result of the level of service analysis for the existing condition at the analysis intersections is shown in Table 3.

Table 3. 2022 PM Peak Hour Level of Service ¹

Intersection	Traffic Control	Total Entering Volume	PM Peak Hour	
			LOS	Delay
79 th Avenue NE / Soper Hill Road	Stop Sign (NB/SB)	603	C	15.4
79 th Avenue NE/40 th Street NE	Stop Sign (WB)	94	A	8.7

¹ Based on HCM 6 LOS report

As shown in Table 3, the side street approach LOS at both of the intersections shown are LOS C or better. The City of Marysville level of service threshold is D for all arterial functionally classified streets where there are three (3 or more) project generated vehicles per hour in both directions.

FUTURE CONDITIONS

The Future Conditions analysis includes several scenarios: 1) Year of Opening (2024) with and without Project, and 2) Horizon Year (2030) with and without the project. This also includes a discussion of background traffic growth assumptions plus pipeline traffic.

Historical Growth Rate

A two (2) percent per year background growth rate, based on City input and prior traffic studies for the area, was used for this analysis.

Background Traffic Volumes (Pipeline Development)

Background traffic volumes for both future year scenarios also include PM peak hour traffic from ten (10) pipeline projects in the area. City staff provided the pipeline projects. A list of the pipeline projects included in this analysis include the following:

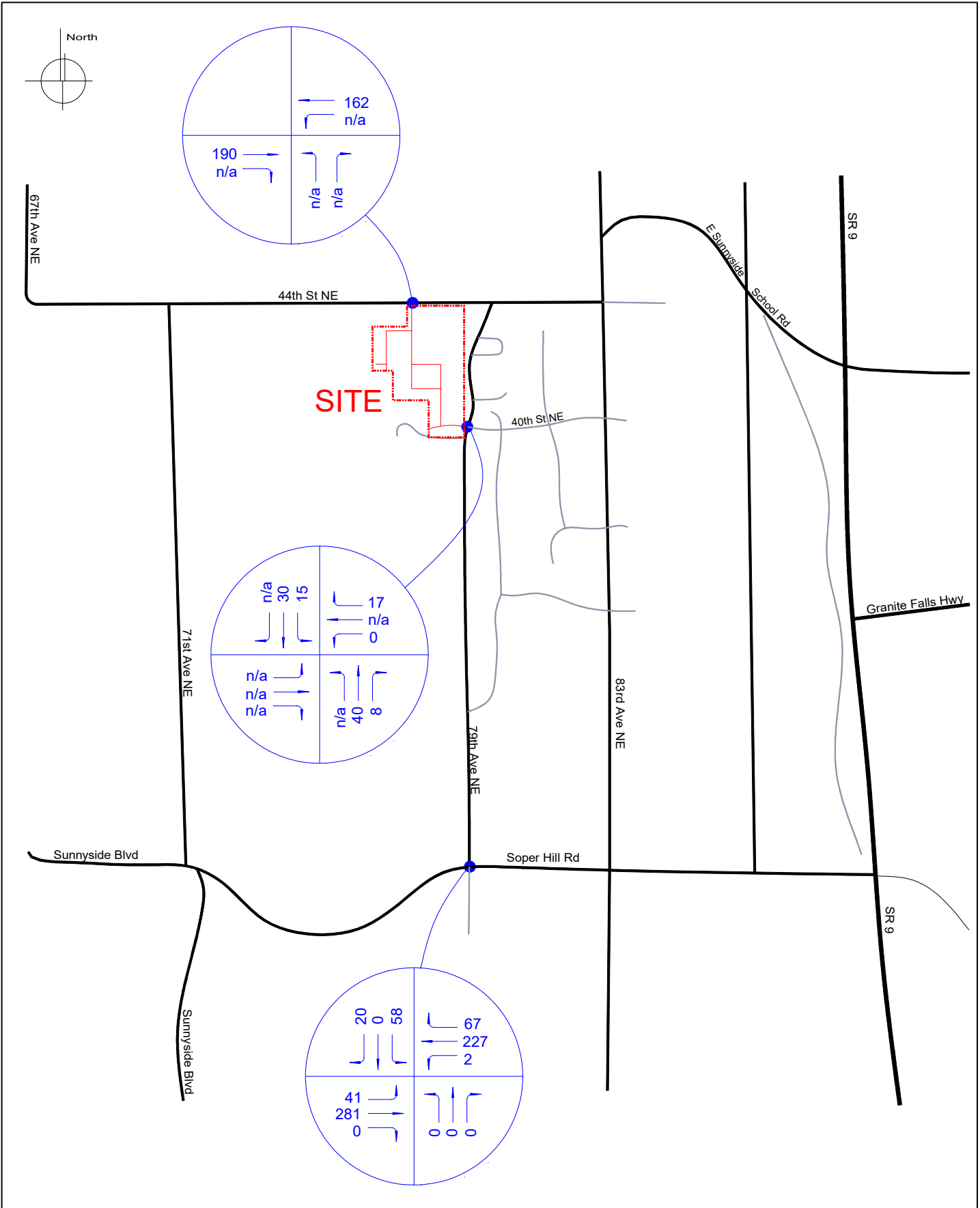
1. Maplewood Crossing
2. Prospector D2
3. White Barn
4. Firerock
5. 87th Assembly
6. Stevens Ridge
7. Inspiration Point
8. Holbrook Development
9. The Retreat
10. Wyndham Homes

Table 4 below, presents the total entering PM peak hour volume (TEV), at each of the analysis intersections, for existing, the Year of Opening (2024), and the Horizon Year (2030) conditions.

As shown in Table 4, there is only one off-site intersections impacted by 25 or more PM peak hour project trips for the Year of Opening. For the Horizon Year there are no off-site intersections impacted by 25 or more PM peak hour project trips. The north and south site access points are included in the table. The south site access is actually a realignment of the 40th Street NE west leg that will connect to the project's south access. 40th Street NE is proposed to extend west to 71st Avenue NE after the Year of Opening conditions, and before the Horizon Year conditions. Some of the project's traffic will use this new roadway once built, these trips will be to and from the northwest.

A summary of the 2024 with and without project PM peak hour turning movement volumes for each intersection are shown in Table 4, and are presented in Figures 7 and 8.

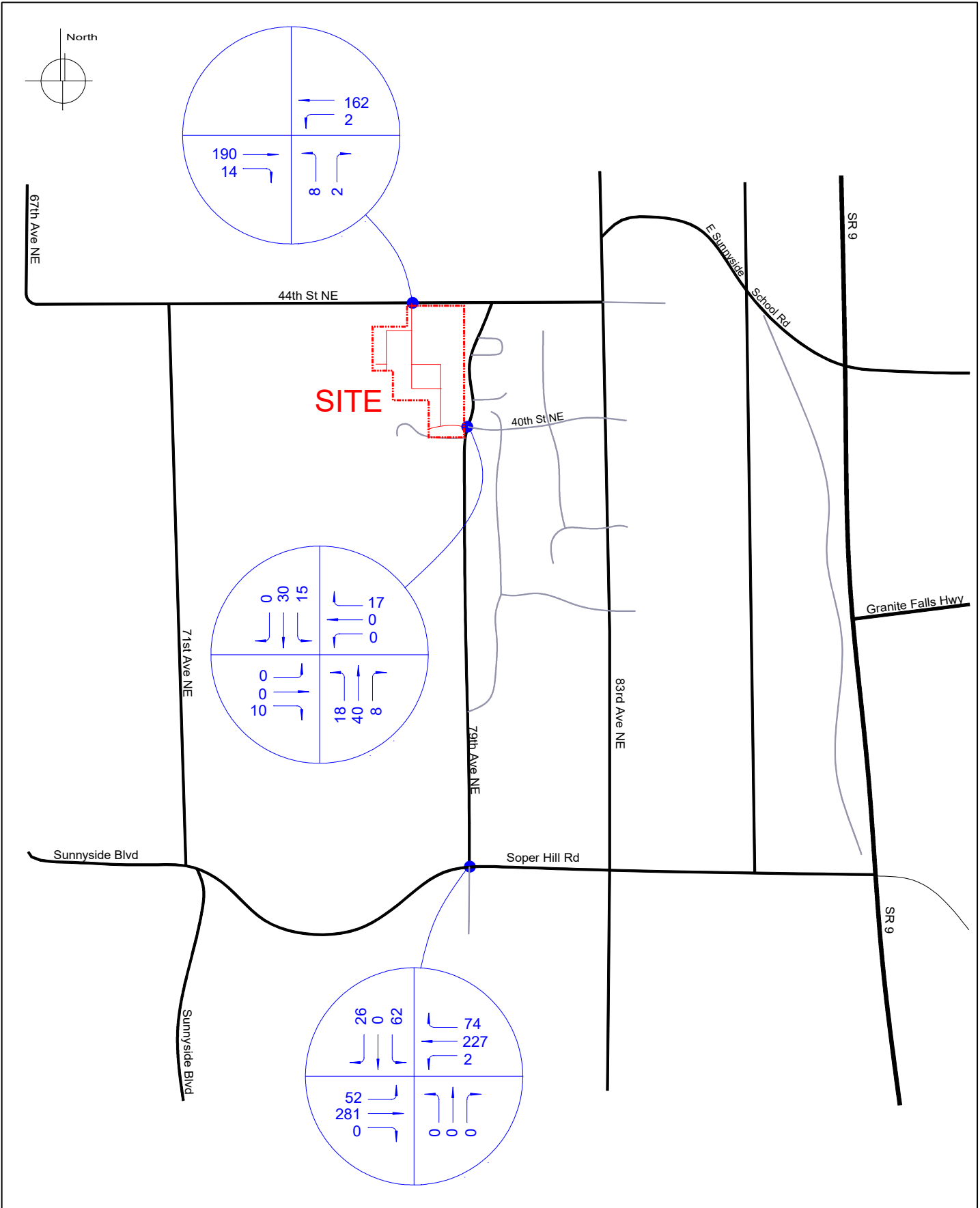
A summary of the 2030 with and without project PM peak hour turning movement volumes for each intersection are also shown in Table 4, and are presented in Figure 9 and 10.



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2024 YEAR OF OPENING (without Project)
Figure 7

**CREEKSIDE VILLAGE
60 units (SFDU's)**

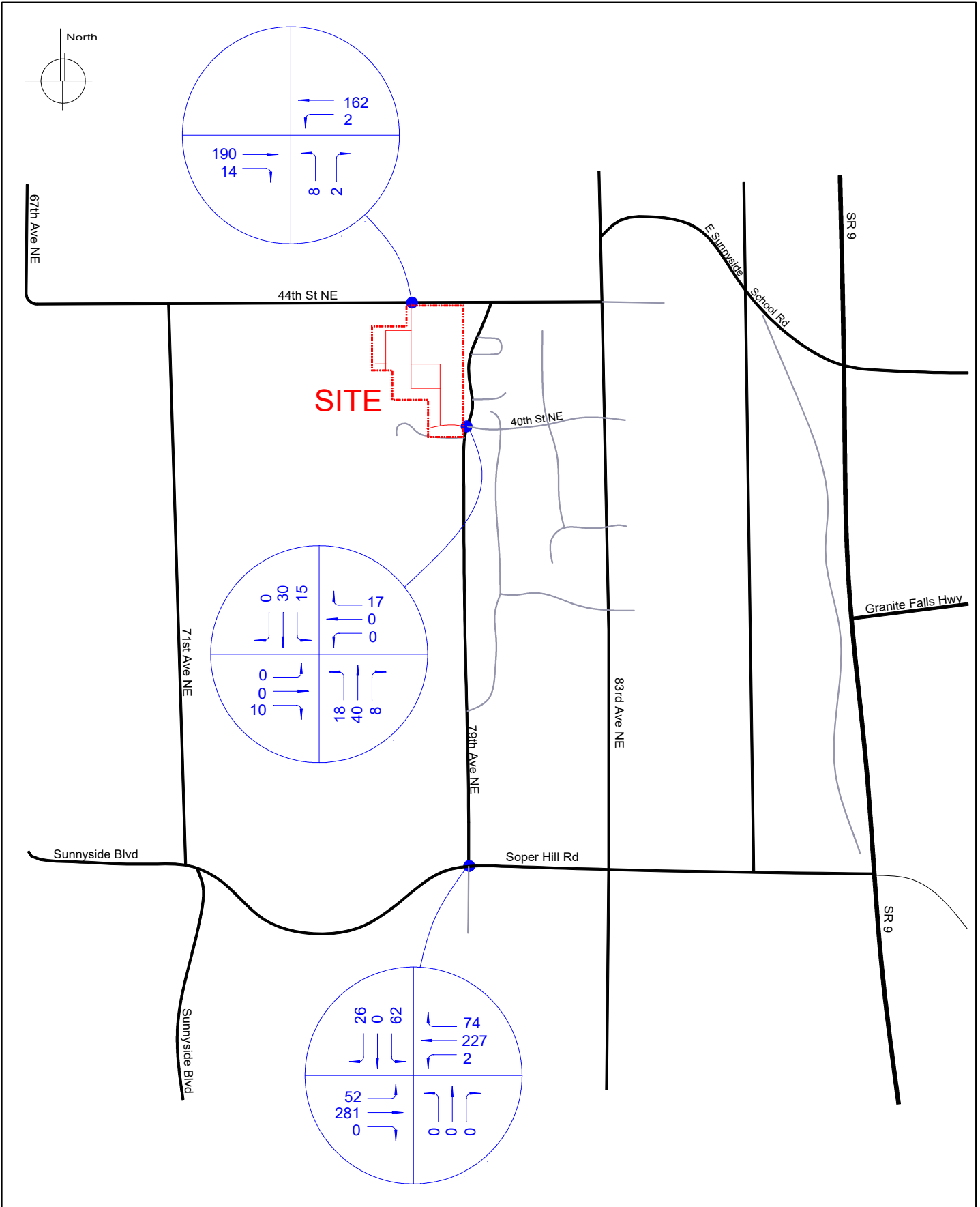


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2024 YEAR OF OPENING (with Project)

Figure 8

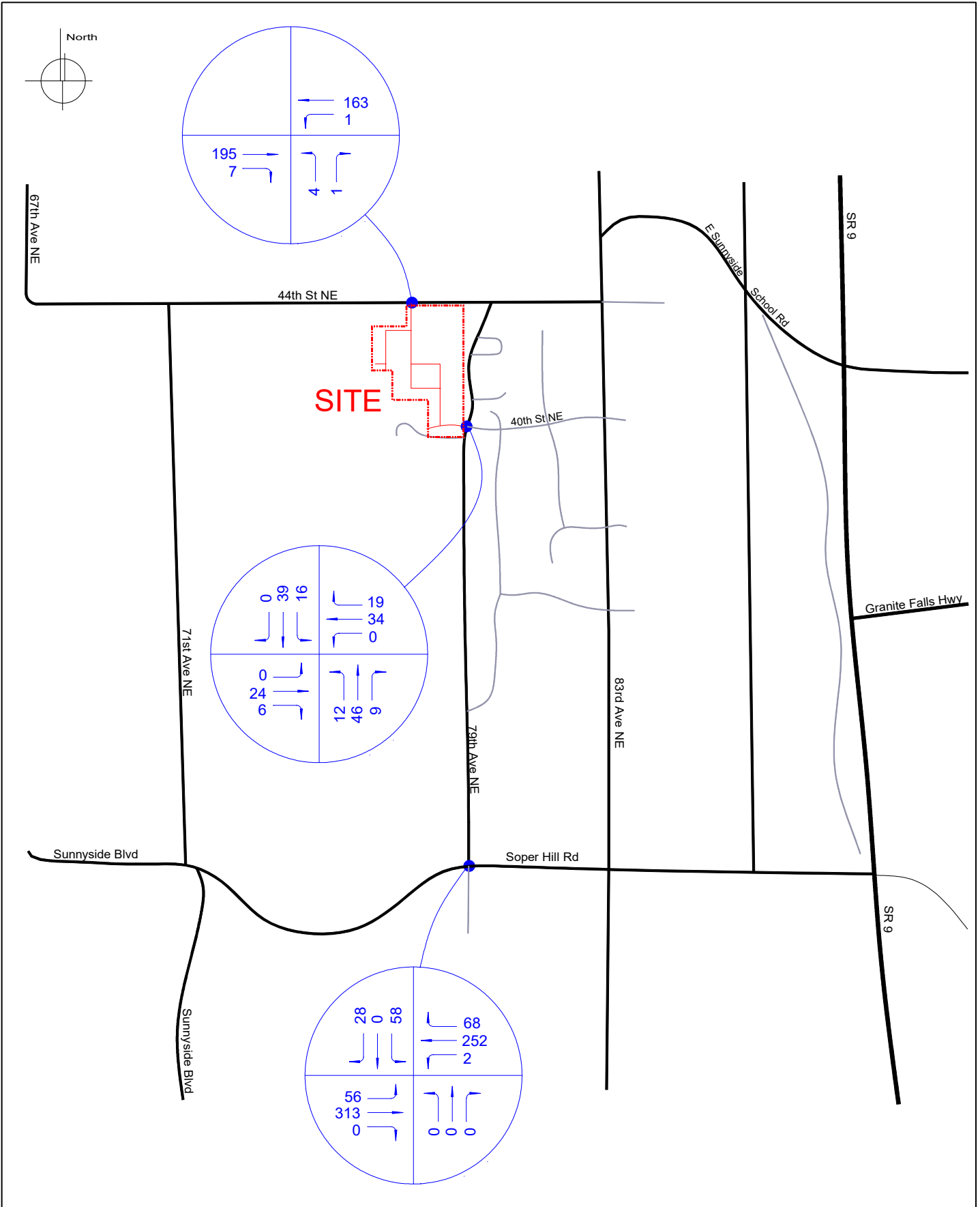
CREEKSIDE VILLAGE
60 units (SFDU's)



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2024 YEAR OF OPENING (with Project)
Figure 9

CREEKSIDE VILLAGE
60 units (SFDU's)



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2030 HORIZON YEAR (with Project)

Figure 10

CREEKSIDE VILLAGE
60 units (SFDU's)

Table 4. 2022 PM Peak Hour TEV ¹

Intersection	2022 PM Peak	Year of Opening (2024) PM Peak Hour TEV				
		Background Growth (2022-2024)	Pipeline Traffic	TEV without Project	Project Traffic	TEV with Project
79th Avenue NE/Soper Hill Road	603	25	68	696	28	724
44th Street NE / North Site Access	176	8	168	352	26	378
79th Avenue NE/40th Street NE ²	94	4	12	110	28	138
Intersection	2022 PM Peak	Horizon Year (2030) PM Peak Hour TEV				
		Background Growth (2022-2030)	Pipeline Traffic	TEV without Project	Project Traffic	TEV with Project
79th Avenue NE/Soper Hill Road	603	104	53	760	18	778
44th Street NE / North Site Access	176	30	152	358	13	371
79th Avenue NE/40th Street NE ³	94	15	66	175	30	205

- 1 TEV = Total Entering Vehicles
- 2 Assumes realignment of the west leg to align with the existing east leg. 40th Street NE does not extend west beyond the project property
- 3 Assumes realignment of the west leg to align with the existing east leg, and extension of 40th Street NE west to 71st Avenue NE. Background traffic includes only traffic from pipeline development. Eleven of the project trips enter the site at the south end via the new westerly extension of 40th Street NE.

Level of Service

A PM peak hour level of service analysis was conducted for the existing 2022 conditions, as well as the 2024 Year of Opening with and without the project based on existing intersection striping and traffic control, and peak-hour factors and heavy vehicle factors per the existing turning movement counts.

The 2024 Year of Opening level of service conditions for the PM peak hour at the analysis intersections are shown in Table 5.

Table 5. 2024 Year of Opening PM Peak Hour Level of Service ¹

Intersection Name	2024 PM Peak Hour without Project		2024 PM Peak Hour with Project	
	LOS	Delay	LOS	Delay
79 th Avenue NE / Soper Hill Road	C	18.4	C	19.5
44 th Street NE / North Site Access	n/a	n/a	B	10.9
79 th Avenue NE / 40 th Street NE / South Site Access Extension	A	8.7	A	8.8

1 Based on HCM 6 LOS report

As shown in Table 5, the side street approach LOS at the intersections shown is LOS C or better.

For the Horizon Year (2030), the PM peak hour level of service analysis summary is shown in Table 6. The analyses were conducted only for the site access locations since no off-site intersection was impacted by 25 or more PM peak hour project trips.

Table 6. 2030 Horizon Year PM Peak Hour Level of Service ¹

Intersection Name	2030 PM Peak Hour without Project		2030 PM Peak Hour with Project	
	LOS	Delay	LOS	Delay
44 th Street NE / North Site Access	n/a	n/a	B	10.8
79 th Avenue NE / 40 th Street NE	B	10.5	B	10.7
40 th Street NE / South Site Access	n/a	n/a	A	8.9

1 Based on HCM 6 LOS report

As shown in Table 6, the side street approach LOS at the intersections shown are LOS B or better. There are planned improvements to widen 44th Street NE to a three (3) -lane section thus the analysis at the north site access assumes this as constructed. For the Horizon Year, 40th Street NE is assumed to be connected between 71st Avenue NE and 79th Avenue NE. The west leg of 40th Street NE at 79th Avenue NE is assumed to be constructed as part of the site development with 40th Street NE extending to the south site access. The future extension of 40th Street NE to the west includes all pipeline traffic as identified in the 10 traffic studies for those developments.

MITIGATION MEASURES

The following list is a summary of mitigation evaluations for the City of Marysville as well as surrounding agencies that have an interlocal agreement with the City. The City of Marysville has an interlocal agreement with Snohomish County that provides for the payment of traffic mitigation fees to Snohomish County for City of Marysville developments. The City of Marysville also has an understanding with WSDOT for the payment traffic mitigation fees. The City of Marysville and the City of Lake Stevens have an interlocal agreement for mitigation fees for impacts along Soper Hill Road.

City of Marysville

The City of Marysville standard traffic mitigation fees have been calculated using the residential rate of \$6,300 per new unit. The Creekside Village development is proposed to have 60 new single-family residential units, however, there are two existing homes that will be removed; thus, the net new number of units is 58. That results in a City of Marysville traffic mitigation fee of \$365,400 (6,300 * 58 = 365,400).

City of Lake Stevens

The City of Marysville and the City of Lake Stevens have an interlocal agreement to fund improvements to Soper Hill Road from SR-9 to 83rd Avenue NE. The intersection of Soper Hill Road at 83rd Avenue NE has already been improved. Traffic mitigation fees are therefore only required to be paid for impacts to the intersection of Soper Hill Road and 87th Avenue NE. The Soper Hill Road and 87th Avenue NE intersection project has a trip mitigation fee of \$1,700.00

per PM peak-hour trip. The Creekside Village development is expected to impact the Soper Hill Road/87th Avenue NE intersection with one (1) PM peak-hour trip in the Horizon Year. Therefore, Creekside Village would have a proportionate fee of \$1,700 for impact at that intersection. It should be noted that the development would not be subject to these fees if another development has been conditioned to construct the 87th Avenue NE roundabout prior to when these fees would be due.

Snohomish County

The City of Marysville and Snohomish County have an interlocal agreement that provides for the payment of traffic mitigation for impacts to Snohomish County roadways by City of Marysville developments. Traffic mitigation fees are based on predetermined area impacts or impacts to actual improvement projects. According to Section 3(a)2 of the *Snohomish County Traffic Worksheet and Traffic Study Requirements for Developments in the City of Marysville*, City of Marysville developments are only required to pay traffic mitigation fees for improvements in the Transportation Needs Report impacted with three directional peak-hour trips. The trip distribution shows that trips generated by the Creekside Village development will not impact any Snohomish County improvement projects in the Transportation Needs Report with three or more directional PM peak-hour trips. Therefore, Snohomish County traffic mitigation fees would not be required for the subject development.

Washington State Department of Transportation (WSDOT)

Developments are only required to mitigate impacts to improvement projects identified on WSDOT's Exhibit C list if the development is expected to impact the project with three or more directional PM peak-hour trips and if the improvement project has not already been completed or advertised for construction. Trips generated by the Creekside Village development are not expected to impact any WSDOT improvement projects on the Exhibit C list with three or more directional PM peak-hour trips. Therefore, WSDOT traffic mitigation fees would not be required for the subject development.

CONCLUSIONS

The Creekside Village development is proposed to construct 60 single-family residential units. As part of the site development, two (2) existing homes will be removed.

The development is estimated to generate 566 average daily trips with 42 AM peak-hour trips and 56 PM peak-hour trips. As a result of site redevelopment and removal of the two (2) existing homes, the estimated net new trips impacting the surrounding street system is 547 daily, 41 AM, and 54 PM peak hour trips.

The intersection of Soper Hill Road and 79th Avenue NE is anticipated to operate at acceptable LOS C under the 2024 Year of Opening condition with the development. For the Horizon Year conditions, the project does not impact any of the arterial intersections with 25 more trips.

The traffic mitigation fees due to the City of Marysville traffic are estimated to be \$365,400. These traffic mitigation fees are presumed to help fund the improvements to 44th Street NE. The traffic mitigation fees due to the City of Lake Stevens are estimated to be \$1,700. Traffic mitigation fees are estimated to be zero for impacts to Snohomish County and WSDOT critical locations.

TECHNICAL APPENDIX

Intersection Turning Movement Volumes PM Peak Hour

PM Peak Hour Level of Service Results

2022 Existing
2024 with and without Project (Year of Opening)
2030 with and without Project (Horizon Year)

Creekside Village
Year of Opening PM Peak Hour Turn Movements (Year 2024)

79th Avenue NE/Soper Hill Road
PM Peak Hour: 4:00 PM - 5:00 PM
Date Collected: 11/8/2022

	2022 PM Peak	Peak Hour Factor	Percent Trucks/Busses	Background Growth 2022-2024	2024 Background Traffic (Year of Opening)	Pipeline Development	2024 Year of Opening w/o Proj	Creekside Village (Net New) Year of Opening	2024 PM with Project
EBLT	39			2	41	0	41	11	52
EBT	250	0.92	0.7	10	260	21	281		281
EBRT	0			0	0	0	0		0
WBLT	2			0	2	0	2		2
WBT	196	0.8	3.2	8	204	23	227		227
WBRT	51			2	53	14	67	7	74
NBLT	0			0	0	0	0		0
NBT	0	0	0	0	0	0	0		0
NBRT	0			0	0	0	0		0
SBLT	46			2	48	10	58	4	62
SBT	0	0.72	4.6	0	0	0	0		0
SBRT	19			1	20	0	20	6	26
	603			25	628	68	696	28	724

44th Street NE / North Site Access
PM Peak Hour: 4:00 PM - 5:00 PM
Date Collected (thru volumes): 11/7/2022

	2022 PM Peak	Peak Hour Factor	Percent Trucks/Busses	Background Growth 2022-2024	2024 Background Traffic (Year of Opening)	Pipeline Development	2024 Year of Opening w/o Proj	Creekside Village (Net New) Year of Opening	2024 PM with Project
EBLT	0			0	0		0		0
EBT	89	0.89	3.35	4	93	97	190		190
EBRT	0			0	0		0	14	14
WBLT	0			0	0		0	2	2
WBT	87	0.82	6.25	4	91	71	162		162
WBRT	0			0	0		0		0
NBLT	0			0	0		0	8	8
NBT	0	0.00	0.00	0	0		0		0
NBRT	0			0	0		0	2	2
SBLT	0			0	0		0		0
SBT	0	0.00	0.00	0	0		0		0
SBRT	0			0	0		0		0
	176			8	184	168	352	26	378

Creekside Village
Year of Opening PM Peak Hour Turn Movements (Year 2024)

79th Avenue NE/40th Street NE
PM Peak Hour: 4:00 PM - 5:00 PM
Date Collected: 11/7/2022

	2022 PM Peak	Peak Hour Factor	Percent Trucks/Busses	Background Growth 2022-2024	2024 Background Traffic (Year of Opening)	Pipeline Development	2024 Year of Opening w/o Proj	Creekside Village (Net New) Year of Opening	2024 PM with Project
EBLT	0			0	0		0		0
EBT	0	0.00	0.00	0	0		0		0
EBRT	0			0	0		0	10	10
WBLT	0			0	0		0		0
WBT	0	0.53	0.00	0	0		0		0
WBRT	16			1	17		17		17
NBLT	0			0	0		0	18	18
NBT	32	0.52	22.50	1	33	7	40		40
NBRT	8			0	8		8		8
SBLT	14			1	15		15		15
SBT	24	0.81	0.00	1	25	5	30		30
SBRT	0			0	0		0		0
	94			4	98	12	110	28	138

Creekside Village
Horizon Year PM Peak Hour Turn Movements (Year 2030)

79th Avenue NE/Soper Hill Road
PM Peak Hour: 4:00 PM - 5:00 PM
Date Collected: 11/8/2022

	2022 PM Peak	Peak Hour Factor	Percent Trucks/Busses	Background Growth 2022-2030	2030 Background Traffic (Horizon Year)	Pipeline Development	2030 Horizon Year w/o Proj	Creekside Village (Net New) Horizon Year	2030 PM with Project
EBLT	39			7	46	0	46	11	57
EBT	250	0.92	0.7	43	293	20	313		313
EBRT	0			0	0	0	0		0
WBLT	2			0	2	0	2		2
WBT	196	0.8	3.2	34	230	22	252		252
WBRT	51			9	60	7	67	1	68
NBLT	0			0	0	0	0		0
NBT	0	0	0	0	0	0	0		0
NBRT	0			0	0	0	0		0
SBLT	46			8	54	4	58	0	58
SBT	0	0.72	4.6	0	0	0	0		0
SBRT	19			3	22	0	22	6	28
	603			104	707	53	760	18	778

44th Street NE / North Site Access
PM Peak Hour: 4:00 PM - 5:00 PM
Date Collected (thru volumes): 11/7/2022

	2022 PM Peak	Peak Hour Factor	Percent Trucks/Busses	Background Growth 2022-2030	2030 Background Traffic (Horizon Year)	Pipeline Development	2030 Horizon Year w/o Proj	Creekside Village (Net New) Horizon Year	2030 PM with Project
EBLT	0			0	0		0		0
EBT	89	0.89	3.35	15	104	91	195		195
EBRT	0			0	0		0	7	7
WBLT	0			0	0		0	1	1
WBT	87	0.82	6.25	15	102	61	163		163
WBRT	0			0	0		0		0
NBLT	0			0	0		0	4	4
NBT	0	0.00	0.00	0	0		0		0
NBRT	0			0	0		0	1	1
SBLT	0			0	0		0		0
SBT	0	0.00	0.00	0	0		0		0
SBRT	0			0	0		0		0
	176			30	206	152	358	13	371

Creekside Village
Horizon Year PM Peak Hour Turn Movements (Year 2030)

79th Avenue NE/40th Street NE
PM Peak Hour: 4:00 PM - 5:00 PM
Date Collected: 11/7/2022

	2022 PM Peak	Peak Hour Factor	Percent Trucks/Buses	Background Growth 2022-2030	2030 Background Traffic (Horizon Year)	Pipeline Development	2030 Horizon Year w/o Proj	Creekside Village (Net New) Horizon Year	2030 PM with Project
EBLT	0			0	0		0		0
EBT	0	0.00	0.00	0	0	19	19	5	24
EBRT	0			0	0		0	6	6
WBLT	0			0	0		0		0
WBT	0	0.53	0.00	0	0	27	27	7	34
WBRT	16			3	19		19		19
NBLT	0			0	0		0	12	12
NBT	32	0.52	22.50	5	37	9	46		46
NBRT	8			1	9		9		9
SBLT	14			2	16		16		16
SBT	24	0.81	0.00	4	28	11	39		39
SBRT	0			0	0		0		0
	94			15	109	66	175	30	205

HCM 6th TWSC
1: Soper Hill Rd & 79th Ave NE

01/20/2023

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	39	250	0	2	196	51	0	0	1	46	0	19
Future Vol, veh/h	39	250	0	2	196	51	0	0	1	46	0	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	80	80	80	92	92	92	72	72	72
Heavy Vehicles, %	1	1	0	0	3	3	0	0	0	4	0	4
Mvmt Flow	42	272	0	3	245	64	0	0	1	64	0	26

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	309	0	0	272	0	0	652	671	272	640	639	277
Stage 1	-	-	-	-	-	-	356	356	-	283	283	-
Stage 2	-	-	-	-	-	-	296	315	-	357	356	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.336
Pot Cap-1 Maneuver	1257	-	-	1303	-	-	384	380	772	385	397	757
Stage 1	-	-	-	-	-	-	666	633	-	720	681	-
Stage 2	-	-	-	-	-	-	717	659	-	657	633	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1257	-	-	1303	-	-	359	364	772	372	380	757
Mov Cap-2 Maneuver	-	-	-	-	-	-	359	364	-	372	380	-
Stage 1	-	-	-	-	-	-	640	608	-	692	679	-
Stage 2	-	-	-	-	-	-	690	657	-	630	608	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.1			0.1			9.7			15.4		
HCM LOS							A			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	772	1257	-	-	1303	-	-	437
HCM Lane V/C Ratio	0.001	0.034	-	-	0.002	-	-	0.207
HCM Control Delay (s)	9.7	8	0	-	7.8	0	-	15.4
HCM Lane LOS	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	0.8

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↔		↔		↔			↔	
Traffic Vol, veh/h	0	0	0	0	0	16	0	32	8	14	24	0
Future Vol, veh/h	0	0	0	0	0	16	0	32	8	14	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	53	53	53	52	52	52	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	23	23	23	0	0	0
Mvmt Flow	0	0	0	0	0	30	0	62	15	17	30	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	134	- 70	- 0 0 77 0 0
Stage 1	70	- -	- - - - -
Stage 2	64	- -	- - - - -
Critical Hdwy	6.4	- 6.2	- - - 4.1 - -
Critical Hdwy Stg 1	5.4	- -	- - - - -
Critical Hdwy Stg 2	5.4	- -	- - - - -
Follow-up Hdwy	3.5	- 3.3	- - - 2.2 - -
Pot Cap-1 Maneuver	864	0 998	0 - - 1535 - 0
Stage 1	958	0 -	0 - - - - 0
Stage 2	964	0 -	0 - - - - 0
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	854	0 998	- - - 1535 - -
Mov Cap-2 Maneuver	854	0 -	- - - - - -
Stage 1	958	0 -	- - - - - -
Stage 2	953	0 -	- - - - - -

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	- 998	1535	-
HCM Lane V/C Ratio	-	-	- 0.03	0.011	-
HCM Control Delay (s)	-	-	0 8.7	7.4	0
HCM Lane LOS	-	-	A A	A	A
HCM 95th %tile Q(veh)	-	-	- 0.1	0	-

HCM 6th TWSC
1: Soper Hill Rd & 79th Ave NE

01/20/2023

Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	41	281	0	2	227	67	0	0	1	58	0	20
Future Vol, veh/h	41	281	0	2	227	67	0	0	1	58	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	80	80	80	92	92	92	72	72	72
Heavy Vehicles, %	1	1	0	0	3	3	0	0	0	4	0	4
Mvmt Flow	45	305	0	3	284	84	0	0	1	81	0	28

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	368	0	0	305	0	0	741	769	305	728	727	326
Stage 1	-	-	-	-	-	-	395	395	-	332	332	-
Stage 2	-	-	-	-	-	-	346	374	-	396	395	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.336
Pot Cap-1 Maneuver	1196	-	-	1267	-	-	335	334	740	336	353	711
Stage 1	-	-	-	-	-	-	634	608	-	677	648	-
Stage 2	-	-	-	-	-	-	674	621	-	625	608	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1196	-	-	1267	-	-	310	318	740	323	336	711
Mov Cap-2 Maneuver	-	-	-	-	-	-	310	318	-	323	336	-
Stage 1	-	-	-	-	-	-	605	581	-	647	646	-
Stage 2	-	-	-	-	-	-	646	619	-	596	581	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0.1			9.9			18.4		
HCM LOS							A			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	740	1196	-	-	1267	-	-	376
HCM Lane V/C Ratio	0.001	0.037	-	-	0.002	-	-	0.288
HCM Control Delay (s)	9.9	8.1	0	-	7.8	0	-	18.4
HCM Lane LOS	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.2

HCM 6th TWSC
2: 79th Ave NE & 40th St NE

01/20/2023

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↶		↶		↶			↶	
Traffic Vol, veh/h	0	0	0	0	0	16	0	32	8	14	24	0
Future Vol, veh/h	0	0	0	0	0	16	0	32	8	14	24	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	100	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	53	53	53	52	52	52	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	23	23	23	0	0	0
Mvmt Flow	0	0	0	0	0	30	0	62	15	17	30	0

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	134	- 70	- 0 0 77 0 0
Stage 1	70	- -	- - - - -
Stage 2	64	- -	- - - - -
Critical Hdwy	6.4	- 6.2	- - - 4.1 - -
Critical Hdwy Stg 1	5.4	- -	- - - - -
Critical Hdwy Stg 2	5.4	- -	- - - - -
Follow-up Hdwy	3.5	- 3.3	- - - 2.2 - -
Pot Cap-1 Maneuver	864	0 998	0 - - 1535 - 0
Stage 1	958	0 -	0 - - - - 0
Stage 2	964	0 -	0 - - - - 0
Platoon blocked, %			- - -
Mov Cap-1 Maneuver	854	0 998	- - - 1535 - -
Mov Cap-2 Maneuver	854	0 -	- - - - - -
Stage 1	958	0 -	- - - - - -
Stage 2	953	0 -	- - - - - -

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	2.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	- 998	1535	-
HCM Lane V/C Ratio	-	-	- 0.03	0.011	-
HCM Control Delay (s)	-	-	0 8.7	7.4	0
HCM Lane LOS	-	-	A A	A	A
HCM 95th %tile Q(veh)	-	-	- 0.1	0	-

HCM 6th TWSC
1: Soper Hill Rd & 79th Ave NE

01/20/2023

Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	52	281	0	2	227	74	0	0	1	62	0	26
Future Vol, veh/h	52	281	0	2	227	74	0	0	1	62	0	26
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	80	80	80	92	92	92	72	72	72
Heavy Vehicles, %	1	1	0	0	3	3	0	0	0	4	0	4
Mvmt Flow	57	305	0	3	284	93	0	0	1	86	0	36

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	377	0	0	305	0	0	774	802	305	757	756	331
Stage 1	-	-	-	-	-	-	419	419	-	337	337	-
Stage 2	-	-	-	-	-	-	355	383	-	420	419	-
Critical Hdwy	4.11	-	-	4.1	-	-	7.1	6.5	6.2	7.14	6.5	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.14	5.5	-
Follow-up Hdwy	2.209	-	-	2.2	-	-	3.5	4	3.3	3.536	4	3.336
Pot Cap-1 Maneuver	1187	-	-	1267	-	-	318	320	740	322	340	706
Stage 1	-	-	-	-	-	-	616	593	-	673	645	-
Stage 2	-	-	-	-	-	-	666	616	-	607	593	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1187	-	-	1267	-	-	288	300	740	307	319	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	288	300	-	307	319	-
Stage 1	-	-	-	-	-	-	580	559	-	634	643	-
Stage 2	-	-	-	-	-	-	630	614	-	571	559	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1.3			0.1			9.9			19.5		
HCM LOS							A			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	740	1187	-	-	1267	-	-	369
HCM Lane V/C Ratio	0.001	0.048	-	-	0.002	-	-	0.331
HCM Control Delay (s)	9.9	8.2	0	-	7.8	0	-	19.5
HCM Lane LOS	A	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0.1	-	-	0	-	-	1.4

HCM 6th TWSC
 2: 79th Ave NE & Site Access (temp)/40th St NE

01/20/2023

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	0	0	10	0	0	17	18	40	8	15	30	0
Future Vol, veh/h	0	0	10	0	0	17	18	40	8	15	30	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	53	53	53	52	52	52	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	23	23	23	0	0	0
Mvmt Flow	0	0	11	0	0	32	35	77	15	19	37	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	246	237	37	236	230	85	37	0	0	92	0	0
Stage 1	75	75	-	155	155	-	-	-	-	-	-	-
Stage 2	171	162	-	81	75	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.33	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.407	-	-	2.2	-	-
Pot Cap-1 Maneuver	712	667	1041	723	673	980	1448	-	-	1515	-	-
Stage 1	939	836	-	852	773	-	-	-	-	-	-	-
Stage 2	836	768	-	932	836	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	669	641	1041	694	647	980	1448	-	-	1515	-	-
Mov Cap-2 Maneuver	669	641	-	694	647	-	-	-	-	-	-	-
Stage 1	915	825	-	830	753	-	-	-	-	-	-	-
Stage 2	788	748	-	910	825	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	8.5	8.8	2.1	2.5
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1448	-	-	-	1041	-	980	1515	-	-
HCM Lane V/C Ratio	0.024	-	-	-	0.01	-	0.033	0.012	-	-
HCM Control Delay (s)	7.5	0	-	0	8.5	0	8.8	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	-	0	-	0.1	0	-	-

HCM 6th TWSC
3: North Site Access & 44th St NE

01/20/2023

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	190	14	2	162	8	2
Future Vol, veh/h	190	14	2	162	8	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	82	82	92	92
Heavy Vehicles, %	3	3	6	6	0	0
Mvmt Flow	213	16	2	198	9	2

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	229	0	423 221
Stage 1	-	-	-	-	221 -
Stage 2	-	-	-	-	202 -
Critical Hdwy	-	-	4.16	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.254	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	1316	-	591 824
Stage 1	-	-	-	-	821 -
Stage 2	-	-	-	-	837 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1316	-	590 824
Mov Cap-2 Maneuver	-	-	-	-	590 -
Stage 1	-	-	-	-	821 -
Stage 2	-	-	-	-	835 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	626	-	-	1316	-
HCM Lane V/C Ratio	0.017	-	-	0.002	-
HCM Control Delay (s)	10.9	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	0	0	18	10	0
Future Vol, veh/h	0	0	0	18	10	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	0	0	20	11	0
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	20	0	-	0	10	10
Stage 1	-	-	-	-	10	-
Stage 2	-	-	-	-	0	-
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	1596	-	-	-	1010	1071
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	1596	-	-	-	1010	1071
Mov Cap-2 Maneuver	-	-	-	-	1010	-
Stage 1	-	-	-	-	1013	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	8.6			
HCM LOS						A
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1596	-	-	-	1010	
HCM Lane V/C Ratio	-	-	-	-	0.011	
HCM Control Delay (s)	0	-	-	-	8.6	
HCM Lane LOS	A	-	-	-	A	
HCM 95th %tile Q(veh)	0	-	-	-	0	

HCM 6th TWSC
1: Soper Hill Rd & 79th Ave NE

01/20/2023

Intersection												
Int Delay, s/veh	17.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	46	313	0	2	252	67	0	0	1	58	0	22
Future Vol, veh/h	46	313	0	2	252	67	0	0	1	58	0	22
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	92	92	92	80	80	80	92	92	92	72	72	72
Heavy Vehicles, %	1	1	0	0	3	3	0	0	0	4	0	4
Mvmt Flow	50	340	0	3	315	84	0	0	1	81	0	31

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	378	179	16	349	194	1	31	0	0	1	0	0
Stage 1	178	178	-	1	1	-	-	-	-	-	-	-
Stage 2	200	1	-	348	193	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.2	7.1	6.53	6.23	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.1	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.1	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.3	3.5	4.027	3.327	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	581	717	1069	609	699	1081	1595	-	-	1609	-	-
Stage 1	826	754	-	1027	893	-	-	-	-	-	-	-
Stage 2	804	897	-	672	739	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	324	680	1069	356	663	1081	1595	-	-	1609	-	-
Mov Cap-2 Maneuver	324	680	-	356	663	-	-	-	-	-	-	-
Stage 1	826	716	-	1027	893	-	-	-	-	-	-	-
Stage 2	480	897	-	335	701	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	21.8		16.2		0		5.3	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1595	-	-	596	717	1609	-	-
HCM Lane V/C Ratio	-	-	-	0.655	0.56	0.05	-	-
HCM Control Delay (s)	0	-	-	21.8	16.2	7.4	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	4.8	3.5	0.2	-	-

HCM 6th TWSC
 2: 79th Ave NE & Site Access (temp)/40th St NE

01/20/2023

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	0	19	0	0	27	0	0	46	9	16	39	0
Future Vol, veh/h	0	19	0	0	27	0	0	46	9	16	39	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	53	53	53	52	52	52	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	23	23	23	0	0	0
Mvmt Flow	0	21	0	0	51	0	0	88	17	20	48	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	210	193	48	196	185	97	48	0	0	105	0	0
Stage 1	88	88	-	97	97	-	-	-	-	-	-	-
Stage 2	122	105	-	99	88	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.33	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.407	-	-	2.2	-	-
Pot Cap-1 Maneuver	752	706	1027	767	713	965	1435	-	-	1499	-	-
Stage 1	925	826	-	914	819	-	-	-	-	-	-	-
Stage 2	887	812	-	912	826	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	703	696	1027	742	703	965	1435	-	-	1499	-	-
Mov Cap-2 Maneuver	703	696	-	742	703	-	-	-	-	-	-	-
Stage 1	925	814	-	914	819	-	-	-	-	-	-	-
Stage 2	832	812	-	876	814	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	10.5	0	2.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1435	-	-	-	696	-	703	1499	-	-
HCM Lane V/C Ratio	-	-	-	-	0.03	-	0.072	0.013	-	-
HCM Control Delay (s)	0	-	-	0	10.3	0	10.5	7.4	0	-
HCM Lane LOS	A	-	-	A	B	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	-	0.2	0	-	-

HCM 6th TWSC
3: North Site Access & 44th St NE

01/20/2023

Intersection						
Int Delay, s/veh	0					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑		↑	↑	↑	
Traffic Vol, veh/h	195	0	0	163	0	0
Future Vol, veh/h	195	0	0	163	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	82	82	92	92
Heavy Vehicles, %	3	3	6	6	0	0
Mvmt Flow	219	0	0	199	0	0

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	219	0	418 219
Stage 1	-	-	-	-	219 -
Stage 2	-	-	-	-	199 -
Critical Hdwy	-	-	4.16	-	6.4 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.254	-	3.5 3.3
Pot Cap-1 Maneuver	-	-	1327	-	595 826
Stage 1	-	-	-	-	822 -
Stage 2	-	-	-	-	839 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1327	-	595 826
Mov Cap-2 Maneuver	-	-	-	-	595 -
Stage 1	-	-	-	-	822 -
Stage 2	-	-	-	-	839 -

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

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1327	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	19	27	0	0	0
Future Vol, veh/h	0	19	27	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	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	21	29	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	29	0	-	0	50 29
Stage 1	-	-	-	-	29 -
Stage 2	-	-	-	-	21 -
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	1584	-	-	-	959 1046
Stage 1	-	-	-	-	994 -
Stage 2	-	-	-	-	1002 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1584	-	-	-	959 1046
Mov Cap-2 Maneuver	-	-	-	-	959 -
Stage 1	-	-	-	-	994 -
Stage 2	-	-	-	-	1002 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1584	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM 6th TWSC
1: Soper Hill Rd & 79th Ave NE

01/20/2023

Intersection												
Int Delay, s/veh	18.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	57	313	0	2	252	68	0	0	1	58	0	28
Future Vol, veh/h	57	313	0	2	252	68	0	0	1	58	0	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
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	92	92	92	80	80	80	92	92	92	72	72	72
Heavy Vehicles, %	1	1	0	0	3	3	0	0	0	4	0	4
Mvmt Flow	62	340	0	3	315	85	0	0	1	81	0	39

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	383	183	20	353	202	1	39	0	0	1	0	0
Stage 1	182	182	-	1	1	-	-	-	-	-	-	-
Stage 2	201	1	-	352	201	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.2	7.1	6.53	6.23	4.1	-	-	4.14	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.1	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.1	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.3	3.5	4.027	3.327	2.2	-	-	2.236	-	-
Pot Cap-1 Maneuver	577	713	1064	606	692	1081	1584	-	-	1609	-	-
Stage 1	822	751	-	1027	893	-	-	-	-	-	-	-
Stage 2	803	897	-	669	733	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	319	676	1064	353	656	1081	1584	-	-	1609	-	-
Mov Cap-2 Maneuver	319	676	-	353	656	-	-	-	-	-	-	-
Stage 1	822	712	-	1027	893	-	-	-	-	-	-	-
Stage 2	479	897	-	331	695	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	24.3		16.5		0		5	
HCM LOS	C		C					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1584	-	-	577	711	1609	-	-
HCM Lane V/C Ratio	-	-	-	0.697	0.566	0.05	-	-
HCM Control Delay (s)	0	-	-	24.3	16.5	7.4	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	5.5	3.6	0.2	-	-

HCM 6th TWSC
 2: 79th Ave NE & Site Access (temp)/40th St NE

01/20/2023

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↶	↷		↶	↷			↕			↕	
Traffic Vol, veh/h	0	24	6	0	34	19	12	46	9	16	39	0
Future Vol, veh/h	0	24	6	0	34	19	12	46	9	16	39	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	100	-	-	100	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	53	53	53	52	52	52	81	81	81
Heavy Vehicles, %	0	0	0	0	0	0	23	23	23	0	0	0
Mvmt Flow	0	26	7	0	64	36	23	88	17	20	48	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	281	239	48	248	231	97	48	0	0	105	0	0
Stage 1	88	88	-	143	143	-	-	-	-	-	-	-
Stage 2	193	151	-	105	88	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.33	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.407	-	-	2.2	-	-
Pot Cap-1 Maneuver	675	666	1027	710	672	965	1435	-	-	1499	-	-
Stage 1	925	826	-	865	782	-	-	-	-	-	-	-
Stage 2	813	776	-	906	826	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	587	645	1027	667	651	965	1435	-	-	1499	-	-
Mov Cap-2 Maneuver	587	645	-	667	651	-	-	-	-	-	-	-
Stage 1	909	814	-	850	769	-	-	-	-	-	-	-
Stage 2	705	763	-	859	814	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.4		10.7		1.4		2.2	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1435	-	-	-	697	-	737	1499	-	-
HCM Lane V/C Ratio	0.016	-	-	-	0.047	-	0.136	0.013	-	-
HCM Control Delay (s)	7.5	0	-	0	10.4	0	10.7	7.4	0	-
HCM Lane LOS	A	A	-	A	B	A	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	-	0.5	0	-	-

HCM 6th TWSC
 3: North Site Access & 44th St NE

01/20/2023

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	195	7	1	163	4	1
Future Vol, veh/h	195	7	1	163	4	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	82	82	92	92
Heavy Vehicles, %	3	3	6	6	0	0
Mvmt Flow	219	8	1	199	4	1

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	227	0	424
Stage 1	-	-	-	-	223
Stage 2	-	-	-	-	201
Critical Hdwy	-	-	4.16	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.254	-	3.5
Pot Cap-1 Maneuver	-	-	1318	-	591
Stage 1	-	-	-	-	819
Stage 2	-	-	-	-	838
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1318	-	590
Mov Cap-2 Maneuver	-	-	-	-	590
Stage 1	-	-	-	-	819
Stage 2	-	-	-	-	837

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	625	-	-	1318	-
HCM Lane V/C Ratio	0.009	-	-	0.001	-
HCM Control Delay (s)	10.8	-	-	7.7	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↔		↕	
Traffic Vol, veh/h	7	19	27	19	11	4
Future Vol, veh/h	7	19	27	19	11	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	8	21	29	21	12	4

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	50	0	-	0	77 40
Stage 1	-	-	-	-	40 -
Stage 2	-	-	-	-	37 -
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	1557	-	-	-	926 1031
Stage 1	-	-	-	-	982 -
Stage 2	-	-	-	-	985 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1557	-	-	-	921 1031
Mov Cap-2 Maneuver	-	-	-	-	921 -
Stage 1	-	-	-	-	977 -
Stage 2	-	-	-	-	985 -

Approach	EB	WB	SB
HCM Control Delay, s	2	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1557	-	-	-	948
HCM Lane V/C Ratio	0.005	-	-	-	0.017
HCM Control Delay (s)	7.3	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1