

MEMORANDUM

DATE: March 28, 2019

TO: Linda Ritter
City of Mukilteo

FROM: Spenser Haynie / Curtis Chin, P.E.
TENW

SUBJECT: Transportation Impact Analysis for the proposed
Mukilteo Warehouse – Mukilteo, WA
TENW Project No. 5814



3/28/19

This memorandum documents the Transportation Impact Analysis (TIA) prepared for the proposed Mukilteo Warehouse project. The project site is located on the northeast corner of 44th Avenue W and 78th Street SW in the City of Mukilteo as shown in the **Figure 1** site vicinity map.

Findings and Conclusions

Project Description. The proposed project would include the development of a single 59,800 square foot (SF) industrial building including up to 31,800 square feet (SF) of manufacturing area and up to 28,000 SF of warehousing area on a currently vacant site. Vehicular access to the proposed Mukilteo Warehouse project would be provided via a new full access driveway onto the existing 78th Street SW. The anticipated buildout year for the proposed Mukilteo Warehouse project is 2020.

Trip Generation. The proposed Mukilteo Warehouse project is estimated to generate 174 new weekday daily trips, with 25 new trips occurring during the weekday AM peak hour (19 in, 6 out), and 26 new trips occurring during the weekday PM peak hour (8 in, 18 out)

Level of Service. The individual movements at the 44th Avenue W/78th Street SW study intersection are expected to operate at acceptable levels (LOS C or better) during the AM and PM peak hours in 2020 without or with the proposed Mukilteo Warehouse project.

Sight Access Analysis.

- The individual movements at the proposed site access on 78th Street SW are expected to operate at LOS A during the weekday PM peak hour in 2020 with the proposed project.
- Entering and stopping sight distance were evaluated in the field at the location of the proposed site driveway on 78th Street SW using City of Mukilteo and AASHTO standards. The available entering and stopping sight distance at the proposed site driveway location was verified to meet the applicable standards.

Transportation Impact Fees. To mitigate long-term traffic impacts created by the proposed Mukilteo Warehouse project, the City of Mukilteo requires payment of a transportation impact fee to help fund city-wide transportation improvements. Based on Mukilteo Municipal Code section 3.107.070, the transportation impact fee (TIF) per new PM peak hour trip is \$1,875. Based on a PM peak hour trip generation of 26 trips, the resulting impact fee would be \$48,750 (26 new PM peak hour trips X \$1,875/trip).



Figure 1: Project Site Vicinity



Project Description

The proposed Mukilteo Warehouse project is located on the northeast corner of 44th Avenue W and 78th Street SW in the City of Mukilteo. The project site is currently zoned as PI (Planned Industrial). The proposed project would include the development of a single 59,800 square foot (SF) industrial building including up to 31,800 square feet (SF) of manufacturing area and up to 28,000 SF of warehousing area on a currently vacant site. Vehicular access to the proposed Mukilteo Warehouse project would be provided via a new full access driveway onto the existing 78th Street SW. The anticipated buildout year for the proposed Mukilteo Warehouse project is 2020. A preliminary site plan is included in **Figure 2**.

Existing Conditions

Roadway Network

The primary travel routes to and from the site include 44th Avenue W and 78th Street SW. The relationship of these roadways to the project site is shown in **Figure 1**.

44th Avenue W is a two-way north-south 2-lane urban collector along the project frontage. Sidewalks exist on the west side of the street. The posted speed limit on 44th Avenue W in the project vicinity is 25 mph.

78th Street SW is a two-way east-west 2-lane local access road along the project frontage. Intermittent sidewalks exist on both sides of the street east of the project site. The posted speed limit on 78th Street SW in the project vicinity is 25 mph.

Transit Service

Transit service to and from the project site is served by Community Transit. The closest existing transit stops are located on Mukilteo Speedway (SR 525) near 76th Street SW, which is approximately 0.5 miles northwest of the site, and provides access to routes 113, 417, and 880.

Route 113 offers weekday, Saturday, and Sunday service between Mukilteo and the Lynnwood Transit Center. Weekday service runs between 5:30 a.m. and 11:45 p.m. with approximate 30-minute headways. Saturday service runs between 5:30 a.m. and 10:30 p.m. with approximate 60-minute headways. Sunday service runs between 7:30 a.m. and 9:15 p.m. with approximate 60-minute headways.

Route 417 offers weekday service between Mukilteo and Downtown Seattle. Weekday service to Downtown Seattle runs between 5:50 a.m. and 9:15 a.m. with approximate 30-minute headways. Weekday service to Mukilteo runs between 3:00 p.m. and 7:15 p.m. with approximate 30-minute headways.

Route 880 offers weekday service between Mukilteo and the University District. Weekday service to the University District runs between 5:00 a.m. and 9:30 a.m. with approximate 15-minute headways. Weekday service to Mukilteo runs between 3:00 p.m. and 6:45 p.m. with approximate 15-minute headways.

Non-motorized Transportation Facilities

Non-motorized transportation facilities in the project area include sidewalks on the west side of 44th Avenue W. Intermittent sidewalks exist on both sides of 78th Street SW, east of the project site. There are no dedicated bicycle facilities in the project area.

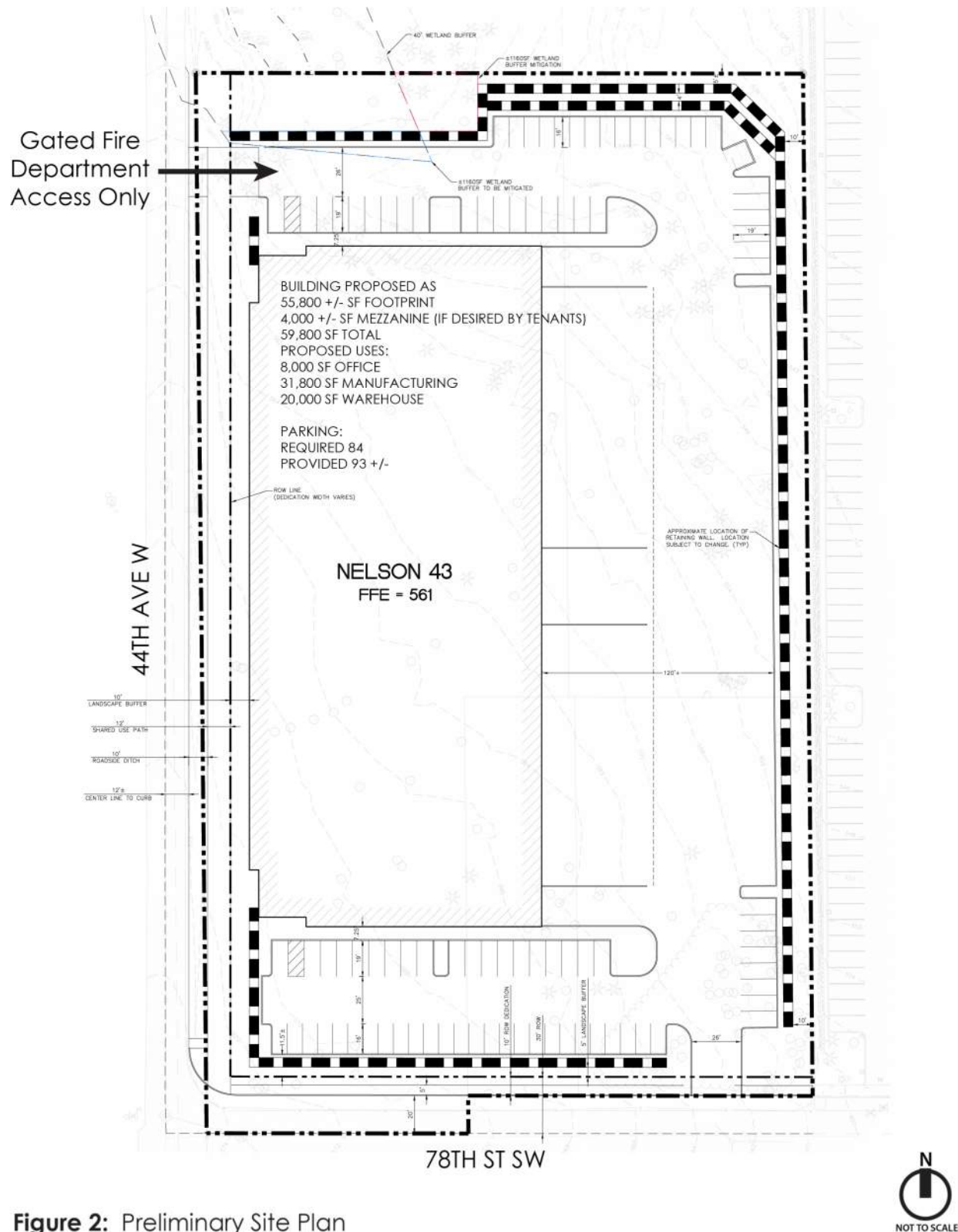


Figure 2: Preliminary Site Plan

Collision History

Historic collisions at the study intersection were analyzed for the five-year period from 2013 to 2017. Collision data was provided by WSDOT. Summaries of the total and yearly average collisions during this period are provided in **Table 1**. Summaries of collisions by type over the five-year period are provided in **Table 2**.

Table 1
Collision Data Summary, January 1, 2013 to December 31, 2017

Location	2013	2014	2015	2016	2017	Five-Year Total Collisions	Average Annual Collisions	Collisions per MEV ¹
<u>Study Intersection</u>								
1. 44 th Avenue W / 78 th Street SW	1	1	0	2	0	4	0.80	0.45

Source: WSDOT Crash Data.

1. MEV = Million Entering Vehicles, MVM = Million Vehicle Miles

Table 2
Collision Data Summary By Type, January 1, 2013 to December 31, 2017

Location	5-Year Total Collisions	Average Annual Collision Rate	Collision Type					
			Approach Turn	Sideswipe	Right Angle	Rear-end	Parked Veh / Fixed	Other
<u>Study Intersection</u>								
1. 44 th Avenue W / 78 th Street SW	4	0.80	0	0	1	1	2	0

Source: WSDOT Crash Data.

Project Trip Generation

The trip generation estimates for the proposed Mukilteo Warehouse project were based on trip rates documented in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th edition for land use code (LUC) 140 (Manufacturing) and LUC 150 (Warehousing).

Table 3 summarizes the resulting new weekday daily, AM peak hour, and PM peak hour trip generation estimates. Detailed trip generation calculations are included in **Attachment A**.

Table 3
Trip Generation Summary

Time Period	<u>Passenger Vehicle Trips</u>			<u>Truck Trips</u>			<u>Total Trip Generation</u>		
	In	Out	Total	In	Out	Total	In	Out	Total
Daily	70	69	139	17	18	35	87	87	174
AM Peak Hour	15	5	20	4	1	5	19	6	25
PM Peak Hour	7	14	21	1	4	5	8	18	26

As shown in **Table 3**, the proposed Mukilteo Warehouse project is estimated to generate 174 new weekday daily trips, with 25 new trips occurring during the weekday AM peak hour (19 in, 6 out), and 26 new trips occurring during the weekday PM peak hour (8 in, 18 out).

Trip Distribution and Assignment

The distribution of the new project trips generated by the proposed Mukilteo Warehouse project was based on existing travel patterns in the area. The new weekday AM and PM peak hour project-generated trips were generally distributed to the street system as follows:

- 40 percent to/from the south via SR 525
- 40 percent to/from the east via SR 526
- 20 percent to/from the north on SR 525 via 76th Street SW

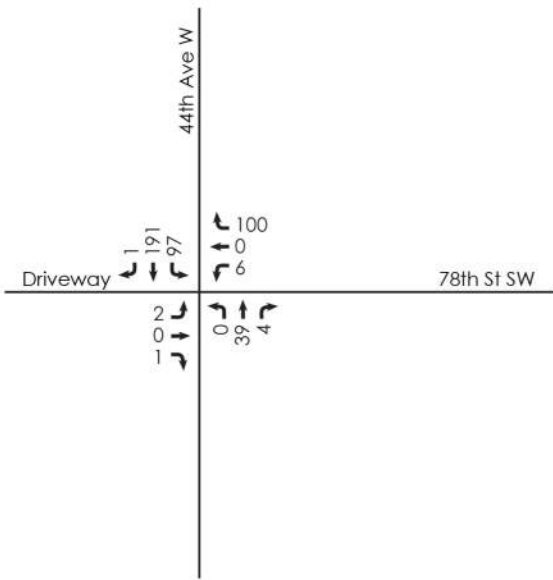
The distribution and assignment of new weekday AM and PM peak hour project trips is illustrated in **Figures 3 and 4**.

Traffic Volume Forecasts

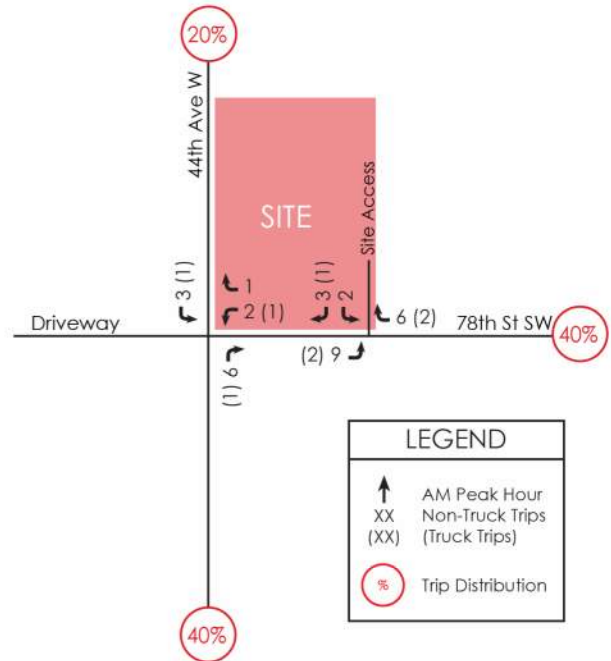
Existing weekday AM and PM peak hour traffic volumes at the 44th Avenue W/78th Street SW study intersection were based on counts conducted by All Traffic Data in February 2019. Existing traffic count worksheets are included in **Attachment B**. Based on these counts, traffic volumes at the proposed site access driveway on 76th Street SW were determined.

To estimate future 2020 Without-Project traffic volumes at the study intersection, an annual growth rate of 2 percent was applied to the existing counts, which accounts for background traffic growth and traffic growth from unknown pipeline projects.

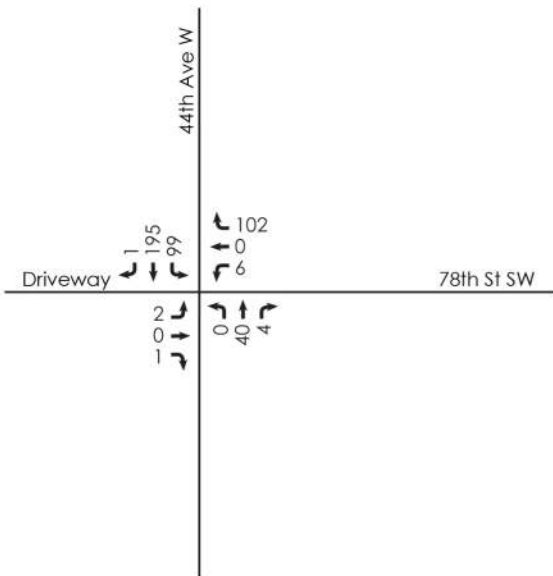
The future 2020 With-Project traffic volumes were estimated by adding the trip assignment from the proposed Mukilteo Warehouse project to the future 2020 Without-Project traffic volumes. The existing traffic volumes, future 2020 Without-Project traffic volumes, project trip assignment, and future 2020 With-Project traffic volumes are shown in **Figures 3 and 4**.



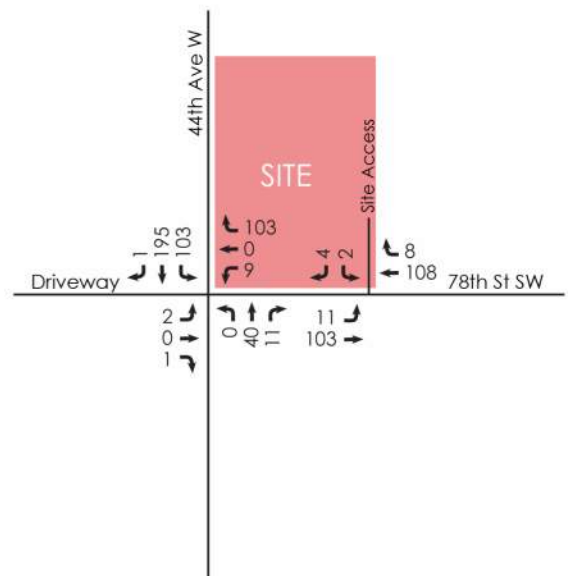
2019 Existing



Project Trip Distribution
and Assignment



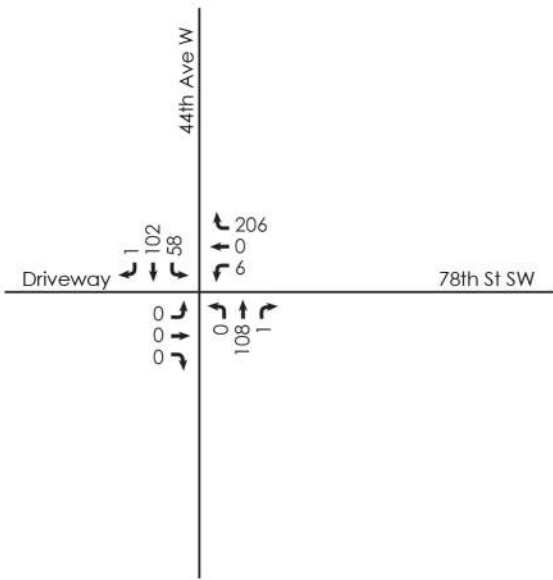
2020 Future Traffic Volumes
Without-Project



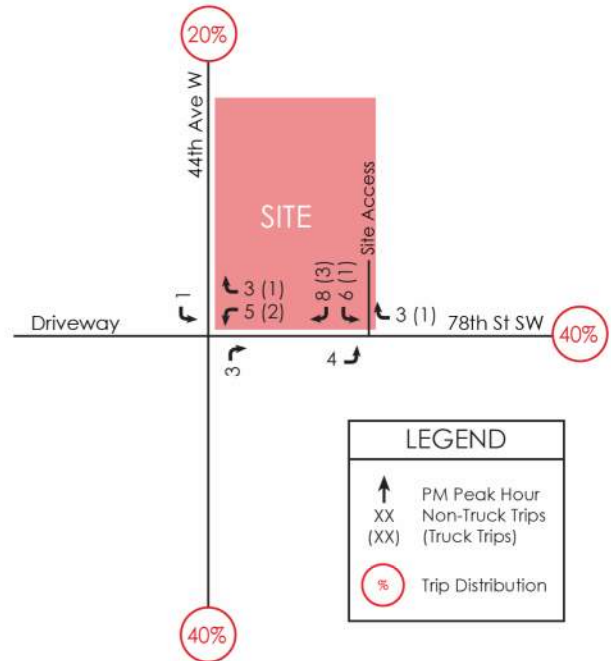
2020 Future Traffic Volumes
With-Project

Figure 3: AM Peak Hour Traffic Volumes

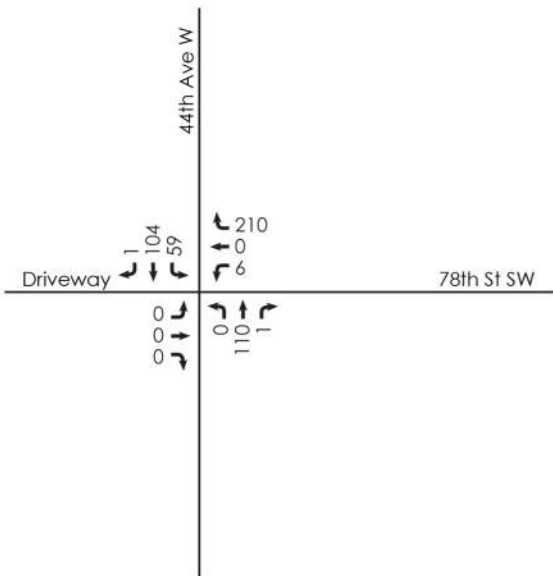




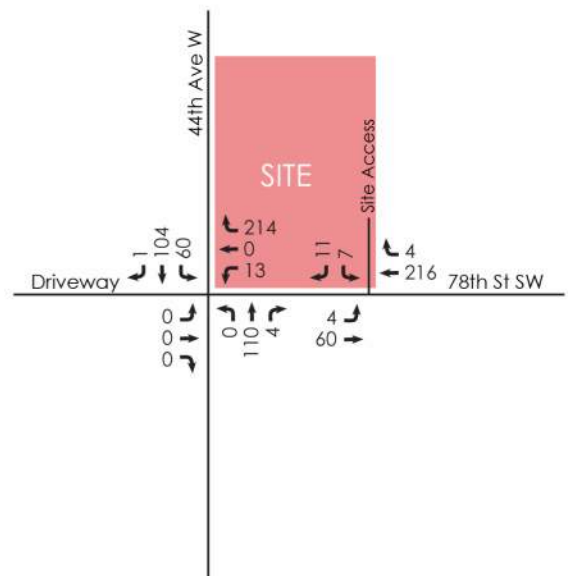
2019 Existing



Project Trip Distribution and Assignment



2020 Future Traffic Volumes Without-Project



2020 Future Traffic Volumes With-Project

Figure 4: PM Peak Hour Traffic Volumes



Planned Transportation Improvements

This section documents the known transportation improvements planned by the City in the study area. Planned transportation improvement projects identified in the City of Mukilteo's adopted 2019-2024 *Transportation Improvement Program* (TIP) are described below:

- **76th Street SW and SR 525 Pedestrian Improvements (76th Street SW between SR 525 and 44th Avenue W)**

Description: Complete the gaps in the sidewalk and repair failed segments of sidewalk along 76th Street SW, provide an RRFB crossing to move pedestrians from the north side of 76th Street SW to the south to connect to existing pedestrian facilities on 44th Avenue W, and provide sidewalks to a proposed HAWK signal on SR 525, just north of 76th Street SW.

Level of Service Analysis

Weekday AM and PM peak hour level of service (LOS) analyses were conducted at the 44th Avenue W/78th Street SW study intersection and proposed site driveway based on methodologies and procedures outlined in the latest *Highway Capacity Manual* (6th Edition). The LOS methodology is described in **Attachment C**. The *Synchro Version 10* software package was used to determine LOS results.

Tables 4 summarizes the weekday AM and PM peak hour LOS analysis results at the 44th Avenue W/78th Street SW study intersection and proposed site driveway. Detailed LOS calculation sheets are included in **Attachment C**.

Table 4
Mukilteo Warehouse LOS Summary

Study Intersection/Movement	<u>2019</u> <u>Existing</u>		<u>2020</u> <u>Without-Project</u>		<u>2020</u> <u>With-Project</u>	
	LOS	Delay (sec)	LOS	Delay (sec)	LOS	Delay (sec)
AM Peak Hour						
1. 44 th Avenue W/78 th Street SW						
Northbound Left-Turn	A	0.0	A	0.0	A	0.0
Eastbound Left-Thru-Right	B	14.8	C	15.0	C	15.4
Westbound Left-Thru-Right	A	9.8	A	9.9	B	10.3
Southbound Left-Turn	A	7.5	A	7.6	A	7.6
2. Site Access/78 th Street SW						
Northbound Left-Right	--	--	--	--	A	7.7
Westbound Left-Turn	--	--	--	--	A	9.4
PM Peak Hour						
1. 44 th Avenue W/78 th Street SW						
Northbound Left-Turn	A	0.0	A	0.0	A	0.0
Eastbound Left-Thru-Right	A	0.0	A	0.0	A	0.0
Westbound Left-Thru-Right	B	10.0	B	10.1	B	10.3
Southbound Left-Turn	A	7.5	A	7.5	A	7.5
2. Site Access/78 th Street SW						
Northbound Left-Right	--	--	--	--	A	7.7
Westbound Left-Turn	--	--	--	--	B	10.2

As shown in **Table 4**, the individual movements at the 44th Avenue W/78th Street SW study intersection are expected to operate at acceptable levels (LOS C or better) during the AM and PM peak hours in 2020 without or with the proposed Mukilteo Warehouse project. The individual movements at the proposed site access are expected to operate at LOS B or better during the AM and PM peak hours in 2020 with the proposed project.

Sight Distance Assessment

The following summarizes the results of the sight distance assessment conducted at the proposed site driveway on 78th Street SW based on review of the City of Mukilteo *Municipal Code*, City of Mukilteo *2017 Development Standards*, AASHTO *A Policy on Geometric Design of Highways and Streets* 6th Edition 2011, and field measurements. The posted speed limit on 78th Street SW in the vicinity of the proposed site access location is 25 MPH. A design speed of 30 MPH (posted speed + 5 MPH) was assumed for this analysis.

Entering Sight Distance (ESD):

Per Mukilteo Municipal Code (MMC) Section 17.20.060.B.1, the minimum required unobstructed sight distance based on a posted speed limit of 25 MPH is 300 feet. MMC Section 17.20.060.B.5 states that if there is a significant number of trucks (greater than ten percent of ADTs using the intersection), then the sight distance shall be increased in accordance with the AASHTO requirements. Therefore, sight distance was evaluated at the proposed site access for both a passenger vehicle and a truck. The minimum required sight distance based on a 25 MPH posted speed and an increased time gap for a truck, is 350 feet.

ESD was measured from a point 10 feet back from the edge of traveled way at the driver's eye height for both a passenger vehicle and a truck, looking at an object 4.25 feet above the road surface.

TENW conducted field measurements and confirmed that the available ESD looking to the east from the proposed site access location exceeds minimum sight distance requirements and that no sight obstructions exist looking to the west between the proposed site access location and 44th Avenue W (approximately 300 feet away). It is recommended that any future landscaping and signage along the project frontage be placed to not obstruct the sight lines in either direction. Photos looking to the east and west on 78th Street SW from the proposed sight access location are included below.



View looking east on 78th Street SW from proposed site driveway location



View looking west on 78th Street SW from proposed site driveway location

Stopping Sight Distance (SSD):

The grade on 78th Street SW in the vicinity of the proposed site access location is a 9% downgrade in the eastbound direction. Therefore, adjustments were made to account for grade in the eastbound direction only. Based on City of Mukilteo *2017 Development Standards* Section 4.7.5 Table 7 (Vertical Curve – Minimum Stopping Sight Distance), the minimum required SSD for a 30 MPH design speed with no adjustments for grade is 200 feet. The minimum required SSD for a 30 MPH design speed with a 9% downgrade is 230 feet. SSD was measured based on an approaching vehicle driver eye height of 3.5 feet and an object height of 0.5 feet. Based on field measurements, the existing available SSD for a vehicle traveling eastbound or westbound towards the proposed site access location exceeds minimum requirements.

Transportation Impact Fees

To mitigate long-term transportation impacts by the proposed Mukilteo Warehouse project, the City of Mukilteo requires payment of a transportation impact fee to help fund city-wide transportation improvements. Based on Mukilteo Municipal Code section 3.107.070, the current transportation impact fee (TIF) per new PM peak hour trip is \$1,875. Based on a PM peak hour trip generation of 26 trips, the resulting transportation impact fee would be \$48,750 (26 new PM peak hour trips X \$1,875/trip).

If you have any questions regarding the information presented in this memo, please feel free to contact me at (206) 390-7253 or spenser@tenw.com.

cc: Jeff Schramm, Planning Manager – TENW
Greg Nelson – Underwood Nelson Development

Attachments

ATTACHMENT A

Detailed Trip Generation Summary

**Mukilteo Warehouse
Trip Generation Summary**

		ITE	Directional Distribution			Trips Generated		
Land Use	Units ¹	LUC ²	In	Out	Trip Rate ²	In	Out	Total
Daily								
Proposed Use:								
Manufacturing	31,800 GFA	140	50%	50%	3.93	62	63	125
Warehousing	28,000 GFA	150	50%	50%	1.74	25	24	49
New Daily Trips =						87	87	174
AM Peak Hour								
Proposed Use:								
Manufacturing	31,800 GFA	140	77%	23%	0.62	15	5	20
Warehousing	28,000 GFA	150	77%	23%	0.17	4	1	5
New AM Peak Hour Trips =						19	6	25
PM Peak Hour								
Proposed Use:								
Manufacturing	31,800 GFA	140	31%	69%	0.67	7	14	21
Warehousing	28,000 GFA	150	27%	73%	0.19	1	4	5
New PM Peak Hour Trips =						8	18	26

Notes:

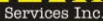
¹ GFA = Gross Floor Area.

² Land Use Code and trip rates based on ITE *Trip Generation* Manual, 10th Edition, 2017.

Truck Trip Percentage ²	Truck Trip Generation			Non-Truck Trip		
	Enter	Exit	Total	Enter	Exit	Total
20.0%	12	13	25	50	50	100
20.0%	5	5	10	20	19	39
	17	18	35	70	69	139
20.0%	3	1	4	12	4	16
20.0%	1	0	1	3	1	4
	4	1	5	15	5	20
20.0%	1	3	4	6	11	17
20.0%	0	1	1	1	3	4
	1	4	5	7	14	21

ATTACHMENT B

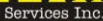
Peak Hour Turning Movement Counts



www.alltrafficdata.net

Peak Hour: 07:15 AM - 08:15 AM

Interval Start Time	Heavy Vehicles					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	0	0	1	0	1	7:00 AM	0	0	0	0	0
7:15 AM	0	0	2	2	4	7:15 AM	0	0	0	0	0
7:30 AM	0	0	3	0	3	7:30 AM	0	0	0	0	0
7:45 AM	0	0	3	6	9	7:45 AM	0	0	0	0	0
8:00 AM	0	1	3	1	5	8:00 AM	0	0	0	0	0
8:15 AM	0	0	0	2	2	8:15 AM	0	0	0	0	0
8:30 AM	0	0	0	1	1	8:30 AM	0	0	0	0	0
8:45 AM	0	0	1	0	1	8:45 AM	0	0	0	0	0
Count Total	0	1	13	12	26	Count Total	0	0	0	0	0
Peak Hour	0	1	11	9	21	Peak Hour	0	0	0	0	0



www.alltrafficdata.net

Peak Hour: 04:45 PM - 05:45 PM

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

ATTACHMENT C

LOS Methodology & Calculations

Level of Service Methodology

Level of service calculations for intersections were based on methodology and procedures outlined in the 2016 *Highway Capacity Manual*, 6th edition (HCM 6), Transportation Research Board using *Synchro 10* traffic analysis software.

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

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

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

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

Table C1
LOS Criteria for Signalized and Stop Controlled Intersections¹

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

¹ Source: Highway Capacity Manual, 6th Edition, Transportation Research Board, 2016.

















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

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

Lanes, Volumes, Timings

1: 44th Ave W & Driveway/78th St SW

03/05/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	6	0	100	0	39	4	97	191	1
Future Volume (vph)	2	0	1	6	0	100	0	39	4	97	191	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		243			282			663			596	
Travel Time (s)		6.6			7.7			18.1			16.3	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	0%	0%	33%	0%	9%	0%	3%	0%	1%	4%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	0	1	6	0	100	0	39	4	97	191	1
Future Vol, veh/h	2	0	1	6	0	100	0	39	4	97	191	1
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	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	33	0	9	0	3	0	1	4	0
Mvmt Flow	3	0	1	8	0	141	0	55	6	137	269	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	673	605	270	602	602	58	270	0	0	61	0	0
Stage 1	544	544	-	58	58	-	-	-	-	-	-	-
Stage 2	129	61	-	544	544	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.43	6.5	6.29	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.43	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.43	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.797	4	3.381	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	372	415	774	370	416	989	1305	-	-	1549	-	-
Stage 1	527	522	-	881	851	-	-	-	-	-	-	-
Stage 2	880	848	-	472	522	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	294	372	774	340	373	989	1305	-	-	1549	-	-
Mov Cap-2 Maneuver	294	372	-	340	373	-	-	-	-	-	-	-
Stage 1	527	468	-	881	851	-	-	-	-	-	-	-
Stage 2	755	848	-	422	468	-	-	-	-	-	-	-

















Approach	EB		WB		NB		SB	
HCM Control Delay, s	14.8		9.8		0		2.5	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1305	-	-	371 893	1549	-	-
HCM Lane V/C Ratio	-	-	-	0.011 0.167	0.088	-	-
HCM Control Delay (s)	0	-	-	14.8 9.8	7.5	0	-
HCM Lane LOS	A	-	-	B A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.6	0.3	-	-

Lanes, Volumes, Timings

1: 44th Ave W & Driveway/78th St SW

03/05/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	0	206	0	108	1	58	102	1
Future Volume (vph)	0	0	0	6	0	206	0	108	1	58	102	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		243			282			663			596	
Travel Time (s)		6.6			7.7			18.1			16.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th TWSC
1: 44th Ave W & Driveway/78th St SW

03/05/2019

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	0	0	6	0	206	0	108	1	58	102	1
Future Vol, veh/h	0	0	0	6	0	206	0	108	1	58	102	1
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	1	0
Mvmt Flow	0	0	0	6	0	210	0	110	1	59	104	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	439	334	105	334	334	111	105	0	0	111	0	0
Stage 1	223	223	-	111	111	-	-	-	-	-	-	-
Stage 2	216	111	-	223	223	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	532	589	955	623	589	945	1499	-	-	1492	-	-
Stage 1	784	723	-	899	807	-	-	-	-	-	-	-
Stage 2	791	807	-	784	723	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	401	564	955	603	564	945	1499	-	-	1492	-	-
Mov Cap-2 Maneuver	401	564	-	603	564	-	-	-	-	-	-	-
Stage 1	784	693	-	899	807	-	-	-	-	-	-	-
Stage 2	615	807	-	751	693	-	-	-	-	-	-	-

















Approach	EB	WB	NB	SB
HCM Control Delay, s	0	10	0	2.7
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1499	-	-	- 930	1492	-	-
HCM Lane V/C Ratio	-	-	-	- 0.233	0.04	-	-
HCM Control Delay (s)	0	-	-	0 10	7.5	0	-
HCM Lane LOS	A	-	-	A B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	- 0.9	0.1	-	-

Lanes, Volumes, Timings

1: 44th Ave W & Driveway/78th St SW

03/05/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	6	0	102	0	40	4	99	195	1
Future Volume (vph)	2	0	1	6	0	102	0	40	4	99	195	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		243			282			663			596	
Travel Time (s)		6.6			7.7			18.1			16.3	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	0%	0%	33%	0%	9%	0%	3%	0%	1%	4%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

Intersection												
Int Delay, s/veh	4.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	2	0	1	6	0	102	0	40	4	99	195	1
Future Vol, veh/h	2	0	1	6	0	102	0	40	4	99	195	1
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	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	33	0	9	0	3	0	1	4	0
Mvmt Flow	3	0	1	8	0	144	0	56	6	139	275	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	685	616	276	613	613	59	276	0	0	62	0	0
Stage 1	554	554	-	59	59	-	-	-	-	-	-	-
Stage 2	131	62	-	554	554	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.43	6.5	6.29	4.1	-	-	4.11	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.43	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.43	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.797	4	3.381	2.2	-	-	2.209	-	-
Pot Cap-1 Maneuver	365	409	768	363	410	987	1299	-	-	1547	-	-
Stage 1	520	517	-	880	850	-	-	-	-	-	-	-
Stage 2	877	847	-	465	517	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	287	366	768	333	367	987	1299	-	-	1547	-	-
Mov Cap-2 Maneuver	287	366	-	333	367	-	-	-	-	-	-	-
Stage 1	520	462	-	880	850	-	-	-	-	-	-	-
Stage 2	749	847	-	415	462	-	-	-	-	-	-	-

















Approach	EB	WB	NB	SB
HCM Control Delay, s	15	9.9	0	2.5
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	363 890	1547	-	-
HCM Lane V/C Ratio	-	-	-	0.012 0.171	0.09	-	-
HCM Control Delay (s)	0	-	-	15 9.9	7.6	0	-
HCM Lane LOS	A	-	-	C A	A A	A	-
HCM 95th %tile Q(veh)	0	-	-	0 0.6	0.3	-	-

Lanes, Volumes, Timings

1: 44th Ave W & Driveway/78th St SW

03/05/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	6	0	210	0	110	1	59	104	1
Future Volume (vph)	0	0	0	6	0	210	0	110	1	59	104	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		243			282			663			596	
Travel Time (s)		6.6			7.7			18.1			16.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th TWSC
1: 44th Ave W & Driveway/78th St SW

















03/05/2019

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	0	0	6	0	210	0	110	1	59	104	1
Future Vol, veh/h	0	0	0	6	0	210	0	110	1	59	104	1
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	1	0	0	0	0	1	0
Mvmt Flow	0	0	0	6	0	214	0	112	1	60	106	1
Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	447	340	107	340	340	113	107	0	0	113	0	0
Stage 1	227	227	-	113	113	-	-	-	-	-	-	-
Stage 2	220	113	-	227	227	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	525	585	953	618	585	943	1497	-	-	1489	-	-
Stage 1	780	720	-	897	806	-	-	-	-	-	-	-
Stage 2	787	806	-	780	720	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	392	560	953	598	560	943	1497	-	-	1489	-	-
Mov Cap-2 Maneuver	392	560	-	598	560	-	-	-	-	-	-	-
Stage 1	780	689	-	897	806	-	-	-	-	-	-	-
Stage 2	608	806	-	746	689	-	-	-	-	-	-	-
Approach	EB		WB			NB			SB			
HCM Control Delay, s	0		10.1			0			2.7			
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1497	-	-	-	928	1489	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.238	0.04	-	-				
HCM Control Delay (s)	0	-	-	0	10.1	7.5	0	-				
HCM Lane LOS	A	-	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	-	0.9	0.1	-	-				

Lanes, Volumes, Timings

1: 44th Ave W & Driveway/78th St SW

03/06/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	1	9	0	103	0	40	11	103	195	1
Future Volume (vph)	2	0	1	9	0	103	0	40	11	103	195	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		243			282			663			596	
Travel Time (s)		6.6			7.7			18.1			16.3	
Peak Hour Factor	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71	0.71
Heavy Vehicles (%)	0%	0%	0%	33%	0%	9%	0%	3%	9%	2%	4%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th TWSC
1: 44th Ave W & Driveway/78th St SW

03/06/2019

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	2	0	1	9	0	103	0	40	11	103	195	1
Future Vol, veh/h	2	0	1	9	0	103	0	40	11	103	195	1
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	71	71	71	71	71	71	71	71	71	71	71	71
Heavy Vehicles, %	0	0	0	33	0	9	0	3	9	2	4	0
Mvmt Flow	3	0	1	13	0	145	0	56	15	145	275	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	702	637	276	630	630	64	276	0	0	71	0	0
Stage 1	566	566	-	64	64	-	-	-	-	-	-	-
Stage 2	136	71	-	566	566	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.43	6.5	6.29	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.43	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.43	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.797	4	3.381	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	355	398	768	354	401	981	1299	-	-	1529	-	-
Stage 1	513	511	-	875	846	-	-	-	-	-	-	-
Stage 2	872	840	-	458	511	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	277	353	768	323	356	981	1299	-	-	1529	-	-
Mov Cap-2 Maneuver	277	353	-	323	356	-	-	-	-	-	-	-
Stage 1	513	454	-	875	846	-	-	-	-	-	-	-
Stage 2	743	840	-	406	454	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.4		10.3		0		2.6	
HCM LOS	C		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	352 843	1529	-	-
HCM Lane V/C Ratio	-	-	-	0.012 0.187 0.095	-	-	-
HCM Control Delay (s)	0	-	-	15.4 10.3 7.6	0	-	-
HCM Lane LOS	A	-	-	C B A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0 0.7 0.3	-	-	-

Lanes, Volumes, Timings

2: 78th St SW & Site Access

03/06/2019






Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	11	103	108	8	2	4
Future Volume (vph)	11	103	108	8	2	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25	25		25	
Link Distance (ft)		282	958		283	
Travel Time (s)		7.7	26.1		7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	18%	1%	10%	25%	0%	25%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
2: 78th St SW & Site Access

03/06/2019

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	11	103	108	8	2	4
Future Vol, veh/h	11	103	108	8	2	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, %	18	1	10	25	0	25
Mvmt Flow	12	112	117	9	2	4

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	126	0	0 258 122
Stage 1	-	-	- 122 -
Stage 2	-	-	- 136 -
Critical Hdwy	4.28	-	- 6.4 6.45
Critical Hdwy Stg 1	-	-	- 5.4 -
Critical Hdwy Stg 2	-	-	- 5.4 -
Follow-up Hdwy	2.362	-	- 3.5 3.525
Pot Cap-1 Maneuver	1367	-	- 735 871
Stage 1	-	-	- 908 -
Stage 2	-	-	- 895 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1367	-	- 728 871
Mov Cap-2 Maneuver	-	-	- 728 -
Stage 1	-	-	- 900 -
Stage 2	-	-	- 895 -

















Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1367	-	-	-	817
HCM Lane V/C Ratio	0.009	-	-	-	0.008
HCM Control Delay (s)	7.7	0	-	-	9.4
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Lanes, Volumes, Timings

1: 44th Ave W & Driveway/78th St SW

03/27/2019

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	0	13	0	214	0	110	4	60	104	1
Future Volume (vph)	0	0	0	13	0	214	0	110	4	60	104	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		243			282			663			596	
Travel Time (s)		6.6			7.7			18.1			16.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	0%	0%	0%	15%	0%	1%	0%	0%	0%	0%	1%	0%
Shared Lane Traffic (%)												
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											

HCM 6th TWSC
1: 44th Ave W & Driveway/78th St SW

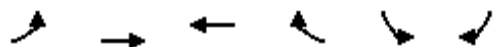
03/27/2019

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	0	0	0	13	0	214	0	110	4	60	104	1
Future Vol, veh/h	0	0	0	13	0	214	0	110	4	60	104	1
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	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	15	0	1	0	0	0	0	1	0
Mvmt Flow	0	0	0	13	0	218	0	112	4	61	106	1
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	452	345	107	343	343	114	107	0	0	116	0	0
Stage 1	229	229	-	114	114	-	-	-	-	-	-	-
Stage 2	223	116	-	229	229	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.25	6.5	6.21	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.25	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.25	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.635	4	3.309	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	521	581	953	587	583	941	1497	-	-	1485	-	-
Stage 1	778	718	-	860	805	-	-	-	-	-	-	-
Stage 2	784	803	-	745	718	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	387	555	953	567	557	941	1497	-	-	1485	-	-
Mov Cap-2 Maneuver	387	555	-	567	557	-	-	-	-	-	-	-
Stage 1	778	686	-	860	805	-	-	-	-	-	-	-
Stage 2	602	803	-	712	686	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	0		10.3		0		2.7					
HCM LOS	A		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR					
Capacity (veh/h)	1497	-	-	-	907	1485	-	-				
HCM Lane V/C Ratio	-	-	-	-	0.255	0.041	-	-				
HCM Control Delay (s)	0	-	-	0	10.3	7.5	0	-				
HCM Lane LOS	A	-	-	A	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	-	1	0.1	-	-				

Lanes, Volumes, Timings

2: 78th St SW & Site Access

03/27/2019



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	4	60	216	4	7	11
Future Volume (vph)	4	60	216	4	7	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)		25	25		25	
Link Distance (ft)		282	958		283	
Travel Time (s)		7.7	26.1		7.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	25%	14%	27%
Shared Lane Traffic (%)						
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
2: 78th St SW & Site Access

03/27/2019

Intersection

Int Delay, s/veh 0.7

Movement EBL EBT WBT WBR SBL SBR

Lane Configurations 

Traffic Vol, veh/h 4 60 216 4 7 11

Future Vol, veh/h 4 60 216 4 7 11

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, % 0 0 1 25 14 27

Mvmt Flow 4 65 235 4 8 12

Major/Minor Major1 Major2 Minor2

Conflicting Flow All 239 0 - 0 310 237

Stage 1 - - - - 237 -

Stage 2 - - - - 73 -

Critical Hdwy 4.1 - - - 6.54 6.47

Critical Hdwy Stg 1 - - - - 5.54 -

Critical Hdwy Stg 2 - - - - 5.54 -

Follow-up Hdwy 2.2 - - - 3.626 3.543

Pot Cap-1 Maneuver 1340 - - - 658 744

Stage 1 - - - - 775 -

Stage 2 - - - - 920 -

Platoon blocked, % - - - -

Mov Cap-1 Maneuver 1340 - - - 656 744

Mov Cap-2 Maneuver - - - - 656 -

Stage 1 - - - - 773 -

Stage 2 - - - - 920 -

Approach EB WB SB

HCM Control Delay, s 0.5 0 10.2

HCM LOS B

Minor Lane/Major Mvmt EBL EBT WBT WBR SBLn1

Capacity (veh/h) 1340 - - - 707

HCM Lane V/C Ratio 0.003 - - - 0.028

HCM Control Delay (s) 7.7 0 - - 10.2

HCM Lane LOS A A - - B

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