



lancaster
moble

10500 SW Manhasset
Transportation Impact
Analysis
Tualatin, Oregon

Date:

August 18, 2021

Prepared for:

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RENEWS: 12-31-21

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Executive Summary

1. The proposed development at 10500 SW Manhasset Drive includes an industrial building totaling approximately 45,000 square feet. The development will include 53 parking spaces, four 48-inch-high loading docks, and two drive-through doors. Construction is expected to be completed with occupancy beginning in the year 2023.
2. The proposed development is estimated to generate 32 morning peak hour, 28 evening peak hour, and 224 average weekday trips. No truck trips are expected during peak hours, but the proposal is estimated to generate 12 average weekday truck trips.
3. Based on a review of the available crash data and crash rates, patterns are consistent with the geometry and traffic control provided at the study intersection. The proposed project is not expected to change or worsen crash rates. Accordingly, no safety mitigation is recommended per the crash data analysis.
4. Left-turn lane warrants were examined for the westbound approach from SW Manhasset Drive into the site. Volumes were reviewed for the morning and evening peak hours for the 2023 buildout condition. Left-turn lane warrants are not met for either peak hour under the 2023 buildout scenario.
5. Preliminary traffic signal warrants are not met at any of the unsignalized study area intersections under buildout conditions.
6. Based on the sight distance analysis, all site accesses are expected to operate safely. No mitigation pertaining to sight distance is required.
7. All study intersections are currently operating acceptably per City of Tualatin standards and are projected to continue operating acceptably through the 2023 buildout year. No operational mitigation is required or recommended.



Introduction

The proposed development at 10500 SW Manhasset Drive includes an industrial building totaling approximately 45,000 square feet (SF). The development will include 53 parking spaces, four 48-inch-high loading docks, and two drive-through doors. Construction is expected to be completed with occupancy beginning in the year 2023.

The purpose of this study is to provide an analysis of potential traffic impacts of the proposed development on the surrounding transportation system and to recommend any required mitigative measures. In addition to the operational analysis, the report includes a safety analysis at the study intersections.

Based on correspondence with the City of Tualatin staff, the study area includes two intersections:

- SW Teton Avenue at SW Manhasset Drive
- Site Access at SW Manhasset Drive

Detailed information on traffic counts, trip generation calculations, safety analyses, and operations are included in the appendices to this report.

Location Description

The proposed 45,000-SF industrial building will be located on the eastern half of tax lot 2S122DD 00200. The western half of this 5.01-acre parcel is already developed with an industrial building. The parcel is zoned General Manufacturing (MG) and is centrally located within Tualatin’s industrially zoned lands. An aerial view of the proposed site and the nearby vicinity is displayed in Figure 1. The subject site is outlined in yellow. A site plan is included in Appendix A.

Vicinity Streets

Two major roadways within the study area are anticipated to carry site trips to and from the proposed development. The characteristics of these roadways are summarized in Table 1.

Table 1: Vicinity Roadway Characteristics

Roadway	Classification	Jurisdiction	Travel Lanes	Speed (mph)	Curbs	Sidewalks	Bicycle Lanes	On-Street Parking
SW Teton Avenue	Minor Arterial	City of Tualatin	3	35 (Posted)	Both Sides	Both Sides w/ Exceptions ¹	None	Not Permitted
SW Manhasset Drive	Connector	City of Tualatin	2	20 (Statutory)	Both Sides	Both Sides w/ Exceptions ²	None	Permitted Both Sides

Notes:

1. Sidewalk is missing on west side of SW Teton Avenue where adjacent land is undeveloped between SW Tualatin-Sherwood Road and SW Manhasset Drive.





2. Sidewalk is missing on south side of SW Manhasset Drive adjacent to the proposed development.

Note that on-street parking is permitted on SW Manhasset Drive, but signage prohibits truck or trailer parking on the street.

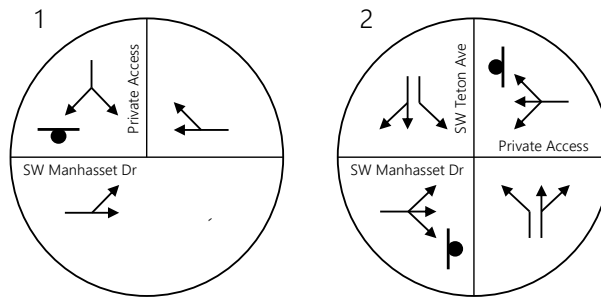




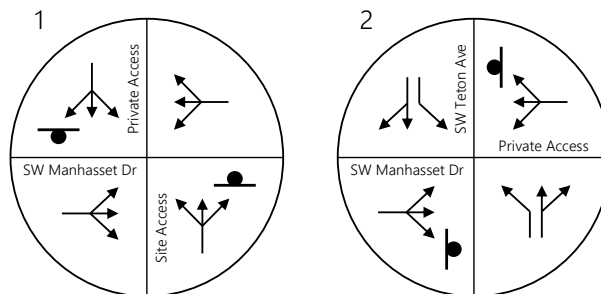
LEGEND

-  STUDY INTERSECTION
-  STOP SIGN
-  LANES/MOVEMENTS
-  PROJECT SITE

Existing Lane Configuration



Future Lane Configuration



Study Intersections

Through coordination with the City of Tualatin and Washington County, two study intersections were identified for evaluation. The existing characteristics of these intersections are summarized in Table 2. Study area intersection configurations are shown in Figure 1.

Table 2: Vicinity Intersection Descriptions

	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	Site Access (Future) & SW Manhasset Drive	Four Legs ¹	Stop-Controlled	Northbound-Southbound Stop
2	SW Teton Avenue & SW Manhasset Drive	Four Legs ²	Stop-Controlled	Eastbound-Westbound Stop

Notes:

1. The proposed site access will be aligned opposite an existing access on the north side of SW Manhasset Drive.
2. SW Manhasset Drive is aligned opposite an existing access on the east side of SW Teton Avenue.

Public Transit

The project is located near one transit line that has stops within an approximate one-half mile walking/biking distance of the southern part of the site.

Route 97 – Tualatin-Sherwood Road provides weekday rush-hour service between W Langer Drive/Sherwood Plaza and the Tualatin WES Station. The nearest bus stops to the site are located at the intersection of SW Teton Avenue and SW Tualatin-Sherwood Road. Weekday service is scheduled with four westbound and three eastbound trips in the morning at approximately 60-minute headways. Afternoon service is scheduled with four eastbound and three westbound trips at approximately 60-minute headways. There is currently no weekend or holiday service.

Site Trips

Trip Generation

To estimate the number of trips that will be generated by the proposed development, trip rates from the *Trip Generation Manual*¹ were used. Trip rates for land-use code 110, *General Light Industrial*, were used to estimate the trip generation for the proposed development based on the square footage of the gross floor area. The trip generation estimates are summarized in Table 3. Detailed trip generation calculations are included in Appendix A.

Table 3: Trip Generation Summary

Land Use	ITE Code	Size (SF)	Vehicle Type	Morning Peak Hour			Evening Peak Hour			Weekday Total
				In	Out	Total	In	Out	Total	
General Light Industrial	110	45,0	All Vehicles	28	4	32	4	24	28	224
			Trucks	0	0	0	0	0	0	12

The proposed development is estimated to generate 32 morning peak hour, 28 evening peak hour, and 224 average weekday trips. No truck trips are expected during peak hours, but the proposal is estimated to generate 12 average weekday truck trips.

Trip Distribution

The following trip distribution was estimated based on existing traffic volumes, the locations of likely trip destinations, and locations of major transportation facilities in the site vicinity:

- Approximately 30 percent of site trips will travel to/from the north on SW Teton Avenue
- Approximately 70 percent of site trips will travel to/from the south on SW Teton Avenue

This distribution is consistent with the traffic studies prepared for other development proposed along SW Teton Avenue.

Trip Assignment

The site trip assignment and distribution for the morning and evening peak hours are shown in Figure 2.

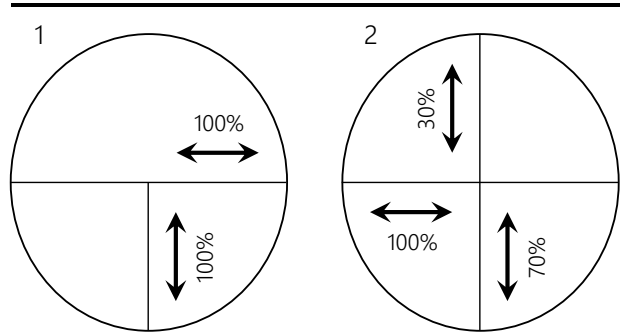
¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 10th Edition, 2017



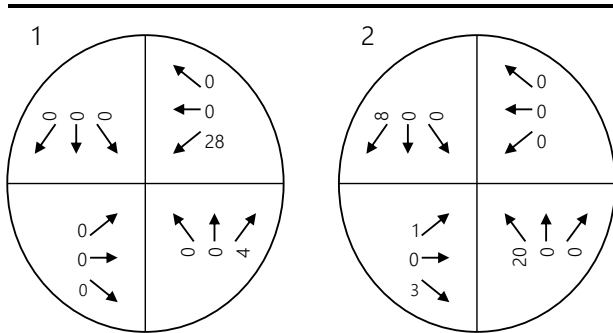
Trip Generation

Period	In	Out	Total
AM	28	4	32
PM	4	24	28
DAILY	118	118	236

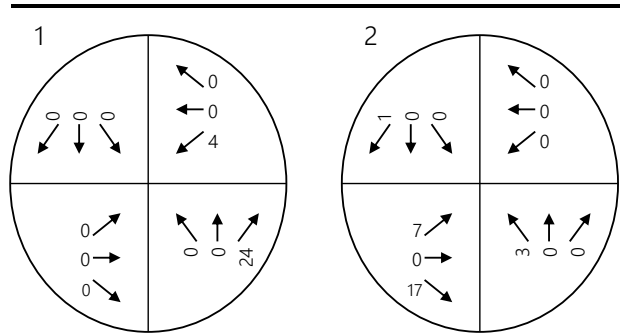
Trip Distribution



Site Trip Assignment - AM Peak Hour



Site Trip Assignment - PM Peak Hour



Traffic Volumes

Existing Conditions

Due to the ongoing COVID-19 viral pandemic, traffic volumes have been depressed relative to normal conditions since mid-March 2020. Under these conditions, traditional traffic count data collection methods are not recommended. Therefore, the following methodology was used to adjust both historical and recently collected traffic counts at the study intersections to estimate year 2021 traffic conditions without the influence of the pandemic:

- Turning movement counts were obtained at the intersection of SW Teton Avenue at SW Manhasset Drive on Tuesday, August 3, 2021.
- Historical turning movement counts from September 2018 were obtained for the intersection of SW Teton Avenue at SW Herman Road.

The following adjustments were applied to the traffic counts to estimate year 2021 existing conditions:

- Growth Adjustment: The 2018 link volume counts were grown by 2 percent per year to estimate year 2021 link volumes on SW Teton Avenue north of SW Manhasset Drive.
- COVID-19 Adjustment: New traffic count data was compared with the 2021 estimated link volumes to develop adjustment factors for the intersection counts. In the morning, the adjustment factor was calculated at 1.68 and in the evening, it was calculated at 1.38.
- Completed Development: The Tualatin LMC Teton Building was a building expansion located at 19200 SW Teton Avenue. This project was completed since the historical counts were collected; therefore, the volumes were added to the 2021 Covid-adjusted volumes.
- Existing Driveway: Volumes for the existing driveway across the street from the proposed development were estimated based on building size (approximately 15,000 SF) and standard trip generation rates for a general light industrial use.
- Balancing: Volumes on SW Manhasset Drive at the proposed site access were balanced with the volume estimates at the intersection with SW Teton Avenue.

Figure 3 shows the existing adjusted year 2021 traffic volumes at the study intersection for the morning (AM) and evening (PM) peak hours. All count data is included in Appendix B.

Background Condition

To provide analysis of the impact of the proposed development on the nearby transportation facilities, an estimate of future traffic volumes is required. Two components were included in the background traffic estimates: 1) general growth and 2) growth associated with planned developments.

For the background growth, an annual growth rate of two percent per year was applied to the adjusted year 2021 existing traffic volumes. This growth rate is generally consistent with historical growth rates on study area roadways.

In addition to the background growth, the city's list of in-process or approved projects² was reviewed and one nearby in-process project was determined to add traffic to the study area. The LU Pacific Development is located along SW Herman Road between SW Teton Avenue and SW Tualatin Avenue and is planned to be fully operational by 2022. Other vicinity projects are either completed, such as the LMC Teton Building or did not include trip assignments along SW Teton Avenue. In-process project information can be found in Appendix B.

Figure 3 displays the Year 2023 background volumes which include the general growth and growth from planned developments for the peak hours.

Buildout Condition

The trips estimated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the year 2023 background traffic volumes to estimate traffic volumes under the year 2023 buildout conditions.

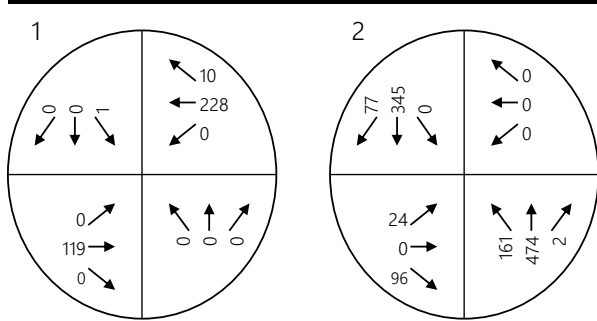
Figure 3 shows the projected year 2023 buildout peak hour traffic volumes at the study intersections.

² <https://www.tualatinoregon.gov/projects>

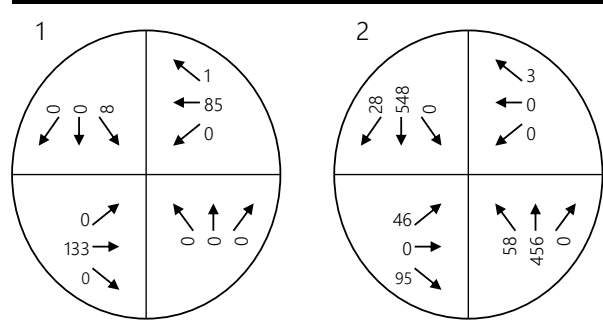




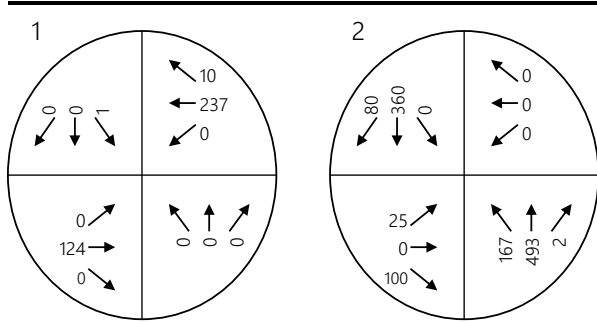
2021 Existing Volumes - AM Peak Hour



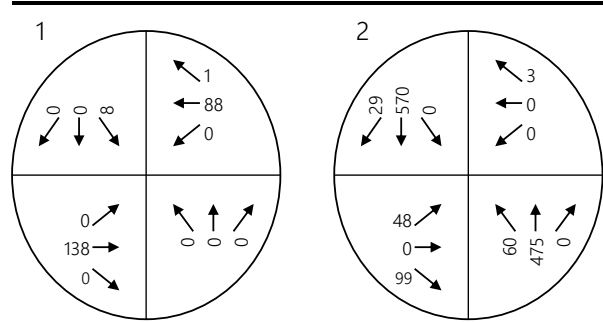
2021 Existing Volumes - PM Peak Hour



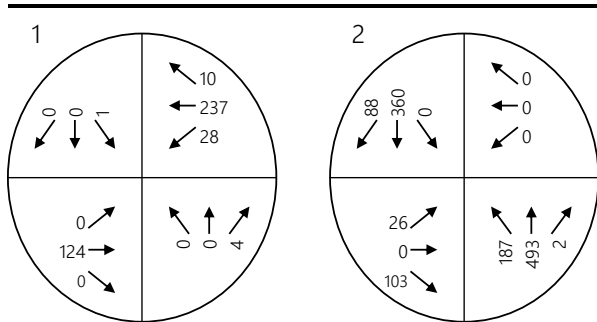
2023 Background Volumes - AM Peak Hour



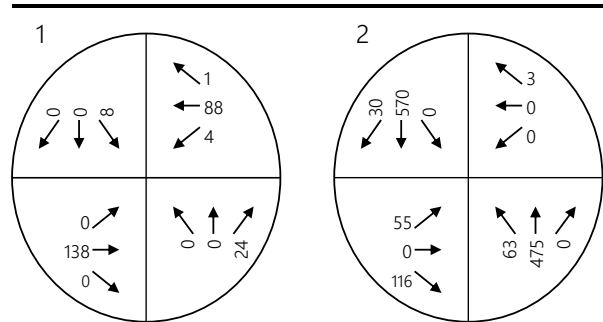
2023 Background Volumes - PM Peak Hour



2023 Buildout Volumes - AM Peak Hour



2023 Buildout Volumes - PM Peak Hour



Safety Analysis

Crash History Review

Using data obtained from the ODOT’s Crash Data System, the most recent available five years of crash history (January 2015 to December 2019) at the study intersections was reviewed. The crash data were evaluated based on the number of crashes, the type of collisions, the severity of the collisions, and the resulting crash rate for the intersection.

Crash severity is based on injuries sustained by people involved in the crash. ODOT classifies crash severity into the following five categories:

- Property Damage Only (PDO)
- Possible Injury (Injury C)
- Non-Incapacitating Injury (Injury B)
- Incapacitating Injury (Injury A)
- Fatality or Fatal Injury

Crash rates provide the ability to compare safety risks at different intersections by accounting for both the number of crashes that have occurred during the study period and the number of vehicles that typically travel through the intersection. Crash rates were calculated using the common assumption that traffic counted during the evening peak period represents approximately 10 percent of the annual average daily traffic (AADT) at the intersection.

Table 4 provides a summary of collision types, crash severities, and the calculated crash rate for the study intersection. Detailed ODOT crash reports are included in Appendix C.

Table 4: Crash Type Summary

Intersection	Collision Type		Crash Severity					Total Crashes	AADT	Crash Rate
	Turn	Non-Collision	PDO	C	B	A	Fatal			
2 SW Teton Avenue & SW Manhasset Drive	2	1	2	0	1	0	0	3	12,340	0.133

No crashes were identified along SW Manhasset Drive except at the intersection with SW Teton Avenue. At the intersection, two crashes were turning collisions, one involving an eastbound left from SW Manhasset Drive and the other involving a northbound left onto SW Manhasset Drive. The third crash, which resulted in an injury, involved an overturned motorcycle and no other vehicles.

Based on a review of the available crash data and crash rates, patterns are consistent with the geometry and traffic control provided at the study intersection. The proposed project is not expected to change or worsen crash rates. Accordingly, no safety mitigation is recommended per the crash data analysis.



Warrant Analysis

Left-turn lane warrants and preliminary traffic signal warrants were examined for the study intersections where such treatments would be applicable.

Left-Turn Lane Warrants

Left-turn lane warrants were examined using the methodology outlined in the National Cooperative Highway Research Program Report (NCHRP) 457, published by the Transportation Research Board in 2001. These turn-lane warrants are evaluated based on the number of left-turning vehicles, the number of advancing and opposing vehicles, and the roadway travel speed.

Left-turn lane warrants were examined for the westbound approach from SW Manhasset Drive into the site. Volumes were reviewed for the morning and evening peak hours for the 2023 buildout condition. Detailed information on the warrant analysis is included in Appendix C.

Left-turn lane warrants are not met for either peak hour under the 2023 buildout scenario.

Preliminary Traffic Signal Warrants

Preliminary traffic signal warrants were examined at the SW Teton Avenue at SW Manhasset Drive intersection to determine whether the installation of a new traffic signal will be warranted at this intersection upon completion of the proposed development. Traffic signal warrants are not met this intersections under buildout conditions. Detailed information on the warrant analysis is included in Appendix C.

The traffic generated by the proposed development at its access on SW Manhasset Drive is well below the thresholds for a traffic signal; therefore, no detailed warrant analysis was performed.

Sight Distance

Sight distance was measured and evaluated in accordance with standards established in *A Policy on Geometric Design of Highways and Streets*³. According to AASHTO, the driver's eye is assumed to be 14.5 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the minor-street approach pavement. The vehicle driver's eye height along the major-street approach is assumed to be 3.5 feet above the cross-street pavement.

AASHTO provides a recommendation for intersection sight distance (ISD) and a requirement for stopping sight distance (SSD). The ISD is an operational measure, intended to provide sufficient line of sight along the major street so that a driver could turn from the minor street with minimal impedance of traffic flow. The SSD is considered the minimum requirement to ensure safe operation of the roadway. The SSD allows an oncoming driver to see a hazard in the roadway, react, and come to a complete stop if necessary to avoid a collision. As long as the available sight lines are at least equal to the minimum required SSD for the design speed of the roadway, adequate sight distance is available for safe operation of the intersection.

Based on a design speed assumed to be 5 mph over the statutory speed limit of 20 mph along SW Manhasset Drive, minimum recommended ISD is 280 feet and required SSD is 155 feet.

³ American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 6th Edition, 2011

Sight distance measured 14.5 feet back from the curb was found to exceed 370 feet to the west and 500 feet to the east. On-street parking is permitted but adequate sight lines will still be available as drivers will pull forward to the edge of the travel lane to see beyond any parked vehicles. No trucks or trailers are permitted to park on the street, so sight lines will not be obstructed by oversize vehicles.



Operational Analysis

A capacity and delay analysis was conducted for the study intersections per the signalized and unsignalized intersection analysis methodologies in the Highway Capacity Manual (HCM). Two performance measures are assessed for intersection operations:

- The Level of service (LOS) is a measure based on average delay per vehicle that ranges from LOS A, which indicates little or no delay, to LOS F, which indicates a significant amount of congestion and delay.
- The volume to capacity (v/c) ratio is a measure that compares the traffic volume (demand) against the available capacity of an intersection, with v/c ratios above 1.0 indicating that an intersection is operating above capacity.

Performance Standards

The City of Tualatin requires intersections to operate at a minimum LOS D and LOS E for signalized and unsignalized intersections, respectively.

Delay & Capacity Analysis

The LOS, delay, and v/c results of the capacity analysis are shown in Table 5. Detailed calculations are included in the appendix to this report.

Table 5: Operations Summary

Condition	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay (s)	V/C Ratio	LOS	Delay (s)	V/C Ratio
1. Site Access at SW Manhasset Drive						
2021 Existing Condition	B (SB)	14 (SB)	0.00 (SB)	B (SB)	11 (SB)	0.02 (SB)
2023 Background Condition	B (SB)	14 (SB)	0.00 (SB)	B (SB)	11 (SB)	0.02 (SB)
2023 Buildout Condition	C (SB)	16 (SB)	0.04 (WB)	B (SB)	11 (SB)	0.04 (NB)
2. SW Teton Avenue at SW Manhasset Drive						
2021 Existing Condition	C (EB)	16 (EB)	0.28 (EB)	D (EB)	27 (EB)	0.53 (EB)
2023 Background Condition	C (EB)	17 (EB)	0.30 (EB)	D (EB)	30 (EB)	0.57 (EB)
2023 Buildout Condition	C (EB)	17 (EB)	0.32 (EB)	E (EB)	36 (EB)	0.67 (EB)

All study intersections are currently operating acceptably per City of Tualatin standards and are projected to continue operating acceptably through the 2023 buildout year. No operational mitigation is required or recommended.



Conclusions

Key findings of this study include:

- The proposed development is estimated to generate 32 morning peak hour, 28 evening peak hour, and 224 average weekday trips. No truck trips are expected during peak hours, but the proposal is estimated to generate 12 average weekday truck trips.
- Based on a review of the available crash data and crash rates, patterns are consistent with the geometry and traffic control provided at the study intersection. The proposed project is not expected to change or worsen crash rates. Accordingly, no safety mitigation is recommended per the crash data analysis.
- Left-turn lane warrants were examined for the westbound approach from SW Manhasset Drive into the site. Volumes were reviewed for the morning and evening peak hours for the 2023 buildout condition. Left-turn lane warrants are not met for either peak hour under the 2023 buildout scenario.
- Preliminary traffic signal warrants are not met at any of the unsignalized study area intersection under buildout conditions.
- Based on the sight distance analysis, all site accesses are expected to operate safely. No mitigation pertaining to sight distance is required.
- All study intersections are currently operating acceptably per City of Tualatin standards and are projected to continue operating acceptably through the 2023 buildout year. No operational mitigation is required or recommended.

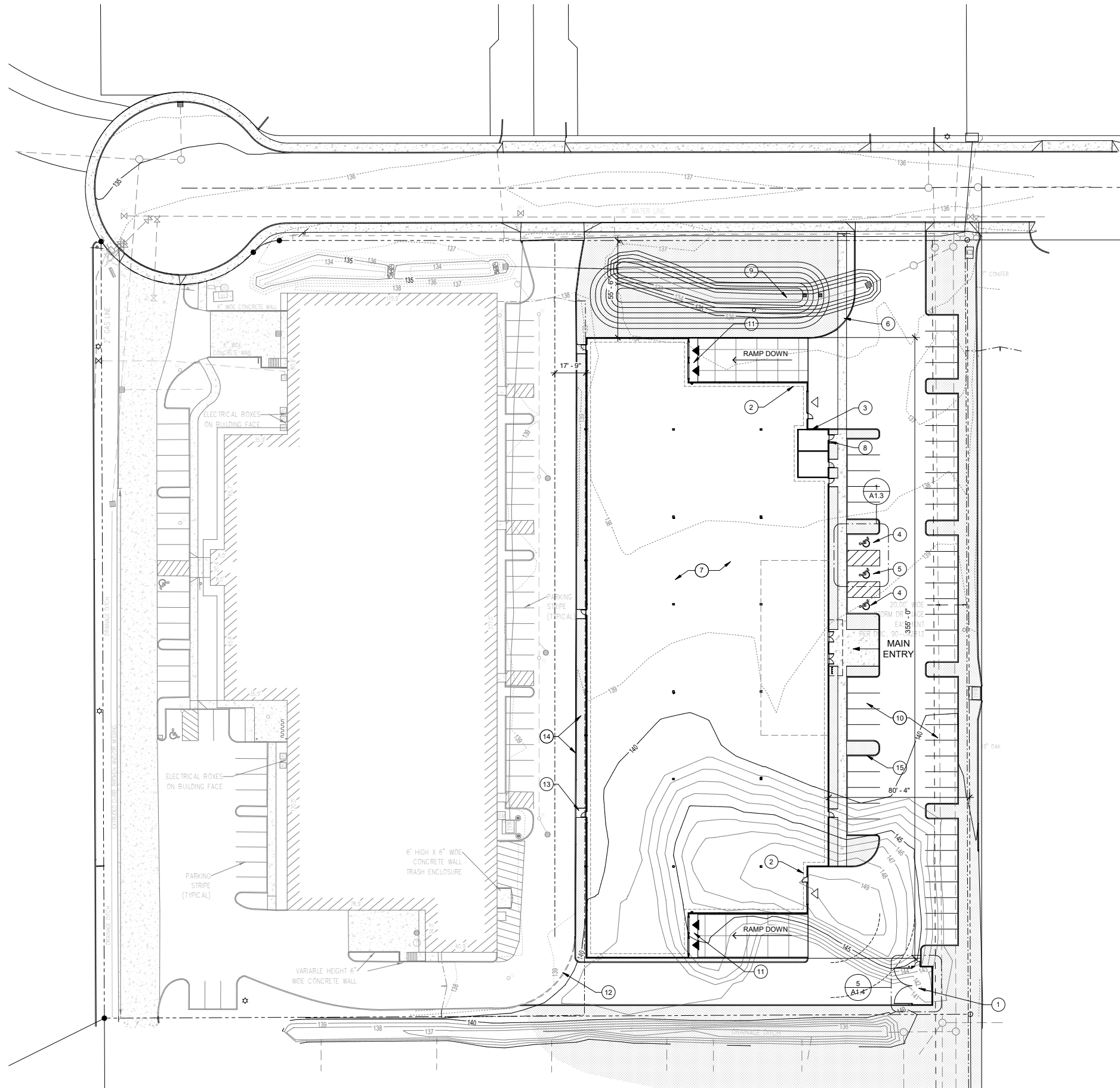


Appendix A – Site Information

Site Plan

Trip Generation Calculations





KEYNOTES

- 1 CONCRETE TILT UP TRASH AND RECYCLING ENCLOSURE-P1, WITH CHAINLINK FENCE AND VINYL SLATS
- 2 NEW CONCRETE TILT UP BUILDING
- 4 ACCESSIBLE PARKING SPACE, AISLE, SIGNAGE AND RAMP - SEE DETAIL
- 5 VAN ACCESSIBLE PARKING SPACE, AISLE, SIGNAGE AND RAMP - SEE DETAIL
- 6 NEW 5'-0" WIDE CONCRETE SIDEWALK
- 7 ROOF HATCH LADDER
- 8 KNOX BOX
- 9 ADJUST DRAINAGE SWALE FOOTPRINT TO MAINTAIN VOLUME REQUIREMENT
- 10 9'-0" X 18'-6" PARKING STALL
- 11 48" HIGH LOADING DOCK
- 12 DEMO EXISTING CURBS CONNECT TO NEW ACCESS
- 13 PEDESTRIAN ACCESS AND CONCRETE PAD
- 14 EXISTING CURBS TO REMAIN, MIN 5'-0" LANDSCAPING
- 15 PARKING LOT LANDSCAPE ISLAND

LEGEND

- ▲ DRIVE-IN DOOR
- ▲ DOCK-HIGH DOOR
- ACTUAL TRAVEL DISTANCE PATH
- FE NOTE: FIRE EXTINGUISHER, VERIFY LOCATION WITH FIRE MARSHAL
- ⬆ DIRECTIONAL LIGHTED EXIT SIGN SHALL BE ON EMERGENCY BACKUP POWER. IT SHALL BE PROVIDED AT ALL APPLICABLE EXIT DOOR PER FUTURE TENANT IMPROVEMENT REQUIREMENT.

SITE DATA

LAND AREA	200.00 S.F.
BUILDING AREA	44,475 S.F.
BUILDING MEZZANINE	20,000 S.F.
TOTAL BUILDING AREA	20,000 S.F.
FAR - 125,000/365,000	5%
TRASH ENCLOSURE	200 S.F.
TOTAL PAVING AREA	200,000 S.F.
LOT COVERAGE	20%
PARKING TOTAL	200 SPACES

Client/ Owner:

**MANHASSET
INDUSTRIAL
LLC**

8625 EVERGREEN WAY
STE. 200
EVERETT, WA 98208

Project:

**MANHASSET
INDUSTRIAL**

10500 SW MANHASSET
DRIVE - SITE B
TUALATIN, OR

Sheet Title:

SITE PLAN

Revisions:

#	Description	Date
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Date: Issue Date

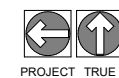
Drawn by: Checked by:

Author Checker

Job Number: 121067

Sheet

1 SITE PLAN
1" = 30'-0"



PROJECT TRUE

A1.1

GENERAL NOTES

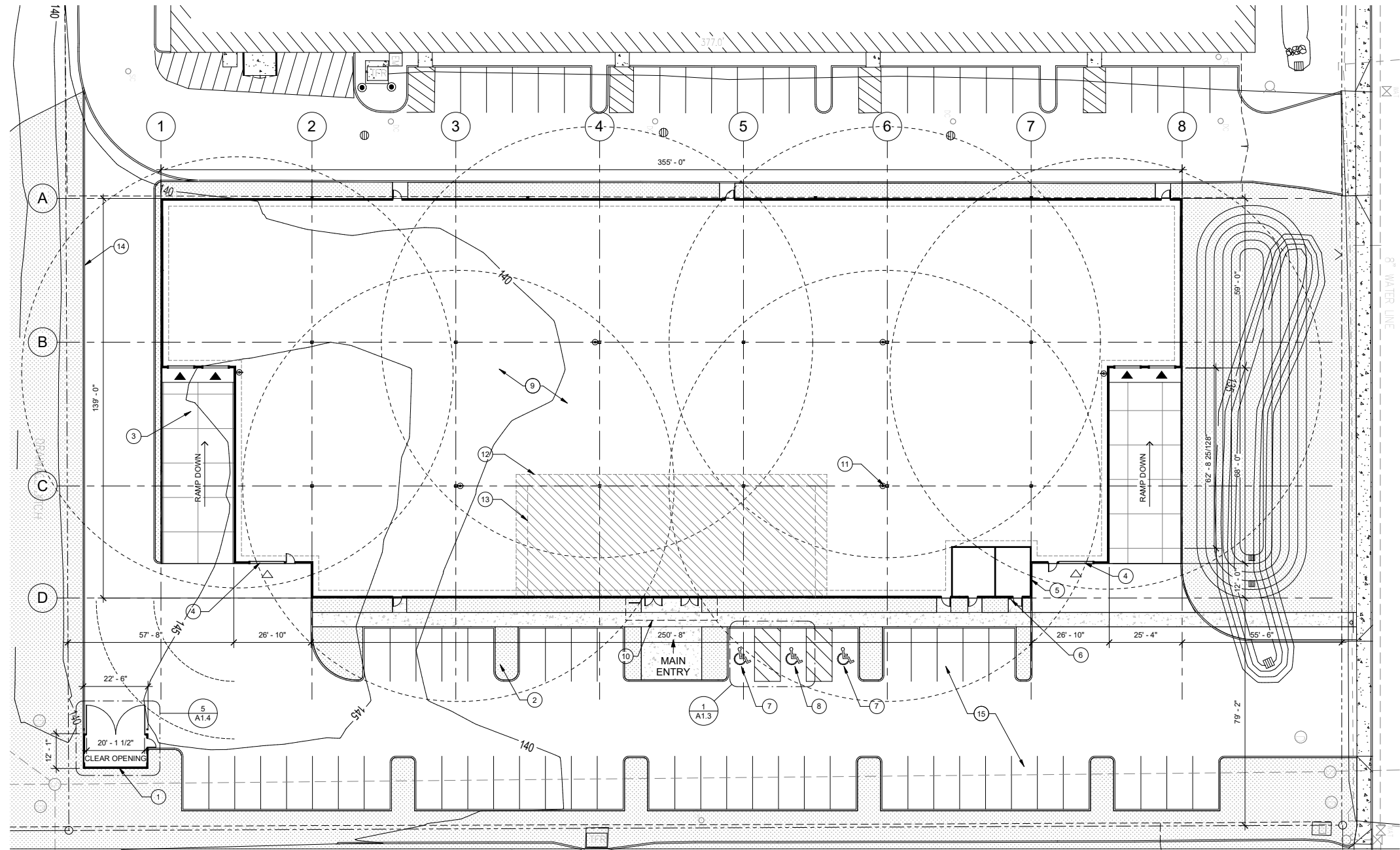
- A. SEE SHEET A0.2 FOR EXTERNAL WALL, INTERIOR WALL AND EXTERIOR HORIZONTAL ASSEMBLIES.
- B. INSIDE FINISHED DOOR JAMB FROM WALL AT HINGE SIDE, UNO.
- C. INTERIOR DIMENSIONS ARE FROM CENTERLINE OF STUDS AND COLUMNS, OR FACE OF FINISH, UNO. EXTERIOR DIMENSIONS ARE FROM FACE OF CONCRETE TO FACE OF CONCRETE UNO.
- D. DASHED RECTANGLE INDICATED MINIMUM FIXTURE ACCESS CLEARANCE & ACCESSIBLE DOOR CLEARANCES.
- E. ALL MECHANICAL, PLUMBING AND ELECTRICAL PENETRATIONS THROUGH RATED ASSEMBLIES SHALL BE FIRESTOPPED.
- F. ALL CROSS SLOPES ALONG ACCESSIBLE ROUTES TO CONFORM TO ACCESSIBILITY REQUIREMENTS (2%) - SEE CIVIL FOR GRADING.
- G. CONTRACTOR TO VERIFY CLEARANCE REQUIREMENTS FOR APPLIANCES, PLUMBING FIXTURES, ETC PRIOR TO FRAMING.
- H. SEE A0.3 FOR REQUIRED CODE CLEARANCES.
- I. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES HAVING JURISDICTION.
- J. SEE STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DOCUMENTS FOR ADDITIONAL INFORMATION AND COORDINATION.
- K. CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL CONTRACT DOCUMENTS, FIELD CONDITIONS AND CONFIRMING THAT WORK IS BUILDABLE AS SHOWN BEFORE PROCEEDING WITH CONSTRUCTION. IF THERE ARE ANY QUESTIONS REGARDING THESE OR OTHER COORDINATION QUESTIONS, THE CONTRACTOR IS RESPONSIBLE FOR OBTAIN CLARIFICATIONS BEFORE PROCEEDING WITH WORK IN QUESTION.
- L. TYPICALS AS USED IN THESE DOCUMENTS SHALL MEAN THAT THE CONDITION IS THE SAME OR REPRESENTATIVE FOR ALL SIMILAR CONDITIONS THROUGHOUT, U.N.O.
- M. SURFACE MOUNTED FIRE EXTINGUISHERS TYPE 2A-10BC TO BE INSTALLED AT A MAX 75'-0" TRAVEL DISTANCE, PER FIRE EXTINGUISHER AND A MAXIMUM OF 4'-6" A.F.F. TO TOP OF EXTINGUISHER.
- N. CONSTRUCT ALL RATED WALLS IN COMPLIANCE WITH U.L. STANDARDS.
- O. FLOORS/ LANDING AT DOORS NOT TO EXCEED 1/2" ELEVATION CHANGE.
- P. MAINTAIN MIN 48" CLEAR UNOBSTRUCTED EMERGENCY EXIT AISLE TOWARD DESIGNATED EXIT.
- Q. SEE FOUNDATION PLAN FOR ALL CONSTRUCTION JOINTS AT CONCRETE SLAB.
- R. ALL EXITS TO BE OPERABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR SPECIAL KNOWLEDGE. MANUALLY OPERATED EDGE OR SURFACE MOUNTED FLUSH BOLTS ARE PROHIBITED ON EXIT DOORS.
- S. COORDINATE KNOX BOX LOCATION PER LOCAL CODES.

KEYNOTES

- 1 CONCRETE TILT UP TRASH AND RECYCLING ENCLOSURE-P1, WITH CHAINLINK FENCE AND VINYL SLATS
- 2 CANOPY LIGHT FIXTURE
- 3 VALLEY
- 4 NEW CONCRETE TILT UP BUILDING
- 5 KNOX BOX
- 6 ACCESSIBLE PARKING SPACE, AISLE, SIGNAGE AND RAMP - SEE DETAIL
- 7 VAN ACCESSIBLE PARKING SPACE, AISLE, SIGNAGE AND RAMP - SEE DETAIL
- 8 ROOF HATCH LADDER
- 9 STORMWATER DETENTION POND
- 10 FIRE EXTINGUISHER 75'-0" COVERAGE RADIUS
- 11 EXTENT OF UNDERSLAB VAPOR BARRIER, WHERE OFFICE OCCURS
- 12 LINE OF POTENTIAL MEZZANINE ABOVE
- 13 NEW 6" HIGH CAST IN PLACE CONCRETE CURB
- 14 9'-0" X 18'-6" PARKING STALL

LEGEND

- DRIVE-IN DOOR
- DOCK-HIGH DOOR
- ACTUAL TRAVEL DISTANCE PATH
- NOTE: FIRE EXTINGUISHER, VERIFY LOCATION WITH FIRE MARSHAL
- DIRECTIONAL LIGHTED EXIT SIGN SHALL BE ON EMERGENCY BACKUP POWER. IT SHALL BE PROVIDED AT ALL APPLICABLE EXIT DOOR PER FUTURE TENANT IMPROVEMENT REQUIREMENT.



1 ENLARGED SITE PLAN
1" = 20'-0"

Client/ Owner:
**MANHASSET
INDUSTRIAL
LLC**

8625 EVERGREEN WAY
STE. 200
EVERETT, WA 98208

Project:
**MANHASSET
INDUSTRIAL**

10500 SW MANHASSET
DRIVE - SITE B
TUALATIN, OR

Sheet Title:
**ENLARGED
SITE PLAN**

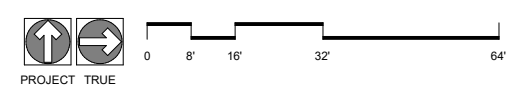
Revisions:

#	Description	Date

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Date:	Issue Date
Drawn by:	Checked by:
Author	Checker
Job Number:	121067
Sheet	





TRIP GENERATION CALCULATIONS

Land Use: General Light Industrial

Land Use Code: 110

Variable: 1,000 Square Feet of Gross Floor Area

Variable Quantity: 45

AM PEAK HOUR

Trip Rate: 0.70

	Enter	Exit	Total
Directional Distribution	88%	12%	
Trip Ends	28	4	32

PM PEAK HOUR

Trip Rate: 0.63

	Enter	Exit	Total
Directional Distribution	13%	87%	
Trip Ends	4	24	28

WEEKDAY

Trip Rate: 4.96

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	112	112	224

SATURDAY

Trip Rate: 1.99

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	45	45	90



TRIP GENERATION CALCULATIONS - TRUCKS

Land Use: General Light Industrial

Land Use Code: 110

Variable: 1,000 Square Feet of Gross Floor Area

Variable Quantity: 45

AM PEAK HOUR

Trip Rate: 0.01

	Enter	Exit	Total
Directional Distribution	63%	37%	
Trip Ends	0	0	0

PM PEAK HOUR

Trip Rate: 0.01

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	0	0	0

WEEKDAY

Trip Rate: 0.25

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	6	6	12

SATURDAY

Trip Rate: 1.99

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	45	45	90

Appendix B – Traffic Data

Turning Movement Counts

Historical Counts

In-Process Traffic Data





(303) 216-2439

www.alltrafficdata.net

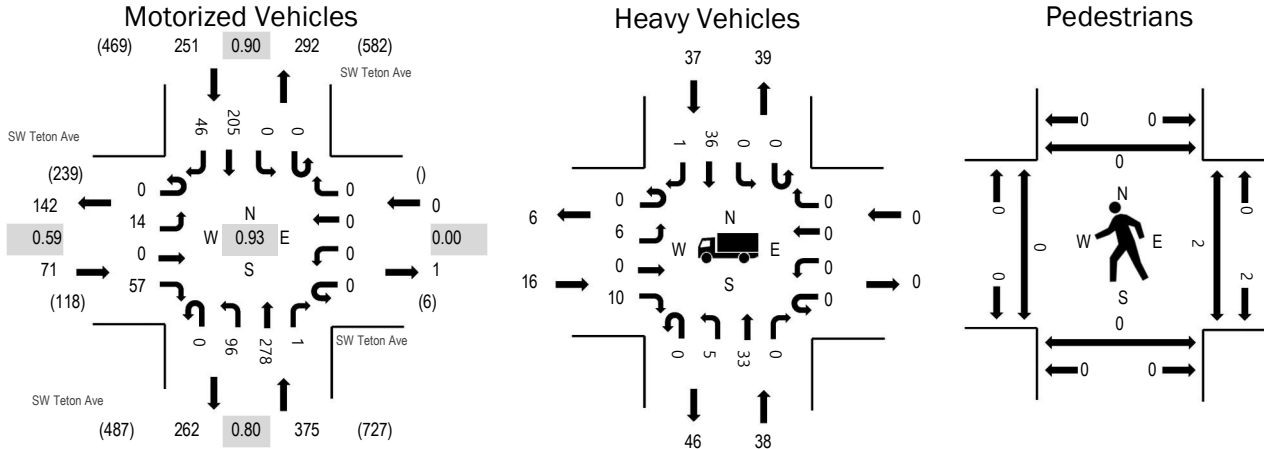
Location: 1 SW Teton Ave & SW Teton Ave AM

Date: Tuesday, August 3, 2021

Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	22.5%	0.59
WB	0.0%	0.00
NB	10.1%	0.80
SB	14.7%	0.90
All	13.1%	0.93

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Teton Ave Eastbound				SW Teton Ave Westbound				SW Teton Ave Northbound				SW Teton Ave Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
7:00 AM	0	0	0	1	0	0	0	0	0	7	42	1	0	0	18	2	71	659
7:05 AM	0	0	0	1	0	0	0	0	0	3	22	0	0	1	16	2	45	641
7:10 AM	0	0	0	1	0	0	0	0	0	5	18	0	0	0	11	0	35	656
7:15 AM	0	0	0	2	0	0	0	0	0	4	29	1	0	0	20	1	57	669
7:20 AM	0	1	0	0	0	0	0	0	0	5	22	0	0	0	19	8	55	666
7:25 AM	0	0	0	2	0	0	0	0	0	9	32	0	0	0	11	2	56	668
7:30 AM	0	0	0	2	0	0	0	0	0	4	27	0	0	0	18	1	52	663
7:35 AM	0	0	0	4	0	0	0	0	0	4	16	0	0	0	18	0	42	683
7:40 AM	0	0	0	2	0	0	0	0	0	4	37	0	0	0	16	1	60	696
7:45 AM	0	1	0	0	0	0	0	0	0	3	41	0	0	0	27	2	74	697
7:50 AM	0	0	0	2	0	0	0	0	0	5	36	0	0	0	21	3	67	674
7:55 AM	0	1	0	6	0	0	0	0	0	5	20	0	0	0	10	3	45	652
8:00 AM	0	0	0	0	0	0	0	0	0	9	23	1	0	0	15	5	53	655
8:05 AM	0	1	0	2	0	0	0	0	0	5	23	0	0	0	25	4	60	
8:10 AM	0	0	0	1	0	0	0	0	0	9	20	0	0	0	16	2	48	
8:15 AM	0	0	0	5	0	0	0	0	0	13	17	0	0	0	17	2	54	
8:20 AM	0	1	0	5	0	0	0	0	0	5	28	0	0	0	17	1	57	
8:25 AM	0	3	0	4	0	0	0	0	0	11	16	0	0	0	11	6	51	
8:30 AM	0	2	0	13	0	0	0	0	0	11	17	0	0	0	26	3	72	
8:35 AM	0	3	0	6	0	0	0	0	0	9	22	0	0	0	8	7	55	
8:40 AM	0	2	0	13	0	0	0	0	0	11	15	0	0	0	12	8	61	
8:45 AM	0	3	1	8	0	0	0	0	0	7	12	0	0	1	17	2	51	
8:50 AM	0	2	0	6	0	0	0	0	0	10	14	0	0	0	7	6	45	
8:55 AM	0	2	0	9	0	0	0	0	0	6	11	0	0	0	16	4	48	
Count Total	0	22	1	95	0	0	0	0	0	164	560	3	0	2	392	75	1,314	
Peak Hour	0	14	0	57	0	0	0	0	0	96	278	1	0	0	205	46	697	

Location: 1 SW Teton Ave & SW Teton Ave AM

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

Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
7:00 AM	1	3	0	8	12	7:00 AM	0	1	0	0	1	7:00 AM	0	0	1	0	1
7:05 AM	0	3	0	8	11	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	0	0	0	2	2	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	0	2	0	4	6	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	0	0	5	6	7:20 AM	0	0	0	0	0	7:20 AM	1	0	1	0	2
7:25 AM	1	3	0	1	5	7:25 AM	0	1	0	0	1	7:25 AM	0	0	0	0	0
7:30 AM	1	3	0	2	6	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	2	0	0	4	6	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	1	6	0	6	13	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	0	2	0	4	6	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	0	1	0	1	2	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	2	2	0	2	6	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	0	1	0	2	3	8:00 AM	0	1	0	0	1	8:00 AM	0	0	2	0	2
8:05 AM	1	3	0	10	14	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	0	0
8:10 AM	0	5	0	1	6	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	1	4	0	6	11	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	3	8	0	2	13	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	2	4	0	1	7	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	2	4	0	6	12	8:30 AM	0	0	0	0	0	8:30 AM	0	0	0	0	0
8:35 AM	3	2	0	1	6	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	2	2	0	1	5	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	0	0
8:45 AM	2	1	0	2	5	8:45 AM	0	0	0	0	0	8:45 AM	0	0	1	0	1
8:50 AM	1	2	0	2	5	8:50 AM	0	0	0	0	0	8:50 AM	0	0	1	0	1
8:55 AM	1	3	0	4	8	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	27	64	0	85	176	Count Total	0	3	0	0	3	Count Total	1	0	6	0	7
Peak Hour	16	38	0	37	91	Peak Hour	0	1	0	0	1	Peak Hour	0	0	2	0	2



ALL TRAFFIC DATA SERVICES

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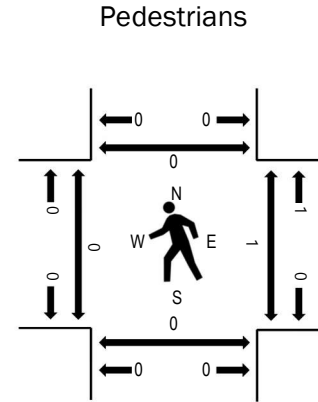
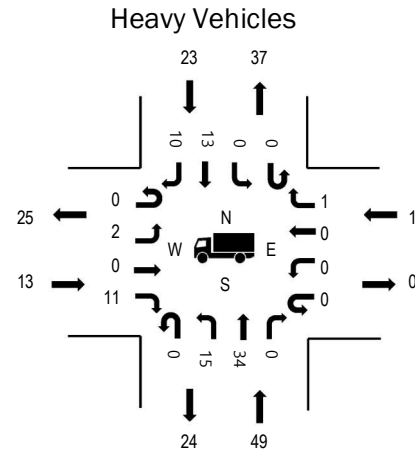
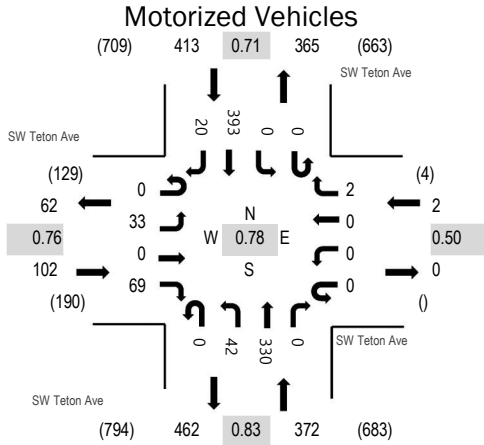
Location: 1 SW Teton Ave & SW Teton Ave PM

Date: Tuesday, August 3, 2021

Peak Hour: 04:15 PM - 05:15 PM

Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	12.7%	0.76
WB	50.0%	0.50
NB	13.2%	0.83
SB	5.6%	0.71
All	9.7%	0.78

Traffic Counts - Motorized Vehicles

Interval Start Time	SW Teton Ave Eastbound				SW Teton Ave Westbound				SW Teton Ave Northbound				SW Teton Ave Southbound				Total	Rolling Hour
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right		
4:00 PM	0	5	0	5	0	0	0	1	1	2	25	0	0	0	37	2	78	888
4:05 PM	0	5	0	9	0	0	0	1	0	3	33	0	0	0	36	1	88	885
4:10 PM	0	2	0	12	0	0	0	0	0	1	23	0	0	0	17	4	59	868
4:15 PM	0	3	0	7	0	0	0	1	0	5	30	0	0	0	26	4	76	889
4:20 PM	0	3	0	5	0	0	0	0	0	1	25	0	0	0	13	0	47	867
4:25 PM	0	2	0	3	0	0	0	1	0	8	26	0	0	0	35	4	79	882
4:30 PM	0	4	0	10	0	0	0	0	0	2	32	0	0	0	38	3	89	856
4:35 PM	0	2	0	4	0	0	0	0	0	4	40	0	0	0	56	2	108	824
4:40 PM	0	4	0	10	0	0	0	0	0	5	21	0	0	0	45	2	87	783
4:45 PM	0	4	0	1	0	0	0	0	0	3	21	0	0	0	34	1	64	745
4:50 PM	0	3	0	2	0	0	0	0	0	2	28	0	0	0	28	2	65	725
4:55 PM	0	1	0	10	0	0	0	0	0	3	22	0	0	0	11	1	48	702
5:00 PM	0	1	0	4	0	0	0	0	0	3	26	0	0	0	41	0	75	698
5:05 PM	0	2	0	6	0	0	0	0	0	1	30	0	0	0	31	1	71	
5:10 PM	0	4	0	7	0	0	0	0	0	5	29	0	0	0	35	0	80	
5:15 PM	0	4	0	5	0	0	0	0	0	6	19	0	0	0	17	3	54	
5:20 PM	0	1	0	6	0	0	0	0	0	2	34	0	0	0	16	3	62	
5:25 PM	0	1	0	4	0	0	0	0	0	5	25	0	0	0	18	0	53	
5:30 PM	0	1	0	3	0	0	0	0	0	7	22	0	0	0	22	2	57	
5:35 PM	0	1	0	8	0	0	0	0	0	6	22	0	0	0	24	6	67	
5:40 PM	0	2	0	4	0	0	0	0	0	3	14	0	0	0	24	2	49	
5:45 PM	0	2	0	0	0	0	0	0	0	2	18	0	0	0	21	1	44	
5:50 PM	0	1	0	2	0	0	0	0	0	1	16	0	0	0	20	2	42	
5:55 PM	0	1	0	4	0	0	0	0	0	2	19	0	0	0	17	1	44	
Count Total	0	59	0	131	0	0	0	4	1	82	600	0	0	0	662	47	1,586	
Peak Hour	0	33	0	69	0	0	0	2	0	42	330	0	0	0	393	20	889	

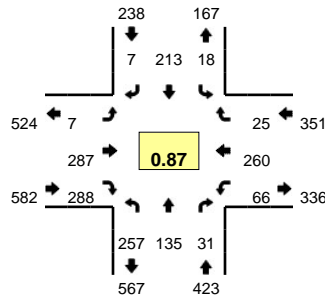
Location: 1 SW Teton Ave & SW Teton Ave PM

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

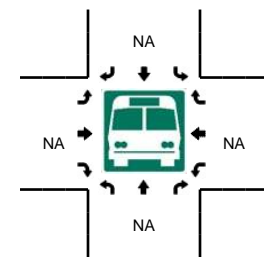
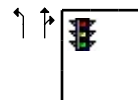
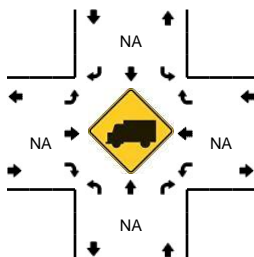
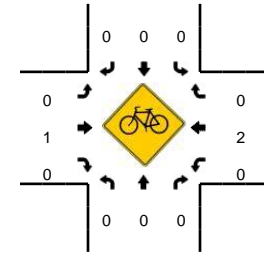
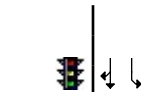
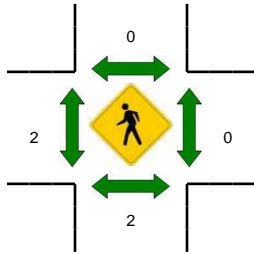
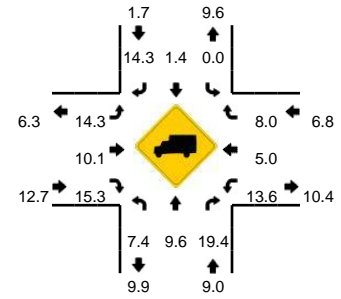
Interval Start Time	Heavy Vehicles					Interval Start Time	Bicycles on Roadway					Interval Start Time	Pedestrians/Bicycles on Crosswalk				
	EB	NB	WB	SB	Total		EB	NB	WB	SB	Total		EB	NB	WB	SB	Total
4:00 PM	1	2	0	5	8	4:00 PM	0	1	0	0	1	4:00 PM	0	0	1	0	1
4:05 PM	0	5	0	1	6	4:05 PM	0	1	0	0	1	4:05 PM	0	0	0	0	0
4:10 PM	1	2	0	0	3	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	1	4	0	5	10	4:15 PM	0	0	0	1	1	4:15 PM	0	0	1	0	1
4:20 PM	2	6	0	1	9	4:20 PM	0	1	0	0	1	4:20 PM	0	0	0	0	0
4:25 PM	1	5	1	2	9	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	1	5	0	3	9	4:30 PM	0	1	0	0	1	4:30 PM	0	0	1	0	1
4:35 PM	1	5	0	1	7	4:35 PM	0	0	0	1	1	4:35 PM	0	0	1	0	1
4:40 PM	0	5	0	3	8	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	2	0	1	3	4:45 PM	0	0	0	0	0	4:45 PM	0	0	1	0	1
4:50 PM	2	3	0	3	8	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	2	6	0	1	9	4:55 PM	0	0	0	1	1	4:55 PM	0	0	0	0	0
5:00 PM	2	3	0	0	5	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	1	0	2	3	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	1	4	0	1	6	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	6	0	1	7	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	1	2	0	2	5	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	4	0	0	4	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	4	0	2	7	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	1	4	0	7	12	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	1	4	0	1	6	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	2	0	2	4	5:45 PM	0	0	0	0	0	5:45 PM	0	0	1	0	1
5:50 PM	1	5	0	4	10	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	1	3	0	1	5	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	21	92	1	49	163	Count Total	0	4	0	3	7	Count Total	0	0	6	0	6
Peak Hour	13	49	1	23	86	Peak Hour	0	2	0	3	5	Peak Hour	0	0	4	0	4

LOCATION: SW Teton Ave -- SW Herman Rd
CITY/STATE: Tualatin, OR

QC JOB #: 14768946
DATE: Tue, Sep 11 2018



Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

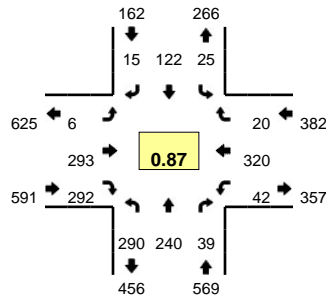


5-Min Count Period Beginning At	SW Teton Ave (Northbound)				SW Teton Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	23	6	0	0	2	8	0	0	0	19	21	0	1	17	1	0	98	
7:05 AM	29	5	3	0	0	13	0	0	0	25	20	0	1	24	0	0	120	
7:10 AM	20	5	1	0	1	17	0	0	1	11	12	0	2	17	0	0	87	
7:15 AM	18	9	2	0	1	16	0	0	2	20	22	0	0	18	0	0	108	
7:20 AM	15	9	1	0	0	9	0	0	0	21	23	0	5	26	1	0	110	
7:25 AM	21	11	3	0	3	13	0	0	0	27	26	0	3	27	2	0	136	
7:30 AM	14	6	1	0	1	26	0	0	0	27	22	0	2	17	0	0	116	
7:35 AM	20	12	4	0	3	18	0	0	2	21	33	0	5	27	1	0	146	
7:40 AM	27	7	5	0	1	24	0	0	0	27	20	0	2	18	1	0	132	
7:45 AM	15	10	3	0	0	23	3	0	2	20	26	0	6	16	2	0	126	
7:50 AM	21	16	0	0	1	21	0	0	0	37	35	0	7	21	7	0	166	
7:55 AM	29	12	5	0	4	23	0	0	0	16	19	0	10	25	1	0	144	1489
8:00 AM	26	13	4	0	1	17	0	0	0	23	27	0	10	25	4	0	150	1541
8:05 AM	26	11	3	0	0	18	2	0	1	22	22	0	6	23	3	0	137	1558
8:10 AM	22	11	1	0	3	13	1	0	1	26	20	0	4	17	1	0	120	1591
8:15 AM	21	17	1	0	1	8	1	0	1	20	15	0	6	18	2	0	111	1594
8:20 AM	15	11	0	0	0	13	0	0	1	20	23	0	2	20	2	0	107	1591
8:25 AM	20	17	2	0	0	13	1	0	0	26	16	0	2	15	1	0	113	1568
8:30 AM	24	12	2	0	0	10	0	0	0	25	7	0	3	16	1	0	100	1552
8:35 AM	22	23	5	0	2	7	1	0	0	16	6	0	0	24	0	0	106	1512
8:40 AM	19	31	6	0	0	13	1	0	0	10	4	0	2	17	0	0	103	1483
8:45 AM	16	15	3	0	2	19	0	0	1	13	8	0	4	19	0	0	100	1457
8:50 AM	22	21	2	0	5	15	0	0	0	18	7	0	3	18	0	0	111	1402
8:55 AM	21	6	4	0	1	7	0	0	1	16	8	0	3	22	3	0	92	1350
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	304	164	36	0	24	244	0	0	0	304	324	0	108	284	48	0	1840	
Heavy Trucks	16	4	8		0	4	0		0	24	52		12	20	4		144	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

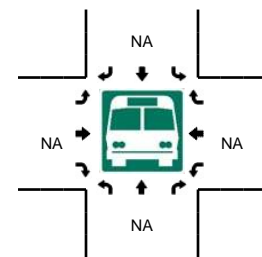
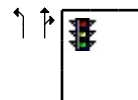
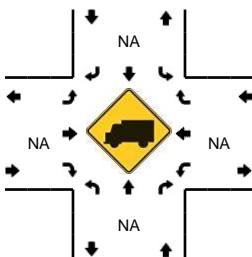
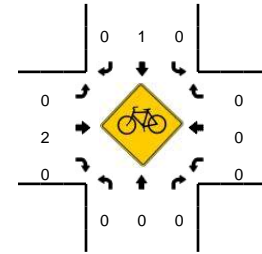
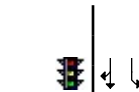
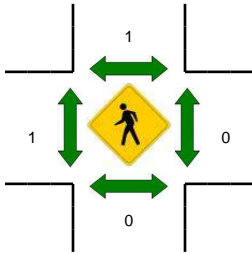
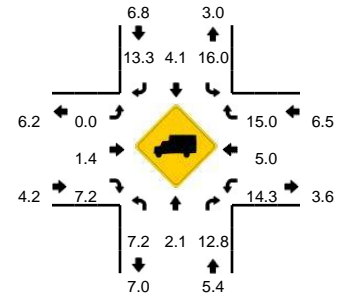
Comments:

LOCATION: SW Teton Ave -- SW Herman Rd
CITY/STATE: Tualatin, OR

QC JOB #: 14768932
DATE: Thu, Aug 16 2018

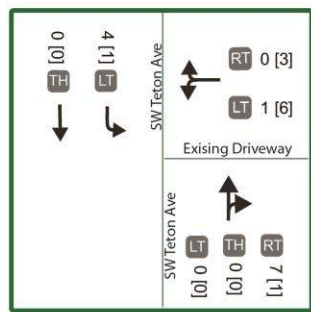
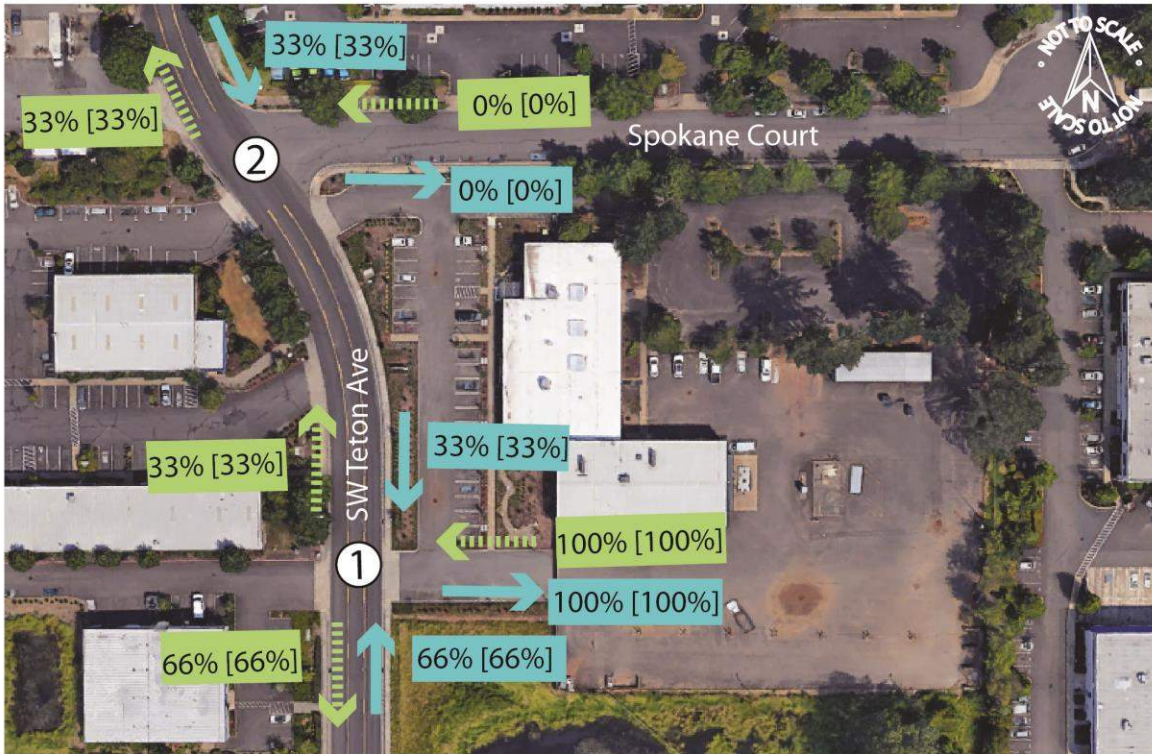


Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:30 PM -- 4:45 PM

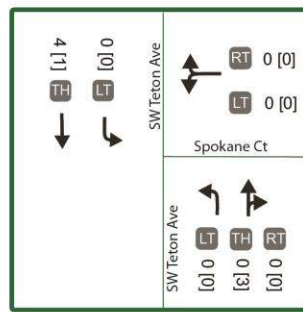


5-Min Count Period Beginning At	SW Teton Ave (Northbound)				SW Teton Ave (Southbound)				SW Herman Rd (Eastbound)				SW Herman Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	18	16	3	0	3	7	2	0	0	28	19	0	1	16	1	0	114	
4:05 PM	17	15	1	0	1	16	1	0	2	30	21	0	3	19	0	0	126	
4:10 PM	35	25	3	0	3	9	0	0	1	29	23	0	1	29	6	0	164	
4:15 PM	23	16	3	0	1	2	0	0	0	22	19	0	2	20	0	0	108	
4:20 PM	17	12	5	0	0	4	2	0	1	16	13	0	5	23	1	0	99	
4:25 PM	19	13	5	0	0	7	0	0	0	14	28	0	2	28	0	0	116	
4:30 PM	19	13	2	0	2	6	1	0	0	36	23	0	2	40	2	0	146	
4:35 PM	37	31	8	0	0	17	2	0	1	24	24	0	6	24	6	0	180	
4:40 PM	22	12	3	0	1	9	2	0	2	35	30	0	8	37	1	0	162	
4:45 PM	17	24	1	0	6	15	2	0	0	12	23	0	5	14	1	0	120	
4:50 PM	33	19	6	0	1	10	2	0	1	17	15	0	3	31	1	0	139	
4:55 PM	18	19	5	0	1	13	0	0	1	24	20	0	2	38	0	0	141	1615
5:00 PM	31	22	2	0	5	10	1	0	0	16	23	0	0	23	2	0	135	1636
5:05 PM	31	18	2	0	3	12	4	0	0	30	25	0	5	15	1	0	146	1656
5:10 PM	26	24	2	0	1	6	0	0	0	31	25	0	5	25	1	0	146	1638
5:15 PM	19	23	2	0	3	10	0	0	1	22	27	0	2	32	2	0	143	1673
5:20 PM	18	22	1	0	2	7	1	0	0	32	29	0	2	13	3	0	130	1704
5:25 PM	12	8	2	0	2	4	0	0	0	14	23	0	2	23	0	0	90	1678
5:30 PM	15	20	1	0	1	7	3	0	0	25	22	0	4	20	0	0	118	1650
5:35 PM	14	14	3	0	1	5	3	0	1	23	15	0	0	23	0	0	102	1572
5:40 PM	15	7	5	0	2	9	0	0	1	20	17	0	4	16	0	0	96	1506
5:45 PM	9	13	2	0	2	12	0	0	0	19	23	0	6	19	1	0	106	1492
5:50 PM	9	16	3	0	0	10	0	0	0	17	23	0	2	15	3	0	98	1451
5:55 PM	12	16	1	0	0	3	1	0	0	15	16	0	1	20	1	0	86	1396
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	312	224	52	0	12	128	20	0	12	380	308	0	64	404	36	0	1952	
Heavy Trucks	24	12	12		8	8	4		0	4	8		8	20	4		112	
Pedestrians		0				4				4				0			8	
Bicycles		0	0			0	0			0	0			0	0		0	
Railroad																		
Stopped Buses																		

Comments:



① SW Teton Ave / Existing Access

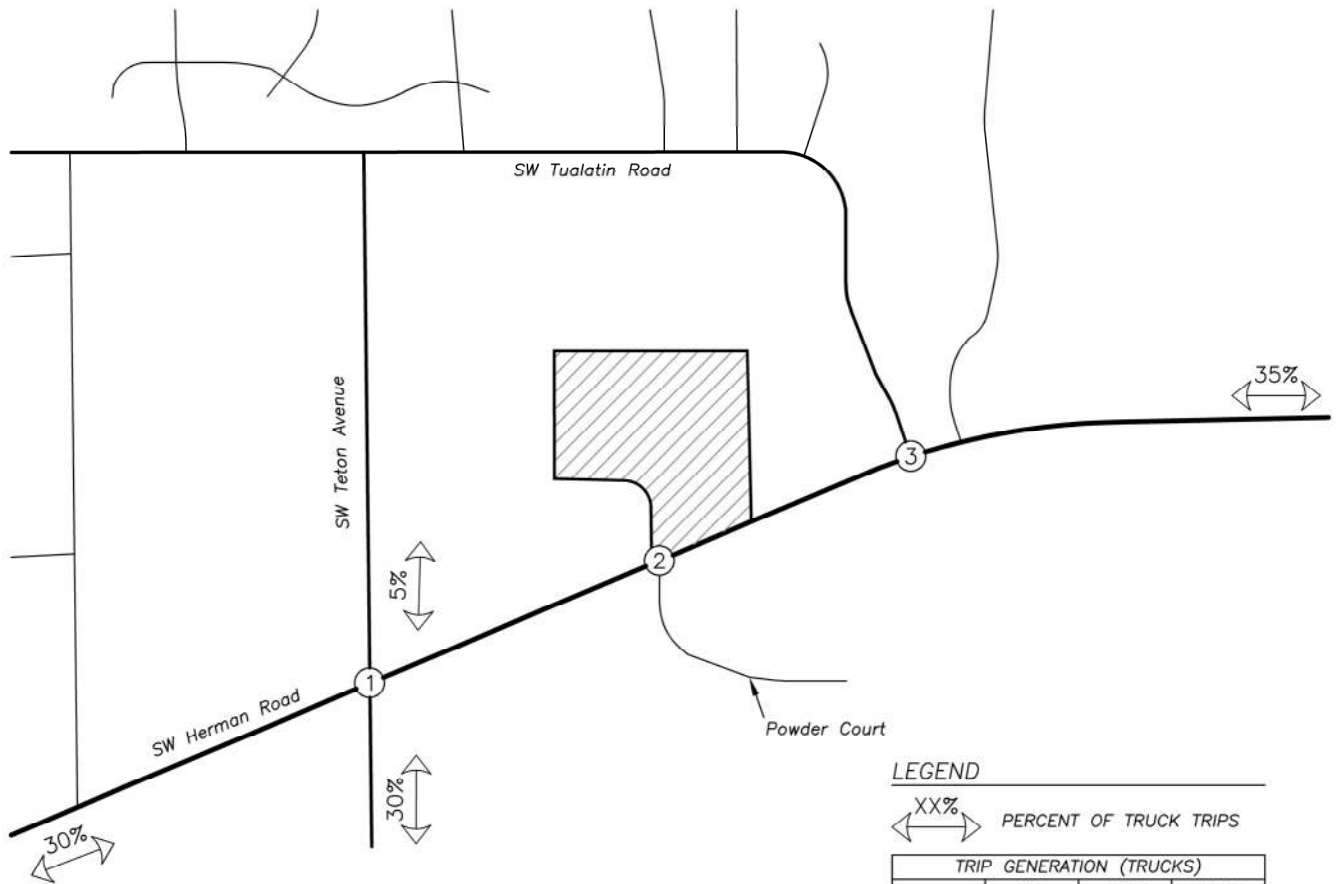


② SW Teton Ave / Spokane Ct

⊗ = Study Intersection
 1. SW Teton Ave / Existing Access
 2. SW Teton Ave / Spokane Court

→ Enter AM [PM]
 → Exit AM [PM]

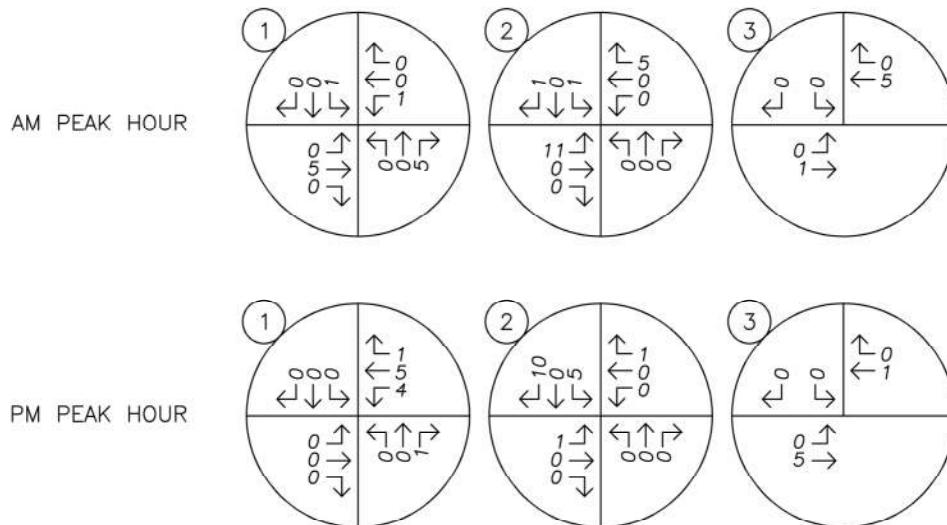
Figure 3:
 Trip Distribution and Assignment
 Weekday Vehicle Peak Hour Volumes



LEGEND

XX% PERCENT OF TRUCK TRIPS

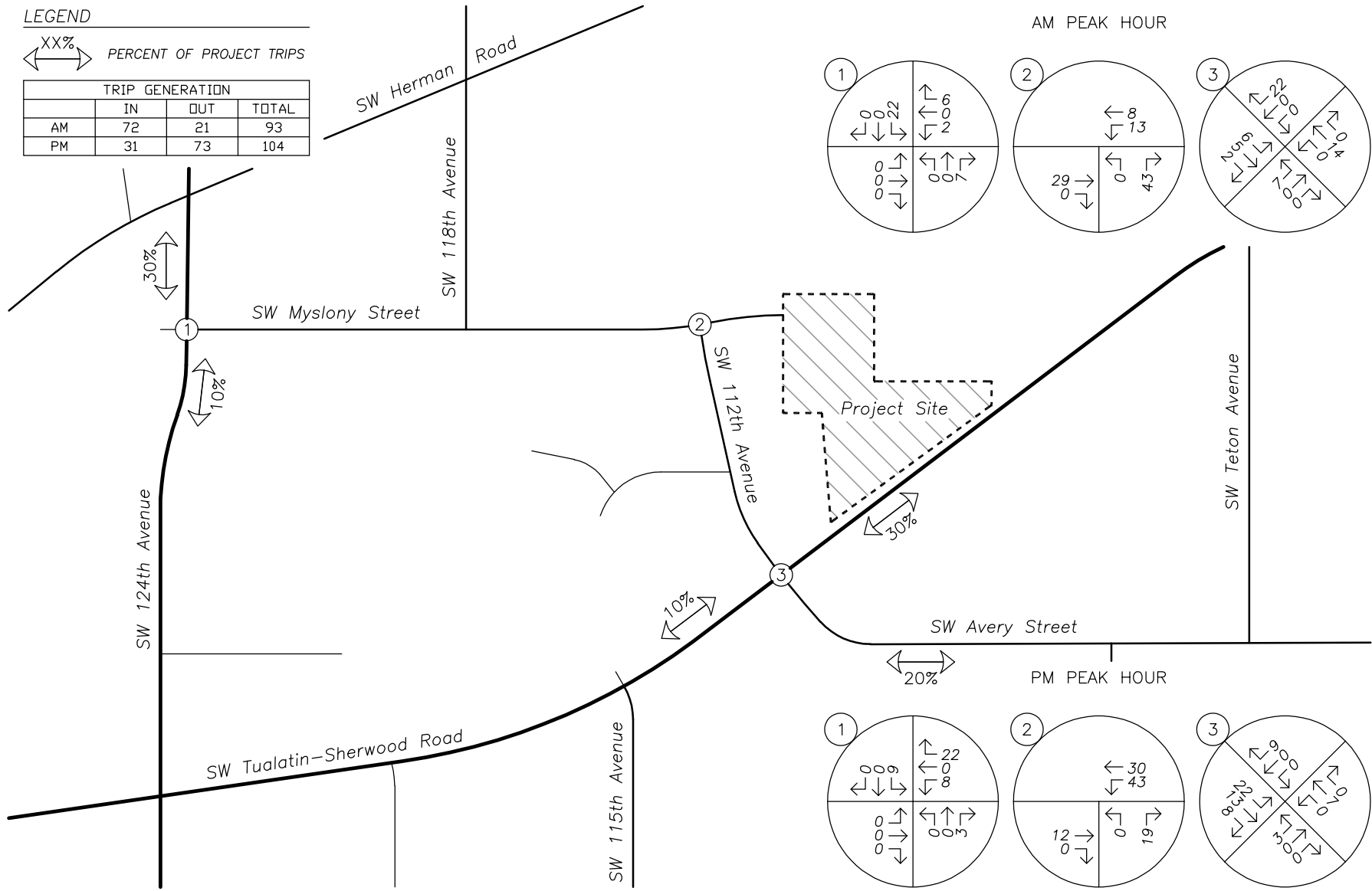
TRIP GENERATION (TRUCKS)			
	IN	OUT	TOTAL
AM	16	2	18
PM	2	15	17



LEGEND

XX% PERCENT OF PROJECT TRIPS

TRIP GENERATION			
	IN	OUT	TOTAL
AM	72	21	93
PM	31	73	104



SITE TRIP DISTRIBUTION & ASSIGNMENT
Proposed Development Plan – Site Trips
AM & PM Peak Hours



FIGURE 2

PAGE 11

Appendix C – Safety

Crash Reports

Left-Turn Lane Warrant Analysis

Traffic Signal Warrant Analysis





Left-Turn Lane Warrant Analysis

Project: 21135 - 10500 SW Manhasset
 Intersection: Site Access
 Date: 8/18/2021
 Scenario: 2023 Buildout AM

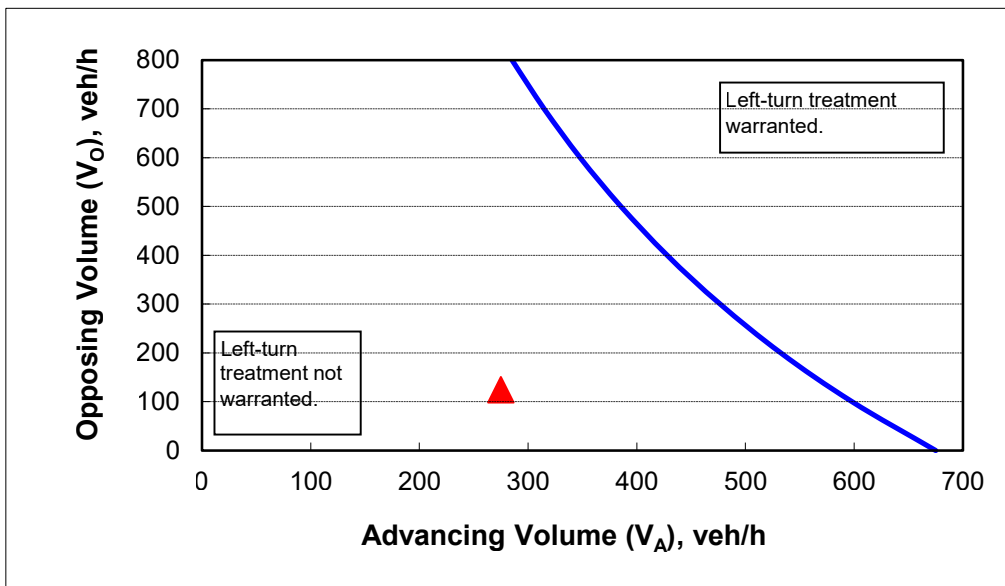
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	25
Left-turns in advancing volume (V_A), veh/hr:	28
Advancing volume (V_A), veh/h:	275
Opposing volume (V_O), veh/h:	124

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	581
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS (2-Lane Roadway)

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9



Left-Turn Lane Warrant Analysis

Project: 21135 - 10500 SW Manhasset
 Intersection: Site Access
 Date: 8/18/2021
 Scenario: 2023 Buildout PM

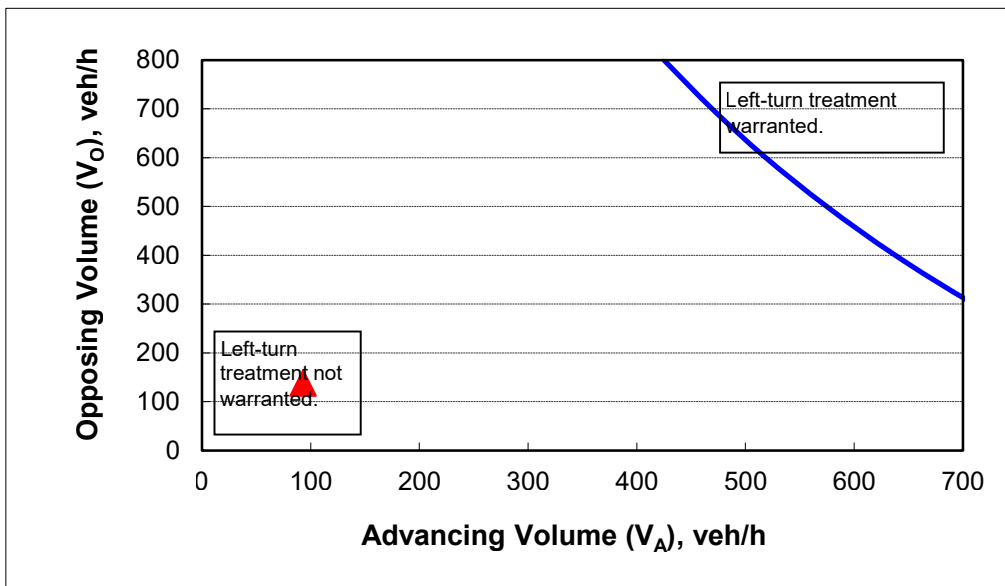
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	25
Left-turns in advancing volume (V_A), veh/hr:	4
Advancing volume (V_A), veh/h:	93
Opposing volume (V_O), veh/h:	138

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	852
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS (2-Lane Roadway)

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9



Preliminary Traffic Signal Warrant Analysis

Project: 21135 - 10500 SW Manhasset Drive
 Date: 8/18/2021
 Scenario: 2023 Buildout PM Peak Hour

Major Street:	SW Teton Avenue	Minor Street:	SW Manhasset Drive	
Number of Lanes:	1	Number of Lanes:	1	
PM Peak Hour Volumes:	1138	PM Peak Hour Volumes:	171 116	Total Rights RT Discount
			50%	

Warrant Used:

 X 100 percent of standard warrants used
 70 percent of standard warrants used due to 85th percentile speed in excess
 of 40 mph or isolated community with population less than 10,000.

Number of Lanes for Moving Traffic on Each Approach:		ADT on Major St. (total of both approaches)		ADT on Minor St. (higher-volume approach)	
<u>Major St.</u>	<u>Minor St.</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>	<u>Warrants</u>
<u>WARRANT 1, CONDITION A</u>					
1	1	8,850	6,200	2,650	1,850
2 or more	1	10,600	7,400	2,650	1,850
2 or more	2 or more	10,600	7,400	3,550	2,500
1	2 or more	8,850	6,200	3,550	2,500
<u>WARRANT 1, CONDITION B</u>					
1	1	13,300	9,300	1,350	950
2 or more	1	15,900	11,100	1,350	950
2 or more	2 or more	15,900	11,100	1,750	1,250
1	2 or more	13,300	9,300	1,750	1,250

Note: ADT volumes assume 8th highest hour is 5.6% of the daily volume

	Approach Volumes	Minimum Volumes	Is Signal Warrant Met?
<i>Warrant 1</i>			
<i>Condition A: Minimum Vehicular Volume</i>			
Major Street	11,380	8,850	
Minor Street*	1,130	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	11,380	13,300	
Minor Street*	1,130	1,350	No
<i>Combination Warrant</i>			
Major Street	11,380	10,640	
Minor Street*	1,130	2,120	No

Appendix D – Operations Analysis

Synchro Reports



HCM 6th TWSC
1: Site Driveway & SW Manhasset

08/13/2021

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	119	0	0	228	10	0	0	0	1	0	0
Future Vol, veh/h	0	119	0	0	228	10	0	0	0	1	0	0
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	61	61	61	61	61	61	61	61	61	61	61	61
Heavy Vehicles, %	10	23	10	10	23	10	10	10	10	10	10	10
Mvmt Flow	0	195	0	0	374	16	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	390	0	0	195	0	0	577	585	195	577	577	382
Stage 1	-	-	-	-	-	-	195	195	-	382	382	-
Stage 2	-	-	-	-	-	-	382	390	-	195	195	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.2	6.6	6.3	7.2	6.6	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	1126	-	-	1331	-	-	416	412	826	416	417	648
Stage 1	-	-	-	-	-	-	789	725	-	625	599	-
Stage 2	-	-	-	-	-	-	625	594	-	789	725	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1126	-	-	1331	-	-	416	412	826	416	417	648
Mov Cap-2 Maneuver	-	-	-	-	-	-	416	412	-	416	417	-
Stage 1	-	-	-	-	-	-	789	725	-	625	599	-
Stage 2	-	-	-	-	-	-	625	594	-	789	725	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	0	13.7
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1126	-	-	1331	-	-	416
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.004
HCM Control Delay (s)	0	0	-	-	0	-	-	13.7
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

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	24	0	96	0	0	0	161	474	2	0	345	77
Future Vol, veh/h	24	0	96	0	0	0	161	474	2	0	345	77
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	-	-	50	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	23	23	23	0	0	0	10	10	10	15	15	15
Mvmt Flow	26	0	103	0	0	0	173	510	2	0	371	83

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1270	1273	413	1323	1313	513	454	0	0	514	0	0
Stage 1	413	413	-	859	859	-	-	-	-	-	-	-
Stage 2	857	860	-	464	454	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.73	6.43	7.1	6.5	6.2	4.2	-	-	4.25	-	-
Critical Hdwy Stg 1	6.33	5.73	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.33	5.73	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.707	4.207	3.507	3.5	4	3.3	2.29	-	-	2.335	-	-
Pot Cap-1 Maneuver	131	152	596	135	160	565	1066	-	-	988	-	-
Stage 1	577	559	-	354	376	-	-	-	-	-	-	-
Stage 2	324	345	-	582	573	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	115	127	596	97	134	564	1066	-	-	986	-	-
Mov Cap-2 Maneuver	241	259	-	97	134	-	-	-	-	-	-	-
Stage 1	484	559	-	296	314	-	-	-	-	-	-	-
Stage 2	271	288	-	481	573	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	15.8		0		2.3		0	
HCM LOS	C		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1066	-	-	460	-	986	-
HCM Lane V/C Ratio	0.162	-	-	0.281	-	-	-
HCM Control Delay (s)	9	-	-	15.8	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	1.1	-	0	-

HCM 6th TWSC
1: Site Driveway & SW Manhasset

08/13/2021

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	133	0	0	85	1	0	0	0	8	0	0
Future Vol, veh/h	0	133	0	0	85	1	0	0	0	8	0	0
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	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	5	13	5	5	13	5	5	5	5	5	5	5
Mvmt Flow	0	168	0	0	108	1	0	0	0	10	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	109	0	0	168	0	0	277	277	168	277	277	109
Stage 1	-	-	-	-	-	-	168	168	-	109	109	-
Stage 2	-	-	-	-	-	-	109	109	-	168	168	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1463	-	-	1392	-	-	669	626	868	669	626	937
Stage 1	-	-	-	-	-	-	827	754	-	889	799	-
Stage 2	-	-	-	-	-	-	889	799	-	827	754	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1463	-	-	1392	-	-	669	626	868	669	626	937
Mov Cap-2 Maneuver	-	-	-	-	-	-	669	626	-	669	626	-
Stage 1	-	-	-	-	-	-	827	754	-	889	799	-
Stage 2	-	-	-	-	-	-	889	799	-	827	754	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1463	-	-	1392	-	-	669
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.015
HCM Control Delay (s)	0	0	-	-	0	-	-	10.5
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

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	46	0	95	0	0	3	58	456	0	0	548	28
Future Vol, veh/h	46	0	95	0	0	3	58	456	0	0	548	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	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	-	-	50	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	13	13	13	50	50	50	13	13	13	6	6	6
Mvmt Flow	59	0	122	0	0	4	74	585	0	0	703	36

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1456	1455	721	1516	1473	586	739	0	0	586	0	0
Stage 1	721	721	-	734	734	-	-	-	-	-	-	-
Stage 2	735	734	-	782	739	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.63	6.33	7.6	7	6.7	4.23	-	-	4.16	-	-
Critical Hdwy Stg 1	6.23	5.63	-	6.6	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.63	-	6.6	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.117	3.417	3.95	4.45	3.75	2.317	-	-	2.254	-	-
Pot Cap-1 Maneuver	102	123	409	76	100	431	819	-	-	969	-	-
Stage 1	402	416	-	346	362	-	-	-	-	-	-	-
Stage 2	395	410	-	324	360	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	94	112	409	50	91	431	819	-	-	968	-	-
Mov Cap-2 Maneuver	258	284	-	50	91	-	-	-	-	-	-	-
Stage 1	366	416	-	315	329	-	-	-	-	-	-	-
Stage 2	356	373	-	228	360	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	26.6		13.4		1.1		0	
HCM LOS	D		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	819	-	-	343	431	968	-
HCM Lane V/C Ratio	0.091	-	-	0.527	0.009	-	-
HCM Control Delay (s)	9.8	-	-	26.6	13.4	0	-
HCM Lane LOS	A	-	-	D	B	A	-
HCM 95th %tile Q(veh)	0.3	-	-	2.9	0	0	-

HCM 6th TWSC
1: Site Driveway & SW Manhasset

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Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	124	0	0	237	10	0	0	0	1	0	0
Future Vol, veh/h	0	124	0	0	237	10	0	0	0	1	0	0
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	61	61	61	61	61	61	61	61	61	61	61	61
Heavy Vehicles, %	10	23	10	10	23	10	10	10	10	10	10	10
Mvmt Flow	0	203	0	0	389	16	0	0	0	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	405	0	0	203	0	0	600	608	203	600	600	397
Stage 1	-	-	-	-	-	-	203	203	-	397	397	-
Stage 2	-	-	-	-	-	-	397	405	-	203	203	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.2	6.6	6.3	7.2	6.6	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	1112	-	-	1322	-	-	401	400	818	401	404	635
Stage 1	-	-	-	-	-	-	781	719	-	613	590	-
Stage 2	-	-	-	-	-	-	613	585	-	781	719	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1112	-	-	1322	-	-	401	400	818	401	404	635
Mov Cap-2 Maneuver	-	-	-	-	-	-	401	400	-	401	404	-
Stage 1	-	-	-	-	-	-	781	719	-	613	590	-
Stage 2	-	-	-	-	-	-	613	585	-	781	719	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1112	-	-	1322	-	-	401
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.004
HCM Control Delay (s)	0	0	-	-	0	-	-	14
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

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	25	0	100	0	0	0	167	493	2	0	360	80
Future Vol, veh/h	25	0	100	0	0	0	167	493	2	0	360	80
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	-	-	50	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	23	23	23	0	0	0	10	10	10	15	15	15
Mvmt Flow	27	0	108	0	0	0	180	530	2	0	387	86

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1321	1324	430	1377	1366	533	473	0	0	534	0	0
Stage 1	430	430	-	893	893	-	-	-	-	-	-	-
Stage 2	891	894	-	484	473	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.73	6.43	7.1	6.5	6.2	4.2	-	-	4.25	-	-
Critical Hdwy Stg 1	6.33	5.73	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.33	5.73	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.707	4.207	3.507	3.5	4	3.3	2.29	-	-	2.335	-	-
Pot Cap-1 Maneuver	121	142	583	123	149	551	1048	-	-	971	-	-
Stage 1	564	549	-	339	363	-	-	-	-	-	-	-
Stage 2	310	332	-	568	562	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	105	117	583	87	123	550	1048	-	-	969	-	-
Mov Cap-2 Maneuver	228	247	-	87	123	-	-	-	-	-	-	-
Stage 1	467	549	-	280	300	-	-	-	-	-	-	-
Stage 2	257	274	-	463	562	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	16.6		0		2.3		0	
HCM LOS	C		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1048	-	-	445	-	969	-
HCM Lane V/C Ratio	0.171	-	-	0.302	-	-	-
HCM Control Delay (s)	9.1	-	-	16.6	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0.6	-	-	1.3	-	0	-

HCM 6th TWSC
1: Site Driveway & SW Manhasset

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Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	138	0	0	88	1	0	0	0	8	0	0
Future Vol, veh/h	0	138	0	0	88	1	0	0	0	8	0	0
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	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	5	13	5	5	13	5	5	5	5	5	5	5
Mvmt Flow	0	175	0	0	111	1	0	0	0	10	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	112	0	0	175	0	0	287	287	175	287	287	112
Stage 1	-	-	-	-	-	-	175	175	-	112	112	-
Stage 2	-	-	-	-	-	-	112	112	-	175	175	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1459	-	-	1383	-	-	659	618	861	659	618	933
Stage 1	-	-	-	-	-	-	820	749	-	886	797	-
Stage 2	-	-	-	-	-	-	886	797	-	820	749	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1459	-	-	1383	-	-	659	618	861	659	618	933
Mov Cap-2 Maneuver	-	-	-	-	-	-	659	618	-	659	618	-
Stage 1	-	-	-	-	-	-	820	749	-	886	797	-
Stage 2	-	-	-	-	-	-	886	797	-	820	749	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	-	1459	-	-	1383	-	-	659
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.015
HCM Control Delay (s)	0	0	-	-	0	-	-	10.5
HCM Lane LOS	A	A	-	-	A	-	-	B
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	0

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	48	0	99	0	0	3	60	475	0	0	570	29
Future Vol, veh/h	48	0	99	0	0	3	60	475	0	0	570	29
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	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	-	-	50	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	13	13	13	50	50	50	13	13	13	6	6	6
Mvmt Flow	62	0	127	0	0	4	77	609	0	0	731	37

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1515	1514	750	1577	1532	610	768	0	0	610	0	0
Stage 1	750	750	-	764	764	-	-	-	-	-	-	-
Stage 2	765	764	-	813	768	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.63	6.33	7.6	7	6.7	4.23	-	-	4.16	-	-
Critical Hdwy Stg 1	6.23	5.63	-	6.6	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.63	-	6.6	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.117	3.417	3.95	4.45	3.75	2.317	-	-	2.254	-	-
Pot Cap-1 Maneuver	92	113	394	69	92	417	799	-	-	950	-	-
Stage 1	387	403	-	332	350	-	-	-	-	-	-	-
Stage 2	380	397	-	310	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	84	102	394	43	83	417	799	-	-	949	-	-
Mov Cap-2 Maneuver	245	271	-	43	83	-	-	-	-	-	-	-
Stage 1	350	403	-	300	316	-	-	-	-	-	-	-
Stage 2	340	358	-	210	348	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	29.6		13.7		1.1		0	
HCM LOS	D		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	799	-	-	329	417	949	-
HCM Lane V/C Ratio	0.096	-	-	0.573	0.009	-	-
HCM Control Delay (s)	10	-	-	29.6	13.7	0	-
HCM Lane LOS	A	-	-	D	B	A	-
HCM 95th %tile Q(veh)	0.3	-	-	3.4	0	0	-

HCM 6th TWSC
1: Site Driveway & SW Manhasset

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Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	124	0	28	237	10	0	0	4	1	0	0
Future Vol, veh/h	0	124	0	28	237	10	0	0	4	1	0	0
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	61	61	61	61	61	61	61	61	61	61	61	61
Heavy Vehicles, %	10	23	10	10	23	10	10	10	10	10	10	10
Mvmt Flow	0	203	0	46	389	16	0	0	7	2	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	405	0	0	203	0	0	692	700	203	696	692	397
Stage 1	-	-	-	-	-	-	203	203	-	489	489	-
Stage 2	-	-	-	-	-	-	489	497	-	207	203	-
Critical Hdwy	4.2	-	-	4.2	-	-	7.2	6.6	6.3	7.2	6.6	6.3
Critical Hdwy Stg 1	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.2	5.6	-	6.2	5.6	-
Follow-up Hdwy	2.29	-	-	2.29	-	-	3.59	4.09	3.39	3.59	4.09	3.39
Pot Cap-1 Maneuver	1112	-	-	1322	-	-	348	354	818	346	357	635
Stage 1	-	-	-	-	-	-	781	719	-	546	536	-
Stage 2	-	-	-	-	-	-	546	532	-	777	719	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1112	-	-	1322	-	-	336	338	818	331	341	635
Mov Cap-2 Maneuver	-	-	-	-	-	-	336	338	-	331	341	-
Stage 1	-	-	-	-	-	-	781	719	-	546	512	-
Stage 2	-	-	-	-	-	-	521	508	-	771	719	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.8			9.4			15.9		
HCM LOS							A			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	818	1112	-	-	1322	-	-	331
HCM Lane V/C Ratio	0.008	-	-	-	0.035	-	-	0.005
HCM Control Delay (s)	9.4	0	-	-	7.8	0	-	15.9
HCM Lane LOS	A	A	-	-	A	A	-	C
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	0

HCM 6th TWSC
2: SW Teton & SW Manhasset

08/18/2021

Intersection												
Int Delay, s/veh	3.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	26	0	103	0	0	0	187	493	2	0	360	88
Future Vol, veh/h	26	0	103	0	0	0	187	493	2	0	360	88
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	2	2	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	-	-	50	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	23	23	23	0	0	0	10	10	10	15	15	15
Mvmt Flow	28	0	111	0	0	0	201	530	2	0	387	95

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1368	1371	435	1425	1417	533	482	0	0	534	0	0
Stage 1	435	435	-	935	935	-	-	-	-	-	-	-
Stage 2	933	936	-	490	482	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.73	6.43	7.1	6.5	6.2	4.2	-	-	4.25	-	-
Critical Hdwy Stg 1	6.33	5.73	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.33	5.73	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.707	4.207	3.507	3.5	4	3.3	2.29	-	-	2.335	-	-
Pot Cap-1 Maneuver	112	132	579	114	138	551	1040	-	-	971	-	-
Stage 1	561	546	-	321	347	-	-	-	-	-	-	-
Stage 2	293	317	-	564	557	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	95	106	579	78	111	550	1040	-	-	969	-	-
Mov Cap-2 Maneuver	211	231	-	78	111	-	-	-	-	-	-	-
Stage 1	453	546	-	258	279	-	-	-	-	-	-	-
Stage 2	236	255	-	456	557	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.4	0	2.5	0
HCM LOS	C	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1040	-	-	428	-	969	-
HCM Lane V/C Ratio	0.193	-	-	0.324	-	-	-
HCM Control Delay (s)	9.3	-	-	17.4	0	0	-
HCM Lane LOS	A	-	-	C	A	A	-
HCM 95th %tile Q(veh)	0.7	-	-	1.4	-	0	-

HCM 6th TWSC
1: Site Driveway & SW Manhasset

08/18/2021

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	138	0	4	88	1	0	0	24	8	0	0
Future Vol, veh/h	0	138	0	4	88	1	0	0	24	8	0	0
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	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	5	13	5	5	13	5	5	5	5	5	5	5
Mvmt Flow	0	175	0	5	111	1	0	0	30	10	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	112	0	0	175	0	0	297	297	175	312	297	112
Stage 1	-	-	-	-	-	-	175	175	-	122	122	-
Stage 2	-	-	-	-	-	-	122	122	-	190	175	-
Critical Hdwy	4.15	-	-	4.15	-	-	7.15	6.55	6.25	7.15	6.55	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.15	5.55	-	6.15	5.55	-
Follow-up Hdwy	2.245	-	-	2.245	-	-	3.545	4.045	3.345	3.545	4.045	3.345
Pot Cap-1 Maneuver	1459	-	-	1383	-	-	649	610	861	635	610	933
Stage 1	-	-	-	-	-	-	820	749	-	875	789	-
Stage 2	-	-	-	-	-	-	875	789	-	805	749	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1459	-	-	1383	-	-	647	608	861	611	608	933
Mov Cap-2 Maneuver	-	-	-	-	-	-	647	608	-	611	608	-
Stage 1	-	-	-	-	-	-	820	749	-	875	786	-
Stage 2	-	-	-	-	-	-	872	786	-	777	749	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			9.3			11		
HCM LOS							A			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	861	1459	-	-	1383	-	-	611
HCM Lane V/C Ratio	0.035	-	-	-	0.004	-	-	0.017
HCM Control Delay (s)	9.3	0	-	-	7.6	0	-	11
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Traffic Vol, veh/h	55	0	116	0	0	3	63	475	0	0	570	30
Future Vol, veh/h	55	0	116	0	0	3	63	475	0	0	570	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	1	1	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	-	-	50	-	-
Veh in Median Storage, #	-	2	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	13	13	13	50	50	50	13	13	13	6	6	6
Mvmt Flow	71	0	149	0	0	4	81	609	0	0	731	38

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1523	1522	750	1597	1541	610	769	0	0	610	0	0
Stage 1	750	750	-	772	772	-	-	-	-	-	-	-
Stage 2	773	772	-	825	769	-	-	-	-	-	-	-
Critical Hdwy	7.23	6.63	6.33	7.6	7	6.7	4.23	-	-	4.16	-	-
Critical Hdwy Stg 1	6.23	5.63	-	6.6	6	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.23	5.63	-	6.6	6	-	-	-	-	-	-	-
Follow-up Hdwy	3.617	4.117	3.417	3.95	4.45	3.75	2.317	-	-	2.254	-	-
Pot Cap-1 Maneuver	91	112	394	66	90	417	798	-	-	950	-	-
Stage 1	387	403	-	328	347	-	-	-	-	-	-	-
Stage 2	376	394	-	305	348	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	83	100	394	38	81	417	798	-	-	949	-	-
Mov Cap-2 Maneuver	242	269	-	38	81	-	-	-	-	-	-	-
Stage 1	348	403	-	295	311	-	-	-	-	-	-	-
Stage 2	335	353	-	190	348	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	35.5		13.7		1.2		0	
HCM LOS	E		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	798	-	-	328	417	949	-
HCM Lane V/C Ratio	0.101	-	-	0.668	0.009	-	-
HCM Control Delay (s)	10	-	-	35.5	13.7	0	-
HCM Lane LOS	B	-	-	E	B	A	-
HCM 95th %tile Q(veh)	0.3	-	-	4.5	0	0	-