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RENEWS: 6/30/2022

Iseli Estates Subdivision
Transportation Impact
Study
Clackamas County,
Oregon

Date:
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Prepared for:

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Executive Summary

1. A 40-lot subdivision is proposed to be located at 14917 SE 142nd Avenue in Clackamas County, Oregon. The development will construct the western leg of SE 142nd Avenue at SE Wenzel Drive.
2. The proposed 40-lot development is estimated to generate a net total of 27 trips during the morning peak hour, 21 trips during the mid-day peak hour, and 36 trips during the evening peak hour.
3. No significant trends or crash patterns were identified at any of the study intersections that were indicative of safety concerns. Accordingly, no safety mitigation is recommended per the crash data analysis.
4. The minimum recommended intersection sight distance is available in either direction at the proposed site access location. Accordingly, no sight distance related mitigation is necessary or recommended.
5. Preliminary traffic signal warrants are not projected to be met at the site access intersection upon full buildout of the proposed development.
6. Left-turn lanes were not warranted at the site access intersection under the year 2024 buildout conditions.
7. All study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year.



Project Description

Introduction

A 40-lot subdivision is proposed to be located at 14917 SE 142nd Avenue in Clackamas County, Oregon. The development will construct the western leg of the intersection of SE 142nd Avenue at SE Wenzel Drive.

Based on correspondence with Clackamas County and ODOT and each jurisdictions' requirements, the report conducts safety and capacity/level of service analyses at the following intersections:

1. SE Sunnyside Road at SE 142nd Avenue
2. SE 142nd Avenue at SE Wenzel Drive (Site Access)
3. Highway 224/212 at SE 142nd Avenue

The purpose of this study is to determine whether the transportation system within the vicinity of the site is capable of safely and efficiently supporting the existing and proposed uses, and to determine any mitigation that may be necessary to do so. Detailed information on traffic counts, trip generation calculations, safety analyses, and level of service calculations is included in the appendix to this report.

Location Description

The subject property is located west of SE 142nd Avenue, south of SE Charjan Street, and north of Highway 224/212. The proposed development will construct the fourth leg of the intersection of SE 142nd Avenue at SE Wenzel Drive. Figure 1 on the following page shows the site vicinity with the subject site highlighted in blue.

Vicinity Streets

The proposed development is expected to impact six roadways near the site. Table 1 provides a description of each vicinity roadway.



Figure 1: Vicinity Map

Table 1: Vicinity Roadway Descriptions

Street Name	Jurisdiction	Functional Classification	Cross-Section	Speed (MPH)	Curbs & Sidewalks	On-Street Parking	Bicycle Facilities
SE Sunnyside Road	Clackamas County	Major Arterial	5 lanes	40 mph posted	Both side	Not Permitted	Both sides
SE 142 nd Avenue	Clackamas County	Minor Arterial	2-3 lanes	40 mph posted	Partial both sides	Partially Permitted	Partial both sides
Highway 224/212	ODOT	Statewide Highway	2-5 lanes	45 mph posted	Partial both sides	Not Permitted	Partial both sides
SE Wenzel Drive	Clackamas County	Local Street	2 lanes	25 mph statutory	Both Sides	Permitted	None

Study Intersections

Based on coordination with Clackamas County and ODOT staff, three intersections were identified for analysis. A summarized description of these study intersections, under their existing lane configurations, is provided in Table 2.







Table 2: Study Intersection Configurations

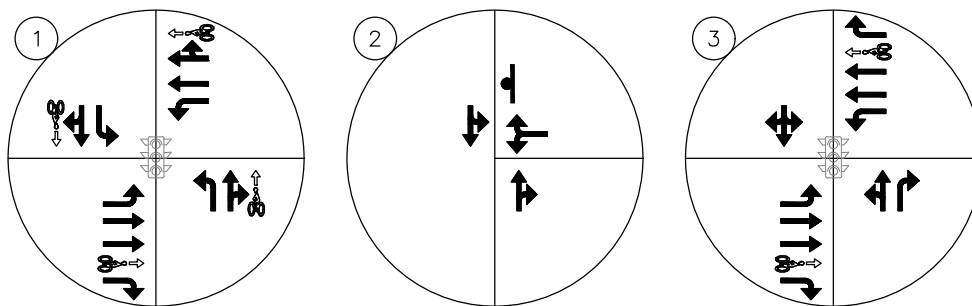
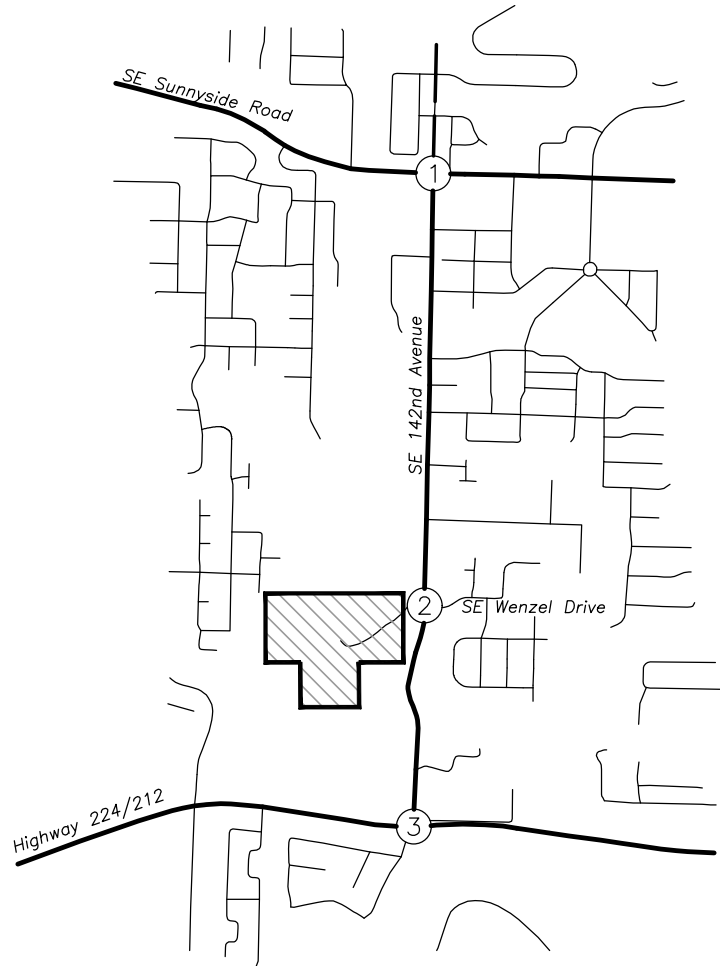
	Intersection	Geometry	Traffic Control	Phasing/Stopped Approaches
1	SE Sunnyside Road at SE 142 nd Avenue	Four-Legged	Traffic Signal	Eastbound and Westbound Protected/Permissive Left-turns with FYA, Permitted Northbound and Southbound Left-turns
2	SE 142 nd Avenue at SE Wenzel Drive	Three-Legged	Stop-Controlled	Westbound Stop-Controlled
3	Highway 224/212 at SE 142 nd Avenue	Three-Legged	Traffic Signal	Eastbound and Westbound Protected/Permissive Left-turns with FYA, Permitted Northbound and Southbound Left-turns

FYA = Flashing Yellow Arrow

A vicinity map showing the project site, vicinity streets, and study intersection configurations is shown in Figure 2.

LEGEND

-  STUDY INTERSECTION
-  STOP SIGN
-  TRAFFIC SIGNAL
-  BIKE LANE
-  PROJECT SITE
-  ARTERIAL ROADWAY
-  COLLECTOR ROADWAY
-  LOCAL ROADWAY



no scale

Site Trips

Trip Generation

To estimate the number of trips that will be generated by the development, data from the *Trip Generation Manual*¹ was referenced. Trip rates for Land-Use Code #210, Single Family Detached Housing, were used to estimate the trip generation for the existing and proposed development based on the number of lots. There are two existing single-family homes on the lot which will be removed in conjunction with the proposed development. The trip generation for the mid-day peak hour was estimated using the time-of-day distribution percentages provided in the ITE Manual appendix. For land use code 210, the peak hour between 11:00 AM and 1:00 PM, consistent with the mid-day peak hour in *Clackamas County Roadway Standards*, was shown to generate 5.7 percent of the 24-hour vehicle trips. The proposed 40-lot development is estimated to generate a net total of 27 trips during the morning peak hour, 21 trips during the mid-day peak hour, and 36 trips during the evening peak hour.

A summary of the trip generation is shown in Table 3.

Table 3: Trip Generation

ITE Code	Size	Morning Peak Hour			Mid-day Peak Hour			Evening Peak Hour			Daily Trips
		In	Out	Total	In	Out	Total	In	Out	Total	
210 (Existing)	2 lots	0	1	1	1	0	1	1	1	2	18
210 (Proposed)	40 lots	7	21	28	11	11	22	24	14	38	378
Total		7	20	27	10	11	21	23	13	36	360

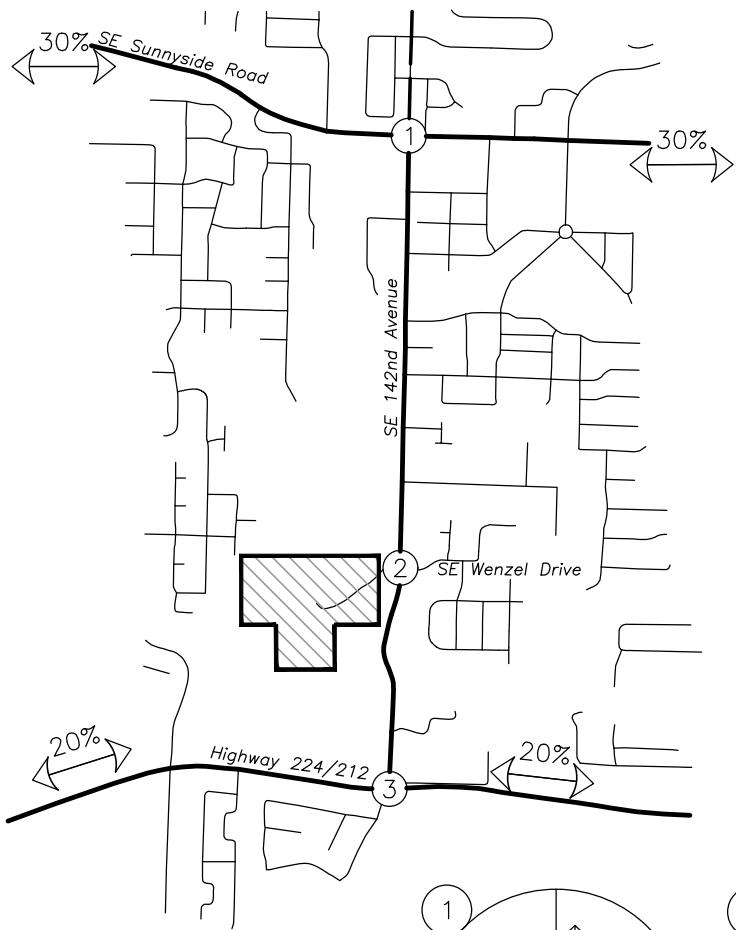
Trip Distribution

The project trip distribution was developed based on the 2018 traffic counts available on Clackamas County's Online Average Daily Traffic Counts GIS, and the existing roadway network facilities. The following trip distribution is projected:

- Approximately 30 percent of trips will travel to/from the east along SE Sunnyside Road;
- Approximately 30 percent of trips will travel to/from the west along SE Sunnyside Road;
- Approximately 20 percent of trips will travel to/from the west along OR-224; and
- Approximately 20 percent of trips will travel to/from the east along OR-224.

The trip distribution and assignment are shown in Figure 3.

¹ Institute of Transportation Engineers (ITE), *Trip Generation Manual*, 11th Edition, 2021

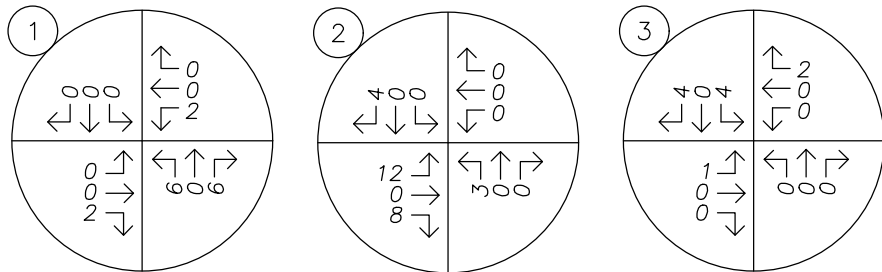


LEGEND

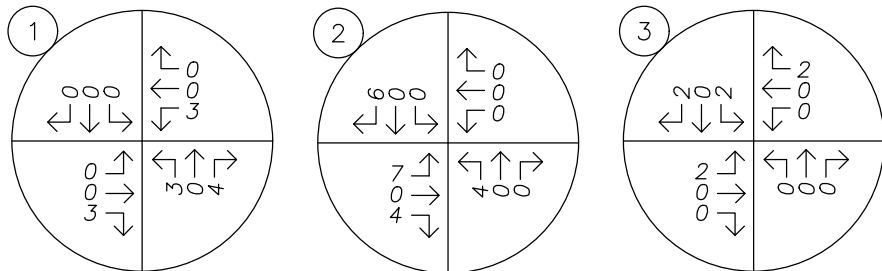
XX% PERCENT OF PROJECT TRIPS

TRIP GENERATION			
	IN	OUT	TOTAL
AM	7	20	27
MD	10	11	21
PM	23	13	36

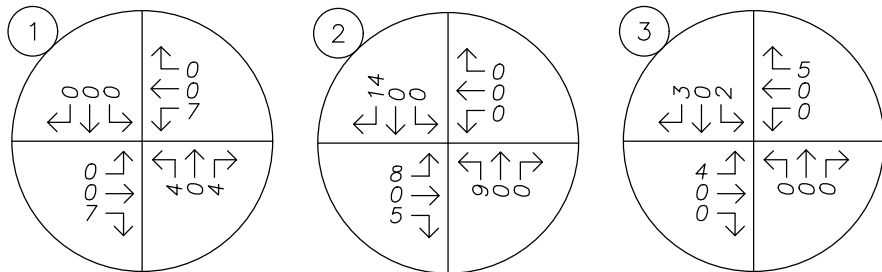
AM PEAK HOUR



MD PEAK HOUR



PM PEAK HOUR



no scale

Traffic Volumes

Existing Conditions

The ongoing COVID-19 pandemic has affected traffic volumes throughout the state in various ways, depending on the current regulations and restrictions to businesses and schools. Through scoping conversations with Clackamas County, it was determined that historical 2018 traffic volumes available on the Clackamas County Online GIS application may not be accurate along SE 142nd Avenue. It was determined that existing volumes near the subject site are anticipated to be at or near pre-COVID levels and would be an accurate estimation of typical peak hour traffic volumes. Traffic counts at the intersections of SE 142nd Avenue at SE Wenzel Drive and SE 142nd Avenue at SE Sunnyside Road were collected on the following dates:

- Thursday, November 18, 2021
- Tuesday, November 16, 2021
- Wednesday, September 29, 2021

The project site is located within the Portland Metro UGB, but outside the Clackamas County regional Center designated area. Therefore, based on table 2-19 in the *Clackamas County Roadway Standards*, the traffic counts should be collected during the mid-day (between 11:00 AM and 1:00 PM) and evening (between 3:30 PM and 6:30 PM) peak hours.

Since Highway 224/212 is under ODOT jurisdiction, traffic volumes were seasonally adjusted to reflect the 30th highest hour of traffic, as per procedures described in ODOT's Analysis Procedures Manual (APM) 2. Using the ODOT's Seasonal Trend Table 3, a seasonal adjustment factor of 1.098 was calculated based on a Commuter seasonal trend and applied to the year 2021 traffic volumes. The adjustment factor was applied to through volumes on Highway 224/212. Traffic counts at the intersection of SE 142nd Avenue at Highway 224/212 were collected on the following date:

- Tuesday, November 16, 2021

Through scope of work coordination with ODOT, it was determined that the hours of analysis for the intersection of Highway 224/212 at SE 142nd Avenue would be the morning (between 7:00 AM and 9:00 AM) and evening (between 4:00 PM and 6:00 PM) peak hours.

Figure 4 on page 12 shows the year 2021 existing traffic volumes.

Background Conditions

To provide analysis of the impact of the proposed development on the existing transportation facilities, an estimation of future traffic volumes is required. A build-out condition of three years was assumed.

A growth rate for through traffic along Highway 224/212 was derived using ODOT's 2039 Future Volume Table in accordance with ODOT's APM. Using data corresponding to milepost 7.62 of ODOT highway number 171, an

² Oregon Department of Transportation, *Analysis Procedures Manual Version 2*. October 2020.

³ ODOT Seasonal Trend Table (Updated 7/20/2021)

average linear growth factor of 1.021 was calculated. For all other turning movements at the Highway 224/212 study intersection and for all city and county roads, a compounded growth rate of two percent per year was applied to the 2021 traffic volumes to approximate year 2024 background conditions.

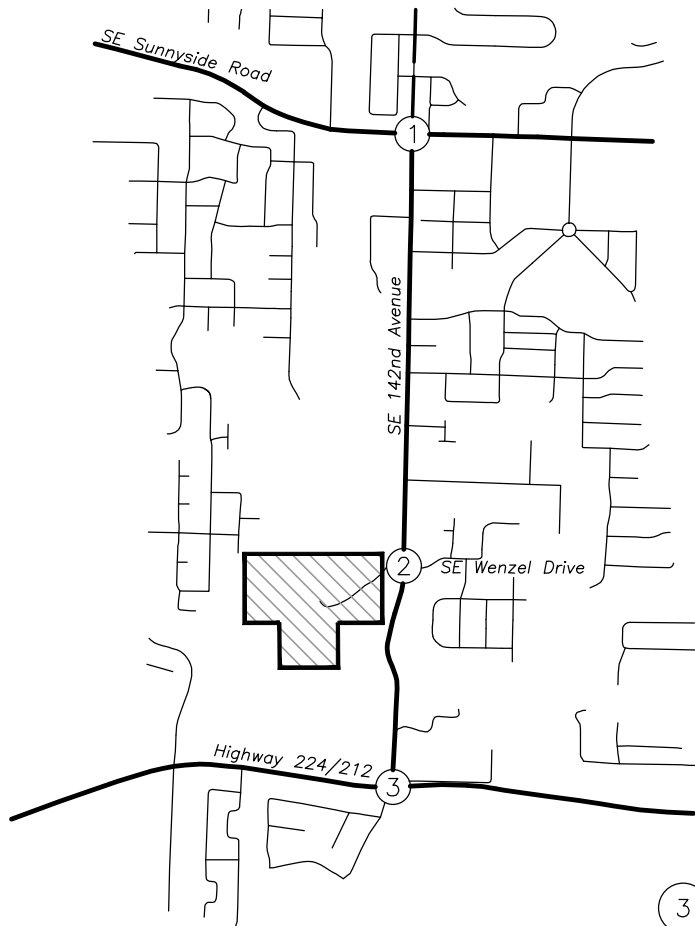
Clackamas County confirmed there were no in-process developments in the site vicinity which need to be accounted for in this report.

Figure 5 on page 13 shows the background traffic volumes.

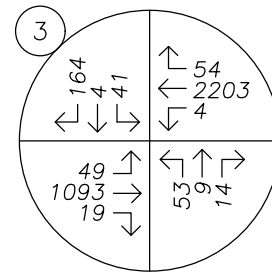
Buildout Conditions

Peak hour trips calculated to be generated by the proposed development, as described earlier within the *Site Trips* section, were added to the projected year 2024 background traffic volumes to obtain the expected 2024 site buildout volumes.

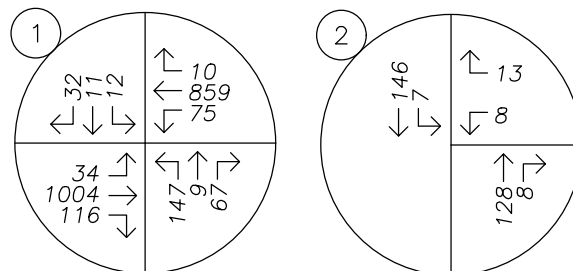
Figure 6 on page 14 shows the buildout traffic volumes at the study intersections.



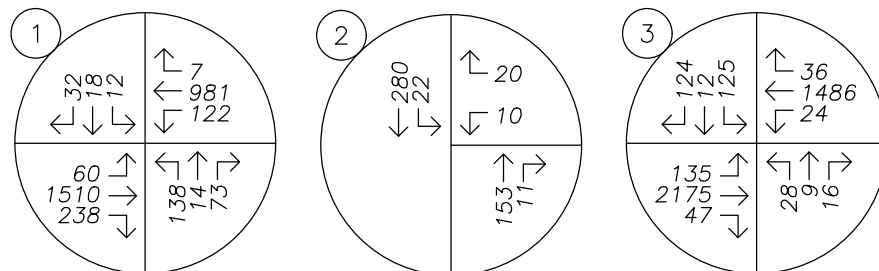
AM PEAK HOUR



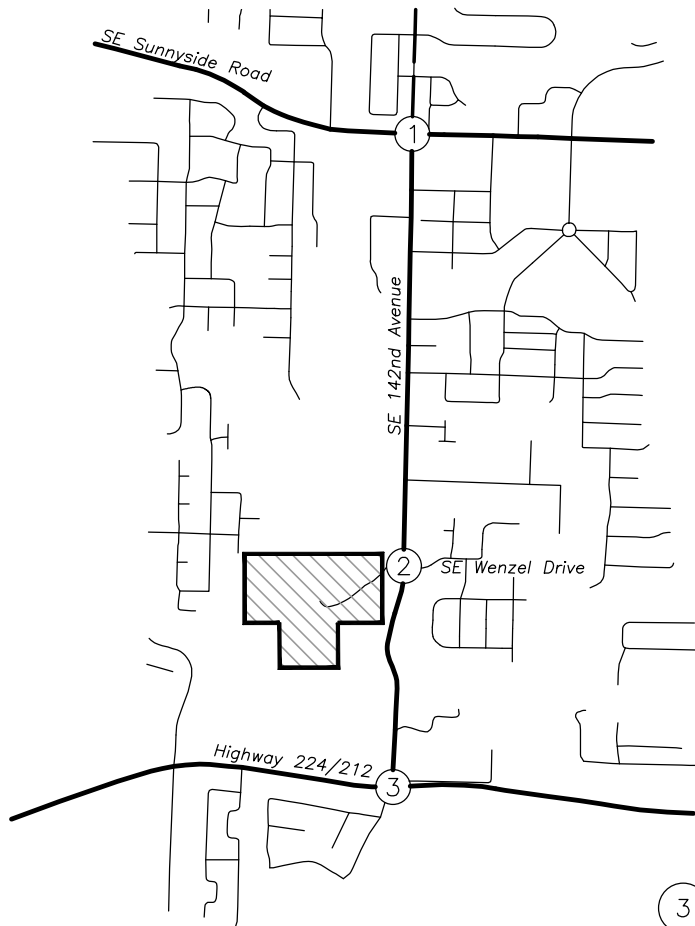
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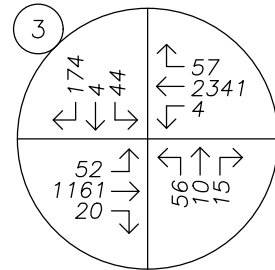
PM PEAK HOUR



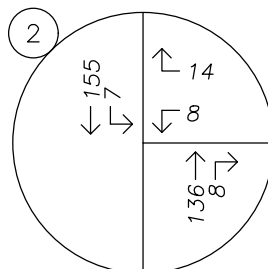
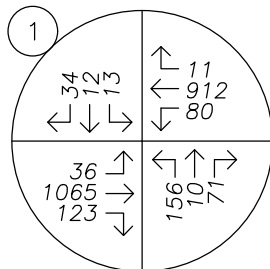
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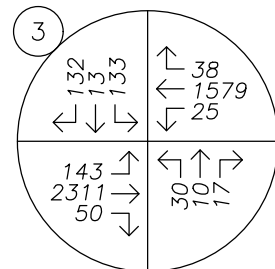
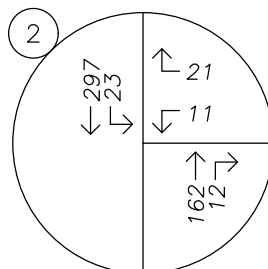
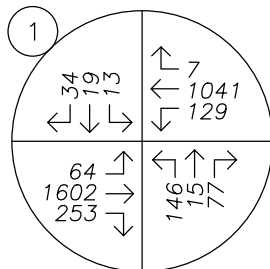
AM PEAK HOUR



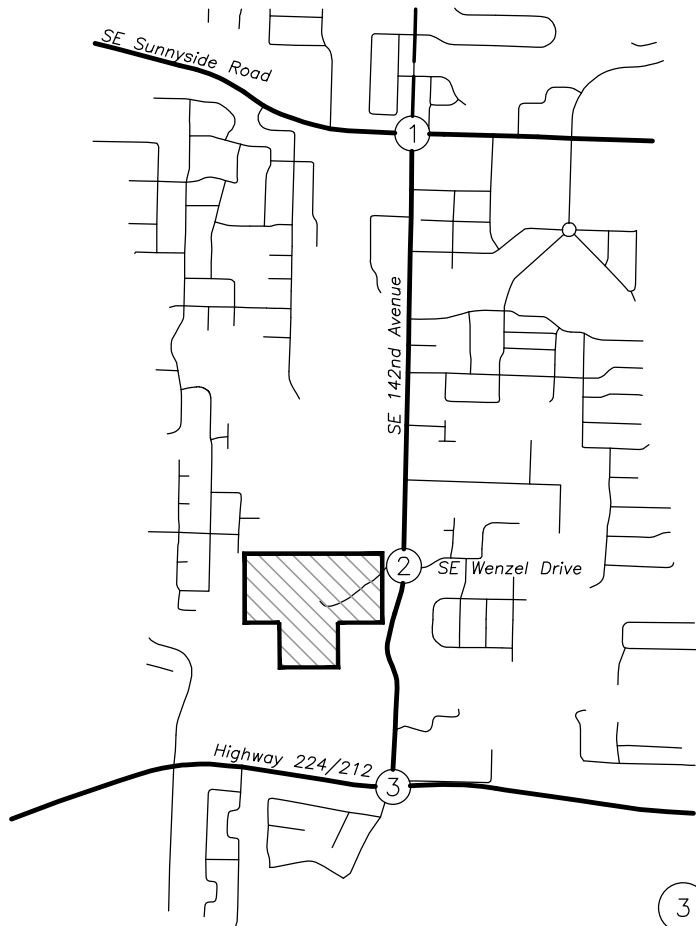
MD PEAK HOUR



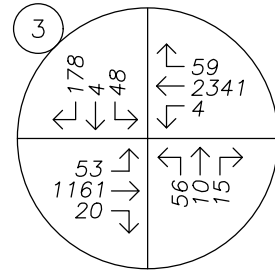
PM PEAK HOUR



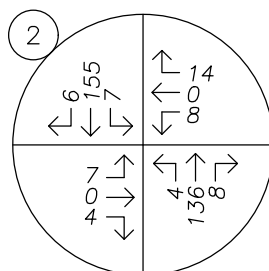
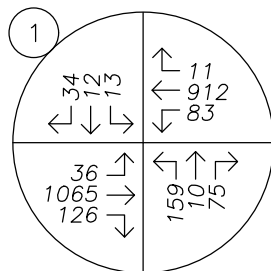
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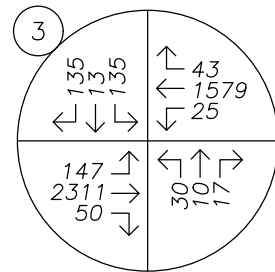
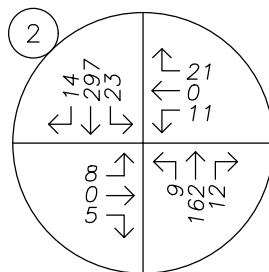
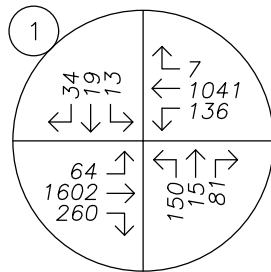
AM PEAK HOUR



MD PEAK HOUR



PM PEAK HOUR



no scale

Safety Analysis

Crash History Review

Using data obtained from ODOT's Crash Data System, a review of approximately five years of the most recent available crash history (January 2015 through December 2019) was performed at the study intersections. The crash data was evaluated based on the number of crashes, the type of collisions, and the severity of the collisions. Crash severity is based on injuries sustained by people involved in the crash, and includes 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.

The study intersection along Highway 224/212 adhere to the crash analysis methodologies in ODOT's APM. According to *Exhibit 4-1: Intersection Crash Rates per MEV by Land Type and Traffic Control* of the APM, intersections which experience crash rates in excess of their respective 90th percentile crash rates should be "flagged for further analysis". For intersections in urban settings, the following average and 90th percentile rates are applicable to the study intersection:

- Signalized, Four-Legged Intersections:
 - Average rate of 0.477 CMEV.
 - 90th percentile rate of 0.860 CMEV.

Table 4 provides a summary of crash types while Table 5 summarizes crash severities and rates for each of the study intersections. Detailed crash data is provided in the appendix to this report.

Table 4: Crash Type Summary

Intersection		Crash Type							Total Crashes	
		Turn	Rear End	Angle	Fixed Object	Side Swipe	Ped	Bike		Other
1	SE Sunnyside Road at SE 142 nd Avenue	9	5	1	0	0	0	2	0	17
2	SE 142 nd Avenue at SE Wenzel Drive	1	0	0	1	0	0	0	0	2
3	Highway 224/212 at SE 142 nd Avenue	14	23	0	1	5	0	0	0	43

Table 5: Crash Severity and Rate Summary

Intersection		Severity					Total Crashes	Peak Hour Volume	Crash Rate
		PDO	C	B	A	Fatality			
1	SE Sunnyside Road at SE 142 nd Avenue	8	7	1	1	0	17	32,050	0.29
2	SE 142 nd Avenue at SE Wenzel Drive	1	1	0	0	0	2	4,960	0.22
3	Highway 224/212 at SE 142 nd Avenue	18	17	6	2	0	43	42,170	0.56

Crashes involving vulnerable users or were classified as Injury A are described further below.

SE Sunnyside Road at SE 142nd Avenue

Two bicycle collisions, one of which was classified as Injury A, were reported at the intersection. One of the bicycle related collisions occurred when the driver of a left-turning vehicle failed to yield to the right-of-way to the bicyclist. The cyclist sustained injuries classified as Injury B. The other bicycle related collision occurred when a left-turning cyclist disregarded the traffic signal and struck a motor vehicle. The cyclist sustained injuries classified as Injury A.

Highway 224/212 at SE 142nd Avenue

Two collisions at the intersection of the reported were classified as Injury A. One of the collisions occurred when the driver of an eastbound passenger car was driving too fast for conditions and rear-ended a motorcyclist. The driver of the motorcycle was stopped at the intersection waiting to make a left turn. The driver of the motorcycle sustained injuries classified as Injury A. The other collision occurred when the driver of a left-turning vehicle conducted an improper turn in front of oncoming traffic and collided with a westbound vehicle. The driver of the left-turning vehicle sustained injuries classified as Injury A.

Based on review of the most recent five years of available crash data, no significant trends or crash patterns were identified at any of study intersections that were indicative of safety concerns. In addition, none of the study intersections exhibit crash rates near or above the 1.0 CMEV threshold nor does the study intersection on Highway 224/212 have a crash rate exceeding ODOT’s 90th percentile rate. Accordingly, no safety mitigation is recommended per crash data analysis.



Sight Distance Evaluation

Sight distance was measured and evaluated at the proposed site access intersection in accordance with the standards established in *A Policy of Geometric Design of Highways and Streets*⁴ as well as per the *Clackamas County Roadway Standards*. 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. Per the *Clackamas County Roadway Standards*, the design speed of a roadway is assumed to be either the intended/posted regulatory speed, the measured 85th percentile speed of traffic, or if in the vicinity of a horizontal curve, the posted advisory speed plus 10 mph (per *Section 250.1.2 Design Speed*).

Based on the posted speed limit of 40 mph on SE 142nd Avenue, the minimum recommended intersection sight distance to the south of the access is 445 feet (for left-turn site egress vehicles) and 385 feet to the north (for right-turn site egress vehicles).

A sight distance exhibit depicting the sight lines and future intersection improvements is attached in the technical appendix. Sight distance was measured to be in excess of 450 feet to the north and to the south.

Warrant Analysis

Preliminary Traffic Signal Warrant Analysis

Traffic signal warrants were examined for the site access intersection based on the methodologies in the Manual on Uniform Traffic Control Devices (MUTCD) published by the Federal Highway Administration in 2009. Volumes were used from the year 2024 buildout conditions. Warrant 1, Eight Hour Vehicular Volumes, was evaluated based on the common assumption that traffic counted during the evening peak hour represents ten percent of the ADT. Detailed information on the traffic signal warrant analysis is included in the attached appendix.

Preliminary traffic signal warrants are not projected to be met at the site access intersection upon full buildout of the proposed development.

Left-Turn Lane Warrants

A left-turn refuge lane is primarily a safety consideration for the major-street, removing left-turning vehicles from the through traffic stream. The left-turn lane warrants were examined using methodologies provided within the National Cooperative Highway Research Program's (NCHRP) Report 457. Turn lane warrants were evaluated based on the number of advancing and opposing vehicles as well as the number of turning vehicles, the travel speed, and the number of through lanes.

Left-turn lanes were not warranted at the site access intersection under the year 2024 buildout conditions.

⁴ American Association of State Highway and Transportation Officials (AASHTO), *A Policy on Geometric Design of Highways and Streets*, 6th Edition, 2011.

Operational Analysis

Intersection Capacity Analysis

A capacity and delay analysis were conducted for each of the study intersections per the signalized and unsignalized intersection analysis methodologies in the *Highway Capacity Manual (HCM)*⁵. Intersections are generally evaluated based on the average control delay experienced by vehicles and are assigned a grade according to their operation. The level of service (LOS) of an intersection can range from LOS A, which indicates very little, or no delay experienced by vehicles, to LOS F, which indicates a high degree of congestion and delay. The volume-to-capacity (V/C) ratio is a measure that compares the traffic volumes (demand) against the available capacity of an intersection.

Performance Standards

The operating standards adopted by the Clackamas County and ODOT are summarized below.

Clackamas County

According to the *Clackamas County Comprehensive Plan, Chapter 5 Transportation System Plan and Map 4-8*, the following operational standard applies to intersections located within urban areas which are designated as neighborhood areas:

- Maximum V/C ratio of 0.99 for the 1st hour, PM Peak
- Maximum V/C ratio of 0.99 for the mid-day one-hour peak

ODOT

ODOT's operating mobility target for intersections along OR 212/224 is v/c ratio at or below 0.99 during the peak first and second hours.

Delay & Capacity Analysis

The LOS, delay, and v/c results of the capacity analysis are shown in Table 6 and Table 7. Detailed calculations as well as tables showing the relationship between delay and LOS are included in the appendix to this report.

⁵ Transportation Research Board, *Highway Capacity Manual 6th Edition*, 2016.

Table 6: Capacity Analysis Summary – Clackamas County

Intersection & Condition	MD Peak Hour			PM Peak Hour		
	LOS	Delay (s)	V/C	LOS	Delay (s)	V/C
1. SE Sunnyside Road at SE 142 nd Avenue						
2021 Existing Conditions	B	11	0.68	B	13	0.78
2024 Background Conditions	B	12	0.72	B	14	0.83
2024 Buildout Conditions	B	12	0.72	B	14	0.84
2. SE 142 nd Avenue at SE Wenzel Drive						
2021 Existing Conditions	A	10	0.03	B	10	0.05
2024 Background Conditions	A	10	0.03	B	11	0.05
2024 Buildout Conditions	B	11	0.04	B	13	0.06

Table 7: Capacity Analysis Summary - ODOT

Intersection & Condition	AM Peak Hour			PM Peak Hour		
	LOS	Delay (s)	V/C	LOS	Delay (s)	V/C
3. Highway 224/212 at SE 142 nd Avenue						
2021 Existing Conditions	B	19	0.91	B	20	0.73
2024 Background Conditions	B	19	0.91	C	26	0.78
2024 Buildout Conditions	B	19	0.92	C	26	0.79

Based on the results of the operational analysis, all study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year. No operational mitigation is necessary or recommended at these intersections.



Conclusions

Key findings include:

- No significant trends or crash patterns were identified at any of the study intersections that were indicative of safety concerns. Accordingly, no safety mitigation is recommended per the crash data analysis.
- The minimum recommended intersection sight distance is available in either direction at the proposed site access location. Accordingly, no sight distance related mitigation is necessary or recommended.
- Preliminary traffic signal warrants are not projected to be met at any of the study intersections upon full buildout of the proposed development.
- Left-turn lanes were not warranted at the site access intersection under the year 2024 buildout conditions.
- All study intersections are currently operating acceptably per jurisdictional standards and are projected to continue operating acceptably through the 2024 site buildout year.

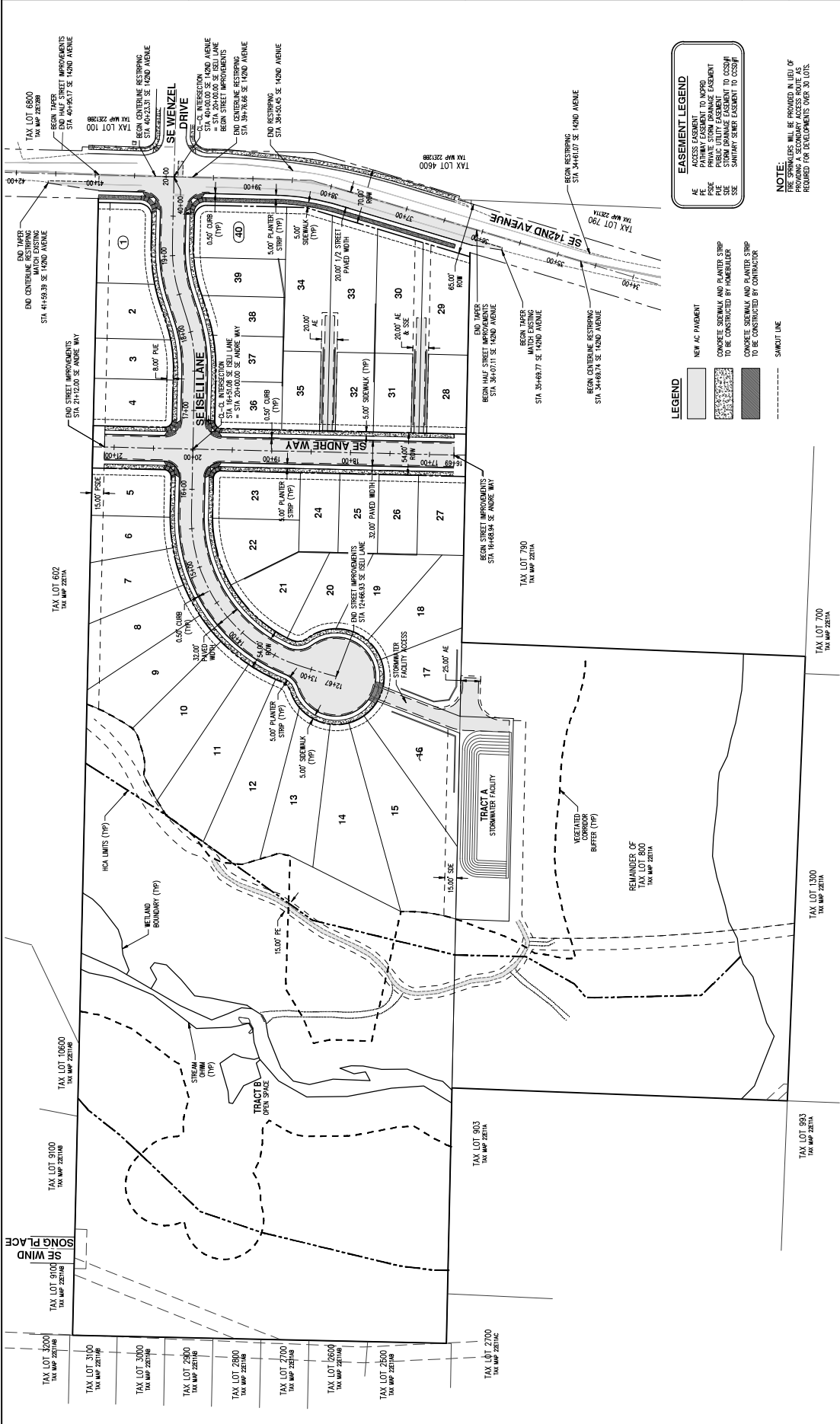


Appendix A – Site Data

Site Plan

Sight Distance Figure

Trip Generation Calculations



EASEMENT LEGEND

- AE EASEMENT TO ADJACENT PROPERTY
- PE PRIVATE EASEMENT TO IMPROVE
- SE SIDEWALK EASEMENT TO CROSS
- SE SIDEWALK EASEMENT TO CROSS
- SE SIDEWALK EASEMENT TO CROSS
- SE SIDEWALK EASEMENT TO CROSS

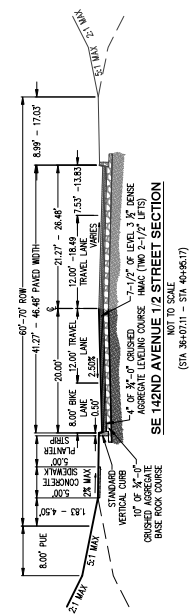
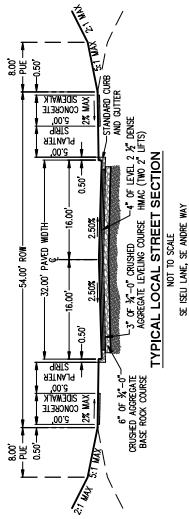
LEGEND

- NEW AC PAVEMENT
- CONCRETE SIDEWALK AND PAINTER STRIP TO BE CONSTRUCTED BY HOMEOWNER
- CONCRETE SIDEWALK AND PAINTER STRIP TO BE CONSTRUCTED BY CONTRACTOR
- SANICUT LINE

NOTE:
 EASEMENTS WILL BE PROVIDED IN LIEU OF PROVIDING A SECONDARY ACCESS ROUTE AS REQUIRED FOR DEVELOPMENTS OVER 30 LOTS.



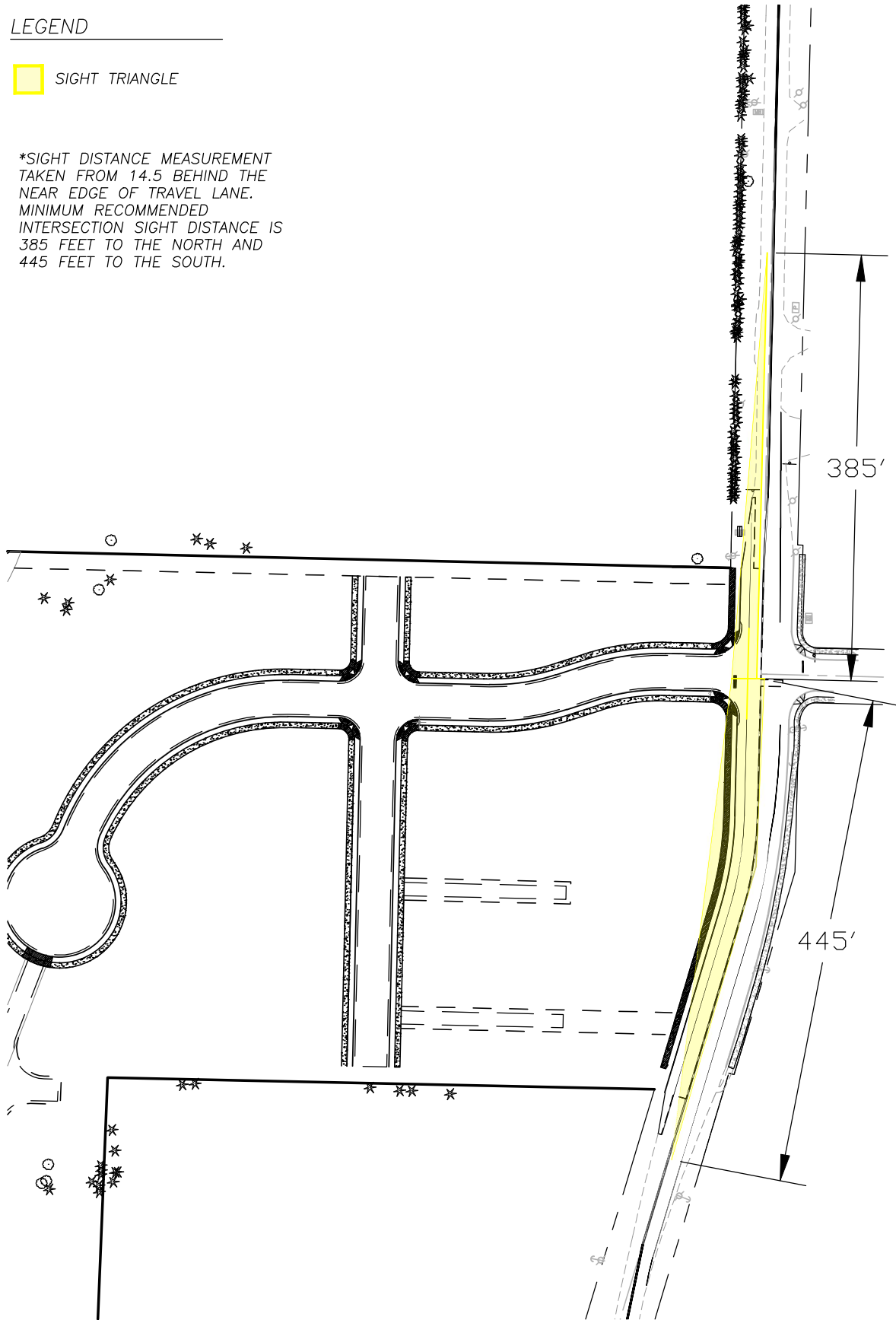
SCALE: 1" = 60 FEET



LEGEND

 SIGHT TRIANGLE

*SIGHT DISTANCE MEASUREMENT
TAKEN FROM 14.5 FEET BEHIND THE
NEAR EDGE OF TRAVEL LANE.
MINIMUM RECOMMENDED
INTERSECTION SIGHT DISTANCE IS
385 FEET TO THE NORTH AND
445 FEET TO THE SOUTH.



no scale



TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use: Single-Family Detached Housing
Land Use Code: 210
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Variable Quantity: 2

WARNING: Variable Quantity is less than Minimum Survey Size for Peak Hours

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Split	26%	74%	
Trip Ends	0	1	1

PM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	1	1	2

WEEKDAY

Trip Rate: 9.43

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	9	9	18

SATURDAY

Trip Rate: 9.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	9	9	18



TRIP GENERATION CALCULATIONS
Source: Trip Generation Manual, 11th Edition

Land Use: Single-Family Detached Housing
Land Use Code: 210
Land Use Subcategory: All Sites
Setting/Location: General Urban/Suburban
Variable: Dwelling Units
Trip Type: Vehicle
Variable Quantity: **40**

AM PEAK HOUR

Trip Rate: 0.7

	Enter	Exit	Total
Directional Split	26%	74%	
Trip Ends	7	21	28

PM PEAK HOUR

Trip Rate: 0.94

	Enter	Exit	Total
Directional Split	63%	37%	
Trip Ends	24	14	38

WEEKDAY

Trip Rate: 9.43

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	189	189	378

SATURDAY

Trip Rate: 9.48

	Enter	Exit	Total
Directional Split	50%	50%	
Trip Ends	190	190	380

Appendix B – Traffic Data

Traffic Counts





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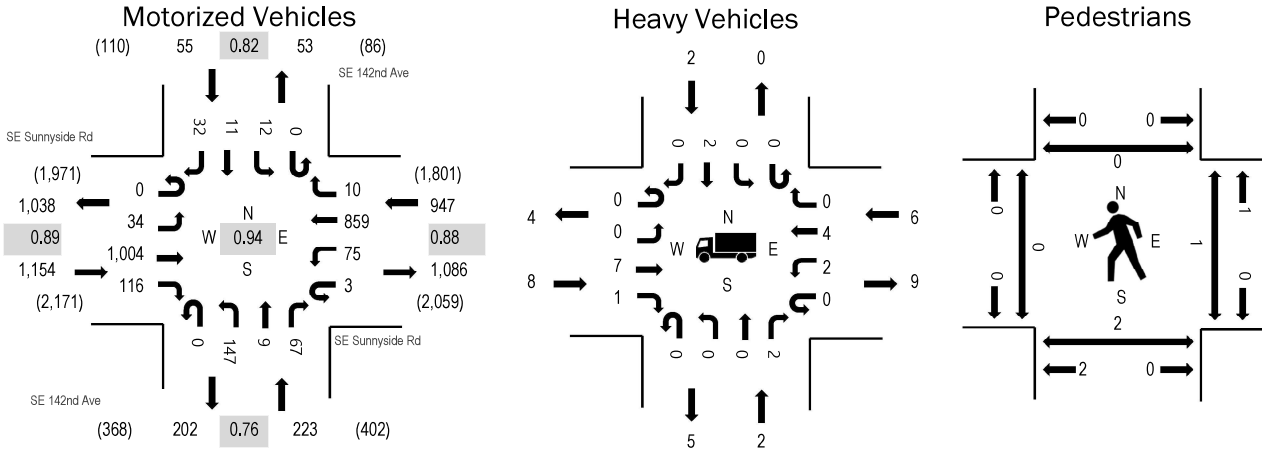
Location: 1 SE 142nd Ave & SE Sunnyside Rd Noon

Date: Tuesday, November 16, 2021

Peak Hour: 12:00 PM - 01:00 PM

Peak 15-Minutes: 12:10 PM - 12:25 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.7%	0.89
WB	0.6%	0.88
NB	0.9%	0.76
SB	3.6%	0.82
All	0.8%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	SE Sunnyside Rd Eastbound				SE Sunnyside Rd Westbound				SE 142nd Ave Northbound				SE 142nd 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		
11:00 AM	0	2	74	8	0	2	68	0	0	11	0	5	0	0	2	4	176	2,105
11:05 AM	0	1	62	7	0	7	73	0	0	6	0	3	0	1	1	4	165	2,130
11:10 AM	0	5	85	8	0	11	67	0	0	7	1	5	0	0	1	2	192	2,151
11:15 AM	0	4	55	11	0	7	58	0	0	11	0	1	0	1	1	4	153	2,192
11:20 AM	0	1	78	7	0	9	72	2	0	6	0	3	0	0	2	4	184	2,239
11:25 AM	0	1	71	8	0	3	60	0	0	6	0	4	0	0	0	0	153	2,252
11:30 AM	0	1	75	4	0	6	67	1	0	14	0	16	0	0	2	3	189	2,307
11:35 AM	0	1	64	8	1	1	66	1	0	14	0	8	0	1	0	6	171	2,302
11:40 AM	0	2	98	10	0	0	62	1	0	7	0	8	0	1	0	1	190	2,329
11:45 AM	0	2	79	6	0	6	68	1	0	9	1	2	0	0	1	4	179	2,317
11:50 AM	0	3	83	9	0	6	56	0	0	7	0	7	0	1	2	2	176	2,346
11:55 AM	0	1	77	6	1	4	66	1	0	14	0	3	0	0	0	4	177	2,349
12:00 PM	0	2	88	9	0	11	69	2	0	11	1	2	0	5	0	1	201	2,379
12:05 PM	0	3	75	10	1	6	68	1	0	9	0	6	0	0	3	4	186	
12:10 PM	0	4	121	17	0	6	67	0	0	8	0	7	0	0	1	2	233	
12:15 PM	0	4	80	8	0	1	86	1	0	13	0	5	0	0	0	2	200	
12:20 PM	0	1	70	8	0	8	84	1	0	13	1	5	0	1	0	5	197	
12:25 PM	0	3	94	8	0	6	82	0	0	8	3	2	0	0	2	0	208	
12:30 PM	0	1	91	9	1	7	57	0	0	10	0	5	0	1	1	1	184	
12:35 PM	0	5	70	8	0	3	82	3	0	13	1	7	0	1	1	4	198	
12:40 PM	0	5	76	9	0	4	61	0	0	13	1	6	0	0	1	2	178	
12:45 PM	0	2	88	16	0	8	64	1	0	17	1	4	0	2	1	4	208	
12:50 PM	0	2	58	9	1	6	65	1	0	20	1	10	0	2	1	3	179	
12:55 PM	0	2	93	5	0	9	74	0	0	12	0	8	0	0	0	4	207	
Count Total	0	58	1,905	208	5	137	1,642	17	0	259	11	132	0	17	23	70	4,484	
Peak Hour	0	34	1,004	116	3	75	859	10	0	147	9	67	0	12	11	32	2,379	

Location: 1 SE 142nd Ave & SE Sunnyside Rd Noon

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
11:00 AM	1	0	1	0	2	11:00 AM	0	0	0	0	0	11:00 AM	0	2	2	0	4
11:05 AM	2	1	1	0	4	11:05 AM	0	0	0	0	0	11:05 AM	0	0	0	0	0
11:10 AM	0	0	0	0	0	11:10 AM	0	0	0	0	0	11:10 AM	0	0	0	0	0
11:15 AM	1	0	1	0	2	11:15 AM	0	0	0	0	0	11:15 AM	0	0	0	0	0
11:20 AM	1	0	2	0	3	11:20 AM	0	0	0	0	0	11:20 AM	0	0	0	0	0
11:25 AM	0	0	0	0	0	11:25 AM	0	0	0	0	0	11:25 AM	0	0	0	0	0
11:30 AM	0	0	1	0	1	11:30 AM	0	0	0	0	0	11:30 AM	0	1	0	0	1
11:35 AM	1	0	0	0	1	11:35 AM	0	0	0	0	0	11:35 AM	0	0	0	0	0
11:40 AM	0	0	1	0	1	11:40 AM	0	0	0	0	0	11:40 AM	0	0	0	0	0
11:45 AM	0	0	0	0	0	11:45 AM	0	0	0	0	0	11:45 AM	2	2	0	0	4
11:50 AM	1	0	3	0	4	11:50 AM	0	0	0	0	0	11:50 AM	0	0	0	0	0
11:55 AM	1	0	1	0	2	11:55 AM	0	0	0	0	0	11:55 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0	12:00 PM	0	0	0	0	0	12:00 PM	0	0	0	0	0
12:05 PM	0	0	0	1	1	12:05 PM	0	0	0	0	0	12:05 PM	0	0	0	0	0
12:10 PM	1	0	0	0	1	12:10 PM	0	0	0	0	0	12:10 PM	0	0	0	0	0
12:15 PM	2	0	0	0	2	12:15 PM	0	0	0	0	0	12:15 PM	0	0	0	0	0
12:20 PM	1	1	0	0	2	12:20 PM	0	0	0	0	0	12:20 PM	0	0	0	0	0
12:25 PM	0	0	1	0	1	12:25 PM	0	0	0	0	0	12:25 PM	0	1	0	0	1
12:30 PM	1	0	2	1	4	12:30 PM	0	0	0	0	0	12:30 PM	0	0	0	0	0
12:35 PM	1	0	0	0	1	12:35 PM	0	0	0	0	0	12:35 PM	0	0	0	0	0
12:40 PM	1	1	0	0	2	12:40 PM	0	0	0	0	0	12:40 PM	0	0	1	0	1
12:45 PM	1	0	1	0	2	12:45 PM	0	0	0	0	0	12:45 PM	0	0	0	0	0
12:50 PM	0	0	0	0	0	12:50 PM	0	0	0	0	0	12:50 PM	0	0	0	0	0
12:55 PM	0	0	2	0	2	12:55 PM	0	0	0	0	0	12:55 PM	0	1	0	0	1
Count Total	16	3	17	2	38	Count Total	0	0	0	0	0	Count Total	2	7	3	0	12
Peak Hour	8	2	6	2	18	Peak Hour	0	0	0	0	0	Peak Hour	0	2	1	0	3

Location: 2 SE 142nd Ave & SE Wenzel Dr Noon

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
11:00 AM	0	0	0	0	0	11:00 AM	0	0	0	0	0	11:00 AM	0	0	0	0	0
11:05 AM	0	1	0	1	2	11:05 AM	0	0	0	0	0	11:05 AM	0	0	0	0	0
11:10 AM	0	0	0	0	0	11:10 AM	0	0	0	0	0	11:10 AM	0	0	0	0	0
11:15 AM	0	0	0	0	0	11:15 AM	0	0	0	0	0	11:15 AM	0	0	0	0	0
11:20 AM	0	0	0	0	0	11:20 AM	0	0	0	0	0	11:20 AM	0	0	0	0	0
11:25 AM	0	0	0	0	0	11:25 AM	0	0	0	0	0	11:25 AM	0	0	0	0	0
11:30 AM	0	0	0	0	0	11:30 AM	0	0	0	0	0	11:30 AM	0	0	0	0	0
11:35 AM	0	1	0	0	1	11:35 AM	0	0	0	0	0	11:35 AM	0	0	0	0	0
11:40 AM	0	0	0	0	0	11:40 AM	0	0	0	0	0	11:40 AM	0	0	0	0	0
11:45 AM	0	0	0	0	0	11:45 AM	0	0	0	0	0	11:45 AM	0	0	0	0	0
11:50 AM	0	0	0	0	0	11:50 AM	0	0	0	0	0	11:50 AM	0	0	0	0	0
11:55 AM	0	0	0	0	0	11:55 AM	0	0	0	0	0	11:55 AM	0	0	0	0	0
12:00 PM	0	0	0	0	0	12:00 PM	0	0	0	0	0	12:00 PM	0	0	0	0	0
12:05 PM	0	0	0	1	1	12:05 PM	0	0	0	0	0	12:05 PM	0	0	0	0	0
12:10 PM	0	0	0	0	0	12:10 PM	0	0	0	0	0	12:10 PM	0	0	0	0	0
12:15 PM	0	1	0	0	1	12:15 PM	0	0	0	0	0	12:15 PM	0	0	0	0	0
12:20 PM	0	1	1	0	2	12:20 PM	0	0	0	0	0	12:20 PM	0	0	0	0	0
12:25 PM	0	0	0	1	1	12:25 PM	0	0	0	0	0	12:25 PM	0	0	0	0	0
12:30 PM	0	0	0	1	1	12:30 PM	0	0	0	0	0	12:30 PM	0	0	0	0	0
12:35 PM	0	0	0	0	0	12:35 PM	0	0	0	0	0	12:35 PM	0	0	0	0	0
12:40 PM	0	1	0	0	1	12:40 PM	0	0	0	0	0	12:40 PM	0	0	0	0	0
12:45 PM	0	0	0	0	0	12:45 PM	0	0	0	0	0	12:45 PM	0	0	0	0	0
12:50 PM	0	0	0	0	0	12:50 PM	0	0	0	0	0	12:50 PM	0	0	0	0	0
12:55 PM	0	0	0	1	1	12:55 PM	0	0	0	0	0	12:55 PM	0	0	0	0	0
Count Total	0	5	1	5	11	Count Total	0	0	0	0	0	Count Total	0	0	0	0	0
Peak Hour	0	3	1	4	8	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0



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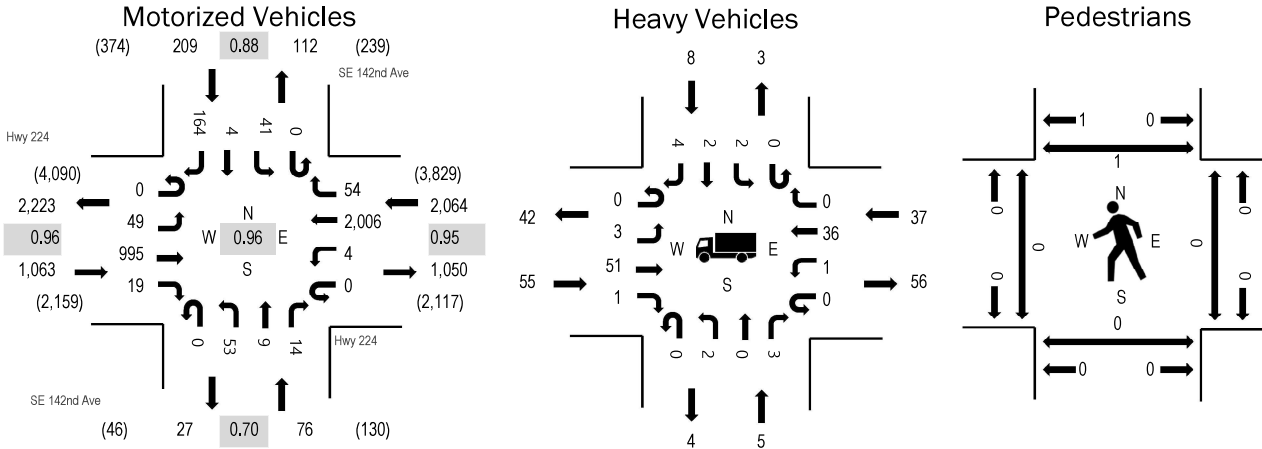
Location: 3 SE 142nd Ave & Hwy 224 AM

Date: Tuesday, November 16, 2021

Peak Hour: 07:10 AM - 08:10 AM

Peak 15-Minutes: 07:50 AM - 08:05 AM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	5.2%	0.96
WB	1.8%	0.95
NB	6.6%	0.70
SB	3.8%	0.88
All	3.1%	0.96

Traffic Counts - Motorized Vehicles

Interval Start Time	Hwy 224 Eastbound				Hwy 224 Westbound				SE 142nd Ave Northbound				SE 142nd 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	9	73	2	0	0	147	3	0	2	2	1	0	1	0	9	249	3,355
7:05 AM	0	3	68	1	0	1	175	0	0	5	1	2	0	0	0	11	267	3,396
7:10 AM	0	4	82	1	0	0	172	5	0	2	1	2	0	4	0	16	289	3,412
7:15 AM	0	2	85	1	0	0	157	4	0	6	0	1	0	3	1	5	265	3,382
7:20 AM	0	2	79	0	0	1	175	0	0	4	0	2	0	1	0	8	272	3,401
7:25 AM	0	5	78	2	0	1	187	5	0	8	2	0	0	2	0	17	307	3,402
7:30 AM	0	2	69	1	0	0	166	5	0	7	0	0	0	2	0	12	264	3,336
7:35 AM	0	4	81	2	0	0	177	5	0	0	1	0	0	2	1	13	286	3,360
7:40 AM	0	6	95	3	0	1	154	3	0	2	0	3	0	1	0	9	277	3,340
7:45 AM	0	5	76	2	0	0	162	5	0	7	0	0	0	7	1	16	281	3,342
7:50 AM	0	3	86	1	0	1	172	3	0	0	0	1	0	5	0	17	289	3,322
7:55 AM	0	5	97	2	0	0	177	5	0	5	2	2	0	1	1	12	309	3,245
8:00 AM	0	7	92	4	0	0	153	10	0	2	0	0	0	4	0	18	290	3,137
8:05 AM	0	4	75	0	0	0	154	4	0	10	3	3	0	9	0	21	283	
8:10 AM	0	3	80	0	0	1	155	5	0	0	0	1	0	3	0	11	259	
8:15 AM	0	8	83	2	0	1	158	3	0	5	1	1	0	8	0	14	284	
8:20 AM	0	2	90	1	0	0	144	5	0	4	0	2	0	7	0	18	273	
8:25 AM	0	5	86	2	0	1	128	5	0	1	0	1	0	1	0	11	241	
8:30 AM	0	9	97	2	0	1	155	2	0	4	0	0	0	4	0	14	288	
8:35 AM	0	5	81	1	0	0	146	9	0	7	0	3	0	6	1	7	266	
8:40 AM	0	10	78	0	0	0	175	4	0	3	0	0	0	0	0	9	279	
8:45 AM	0	8	111	0	0	0	126	6	0	1	1	0	0	1	0	7	261	
8:50 AM	0	4	83	1	0	0	105	2	0	2	1	1	0	4	1	8	212	
8:55 AM	0	4	84	0	0	0	95	7	0	0	0	2	0	4	0	5	201	
Count Total	0	119	2,009	31	0	9	3,715	105	0	87	15	28	0	80	6	288	6,492	
Peak Hour	0	49	995	19	0	4	2,006	54	0	53	9	14	0	41	4	164	3,412	

Location: 3 SE 142nd Ave & Hwy 224 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	6	1	3	0	10	7:00 AM	0	0	0	0	0	7:00 AM	0	0	0	0	0
7:05 AM	6	1	7	0	14	7:05 AM	0	0	0	0	0	7:05 AM	0	0	0	0	0
7:10 AM	6	1	4	1	12	7:10 AM	0	0	0	0	0	7:10 AM	0	0	0	0	0
7:15 AM	9	0	3	1	13	7:15 AM	0	0	0	0	0	7:15 AM	0	0	0	0	0
7:20 AM	1	1	5	0	7	7:20 AM	0	0	0	0	0	7:20 AM	0	0	0	0	0
7:25 AM	5	0	3	1	9	7:25 AM	0	0	0	0	0	7:25 AM	0	0	0	0	0
7:30 AM	5	0	3	0	8	7:30 AM	0	0	0	0	0	7:30 AM	0	0	0	0	0
7:35 AM	4	0	2	1	7	7:35 AM	0	0	0	0	0	7:35 AM	0	0	0	0	0
7:40 AM	4	1	3	0	8	7:40 AM	0	0	0	0	0	7:40 AM	0	0	0	0	0
7:45 AM	3	0	0	1	4	7:45 AM	0	0	0	0	0	7:45 AM	0	0	0	0	0
7:50 AM	3	0	2	0	5	7:50 AM	0	0	0	0	0	7:50 AM	0	0	0	0	0
7:55 AM	2	0	4	1	7	7:55 AM	0	0	0	0	0	7:55 AM	0	0	0	0	0
8:00 AM	8	0	4	2	14	8:00 AM	0	0	0	0	0	8:00 AM	0	0	0	0	0
8:05 AM	5	2	4	0	11	8:05 AM	0	0	0	0	0	8:05 AM	0	0	0	1	1
8:10 AM	4	0	7	0	11	8:10 AM	0	0	0	0	0	8:10 AM	0	0	0	0	0
8:15 AM	3	0	3	0	6	8:15 AM	0	0	0	0	0	8:15 AM	0	0	0	0	0
8:20 AM	4	0	3	0	7	8:20 AM	0	0	0	0	0	8:20 AM	0	0	0	0	0
8:25 AM	3	0	3	0	6	8:25 AM	0	0	0	0	0	8:25 AM	0	0	0	0	0
8:30 AM	6	0	7	0	13	8:30 AM	0	0	0	0	0	8:30 AM	0	1	0	0	1
8:35 AM	3	0	3	0	6	8:35 AM	0	0	0	0	0	8:35 AM	0	0	0	0	0
8:40 AM	3	0	5	0	8	8:40 AM	0	0	0	0	0	8:40 AM	0	0	0	1	1
8:45 AM	8	0	3	0	11	8:45 AM	0	0	0	0	0	8:45 AM	0	0	1	0	1
8:50 AM	6	0	4	0	10	8:50 AM	0	0	0	0	0	8:50 AM	0	0	0	0	0
8:55 AM	1	0	2	0	3	8:55 AM	0	0	0	0	0	8:55 AM	0	0	0	0	0
Count Total	108	7	87	8	210	Count Total	0	0	0	0	0	Count Total	0	1	1	2	4
Peak Hour	55	5	37	8	105	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	1	1



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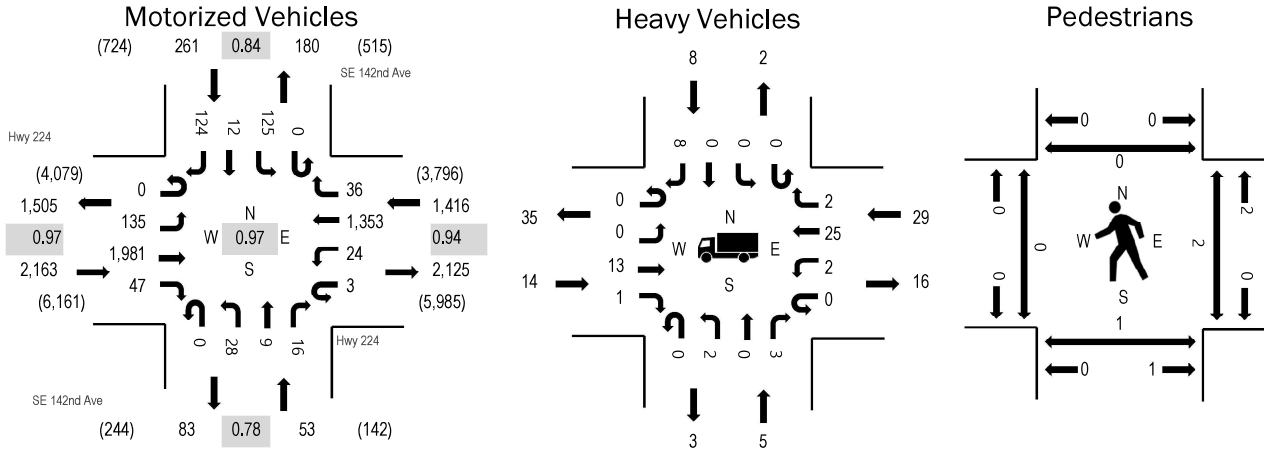
Location: 3 SE 142nd Ave & Hwy 224 PM

Date: Tuesday, November 16, 2021

Peak Hour: 04:35 PM - 05:35 PM

Peak 15-Minutes: 05:20 PM - 05:35 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.6%	0.97
WB	2.0%	0.94
NB	9.4%	0.78
SB	3.1%	0.84
All	1.4%	0.97

Traffic Counts - Motorized Vehicles

Interval Start Time	Hwy 224 Eastbound				Hwy 224 Westbound				SE 142nd Ave Northbound				SE 142nd 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		
3:30 PM	0	12	160	2	0	1	113	6	0	3	0	0	0	4	0	12	313	3,750
3:35 PM	0	6	184	3	0	1	125	2	0	2	0	1	0	11	0	12	347	3,749
3:40 PM	0	12	153	8	0	0	95	5	1	2	0	1	0	5	0	10	292	3,726
3:45 PM	0	9	154	5	0	1	122	3	0	3	2	1	0	10	2	11	323	3,794
3:50 PM	0	8	142	6	0	2	129	10	0	3	1	2	0	11	1	8	323	3,772
3:55 PM	0	20	150	4	0	0	106	1	0	3	0	1	0	7	3	12	307	3,768
4:00 PM	0	6	154	4	0	0	82	7	0	3	2	0	0	12	4	9	283	3,780
4:05 PM	0	14	177	2	0	0	118	2	0	2	0	0	0	11	0	19	345	3,782
4:10 PM	0	9	171	3	0	1	101	2	0	1	2	4	0	10	0	11	315	3,756
4:15 PM	0	9	154	6	0	0	88	2	0	0	1	3	0	16	2	11	292	3,797
4:20 PM	0	8	145	9	0	2	110	3	0	3	3	1	0	11	1	4	300	3,810
4:25 PM	0	8	168	2	1	1	110	0	0	0	0	1	0	6	1	12	310	3,840
4:30 PM	0	14	148	16	0	1	103	1	0	0	1	2	0	13	2	11	312	3,877
4:35 PM	0	5	160	2	1	0	119	2	0	3	1	3	0	21	1	6	324	3,893
4:40 PM	0	8	183	6	0	1	121	5	0	2	0	0	0	12	3	19	360	3,830
4:45 PM	0	14	140	4	0	2	105	4	0	3	2	2	0	13	0	12	301	3,836
4:50 PM	0	13	165	4	0	1	113	2	0	2	1	2	0	8	1	7	319	3,837
4:55 PM	0	7	161	6	0	0	118	5	0	4	0	0	0	8	0	10	319	3,786
5:00 PM	0	13	156	2	0	3	87	2	0	0	0	4	0	9	0	9	285	3,722
5:05 PM	0	6	172	3	0	0	112	1	0	2	0	0	0	12	1	10	319	3,699
5:10 PM	0	8	177	4	1	4	129	4	0	1	0	1	0	15	1	11	356	3,654
5:15 PM	0	11	158	8	0	2	91	4	0	1	3	2	0	11	2	12	305	3,514
5:20 PM	0	14	165	7	1	2	121	1	0	4	2	0	0	5	0	8	330	3,447
5:25 PM	0	14	172	1	0	4	133	4	0	2	0	1	0	4	3	9	347	3,339
5:30 PM	0	22	172	0	0	5	104	2	0	4	0	1	0	7	0	11	328	3,196
5:35 PM	0	11	154	5	0	1	67	4	0	0	0	0	0	13	0	6	261	
5:40 PM	0	8	181	3	0	0	150	1	0	3	2	1	0	6	2	9	366	
5:45 PM	0	11	178	4	0	1	90	2	0	2	0	0	0	5	1	8	302	

Location: 3 SE 142nd Ave & Hwy 224 PM

5:50 PM	0	14	145	6	0	2	73	2	0	2	0	1	0	10	4	9	268
5:55 PM	0	14	130	3	0	2	84	3	0	2	1	0	0	5	1	10	255
6:00 PM	0	7	139	1	0	0	91	0	0	2	1	1	0	6	2	12	262
6:05 PM	0	19	158	5	0	0	64	2	0	4	1	1	0	12	1	7	274
6:10 PM	0	3	107	3	0	1	83	5	0	0	0	1	0	4	2	7	216
6:15 PM	0	11	140	3	0	0	78	0	0	1	1	0	0	1	0	3	238
6:20 PM	0	13	119	6	0	2	62	1	0	1	0	0	0	7	0	11	222
6:25 PM	0	5	126	1	0	0	51	1	0	5	1	0	0	4	2	8	204
Count Total	0	386	5,618	157	4	43	3,648	101	1	75	28	38	0	325	43	356	10,823
Peak Hour	0	135	1,981	47	3	24	1,353	36	0	28	9	16	0	125	12	124	3,893

Location: 3 SE 142nd Ave & Hwy 224 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
3:30 PM	4	0	8	2	14	3:30 PM	0	0	0	0	0	3:30 PM	0	0	0	0	0
3:35 PM	3	0	2	0	5	3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0
3:40 PM	0	0	3	0	3	3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0
3:45 PM	6	0	5	0	11	3:45 PM	1	0	0	0	1	3:45 PM	0	0	0	0	0
3:50 PM	4	0	5	0	9	3:50 PM	0	0	0	0	0	3:50 PM	0	0	0	0	0
3:55 PM	2	0	6	0	8	3:55 PM	0	0	0	0	0	3:55 PM	0	0	0	1	1
4:00 PM	2	0	3	2	7	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	1	1	3	1	6	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	4	0	2	0	6	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	4	0	2	1	7	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	3	0	2	0	5	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	4	0	1	1	6	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	3	0	3	5	11	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	3	2	2	1	8	4:35 PM	0	0	0	0	0	4:35 PM	0	0	1	0	1
4:40 PM	0	0	7	4	11	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	1	0	1	0	2	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	3	0	1	0	4	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	2	1	1	0	4	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	1	0	2	0	3	5:00 PM	0	0	0	0	0	5:00 PM	0	1	1	0	2
5:05 PM	2	0	2	0	4	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	3	1	4	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	0	3	0	4	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	2	2	4	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	2	0	2	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	1	2	3	0	6	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	3	0	3	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	2	0	2	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	3	0	1	0	4	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	1	0	3	0	4	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
6:00 PM	2	0	3	0	5	6:00 PM	0	0	0	0	0	6:00 PM	0	0	0	0	0
6:05 PM	0	0	0	0	0	6:05 PM	1	0	0	0	1	6:05 PM	0	0	1	0	1
6:10 PM	1	0	2	0	3	6:10 PM	0	0	0	0	0	6:10 PM	0	0	0	0	0
6:15 PM	0	0	2	0	2	6:15 PM	0	0	0	0	0	6:15 PM	0	0	0	0	0
6:20 PM	1	0	1	0	2	6:20 PM	0	0	0	0	0	6:20 PM	0	0	0	0	0
6:25 PM	3	0	0	0	3	6:25 PM	0	0	0	0	0	6:25 PM	0	0	0	0	0
Count Total	65	6	91	20	182	Count Total	2	0	0	0	2	Count Total	0	1	3	1	5
Peak Hour	14	5	29	8	56	Peak Hour	0	0	0	0	0	Peak Hour	0	1	2	0	3



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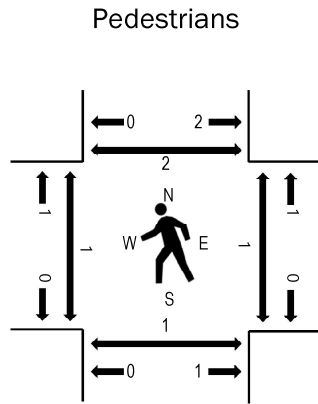
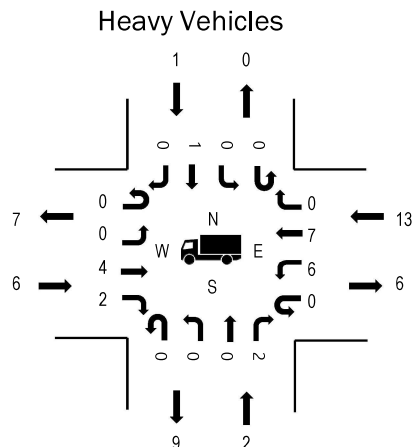
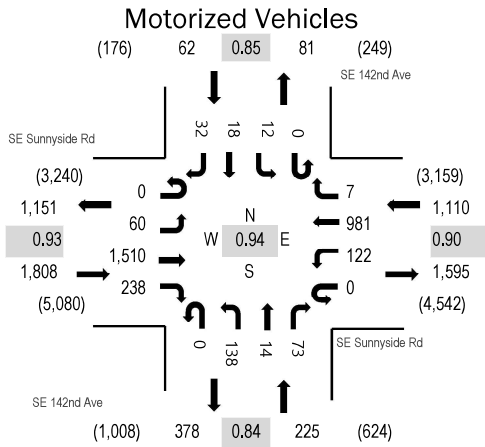
Location: 1 SE 142nd Ave & SE Sunnyside Rd PM

Date: Thursday, November 18, 2021

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

Peak 15-Minutes: 05:05 PM - 05:20 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.3%	0.93
WB	1.2%	0.90
NB	0.9%	0.84
SB	1.6%	0.85
All	0.7%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	SE Sunnyside Rd Eastbound				SE Sunnyside Rd Westbound				SE 142nd Ave Northbound				SE 142nd 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		
3:30 PM	0	4	114	14	0	9	89	1	0	11	1	7	0	2	1	1	254	3,160
3:35 PM	0	2	130	14	0	3	76	3	0	7	2	6	0	1	1	3	248	3,195
3:40 PM	0	8	130	15	0	15	91	0	0	10	0	4	0	2	2	1	278	3,179
3:45 PM	0	5	123	16	1	3	82	2	0	10	0	11	0	0	1	3	257	3,171
3:50 PM	0	2	91	14	0	8	92	0	0	5	1	0	0	1	0	3	217	3,142
3:55 PM	0	2	150	14	0	5	74	4	0	6	1	10	0	1	1	3	271	3,161
4:00 PM	0	6	100	18	0	11	72	2	0	12	1	11	0	0	3	2	238	3,160
4:05 PM	0	8	131	31	0	10	79	0	0	10	2	4	0	0	1	5	281	3,186
4:10 PM	0	2	118	21	0	15	89	1	0	10	2	6	0	1	1	1	267	3,166
4:15 PM	0	11	125	25	0	7	97	1	0	13	0	7	0	0	1	4	291	3,205
4:20 PM	0	1	133	19	0	11	94	1	0	12	0	6	0	0	2	4	283	3,197
4:25 PM	0	8	134	18	0	13	81	0	0	6	1	5	0	3	3	3	275	3,155
4:30 PM	0	7	145	22	0	9	88	1	0	8	0	6	0	1	0	2	289	3,121
4:35 PM	0	2	120	20	0	8	57	0	0	13	0	6	0	2	2	2	232	3,084
4:40 PM	0	4	112	20	0	14	94	0	0	12	3	6	0	0	0	5	270	3,102
4:45 PM	0	3	109	23	0	5	67	1	0	7	1	5	0	0	3	4	228	3,086
4:50 PM	0	1	111	22	0	14	62	1	0	14	0	5	0	2	2	2	236	3,091
4:55 PM	0	7	138	18	0	10	67	1	0	13	3	6	0	2	3	2	270	3,112
5:00 PM	0	7	110	15	0	15	83	1	0	16	4	9	0	1	1	2	264	3,058
5:05 PM	0	5	137	18	0	2	84	0	0	6	0	6	0	0	1	2	261	3,013
5:10 PM	0	4	136	18	0	14	107	0	0	18	2	6	0	1	0	0	306	2,964
5:15 PM	0	5	155	14	0	6	67	3	0	12	4	7	0	2	1	7	283	2,906
5:20 PM	0	2	104	18	1	14	79	2	0	13	0	4	0	1	0	3	241	2,840
5:25 PM	0	5	123	15	0	6	70	3	0	9	2	4	0	1	1	2	241	2,802
5:30 PM	0	4	126	19	1	10	71	1	0	9	0	4	0	3	1	3	252	2,758
5:35 PM	0	2	138	22	0	7	54	1	0	7	2	12	1	1	0	3	250	
5:40 PM	0	8	105	24	0	13	81	0	0	11	2	7	0	0	1	2	254	
5:45 PM	0	8	111	22	0	10	58	3	0	13	1	5	0	0	1	1	233	

Location: 1 SE 142nd Ave & SE Sunnyside Rd PM

5:50 PM	0	1	125	18	0	10	85	1	0	4	1	5	0	3	0	4	257
5:55 PM	0	8	100	8	1	8	71	0	0	5	1	11	0	0	3	0	216
6:00 PM	0	4	102	14	0	10	68	1	0	13	0	1	0	2	1	3	219
6:05 PM	0	4	92	20	0	10	69	0	0	7	0	6	0	3	0	1	212
6:10 PM	0	5	124	14	0	8	75	0	0	15	0	3	0	0	0	4	248
6:15 PM	0	9	96	8	0	9	70	2	0	6	1	8	0	0	4	4	217
6:20 PM	0	3	91	7	0	5	75	0	0	9	3	8	0	0	0	2	203
6:25 PM	1	2	93	10	1	9	62	1	0	12	0	2	0	0	2	2	197
Count Total	1	169	4,282	628	5	336	2,780	38	0	364	41	219	1	36	44	95	9,039
Peak Hour	0	60	1,510	238	0	122	981	7	0	138	14	73	0	12	18	32	3,205

Location: 1 SE 142nd Ave & SE Sunnyside Rd 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
3:30 PM	1	0	4	0	5	3:30 PM	0	0	0	0	0	3:30 PM	0	1	0	0	1
3:35 PM	1	2	3	0	6	3:35 PM	0	0	0	0	0	3:35 PM	0	0	0	0	0
3:40 PM	1	0	1	0	2	3:40 PM	0	0	0	0	0	3:40 PM	0	0	0	0	0
3:45 PM	0	0	1	1	2	3:45 PM	0	0	0	0	0	3:45 PM	0	0	0	0	0
3:50 PM	3	0	0	0	3	3:50 PM	0	0	0	0	0	3:50 PM	0	0	0	0	0
3:55 PM	1	0	0	0	1	3:55 PM	1	0	0	0	1	3:55 PM	0	0	0	0	0
4:00 PM	0	0	4	0	4	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	1	1
4:10 PM	0	0	1	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	0	1	0	1	4:15 PM	0	0	1	0	1	4:15 PM	0	0	0	1	1
4:20 PM	2	0	1	0	3	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	2	1	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	1	0	1	4:30 PM	0	0	0	0	0	4:30 PM	0	1	0	0	1
4:35 PM	0	0	2	0	2	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	1	1	2	0	4	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	1	0	1	4:45 PM	0	0	0	0	0	4:45 PM	0	0	1	0	1
4:50 PM	2	0	1	0	3	4:50 PM	0	0	0	0	0	4:50 PM	1	0	0	1	2
4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	1	0	1	5:00 PM	1	0	0	0	1	5:00 PM	0	0	0	0	0
5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	1	1	1	0	3	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	1	0	0	0	1	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	2	0	2	0	4	5:20 PM	1	0	0	0	1	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	0	0	1	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	2	0	2	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	1	0	1	5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	1	0	0	0	1	5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
6:00 PM	0	0	0	0	0	6:00 PM	0	0	0	0	0	6:00 PM	0	0	0	0	0
6:05 PM	0	0	1	0	1	6:05 PM	0	0	0	0	0	6:05 PM	0	0	0	0	0
6:10 PM	1	0	0	0	1	6:10 PM	0	0	0	0	0	6:10 PM	0	0	0	0	0
6:15 PM	1	0	0	0	1	6:15 PM	0	0	0	0	0	6:15 PM	0	0	0	0	0
6:20 PM	1	0	0	0	1	6:20 PM	0	0	0	0	0	6:20 PM	0	0	0	0	0
6:25 PM	0	0	0	0	0	6:25 PM	0	0	0	0	0	6:25 PM	0	0	0	0	0
Count Total	20	4	33	3	60	Count Total	3	0	1	0	4	Count Total	1	2	1	3	7
Peak Hour	6	2	13	1	22	Peak Hour	1	0	1	0	2	Peak Hour	1	1	1	2	5



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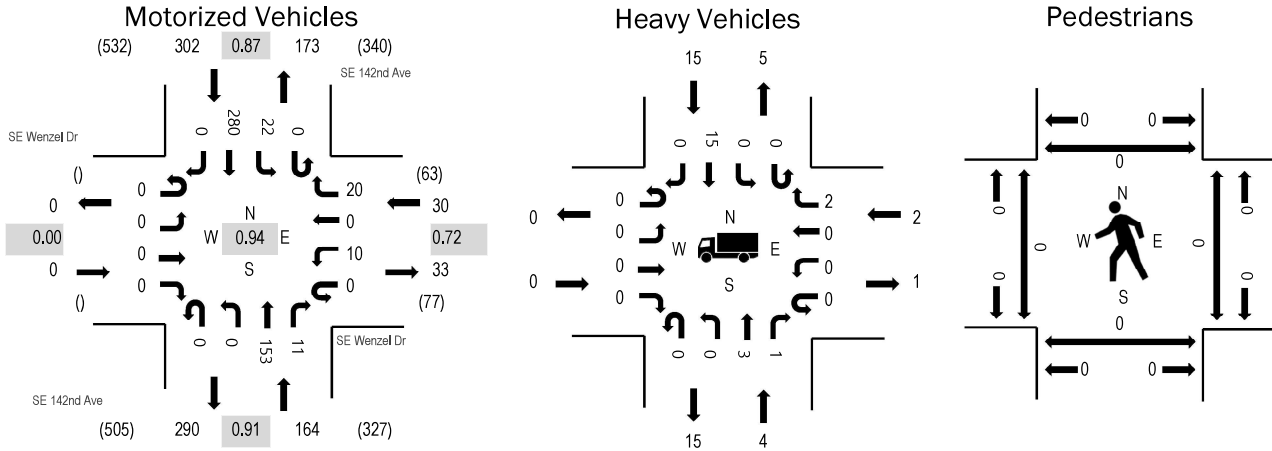
Location: 1 SE 142nd Ave & SE Wenzel Dr PM

Date: Wednesday, September 29, 2021

Peak Hour: 04:25 PM - 05:25 PM

Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour



Note: Total study counts contained in parentheses.

	HV%	PHF
EB	0.0%	0.00
WB	6.7%	0.72
NB	2.4%	0.91
SB	5.0%	0.87
All	4.2%	0.94

Traffic Counts - Motorized Vehicles

Interval Start Time	SE Wenzel Dr Eastbound				SE Wenzel Dr Westbound				SE 142nd Ave Northbound				SE 142nd 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	0	0	0	0	1	0	0	0	0	10	1	0	0	17	0	29	445
4:05 PM	0	0	0	0	0	0	0	1	0	0	11	0	0	4	17	0	33	448
4:10 PM	0	0	0	0	0	0	0	1	0	0	11	2	0	1	14	0	29	464
4:15 PM	0	0	0	0	0	0	0	1	0	0	5	3	0	1	14	0	24	465
4:20 PM	0	0	0	0	0	0	0	2	0	0	14	1	0	1	21	0	39	493
4:25 PM	0	0	0	0	0	2	0	1	0	0	13	1	0	1	28	0	46	496
4:30 PM	0	0	0	0	0	0	0	0	0	0	14	2	0	3	17	0	36	484
4:35 PM	0	0	0	0	0	0	0	0	0	0	10	0	0	1	28	0	39	487
4:40 PM	0	0	0	0	0	1	0	2	0	0	12	1	0	2	20	0	38	485
4:45 PM	0	0	0	0	0	0	0	3	0	0	14	1	0	0	33	0	51	489
4:50 PM	0	0	0	0	0	0	0	0	0	0	12	0	0	3	20	0	35	478
4:55 PM	0	0	0	0	0	2	0	3	0	0	9	1	0	2	29	0	46	474
5:00 PM	0	0	0	0	0	1	0	1	0	0	11	0	0	2	17	0	32	477
5:05 PM	0	0	0	0	0	0	0	4	0	0	17	0	0	2	26	0	49	
5:10 PM	0	0	0	0	0	0	0	1	0	0	13	1	0	4	11	0	30	
5:15 PM	0	0	0	0	0	3	0	2	0	0	15	3	0	1	28	0	52	
5:20 PM	0	0	0	0	0	1	0	3	0	0	13	1	0	1	23	0	42	
5:25 PM	0	0	0	0	0	2	0	4	0	0	10	1	0	3	14	0	34	
5:30 PM	0	0	0	0	0	0	0	2	0	0	12	5	0	1	19	0	39	
5:35 PM	0	0	0	0	0	0	0	3	0	0	13	2	0	2	17	0	37	
5:40 PM	0	0	0	0	0	1	0	5	0	0	14	3	0	3	16	0	42	
5:45 PM	0	0	0	0	0	1	0	3	0	0	16	1	0	3	16	0	40	
5:50 PM	0	0	0	0	0	0	0	1	0	0	11	0	0	3	16	0	31	
5:55 PM	0	0	0	0	0	4	0	1	0	0	16	1	0	2	25	0	49	
Count Total	0	0	0	0	0	19	0	44	0	0	296	31	0	46	486	0	922	
Peak Hour	0	0	0	0	0	10	0	20	0	0	153	11	0	22	280	0	496	

Location: 1 SE 142nd Ave & SE Wenzel Dr 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	0	0	0	2	2	4:00 PM	0	0	0	0	0	4:00 PM	0	0	0	0	0
4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0	4:05 PM	0	0	0	0	0
4:10 PM	0	1	0	0	1	4:10 PM	0	0	0	0	0	4:10 PM	0	0	0	0	0
4:15 PM	0	1	0	0	1	4:15 PM	0	0	0	0	0	4:15 PM	0	0	0	0	0
4:20 PM	0	1	0	0	1	4:20 PM	0	0	0	0	0	4:20 PM	0	0	0	0	0
4:25 PM	0	0	0	3	3	4:25 PM	0	0	0	0	0	4:25 PM	0	0	0	0	0
4:30 PM	0	0	0	4	4	4:30 PM	0	0	0	0	0	4:30 PM	0	0	0	0	0
4:35 PM	0	1	0	3	4	4:35 PM	0	0	0	0	0	4:35 PM	0	0	0	0	0
4:40 PM	0	0	0	2	2	4:40 PM	0	0	0	0	0	4:40 PM	0	0	0	0	0
4:45 PM	0	0	0	2	2	4:45 PM	0	0	0	0	0	4:45 PM	0	0	0	0	0
4:50 PM	0	2	0	0	2	4:50 PM	0	0	0	0	0	4:50 PM	0	0	0	0	0
4:55 PM	0	1	1	0	2	4:55 PM	0	0	0	0	0	4:55 PM	0	0	0	0	0
5:00 PM	0	0	0	1	1	5:00 PM	0	0	0	0	0	5:00 PM	0	0	0	0	0
5:05 PM	0	0	1	0	1	5:05 PM	0	0	0	0	0	5:05 PM	0	0	0	0	0
5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0	5:10 PM	0	0	0	0	0
5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0	5:15 PM	0	0	0	0	0
5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0	5:20 PM	0	0	0	0	0
5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0	5:25 PM	0	0	0	0	0
5:30 PM	0	1	0	0	1	5:30 PM	0	0	0	0	0	5:30 PM	0	0	0	0	0
5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0	5:35 PM	0	0	0	0	0
5:40 PM	0	0	0	0	0	5:40 PM	0	0	0	0	0	5:40 PM	0	0	1	0	1
5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0	5:45 PM	0	0	0	0	0
5:50 PM	0	0	0	0	0	5:50 PM	0	0	0	0	0	5:50 PM	0	0	1	0	1
5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0	5:55 PM	0	0	0	0	0
Count Total	0	8	2	17	27	Count Total	0	0	0	0	0	Count Total	0	0	2	0	2
Peak Hour	0	4	2	15	21	Peak Hour	0	0	0	0	0	Peak Hour	0	0	0	0	0

Appendix C - Safety

Crash History Data

Preliminary Signal Warrants

Left-turn Lane Warrants



CITY OF HAPPY VALLEY, CLATSOP COUNTY

SUNNYSIDE RD at 142ND AVE, City of Happy Valley, Clackamas County, 01/01/2015 to 12/31/2019

1 - 3 of 17 Crash records shown.

SER#	INVEST	RD DFT	UNLOC?	Y N N N	D M	R J S W DATE	CLASS	CITY STREET	INT-TYPE (MEDIAN)	INT-REL	RD CHAR	CROSS	TRF SIGNAL	DRVWY	LIGHT	SVRTY	S-1STOP	CRASH	WTHR	OFFRD	RNDBT	SURF	COLL	MOVE	SPCL USE	TRLR QTY	OWNER	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE	
00935						03/15/2015	16	142ND AVE	CROSS	N	INTER	0	TRF SIGNAL	N	RAIN	N	S-1STOP	0	STRGHT	E -W	UNKN	01	DRVR	NONE	00	M	UNK	UNK	047,043,026	000	000	01,07	01,07		
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	E	0	TRF SIGNAL	N	WET	N	REAR	0	STOP	E -W	PSNGR CAR	01	DRVR	NONE	00	M	UNK	UNK	047,043,026	000	000	01,07	01,07		
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DAY	N	INJ	0	STOP	E -W	PSNGR CAR	01	DRVR	INJC	53	F	OR-Y	OR<25	000	000	011	000	00	00	
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DAY	N	INJ	0	STOP	E -W	PSNGR CAR	02	PSNG	INJC	29	F	000	000	000	000	011	000	00	00	
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DAY	N	INJ	0	STOP	E -W	PSNGR CAR	02	PSNG	INJC	29	F	000	000	000	000	011	000	00	00	
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DAY	N	INJ	0	STOP	E -W	PSNGR CAR	03	PSNG	INJC	26	F	000	000	000	000	011	000	00	00	
01543						04/05/2016	16	SE 142ND AVE	CROSS	N	INTER	0	TRF SIGNAL	N	CLR	N	S-1STOP	0	STRGHT	W -E	PRVTE	01	DRVR	INJC	46	F	OR-Y	OR<25	026	000	000	013	29		
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DRY	N	REAR	0	STOP	W -E	PSNGR CAR	01	DRVR	INJC	46	F	OR-Y	OR<25	026	000	000	000	00	00	
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DUSK	N	INJ	0	STOP	W -E	PSNGR CAR	02	PSNG	INJC	12	M	000	000	000	000	000	000	00	00	
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DRY	N	REAR	0	STOP	W -E	PSNGR CAR	02	PSNG	INJC	32	M	000	000	000	000	011	013	00	00	
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DRY	N	REAR	0	STOP	W -E	PSNGR CAR	01	DRVR	INJC	32	M	000	000	000	000	000	000	000	00	00
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DAY	N	PDO	0	STOP	W -E	UNKN	03	DRVR	NONE	00	UNK	UNK	000	000	000	000	022	000	00	00
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DAY	N	PDO	0	STOP	W -E	UNKN	01	DRVR	NONE	00	UNK	UNK	000	000	000	000	000	000	00	00
04162						09/10/2016	16	SE 142ND AVE	CROSS	N	INTER	0	TRF SIGNAL	N	CLR	N	S-1STOP	9	STRGHT	W -E	PRVTE	01	DRVR	NONE	00	UNK	UNK	000	000	000	000	000	000	00	00
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DRY	N	REAR	0	STOP	W -E	N/A	01	DRVR	NONE	00	UNK	UNK	000	000	000	000	000	000	00	00
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DAY	N	PDO	0	STOP	W -E	PSNGR CAR	01	DRVR	NONE	00	UNK	UNK	000	000	000	000	000	000	00	00
						05/29/2016	31	SUNNYSIDE RD	CROSS	0	06	0	TRF SIGNAL	N	DAY	N	PDO	0	STOP	W -E	N/A	02	DRVR	NONE	00	UNK	UNK	000	000	000	000	011	000	00	00

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OREGON... DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

SUNNYSIDE RD at 142ND AVE, City of Happy Valley, Clackamas County, 01/01/2015 to 12/31/2019
4 - 8 of 17 Crash records shown.

SER#	INVEST	RD DFT	UNLOC	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	TRLR QTY	OWNER	FROM	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE
03529	N N N	N N N	N N N	10/03/2018	16	SE 142ND AVE	INTER	CROSS	N	N	CLR	S-1STOP	01 NONE	0	STRGHT	01 DRVR	NONE	16 M	OR-Y	OR<25	026	000	00
NONE	WE	0				SUNNYSIDE RD	W	TRF SIGNAL	N	N	DRY	REAR	PRVTE	W -E									00
N	8A	45 25 29.68	-122 31				06	0			DAY	INJ	PSNGR CAR									026	026
N	45 25 29.68	-122 31	2.191										02 NONE	0	STOP	01 DRVR	NONE	16 F	OR-Y	OR<25	000	011	00
N	45 25 29.7	-122 31	2.191				06	0			DAY	PDO	PSNGR CAR									000	00
02834	N N N	N N N	N N N	08/18/2019	16	SE 142ND AVE	INTER	CROSS	N	N	CLR	S-STRGHT	01 NONE	9	STRGHT	01 DRVR	NONE	00	Unk	UNK	000	000	00
NONE	SU	0				SUNNYSIDE RD	W	TRF SIGNAL	N	N	DRY	REAR	N/A										000
N	4P	45 25 29.7	-122 31				06	0			DAY	PDO	PSNGR CAR									000	00
N	45 25 29.7	-122 31	2.191										02 NONE	9	STRGHT	01 DRVR	NONE	00	Unk	UNK	000	000	00
N	45 25 29.68	-122 31	2.191				01	0			DAMN	INJ	PSNGR CAR									000	00
04970	N N N	N N N	N N N	11/23/2015	16	142ND AVE	INTER	CROSS	N	N	UNK	O-1 L-TURN	01 NONE	0	STRGHT	01 DRVR	NONE	00	Unk	UNK	000	000	00
NONE	HO	0				SUNNYSIDE RD	CN	TRF SIGNAL	N	N	WET	TURN	PRVTE	N -S									000
N	6A	45 25 29.68	-122 31				01	0			DAMN	INJ	PSNGR CAR									000	00
N	45 25 29.68	-122 31	2.191										02 NONE	9	STRGHT	01 DRVR	NONE	00	Unk	UNK	000	000	00
N	45 25 29.68	-122 31	2.191				01	0			DAMN	INJ	PSNGR CAR									000	00
04712	N N N	N N N	N N N	11/11/2015	16	142ND AVE	INTER	CROSS	N	N	CLD	ANGL-OTH	01 NONE	0	STRGHT	01 DRVR	NONE	23 M	OTH-Y	OR<25	028,004	000	02
NONE	WE	0				SUNNYSIDE RD	CN	TRF SIGNAL	N	N	DRY	TURN	PRVTE	W -E									000
N	12P	45 25 29.68	-122 31				04	0			DAY	PDO	PSNGR CAR									000	00
N	45 25 29.68	-122 31	2.191										02 NONE	0	TURN-L	01 DRVR	NONE	41 M	OR-Y	OR<25	000	000	00
N	45 25 29.68	-122 31	2.191				04	0			DAY	PDO	PSNGR CAR									000	02
04176	N N N	N N N	N N N	09/11/2016	16	SE 142ND AVE	INTER	CROSS	N	N	CLR	O-1 L-TURN	01 NONE	9	STRGHT	01 DRVR	NONE	26 F	OR-Y	OR<25	028	000	02
NONE	SU	0				SUNNYSIDE RD	CN	TRF SIGNAL	N	N	DRY	TURN	N/A										000
N	6P	45 25 29.68	-122 31				01	0			DAY	PDO	PSNGR CAR									000	00
N	45 25 29.68	-122 31	2.191										02 NONE	9	TURN-L	01 DRVR	NONE	00	Unk	UNK	000	000	00
N	45 25 29.68	-122 31	2.191				01	0			DAY	PDO	PSNGR CAR									000	00
N	45 25 29.68	-122 31	2.191										02 NONE	9	TURN-L	01 DRVR	NONE	00	Unk	UNK	000	000	00
N	45 25 29.68	-122 31	2.191				01	0			DAY	PDO	PSNGR CAR									000	00

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OREGON... DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

SUNNYSIDE RD at 142ND AVE, City of Happy Valley, Clackamas County, 01/01/2015 to 12/31/2019
14 - 17 of 17 Crash records shown.

CITY OF HAPPY VALLEY, CLACKAMAS COUNTY

SER#	INVEST	RD DPT	UNLOC?	D C S V L K LAT	LONG	CITY STREET	CLASS	CHAS	DIST	FROM	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	TRLR QTY	OWNER	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE	
03403	N N N	N N N	17	10/03/2019		SE 142ND AVE	0				INTER	CROSS	N	N	RAIN	ANGL-OTH	01 NONE			01	DRVR	NONE	45 F	OR-Y	OR<25	000	00
NO RPT						SUNNYSIDE RD					CN	TRF SIGNAL	N	N	WET	ANGL	PRVTE								000	00	
N	8P										01	0		N	DLIT	INJ	PSNGR CAR								000	00	
N	45 25 29.71																								000	00	
N	45 25 29.71																								000	04	
04550	N N N	N N N	16	12/16/2019		SE 142ND AVE	0				INTER	CROSS	N	N	CLD	BIKE									110	04,19	
CITY	NO					SUNNYSIDE RD					CN	TRF SIGNAL	N	N	DRY	TURN											
N	5A										01	0		N	DLIT	INJ									088	04,19	
N	45 25 29.68																								000	00	
N	45 25 29.68																								000	00	
03624	N N N	N N N	16	10/16/2019		SE 142ND AVE	0				INTER	CROSS	N	N	RAIN	O-OTHER	01 NONE									02	
NO RPT						SUNNYSIDE RD					CN	TRF SIGNAL	N	N	WET	TURN	N/A									00	
N	3P										03	0		N	DAY	PDO	PSNGR CAR								000	00	
N	45 25 29.68																								000	00	
N	45 25 29.68																								000	00	
03646	N N N	N N N	16	10/17/2019		SE 142ND AVE	0				INTER	CROSS	N	N	CLR	O-OTHER	01 NONE									02	
NONE						SUNNYSIDE RD					CN	TRF SIGNAL	N	N	DRY	TURN	N/A									00	
N	3P										04	0		N	DAY	PDO	PSNGR CAR								000	00	
N	45 25 29.68																								000	00	
N	45 25 29.68																								000	00	

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CITY OF HAPPY VALLEY, CLACKAMAS COUNTY

WENZEL DR at 142ND AVE, City of Happy Valley, Clackamas County, 01/01/2015 to 12/31/2019

1 - 2 of 2 Crash records shown.

SER#	INVEST	RD DFT	UNLOC?	D C S V L K LAT	LONG	CITY STREET	RD CHAR	INT-TYPE	INT-REL	LEGS	TRAFF-	CONTL	DRVMY	LIGHT	SVRTY	VH TYPE	OWNER	TRLR QTY	SPCL USE	MOVE	FROM	PRTC	INJ	G E LICNS	PED	PH TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE		
01853	N N N	06/05/2019	17			142ND AVE	INTER	3-LEG	N	NONE	NONE	NONE	Y	CLR	FIX OBJ	01 NONE	N/A	0	TURN-L	N -E	01 DRVR	NONE	00	Unk	UNK	000	000	000	007	043	26,08			
NONE		WE	0			WENZEL DR	E	0					N	DRY	FIX	N/A	FSNGR CAR			N -E												00		
N		10P					05						N	DARK	PDO																	00		
N		45 24 54.3	-122 31										N																				00	
			2.66																															
04679	N N N	12/18/2018	17			142ND AVE	INTER	3-LEG	N	NONE	STOP SIGN	N	N	RAIN	ANGL-OTH	01 NONE	0	STRGHT															02	
NONE		TU	0			WENZEL DR	CN	0					N	WET	TURN	PRVTE				S -N													00	
N		3P					02						N	DUSK	INJ	PSNGR CAR																	00	
N		45 24 54.3	-122 31										N																				00	
			2.66																														00	
																																	02	
																																		02

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKAMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

1 - 4 of 52 Crash records shown.

SER#	P R J S W DATE	COUNTY	RDH FC	CONN#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPL USE	MOVE	FROM	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE
INVEST	E A U I C O DAY	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)		ANDBT	SUBP	COLL	TRLR QTY	OWNER													
RD DFT	E L G N H R TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCIN	LEGS	TRAF-	DRVMY	LIGHT	SVRTY	VH TYPE														
UNLOC?	D C S V L K LAT	LONG	MILEINT	FRS		(#LANES)	CONTL																		
00410	N N N N 01/22/2018	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	N	N	UNK	S-STRGHT	01 NONE	9	STRGHT												10
NONE	MO	HAPPY VALLEY	MN 0	SE CARVER RD	W		UNKNOWN	N	WET	SS-O	N/A		E -W												00
N	7P	PORTLAND UA	7.44	SE 142ND AVE	06			N	DARK	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK						00
N	45 24 37	-122 31 12.36		017100100500		(04)																			00
04571	N N N N 12/12/2018	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	N	N	CLD	S-STRGHT	01 NONE	9	STRGHT												29
NONE	WE	HAPPY VALLEY	MN 0	SE CARVER RD	W		NONE	N	DRY	REAR	N/A		W -E												00
N	4P	PORTLAND UA	7.46	SE 142ND AVE	03			N	DUSK	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK						00
N	45 24 36.83	-122 31 10.79		017100100500		(04)																			00
01871	N N N N 05/17/2015	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	N	N	CLR	ANIMAL	01 NONE	0	STRGHT												12
NONE	SU	HAPPY VALLEY	MN 0	SE CARVER RD	W		UNKNOWN	N	DRY	OTH	PRVTE		E -W												00
N	11A	PORTLAND UA	7.47	SE 142ND AVE	06			N	DAY	PDO	PSNGR CAR			01	DRVR	NONE	30	M	OR-Y						00
N	45 24 36.75	-122 31 10.03		017100100500		(04)																			00
04178	N N N N 11/22/2019	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	N	N	CLR	S-STRGHT	01 NONE	9	STRGHT												13
NONE	FR	HAPPY VALLEY	MN 0	SE CARVER RD	W		NONE	N	DRY	SS-O	N/A		E -W												00
N	5P	PORTLAND UA	7.47	SE 142ND AVE	06			N	DARK	PDO	PSNGR CAR			01	DRVR	NONE	00	Unk	UNK						00
N	45 24 36.76	-122 31 10.04		017100100500		(04)																			00
00770	N N N N 03/05/2019	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	N	N	CLR	S-1STOP	01 NONE	0	STRGHT												29
NONE	TU	HAPPY VALLEY	MN 0	SE CARVER RD	W		NONE	N	DRY	REAR	PRVTE		W -E												00
N	4P	PORTLAND UA	7.48	SE 142ND AVE	03			N	DAY	INJ	PSNGR CAR			01	DRVR	NONE	23	M	OR-Y						00
N	45 24 36.7	-122 31 9.28		017100100500		(04)																			29

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

5 - 9 of 52 Crash records shown.

SER#	P R J S W DATE	COUNTY	RD# FC	CONNH#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPL USE	TRLR QTY	OWNER	A S	FROM	MOVE	TO	SVTY	SVTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE	
NO RPT	W E	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)	TRAF-LEGS	DRY	DRY	SS-O	STRGHT	W -E	NONE	NONE	0	W -E	W -E	02 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE
N	6P	PORTLAND UA	7.48	SE 142ND AVE	04	(NONE)	(04)	N	DUSK	PDO	PSNGR CAR	00	Unk	Unk	00	Unk	Unk	01	DRVR	NONE	00	Unk	Unk	00	
N	45 24 36.68	-122 31 9.28	017100100500																						
N	06/08/2016	CLACKAMAS	1 14	SE CARVER RD	STRGHT	(NONE)	(04)	N	CLR	S-1STOP	STRGHT	W -E	NONE	NONE	0	W -E	W -E	02 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE	
N	6P	PORTLAND UA	7.52	SE 142ND AVE	03	(NONE)	(04)	N	DAY	INJ	PSNGR CAR	03	M	OR-Y	026	OR<25	01	DRVR	NONE	23	M	OR-Y	026	026	
N	45 24 36.46	-122 31 6.16	017100100500																						
N	08/30/2016	CLACKAMAS	1 14	SE CARVER RD	STRGHT	(NONE)	(04)	N	CLR	S-1STOP	STRGHT	W -E	UNKNOWN	UNKNOWN	0	W -E	W -E	02 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE	
N	5P	PORTLAND UA	7.52	SE 142ND AVE	03	(NONE)	(04)	N	DAY	INJ	PSNGR CAR	03	M	OR-Y	026	OR<25	01	DRVR	NONE	47	M	OR-Y	026	026	
N	45 24 36.46	-122 31 6.16	017100100500																						
N	12/21/2015	CLACKAMAS	1 14	SE CARVER RD	STRGHT	(NONE)	(04)	N	RAIN	S-1STOP	STRGHT	W -E	UNKNOWN	UNKNOWN	0	W -E	W -E	02 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE	01 NONE	
N	1P	PORTLAND UA	7.53	SE 142ND AVE	03	(NONE)	(04)	N	DAY	PDO	PSNGR CAR	03	M	OR-Y	026	OR<25	01	DRVR	NONE	36	M	OR-Y	026	026	
N	45 24 36.44	-122 31 5.39	017100100500																						

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171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

171: CLACKAMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

10 - 14 of 52 Crash records shown.

SER#	P R J S W DATE	COUNTY	RDH FC	CONN#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPLC USE	MOVE	FROM	TO	P#	TYPE	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE	
INVEST	E A U I C O DAY	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)	INT-REL	TRAF-	LEGS	TRAP-	OWNER	TRLR QTY	OWNER	WH TYPE	PRTC	INJ	G	E	LICNS	PED						
RD DFT	E L G N H R TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCIN			DRVWY	LIGHT	SVRTY	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR												
UNLOC#	D C S V L K LAT	LONG	MILEINT	LRS		(#LANES)	CONTL	CLR	S-STRGHT	01	NONE	9	STRGHT	W -E												
03818	N N N N N 08/12/2016	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	UNKNOWN	N	DRY	REAR	N/A	W -E	01	DRVR	NONE	00	Unk	UNK	000	000	00	00	00	00	00	
N	45 24 36.44	-122 31 5.39	7.53	SE 142ND AVE	03	(04)		N	DAY	PDO	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR												
02690	N N N N N 08/07/2019	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	NONE	N	CLD	S-1STOP	01	NONE	0	STRGHT	W -E											
N	45 24 36.45	-122 31 5.39	7.53	SE 142ND AVE	03	(04)		N	DAY	INJ	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR												
01138	N N N N N 04/01/2015	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	NONE	N	CLD	O-STRGHT	01	NONE	0	STRGHT	E -W											
N	45 24 36.44	-122 31 5.39	7.53	SE 142ND AVE	04	(04)		N	DUSK	PDO	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR												
01169	N N N N N 04/06/2018	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	UNKNOWN	N	CLR	S-1STOP	01	NONE	9	STRGHT	W -E											
N	45 24 36.44	-122 31 5.39	7.53	SE 142ND AVE	04	(04)		N	DAY	PDO	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR												
02710	N N N N N 08/03/2018	CLACKAMAS	1 14	0 SE CARVER RD	STRGHT	(NONE)	NONE	N	CLR	S-STRGHT	01	NONE	9	STRGHT	W -E											
N	45 24 36.45	-122 31 5.38	7.53	SE 142ND AVE	04	(04)		N	DAY	PDO	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR												

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171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

15 - 18 of 52 Crash records shown.

171: CLACKAMAS

15 - 18 of 52 Crash records shown.

SER#	P R J S W DATE	COUNTY	RDH FC	CONN#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPL USE	MOVE	FROM	TO	P#	TYPE	SVRTY	E X RES	LOC	ERROR	ACT EVENT	CAUSE
INVEST	E A U I C O DAY	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)	LEGS	TRAF-	DRVWY	LIGHT	SVRTY	WH TYPE	OWNER	TRLR QTY	OWNER	PRTC	INJ	G E LICNS	PED			
RD DFT	E L G N H R TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCIN	(#LANES)	CONTL	DRVWY	DRY	DRY	CLR	S-1STOP	REAR	REAR	REAR	DRY	DAY	DAY	DAY	DAY	DAY	DAY
UNLOC?	D C S V L K LAT	LONG	MILEENT	LRS	STRGHT	W	STRGHT	W	DRY	DRY	DAY	DAY	DAY	DAY	DAY	DAY	DAY	DAY	DAY	DAY	DAY	DAY
02978	N N N N 08/28/2019	CLACKAMAS	1 14	MN 0 SE CARVER RD	W	(NONE)	NONE	N	DRY	REAR	01 NONE	0	STRGHT	W-E	01	DRVR	NONE	40 M	OR-Y	026	000	00
N	WE	HAPPY VALLEY	7.55	SE 142ND AVE	03	(04)		N	DRY	REAR	02 NONE	0	STOP	W-E								
N	4P	PORTLAND UA						N	DAY	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	61 M	OR-Y	000	000	00
N	45 24 36.45	-122 31 4.17		017100100500				N	DAY	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	61 M	OR-Y	000	000	00
01837	N N N N 04/21/2016	CLACKAMAS	1 14	MN 0 SE CARVER RD	E	CROSS	TRF SIGNAL	N	DRY	REAR	01 NONE	0	STRGHT	E-W	01	DRVR	NONE	33 M	OR-Y	043,026	000	07
STATE	TH	HAPPY VALLEY	7.57	SE 142ND AVE	06	0		N	DRY	REAR	02 NONE	0	STOP	E-W	01	DRVR	NONE	50 M	OTH-Y	000	000	00
N	12P	PORTLAND UA						N	DAY	INJ	MTRCYCLE		PSNGR CAR	W-E	01	DRVR	INJC	61 M	OR-Y	000	000	00
N	45 24 36.44	-122 31 3.3		017100100500				N	DAY	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	61 M	OR-Y	000	000	00
04769	N N N N 10/15/2016	CLACKAMAS	1 14	MN 0 SE CARVER RD	E	CROSS	TRF SIGNAL	N	RAIN	S-1STOP	01 NONE	0	STRGHT	E-W	01	DRVR	NONE	17 F	OR-Y	026	000	29
COUNTY	SA	HAPPY VALLEY	7.57	SE 142ND AVE	06	0		N	WET	REAR	02 NONE	0	STOP	E-W	01	DRVR	NONE	43 M	OR-Y	000	000	00
N	6A	PORTLAND UA						N	DLIT	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	17 F	OR-Y	026	000	29
N	45 24 36.44	-122 31 3.3		017100100500				N	DLIT	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	17 F	OR-Y	026	000	29
04389	N N N N 10/21/2017	CLACKAMAS	1 14	MN 0 SE CARVER RD	E	CROSS	TRF SIGNAL	N	CLD	S-1STOP	01 NONE	0	STRGHT	E-W	01	DRVR	NONE	19 M	OR-Y	052,026,020	025	16,04,29
COUNTY	SA	HAPPY VALLEY	7.57	SE 142ND AVE	06	1		N	DRY	REAR	01 NONE	0	STRGHT	E-W	01	DRVR	NONE	19 M	OR-Y	052,026,020	025	16,04,29
N	7A	PORTLAND UA						N	DAY	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	17 F	OR-Y	000	000	00
N	45 24 36.44	-122 31 3.3		017100100500				N	DAY	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	17 F	OR-Y	000	000	00
04389	N N N N 10/21/2017	CLACKAMAS	1 14	MN 0 SE CARVER RD	E	CROSS	TRF SIGNAL	N	CLD	S-1STOP	01 NONE	0	STRGHT	E-W	01	DRVR	NONE	19 M	OR-Y	052,026,020	025	16,04,29
COUNTY	SA	HAPPY VALLEY	7.57	SE 142ND AVE	06	1		N	DRY	REAR	01 NONE	0	STRGHT	E-W	01	DRVR	NONE	19 M	OR-Y	052,026,020	025	16,04,29
N	7A	PORTLAND UA						N	DAY	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	17 F	OR-Y	000	000	00
N	45 24 36.44	-122 31 3.3		017100100500				N	DAY	INJ	PSNGR CAR		PSNGR CAR	W-E	01	DRVR	INJC	17 F	OR-Y	000	000	00

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

19 - 22 of 52 Crash records shown.

SER#	P R J S W DATE	COUNTY	RDH FC	CONN#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPLC USE	TRLR QTY	OWNER	A S	PRTC	INJ	G E LICNS	PED	ACT EVENT	CAUSE	
INVEST	E A U I C O DAY	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)	LEGS	TRAF-	DRYVY	LIGHT SVRTY	CRASH	COLL	WHTR	COLL	DRYVY	SVRTY	E X RES	LOC	ERROR		
RD DPT	E L G N H R TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCIN	(#LANES)	CONTL	TRF SIGNAL	N	RAIN	S-1STOP	REAR	WET	REAR	N	DAY	INJ	PSNGR CAR	OR<25		
UNLOC?	D C S V L K LAT	LONG	MILEINT	FRS	INTER	CROSS	TRF SIGNAL	N	RAIN	S-1STOP	REAR	WET	REAR	N	DAY	INJ	PSNGR CAR	OR<25			
05708	N N N N 12/23/2017	CLACKAMAS	1	14	INTER	CROSS	TRF SIGNAL	N	RAIN	S-1STOP	REAR	WET	REAR	N	DAY	INJ	PSNGR CAR	OR<25			
NONE	SA	HAPPY VALLEY	MN	0 SE CARVER RD	E	0															
N	8A	PORTLAND UA	7.57	SE 142ND AVE	06	0															
N	45 24 36.44	-122 31 3.3		017100100500																	
01909	N N N N 05/16/2017	CLACKAMAS	1	14	INTER	CROSS	TRF SIGNAL	N	RAIN	S-1STOP	REAR	WET	REAR	N	DAY	INJ	PSNGR CAR	OR<25			
NONE	TU	HAPPY VALLEY	MN	0 SE CARVER RD	E	0															
N	9A	PORTLAND UA	7.57	SE 142ND AVE	06	0															
N	45 24 36.44	-122 31 3.3		017100100500																	
01582	N N N N 04/27/2015	CLACKAMAS	1	14	INTER	CROSS	TRF SIGNAL	N	CLR	S-1STOP	REAR	WET	REAR	N	DAY	INJ	PSNGR CAR	OR<25			
NONE	MO	HAPPY VALLEY	MN	0 SE CARVER RD	W	0															
N	7A	PORTLAND UA	7.57	SE 142ND AVE	06	1															
N	45 24 36.44	-122 31 3.3		017100100500																	
02288	N N N N 05/21/2016	CLACKAMAS	1	14	INTER	CROSS	TRF SIGNAL	N	RAIN	S-1STOP	REAR	WET	REAR	N	DAY	INJ	PSNGR CAR	OR<25			
NONE	SA	HAPPY VALLEY	MN	0 SE CARVER RD	W	0															
N	6P	PORTLAND UA	7.57	SE 142ND AVE	06	0															
N	45 24 36.44	-122 31 3.3		017100100500																	

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKAMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

23 - 25 of 52 Crash records shown.

SER#	P R J S W DATE	COUNTY	RDH FC	CONN#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPL USE	TRLR QTY	OWNER	A S	FROM	MOVE	TO	ACT EVENT	CAUSE				
INVEST	E A U I C O DAY	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)	TRAP-	REAR	DRY	COLL	SPNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR	PSNGR CAR			
RD DPT	E L G N H R TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCIN	LEGS	CONTL	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY		
UNLOC?	D C S V L K LAT	LONG	MILEENT	LRS		(#LANES)		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	
STATE	Y N N N N N N N	CLACKAMAS	1	14	INTER	CROSS	TRF SIGNAL	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	45 24 36.44	PORTLAND UA	MN	0 SE CARVER RD	W	1		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	45 24 36.44	-122 31 3.3	7.57	SE 142ND AVE	06	1		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	45 24 36.44	017100100500	017100100500					DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
03213	N N N N 07/16/2016	CLACKAMAS	1	14	INTER	CROSS	TRF SIGNAL	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
NONE	SA	HAPPY VALLEY	MN	0 SE CARVER RD	W			DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	7P	PORTLAND UA	7.57	SE 142ND AVE	06	1		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	45 24 36.44	-122 31 3.3	017100100500					DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
00043	N N N N 01/05/2018	CLACKAMAS	1	14	INTER	CROSS	TRF SIGNAL	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
COUNTY	FR	HAPPY VALLEY	MN	0 SE CARVER RD	CN			DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	8A	PORTLAND UA	7.57	SE 142ND AVE	01	1		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	45 24 36.45	-122 31 3.32	017100100500					DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
00424	N N N N 02/04/2018	CLACKAMAS	1	14	INTER	CROSS	TRF SIGNAL	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
CITY	SU	HAPPY VALLEY	MN	0 SE CARVER RD	CN			DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	4P	PORTLAND UA	7.57	SE 142ND AVE	01	1		DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY
N	45 24 36.44	-122 31 3.3	017100100500					DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY	DRY

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

26 - 30 of 52 Crash records shown.

171: CLACKAMAS

SER#	P R J S W DATE	COUNTY	RDH FC	CONN#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPL USE	TRLR QTY	OWNER	A S	PRTC	INJ	G E	LICNS	PED	ACT EVENT	CAUSE	
INVEST	E A U I C O DAY	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)	TRF SIGNAL	N	CLR	S-OTHER	TURN-R	TURN-R	TURN-R	TURN-R	TURN-R	TURN-R	TURN-R	TURN-R	TURN-R	TURN-R	TURN-R	
RD DFT	E L G N H R TIME	URBAN AREA	MLG TYP	SECOND STREET	LOCIN	LEGS	TRAF-	DRVWY	SUBP	COLL	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	DRVWY	
UNLOC#	D C S V L K LAT	LONG	MILEPNT	LR5		(#LANES)	CONVL	CONVL	LIGHT	SVRTY	SVRTY	SVRTY	SVRTY	SVRTY	SVRTY	SVRTY	SVRTY	SVRTY	SVRTY	SVRTY	SVRTY	
03115	N N N N N 09/19/2018	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	CLR	S-OTHER	0	0	NONE	0	0	0	0	0	0	0	0	0
COUNTY	WE	HAPPY VALLEY	MN 0	SE CARVER RD	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	N -W	PRVTE	PSNGR CAR	02	PSNG	INJB	53	F		011	00
N	9A	PORTLAND UA	7.57	SE 142ND AVE	01	1		N	DAY	INJ	PSNGR CAR	01	DRVR	INJB	74	F	OR-Y		034,031	000	000	00
N	45 24 36.44	-122 31 3.29	017100100500																			00
04164	N N N N N 11/14/2018	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	CLR	ANGL-OTH	0	0	NONE	0	0	0	0	0	0	0	0	0
COUNTY	WE	HAPPY VALLEY	MN 0	SE CARVER RD	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	N -W	PRVTE	PSNGR CAR	01	DRVR	INJC	28	F	OR-Y	016	00
N	9A	PORTLAND UA	7.57	SE 142ND AVE	01	0		N	DAY	INJ	PSNGR CAR	01	DRVR	INJC	28	F	OR-Y		028	000	000	00
N	45 24 36.47	-122 31 3.28	017100100500																			00
03012	N N N N N 06/13/2019	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	CLR	ANGL-OTH	0	9	NONE	9	0	0	0	0	0	0	0	0
COUNTY	TH	HAPPY VALLEY	MN 0	SE CARVER RD	CN		TRF SIGNAL	N	DRY	TURN	N/A	N -S	N/A	PSNGR CAR	01	DRVR	NONE	00	Unk	Unk	000	00
N	6P	PORTLAND UA	7.57	SE 142ND AVE	01	0		N	DAY	PDO	PSNGR CAR	01	DRVR	NONE	00	Unk	Unk		000	000	000	00
N	45 24 36.45	-122 31 3.3	017100100500																			00
01645	N N N N N 05/20/2019	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	0	9	NONE	9	0	0	0	0	0	0	0	0
COUNTY	HO	HAPPY VALLEY	MN 0	SE CARVER RD	CN		TRF SIGNAL	N	DRY	TURN	N/A	N -S	N/A	PSNGR CAR	01	DRVR	NONE	00	Unk	Unk	000	00
N	11A	PORTLAND UA	7.57	SE 142ND AVE	01	1		N	DAY	PDO	PSNGR CAR	01	DRVR	NONE	00	Unk	Unk		000	000	000	00
N	45 24 36.44	-122 31 3.3	017100100500																			00
01498	N N N N N 05/03/2018	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	0	0	NONE	0	0	0	0	0	0	0	0	0
COUNTY	TH	HAPPY VALLEY	MN 0	SE CARVER RD	CN		TRF SIGNAL	N	DRY	TURN	PRVTE	E -W	PRVTE	PSNGR CAR	01	DRVR	NONE	26	M	OR-Y	000	00
N	6A	PORTLAND UA	7.57	SE 142ND AVE	02	0		N	DAWN	INJ	PSNGR CAR	01	DRVR	NONE	00	OR-Y		000	000	000	000	00
N	45 24 36.44	-122 31 3.31	017100100500																			00

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

31 - 35 of 52 Crash records shown.

171: CLACKAMAS

CDS380

01/26/2022

SER#	P R J S W DATE	COUNTY	RD# FC	CONN#	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPL USE	TRLR QTY	OWNER	A S	MOVE	FROM	TO	TURN-L	W -N	PRVTE	PSNGR CAR	01 DRVR	INJA	57 F	OR-Y	OR<25	028,004	000	00	02,08						
INVEST	E A I C O DAY	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)	TRF SIGNAL	N	CLR	O-1 L-TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
RD DPT	E L G N H R TIME	URBAN AREA	MILENT	SECOND STREET	LOCIN	LEGS	TRAP-	DRVWY	LIGHT	SVRTY	02 NONE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
UNLOC?	D C S V L K LAT	LONG		FIRST STREET		(#LANES)	CONVL	SVRTY	SVRTY	SVRTY	02 NONE	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
03126	N N N N	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
N	09/06/2018	HAPPY VALLEY	MN 0	SE CARVER RD	CN	1	TRF SIGNAL	N	DRY	TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
N	4P	PORTLAND UA	7.57	SE 142ND AVE	02	1		N	DAY	INJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
N	45 24 36.44	-122 31 3.3	017100100500																																	
03520	N N N N	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
N	10/02/2018	HAPPY VALLEY	MN 0	SE CARVER RD	CN	1	TRF SIGNAL	N	DRY	TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
N	6P	PORTLAND UA	7.57	SE 142ND AVE	02	1		N	DAY	INJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
N	45 24 36.45	-122 31 3.31	017100100500																																	
04858	N N N N	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	CLR	O-1 L-TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
N	12/31/2018	HAPPY VALLEY	MN 0	SE CARVER RD	CN	1	TRF SIGNAL	N	DRY	TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	10P	PORTLAND UA	7.57	SE 142ND AVE	02	1		N	DLIT	INJ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	45 24 36.44	-122 31 3.31	017100100500																																	
04944	N N N N	CLACKAMAS	1 14	SE CARVER RD	INTER	CROSS	N	N	RAIN	O-1 L-TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	11/22/2017	HAPPY VALLEY	MN 0	SE CARVER RD	CN	1	TRF SIGNAL	N	WET	TURN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	11P	PORTLAND UA	7.57	SE 142ND AVE	03	1		N	DLIT	PDO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
N	45 24 36.44	-122 31 3.3	017100100500																																	

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

36 - 39 of 52 Crash records shown.

171: CLACKAMAS

SER#	INVEST	RD DFT	UNLOC?	D C S V L K LAT	TU	10A	45 24 36.44	-122 31 3.3	CLACKAMAS	RD	FC	CONNH	RD CHAR	INT-TYPE	INT-REL	COMMENT	RD	FC	CONNH	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPCL USE	TRLR QTY	OWNER	FROM	MOVE	PRTC	INJ	G E LICNS	PED	ERRR	ACT EVENT	CAUSE														
00900	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	03/13/2018	-122 31 3.3	CLACKAMAS	HAPPY VALLEY	1	14	0	SE	CARVER RD	03	INTER	CN	03	1	CROSS	N	TRF SIGNAL	N	WET	TURN	0	PSNGR CAR	01	DRVR	INJC	33	F	OR-Y	000	000	000	02,08													
N																																																			
N																																																			
00483	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	02/06/2015	-122 31 3.3	CLACKAMAS	HAPPY VALLEY	1	14	0	SE	CARVER RD	04	INTER	CN	04	1	CROSS	N	TRF SIGNAL	N	WET	TURN	0	PSNGR CAR	01	DRVR	INJC	24	M	OTH-Y	028,004	000	000	000	02,08												
N																																																			
N																																																			
04706	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	12/21/2018	-122 31 3.3	CLACKAMAS	HAPPY VALLEY	1	14	0	SE	CARVER RD	04	INTER	CN	04	0	CROSS	N	TRF SIGNAL	N	DRY	TURN	0	PSNGR CAR	01	DRVR	INJC	23	F	OTH-Y	028	000	000	000	02												
N																																																			
N																																																			
04359	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	12/05/2019	-122 31 1.99	CLACKAMAS	HAPPY VALLEY	1	14	0	SE	CARVER RD	03	STRGHT	E	03	(NONE)	N	NONE	N	CLR	DRY	REAR	0	PSNGR CAR	01	DRVR	INJC	40	M	SUSP	016,042	000	000	000	02												
N																																																			
N																																																			
02065	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	N N N N N	05/26/2017	-122 31 2.04	CLACKAMAS	HAPPY VALLEY	1	14	0	SE	CARVER RD	05	STRGHT	E	05	(NONE)	N	UNKNOWN	N	CLR	DRY	REAR	0	PSNGR CAR	01	DRVR	INJC	31	M	OR-Y	006,092	000	000	000	00												
N																																																			
N																																																			

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CDS380
01/26/2022
OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

45 - 48 of 52 Crash records shown.

SER#	P R J S W DATE	COUNTY	CITY	RD# FC	CONNH	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPLC USE	MOVE	FROM	TO	SVRTY	E X RES	LICNS	PED	ACT EVENT	CAUSE	ERROR	SPLC USE										
																							TRLR QTY	A S	OWNER	G E							
INVEST	E A U I C O DAY	URBAN AREA	LONG	MG TYP	FIRST STREET	DIRECT	(MEDIAN)	LEGS	TRAP-	DRVWY	LIGHT	SVRTY	CRASH COLL	DRY	CLR	S-1STOP	NONE	0	STRGHT	W-E	DRVR	INJC	34 M	OR-Y	026	OR<25	011	000	000	000			
RD DFT	E L G N H R TIME	URBAN AREA	LONG	MILENT	LRS	LOCIN	(#LANES)	CONTL	UNKOWN	N	DRY	DAY	INJ	PSNGR	CAR	01	DRVR	INJC	31 M	OR-Y	000	000	000	000	000	000	000	000	000	000			
UNLOC?	D C S V L K LAT	CLACKAMAS	HAPPY VALLEY	1 14	MN 0 SE CARVER RD	E	(NONE)	(NONE)	UNKOWN	N	DRY	DAY	INJ	02	PSNGR	CAR	02	PSNG	INJC	22 M	000	011	000	000	000	000	000	000	000	000			
N	N N N N	CLACKAMAS	HAPPY VALLEY	1 14	MN 0 SE CARVER RD	E	(NONE)	(NONE)	UNKOWN	N	DRY	DAY	INJ	02	PSNGR	CAR	02	PSNG	INJC	22 M	000	011	000	000	000	000	000	000	000	000			
N	5P	PORTLAND	UA	7.79	SE 142ND AVE	03	(04)			N	DAY	INJ									01	DRVR	INJC	34 M	OR-Y	026	OR<25			29			
N	45 24 36.33	-122 30 49.23	-122 30 49.23	017100100500																													
02661	N N N N	CLACKAMAS	HAPPY VALLEY	1 14	MN 0 SE CARVER RD	E	(NONE)	(NONE)	UNKOWN	N	DRY	DAY	INJ	02	PSNGR	CAR	02	PSNG	INJC	22 M	000	011	000	000	000	000	000	000	000	000	000		
STATE	TU	HAPPY VALLEY	07/31/2018	1 14	MN 0 SE CARVER RD	E	(NONE)	(NONE)	UNKOWN	N	DRY	DAY	INJ	02	PSNGR	CAR	02	PSNG	INJC	22 M	000	011	000	000	000	000	000	000	000	000	000		
N	5P	PORTLAND	UA	7.80	SE 142ND AVE	03	(04)			N	DAY	INJ																					
N	45 24 36.28	-122 30 48.53	-122 30 48.53	017100100500																													
01799	N N N N	CLACKAMAS	HAPPY VALLEY	1 14	MN 0 SE CARVER RD	E	(NONE)	(NONE)	UNKOWN	N	DRY	DAY	INJ	02	PSNGR	CAR	02	PSNG	INJC	22 M	000	011	000	000	000	000	000	000	000	000	000		
COUNTY	FR	HAPPY VALLEY	05/25/2018	1 14	MN 0 SE CARVER RD	E	(NONE)	(NONE)	UNKOWN	N	DRY	DAY	INJ	02	PSNGR	CAR	02	PSNG	INJC	22 M	000	011	000	000	000	000	000	000	000	000	000	000	
N	4P	PORTLAND	UA	7.80	SE 142ND AVE	04	(04)			N	DAY	PDO																					
N	45 24 36.27	-122 30 48.49	-122 30 48.49	017100100500																													
02380	N N N N	CLACKAMAS	HAPPY VALLEY	1 14	MN 0 SE CARVER RD	W	(NONE)	(NONE)	UNKOWN	N	UNK	DAY	REAR	02	PSNGR	CAR	02	PSNG	INJC	22 M	000	011	000	000	000	000	000	000	000	000	000	000	
NONE	MO	HAPPY VALLEY	07/09/2018	1 14	MN 0 SE CARVER RD	W	(NONE)	(NONE)	UNKOWN	N	UNK	DAY	REAR	02	PSNGR	CAR	02	PSNG	INJC	22 M	000	011	000	000	000	000	000	000	000	000	000	000	
N	11A	PORTLAND	UA	7.81	152ND AVE	00	(04)			N	DAY	PDO																					
N	45 24 36.22	-122 30 47.8	-122 30 47.8	017100100500																													

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

171: CLACKEMAS

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
CONTINUOUS SYSTEM CRASH LISTING

Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

49 - 52 of 52 Crash records shown.

171: CLACKAMAS

CDS380

01/26/2022

SER#	P	R	J	S	W	D	M	COUNTY	RDH FC	CONNH	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	SPL USE	TRLR QTY	MOVE	FROM	TO	DRVTY	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE					
INVEST	E	A	U	I	C	O	D	CITY	COMMENT	FIRST STREET	DIRECT	(MEDIAN)	TRAP-	DRVY	LIGHT	SVRTY	OWNER	A	S	FROM	TO	DRVTY	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE					
RD DFT	E	L	G	N	H	R	T	URBAN AREA	MLG TYP	SECOND STREET	LOCIN	LEGS	CONTL	DRVY	DRY	FIX	PSNGR	INJ	G	E	LOC	DRVTY	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE					
UNLOC?	D	C	S	V	L	K	L	LONG	MILEENT	LRS		(#LANES)			CLR	OBJ	PSNGR	INJ	G	E	LOC	DRVTY	SVRTY	E	X	RES	LOC	ERROR	ACT	EVENT	CAUSE					
04774	N	N	N	N	N	N	N	CLACKAMAS	1	14	STRGHT	(NONE)	NONE	N	Y	CLR	FIX	01	NONE	9	STRGHT	NONE	NONE	00	Unk	Unk	000	000	000	079,061	16					
Y								HAPPY VALLEY	MN	0	SE CARVER RD	E	(NONE)	N	N	DRY	FIX	N/A	N/A	W	-E	01	DRVR	NONE	00	Unk	Unk	000	000	000	00	00				
N								PORTLAND UA	7.82	SE 142ND AVE	01	(04)		N	N	DUSK	PDO	PSNGR	CAR			01	DRVR	NONE	00	Unk	Unk	000	000	000	00	00				
N									45 24 36.15																											
04927	N	N	N	N	N	N	N	CLACKAMAS	1	14	STRGHT	(NONE)	NONE	N	N	RAIN	S-STRGHT	01	NONE	0	STRGHT	NONE	NONE	00	Unk	Unk	000	000	000	000	000	29				
COUNTY								HAPPY VALLEY	MN	0	CARVER RD	W	(NONE)	UNKNOWN	N	WET	REAR	PRVTE	E	-W			01	DRVR	NONE	57	F	OR-Y	042	000	000	00	00			
N								PORTLAND UA	7.88	152ND AVE	03	(04)		N	N	DUSK	INJ	PSNGR	CAR			01	DRVR	NONE	00	Unk	Unk	000	000	000	00	00				
N									45 24 35.81																											
01141	Y	N	N	N	N	N	N	CLACKAMAS	1	14	STRGHT	(NONE)	NONE	N	N	RAIN	S-1STOP	01	NONE	9	STRGHT	NONE	NONE	00	Unk	Unk	000	000	000	000	000	00	00			
COUNTY								HAPPY VALLEY	MN	0	CARVER RD	W	(NONE)	UNKNOWN	N	WET	REAR	N/A	N/A	E	-W			01	DRVR	NONE	00	Unk	Unk	000	000	000	00	00		
N								PORTLAND UA	7.89	152ND AVE	06	(04)		N	N	DARK	PDO	PSNGR	CAR			01	DRVR	NONE	00	Unk	Unk	000	000	000	000	000	00	00		
N									45 24 35.75																											
00228	N	N	N	N	N	N	N	CLACKAMAS	1	14	STRGHT	(NONE)	NONE	N	N	UNK	S-STRGHT	01	NONE	0	STRGHT	NONE	NONE	00	Unk	Unk	000	000	000	000	000	00	00			
NONE								HAPPY VALLEY	MN	0	CARVER RD	E	(NONE)	UNKNOWN	N	WET	SS-O	PRVTE	E	-W			01	DRVR	NONE	00	Unk	Unk	000	000	000	000	000	00	00	
N								PORTLAND UA	7.90	SE 142ND AVE	04	(04)		N	N	DLIT	PDO	PSNGR	CAR			01	DRVR	NONE	37	F	OR-Y	045	000	000	000	000	00	00		
N									45 24 35.69																											
00228	N	N	N	N	N	N	N	CLACKAMAS	1	14	STRGHT	(NONE)	NONE	N	N	UNK	S-STRGHT	01	NONE	0	STRGHT	NONE	NONE	00	Unk	Unk	000	000	000	000	000	000	00	00		
NONE								HAPPY VALLEY	MN	0	CARVER RD	E	(NONE)	UNKNOWN	N	WET	SS-O	PRVTE	E	-W			01	DRVR	NONE	00	Unk	Unk	000	000	000	000	000	000	00	00
N								PORTLAND UA	7.90	SE 142ND AVE	04	(04)		N	N	DLIT	PDO	PSNGR	CAR			01	DRVR	NONE	37	F	OR-Y	045	000	000	000	000	000	00	00	
N									45 24 35.69																											
00228	N	N	N	N	N	N	N	CLACKAMAS	1	14	STRGHT	(NONE)	NONE	N	N	UNK	S-STRGHT	01	NONE	0	STRGHT	NONE	NONE	00	Unk	Unk	000	000	000	000	000	000	00	00		
NONE								HAPPY VALLEY	MN	0	CARVER RD	E	(NONE)	UNKNOWN	N	WET	SS-O	PRVTE	E	-W			01	DRVR	NONE	00	Unk	Unk	000	000	000	000	000	000	00	00
N								PORTLAND UA	7.90	SE 142ND AVE	04	(04)		N	N	DLIT	PDO	PSNGR	CAR			01	DRVR	NONE	37	F	OR-Y	045	000	000	000	000	000	00	00	
N									45 24 35.69																											

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OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
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Highway 171 ALL ROAD TYPES, MP 7.41 to 7.9 01/01/2015 to 12/31/2019, Both Add and Non-Add mileage

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Traffic Signal Warrant Analysis



Project: Iseli Estates
 Date: 2/18/2022
 Scenario: Year 2024 Buildout

Major Street:	SE 142nd Avenue	Minor Street:	SE Wenzel Drive
Number of Lanes:	1	Number of Lanes:	1
PM Peak Hour Volumes:	517	PM Peak Hour Volumes:	27

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>100% Warrants</u>	<u>70% Warrants</u>	<u>100% Warrants</u>	<u>70% Warrants</u>
WARRANT 1, CONDITION A					
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
WARRANT 1, CONDITION B					
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	5,170	8,850	
Minor Street*	270	2,650	No
<i>Condition B: Interruption of Continuous Traffic</i>			
Major Street	5,170	13,300	
Minor Street*	270	1,350	No
<i>Combination Warrant</i>			
Major Street	5,170	10,640	
Minor Street*	270	2,120	No

* Minor street right-turning traffic volumes reduced by 25%

Left-Turn Lane Warrant Analysis



Project: Iseli Estates
 Intersection: Wenzel Drive at SE 142nd Avenue
 Date: 2/18/2022
 Scenario: 2024 buildout conditions MD NB

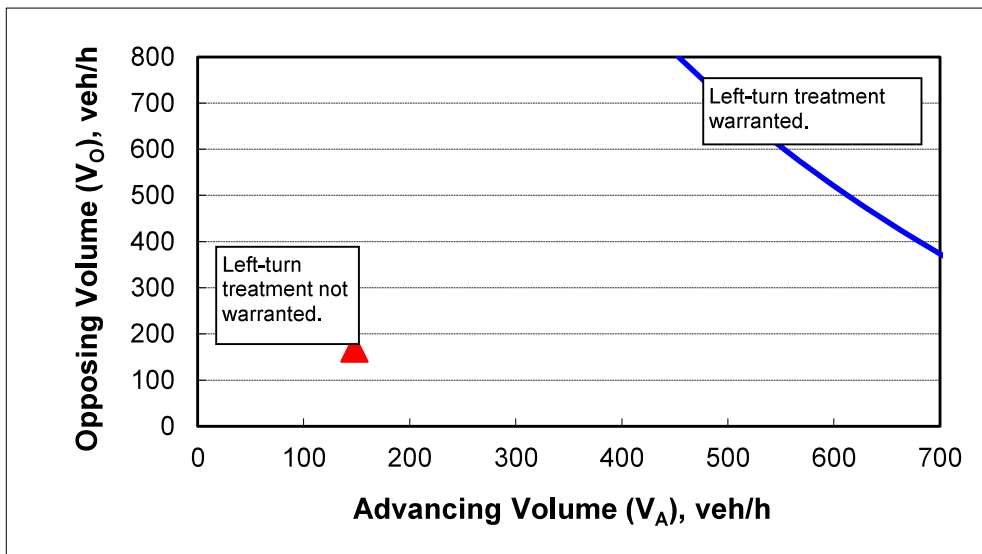
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	40
Percent of left-turns in advancing volume (V_A), %:	3%
Advancing volume (V_A), veh/h:	148
Opposing volume (V_O), veh/h:	168

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	878
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

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: Iseli Estates
 Intersection: Wenzel Drive at SE 142nd Avenue
 Date: 2/18/2022
 Scenario: 2024 buildout conditions PM NB

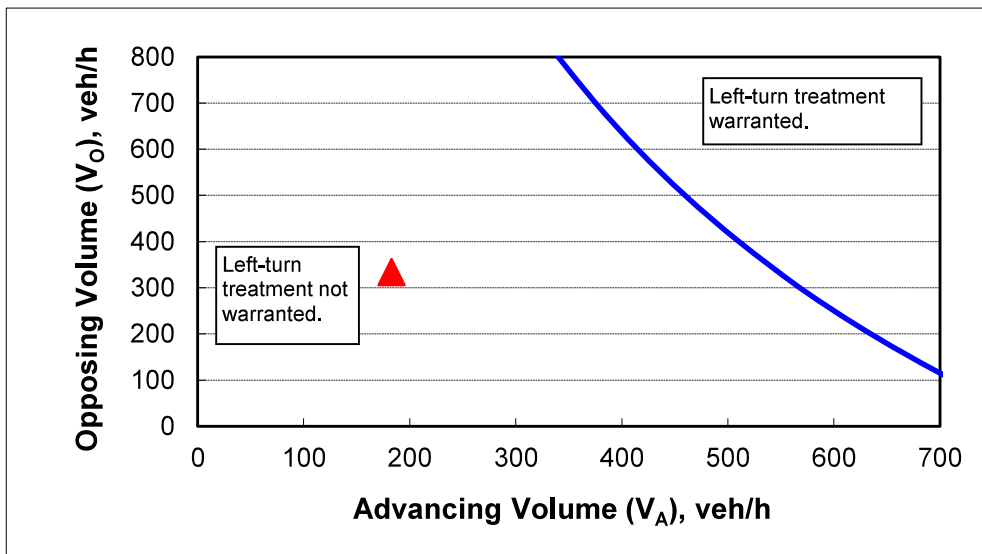
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	40
Percent of left-turns in advancing volume (V_A), %:	5%
Advancing volume (V_A), veh/h:	183
Opposing volume (V_O), veh/h:	334

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	548
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT warranted.	



CALIBRATION CONSTANTS

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

























Appendix D – Operations

Capacity Reports



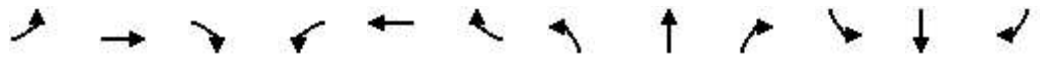
HCM 6th Signalized Intersection Summary
 3: SE 142nd Avenue & Highway 224/212

02/03/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 						 	
Traffic Volume (veh/h)	49	1093	19	4	2203	54	53	9	14	41	4	164
Future Volume (veh/h)	49	1093	19	4	2203	54	53	9	14	41	4	164
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	1796	1841	1841	1841
Adj Flow Rate, veh/h	51	1139	0	4	2295	40	55	9	3	43	4	110
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	7	4	4	4
Cap, veh/h	143	2513		362	2469	1101	155	21	243	70	21	121
Arrive On Green	0.03	0.72	0.00	0.01	0.69	0.69	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	633	136	1522	201	134	784
Grp Volume(v), veh/h	51	1139	0	4	2295	40	64	0	3	157	0	0
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	770	0	1522	1118	0	0
Q Serve(g_s), s	0.9	15.7	0.0	0.1	64.8	0.9	0.0	0.0	0.2	7.4	0.0	0.0
Cycle Q Clear(g_c), s	0.9	15.7	0.0	0.1	64.8	0.9	9.3	0.0	0.2	16.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.86		1.00	0.27		0.70
Lane Grp Cap(c), veh/h	143	2513		362	2469	1101	176	0	243	212	0	0
V/C Ratio(X)	0.36	0.45		0.01	0.93	0.04	0.36	0.00	0.01	0.74	0.00	0.00
Avail Cap(c_a), veh/h	157	2513		430	2548	1137	176	0	243	212	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	29.6	6.6	0.0	5.9	15.3	5.6	45.3	0.0	41.2	49.1	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.1	0.0	0.0	6.7	0.0	1.2	0.0	0.0	12.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	4.6	0.0	0.0	22.8	0.3	1.7	0.0	0.1	5.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.1	6.7	0.0	5.9	22.0	5.6	46.6	0.0	41.2	62.0	0.0	0.0
LnGrp LOS	C	A		A	C	A	D	A	D	E	A	A
Approach Vol, veh/h		1190	A		2339			67			157	
Approach Delay, s/veh		7.8			21.7			46.3			62.0	
Approach LOS		A			C			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	88.8		22.5	8.5	85.4		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	83.5		18.0	5.0	83.5		18.0				
Max Q Clear Time (g_c+I1), s	2.1	17.7		18.6	2.9	66.8		11.3				
Green Ext Time (p_c), s	0.0	10.0		0.0	0.0	14.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			19.4									
HCM 6th LOS			B									
Notes												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary
 1: SE 142nd Avenue & SE Sunnyside Road

02/02/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑↑	↗	↖	↑↑		↖	↗		↖	↗	
Traffic Volume (veh/h)	34	1004	116	75	859	10	147	9	67	12	11	32
Future Volume (veh/h)	34	1004	116	75	859	10	147	9	67	12	11	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	37	1091	126	82	934	11	160	10	73	13	12	35
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	394	1504	671	370	1633	19	399	38	278	365	82	240
Arrive On Green	0.04	0.42	0.42	0.07	0.45	0.45	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3554	1585	1781	3597	42	1359	195	1420	1315	421	1228
Grp Volume(v), veh/h	37	1091	126	82	461	484	160	0	83	13	0	47
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1863	1359	0	1615	1315	0	1649
Q Serve(g_s), s	0.5	11.2	2.2	1.1	8.4	8.4	4.8	0.0	1.9	0.4	0.0	1.0
Cycle Q Clear(g_c), s	0.5	11.2	2.2	1.1	8.4	8.4	5.9	0.0	1.9	2.3	0.0	1.0
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.88	1.00		0.74
Lane Grp Cap(c), veh/h	394	1504	671	370	806	845	399	0	316	365	0	323
V/C Ratio(X)	0.09	0.73	0.19	0.22	0.57	0.57	0.40	0.00	0.26	0.04	0.00	0.15
Avail Cap(c_a), veh/h	524	1831	816	446	915	960	724	0	702	680	0	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.0	10.5	7.9	7.6	8.8	8.8	17.0	0.0	14.9	15.9	0.0	14.5
Incr Delay (d2), s/veh	0.1	1.1	0.1	0.3	0.7	0.6	0.7	0.0	0.4	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	3.5	0.6	0.3	2.5	2.6	1.4	0.0	0.6	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.1	11.6	8.0	7.9	9.5	9.4	17.6	0.0	15.3	15.9	0.0	14.7
LnGrp LOS	A	B	A	A	A	A	B	A	B	B	A	B
Approach Vol, veh/h		1254			1027			243				60
Approach Delay, s/veh		11.1			9.3			16.8				15.0
Approach LOS		B			A			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.0	7.7	23.0		13.0	6.3	24.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	5.0	22.5		19.0	5.0	22.5				
Max Q Clear Time (g_c+I1), s		7.9	3.1	13.2		4.3	2.5	10.4				
Green Ext Time (p_c), s		0.7	0.0	5.3		0.2	0.0	4.8				
Intersection Summary												
HCM 6th Ctrl Delay				11.0								
HCM 6th LOS				B								

HCM 6th TWSC
2: SE 142nd Avenue & SE Wenzel Drive

02/02/2022

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	8	13	128	8	7	146
Future Vol, veh/h	8	13	128	8	7	146
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	14	139	9	8	159

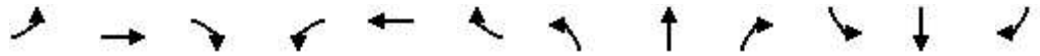
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	319	144	0	0	148
Stage 1	144	-	-	-	-
Stage 2	175	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	674	903	-	-	1434
Stage 1	883	-	-	-	-
Stage 2	855	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	670	903	-	-	1434
Mov Cap-2 Maneuver	670	-	-	-	-
Stage 1	878	-	-	-	-
Stage 2	855	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	797	1434
HCM Lane V/C Ratio	-	-	0.029	0.005
HCM Control Delay (s)	-	-	9.7	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th Signalized Intersection Summary
 1: SE 142nd Avenue & SE Sunnyside Road

02/03/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1510	238	122	981	7	138	14	73	12	18	32
Future Volume (veh/h)	60	1510	238	122	981	7	138	14	73	12	18	32
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	64	1606	225	130	1044	6	147	15	69	13	19	31
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	422	1997	890	284	2081	12	309	50	230	276	109	178
Arrive On Green	0.05	0.55	0.55	0.07	0.57	0.57	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1810	3610	1609	1795	3651	21	1362	292	1345	1310	638	1041
Grp Volume(v), veh/h	64	1606	225	130	512	538	147	0	84	13	0	50
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1795	1791	1881	1362	0	1637	1310	0	1679
Q Serve(g_s), s	0.9	23.4	4.8	1.9	11.3	11.3	6.8	0.0	2.9	0.6	0.0	1.7
Cycle Q Clear(g_c), s	0.9	23.4	4.8	1.9	11.3	11.3	8.4	0.0	2.9	3.5	0.0	1.7
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.82	1.00		0.62
Lane Grp Cap(c), veh/h	422	1997	890	284	1021	1072	309	0	280	276	0	288
V/C Ratio(X)	0.15	0.80	0.25	0.46	0.50	0.50	0.48	0.00	0.30	0.05	0.00	0.17
Avail Cap(c_a), veh/h	474	2289	1020	327	1157	1216	469	0	473	430	0	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.2	11.8	7.6	12.6	8.5	8.5	26.8	0.0	23.7	25.2	0.0	23.2
Incr Delay (d2), s/veh	0.2	1.9	0.1	1.1	0.4	0.4	1.1	0.0	0.6	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	7.4	1.3	0.9	3.3	3.5	2.1	0.0	1.1	0.2	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.3	13.7	7.7	13.7	8.9	8.8	27.9	0.0	24.3	25.3	0.0	23.4
LnGrp LOS	A	B	A	B	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1895			1180			231				63
Approach Delay, s/veh		12.7			9.4			26.6				23.8
Approach LOS		B			A			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		15.7	9.0	40.7		15.7	7.9	41.8				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.9	6.1	41.5		18.9	5.3	42.3				
Max Q Clear Time (g_c+I1), s		10.4	3.9	25.4		5.5	2.9	13.3				
Green Ext Time (p_c), s		0.5	0.1	10.8		0.2	0.0	7.3				
Intersection Summary												
HCM 6th Ctrl Delay				12.7								
HCM 6th LOS				B								

HCM 6th TWSC
2: SE 142nd Avenue & SE Wenzel Drive

02/03/2022

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	10	20	153	11	22	280
Future Vol, veh/h	10	20	153	11	22	280
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	7	2	2	5	5
Mvmt Flow	11	21	163	12	23	298

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	513	169	0	0	175
Stage 1	169	-	-	-	-
Stage 2	344	-	-	-	-
Critical Hdwy	6.47	6.27	-	-	4.15
Critical Hdwy Stg 1	5.47	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-
Follow-up Hdwy	3.563	3.363	-	-	2.245
Pot Cap-1 Maneuver	512	862	-	-	1383
Stage 1	849	-	-	-	-
Stage 2	707	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	502	862	-	-	1383
Mov Cap-2 Maneuver	502	-	-	-	-
Stage 1	832	-	-	-	-
Stage 2	707	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	696	1383
HCM Lane V/C Ratio	-	-	0.046	0.017
HCM Control Delay (s)	-	-	10.4	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1

HCM 6th Signalized Intersection Summary
 3: SE 142nd Avenue & Highway 224/212

02/03/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘		↖	↗		↖	↗
Traffic Volume (veh/h)	135	2175	47	24	1486	38	28	9	16	125	12	124
Future Volume (veh/h)	135	2175	47	24	1486	38	28	9	16	125	12	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1767	1767	1767	1856	1856	1856
Adj Flow Rate, veh/h	139	2242	0	25	1532	9	29	9	0	129	12	105
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	9	9	9	3	3	3
Cap, veh/h	276	2481		128	2398	1068	194	53	266	183	16	116
Arrive On Green	0.04	0.69	0.00	0.02	0.67	0.67	0.18	0.18	0.00	0.18	0.18	0.18
Sat Flow, veh/h	1795	3582	1598	1781	3554	1583	809	300	1497	785	92	653
Grp Volume(v), veh/h	139	2242	0	25	1532	9	38	0	0	246	0	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1781	1777	1583	1109	0	1497	1530	0	0
Q Serve(g_s), s	3.0	65.0	0.0	0.5	31.1	0.2	0.0	0.0	0.0	16.4	0.0	0.0
Cycle Q Clear(g_c), s	3.0	65.0	0.0	0.5	31.1	0.2	3.4	0.0	0.0	19.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.76		1.00	0.52		0.43
Lane Grp Cap(c), veh/h	276	2481		128	2398	1068	247	0	266	315	0	0
V/C Ratio(X)	0.50	0.90		0.19	0.64	0.01	0.15	0.00	0.00	0.78	0.00	0.00
Avail Cap(c_a), veh/h	381	2665		158	2431	1083	299	0	326	375	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	12.0	16.0	0.0	24.1	11.7	6.7	44.0	0.0	0.0	50.6	0.0	0.0
Incr Delay (d2), s/veh	1.4	4.6	0.0	0.7	0.6	0.0	0.3	0.0	0.0	8.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	23.3	0.0	0.4	10.7	0.1	1.0	0.0	0.0	8.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.5	20.6	0.0	24.9	12.3	6.7	44.3	0.0	0.0	59.2	0.0	0.0
LnGrp LOS	B	C		C	B	A	D	A	A	E	A	A
Approach Vol, veh/h		2381	A		1566			38				246
Approach Delay, s/veh		20.2			12.5			44.3				59.2
Approach LOS		C			B			D				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.4	92.0		26.9	9.7	89.7		26.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	94.0		27.5	12.6	86.4		27.5				
Max Q Clear Time (g_c+I1), s	2.5	67.0		21.8	5.0	33.1		5.4				
Green Ext Time (p_c), s	0.0	20.5		0.6	0.2	16.4		0.1				

Intersection Summary

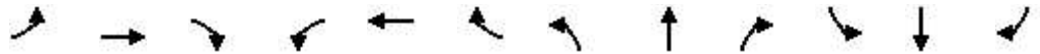
HCM 6th Ctrl Delay	19.8
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 3: SE 142nd Avenue & Highway 224/212

02/03/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗	↘	↖	↗	↘		↖	↗		↕	
Traffic Volume (veh/h)	52	1161	20	4	2341	57	56	10	15	44	4	174
Future Volume (veh/h)	52	1161	20	4	2341	57	56	10	15	44	4	174
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	1796	1841	1841	1841
Adj Flow Rate, veh/h	54	1209	0	4	2439	43	58	10	2	46	4	122
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	7	4	4	4
Cap, veh/h	127	2533		340	2489	1110	142	20	238	63	18	104
Arrive On Green	0.03	0.73	0.00	0.01	0.70	0.70	0.15	0.15	0.15	0.15	0.15	0.15
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	569	132	1522	166	116	689
Grp Volume(v), veh/h	54	1209	0	4	2439	43	68	0	2	172	0	0
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	701	0	1522	972	0	0
Q Serve(g_s), s	1.0	17.2	0.0	0.1	78.0	1.0	0.0	0.0	0.1	7.4	0.0	0.0
Cycle Q Clear(g_c), s	1.0	17.2	0.0	0.1	78.0	1.0	10.6	0.0	0.1	18.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.85		1.00	0.27		0.71
Lane Grp Cap(c), veh/h	127	2533		340	2489	1110	162	0	238	185	0	0
V/C Ratio(X)	0.42	0.48		0.01	0.98	0.04	0.42	0.00	0.01	0.93	0.00	0.00
Avail Cap(c_a), veh/h	139	2533		406	2494	1112	162	0	238	185	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	33.7	6.7	0.0	6.0	17.0	5.5	47.1	0.0	42.4	52.5	0.0	0.0
Incr Delay (d2), s/veh	2.2	0.1	0.0	0.0	13.6	0.0	1.7	0.0	0.0	45.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	5.0	0.0	0.0	29.4	0.3	1.9	0.0	0.1	7.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.9	6.8	0.0	6.0	30.7	5.5	48.8	0.0	42.4	98.4	0.0	0.0
LnGrp LOS	D	A		A	C	A	D	A	D	F	A	A
Approach Vol, veh/h		1263	A		2486			70				172
Approach Delay, s/veh		8.0			30.2			48.7				98.4
Approach LOS		A			C			D				F
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	91.4		22.5	8.7	87.8		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	83.5		18.0	5.0	83.5		18.0				
Max Q Clear Time (g_c+I1), s	2.1	19.2		20.0	3.0	80.0		12.6				
Green Ext Time (p_c), s	0.0	11.1		0.0	0.0	3.3		0.1				

Intersection Summary

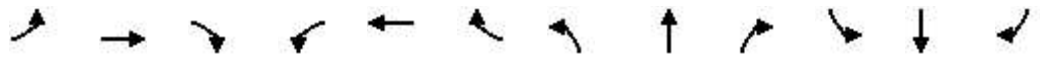
HCM 6th Ctrl Delay	26.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 1: SE 142nd Avenue & SE Sunnyside Road

02/02/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1065	123	80	912	11	156	10	71	13	12	34
Future Volume (veh/h)	36	1065	123	80	912	11	156	10	71	13	12	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	39	1158	134	87	991	12	170	11	77	14	13	37
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	376	1522	679	353	1650	20	399	41	286	363	87	247
Arrive On Green	0.04	0.43	0.43	0.07	0.46	0.46	0.20	0.20	0.20	0.20	0.20	0.20
Sat Flow, veh/h	1781	3554	1585	1781	3596	44	1355	202	1414	1309	429	1221
Grp Volume(v), veh/h	39	1158	134	87	490	513	170	0	88	14	0	50
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1863	1355	0	1616	1309	0	1651
Q Serve(g_s), s	0.5	12.6	2.4	1.2	9.4	9.4	5.4	0.0	2.1	0.4	0.0	1.1
Cycle Q Clear(g_c), s	0.5	12.6	2.4	1.2	9.4	9.4	6.5	0.0	2.1	2.5	0.0	1.1
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.88	1.00		0.74
Lane Grp Cap(c), veh/h	376	1522	679	353	815	854	399	0	327	363	0	334
V/C Ratio(X)	0.10	0.76	0.20	0.25	0.60	0.60	0.43	0.00	0.27	0.04	0.00	0.15
Avail Cap(c_a), veh/h	495	1753	782	418	876	919	688	0	673	643	0	688
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	11.1	8.1	8.1	9.2	9.2	17.6	0.0	15.3	16.4	0.0	15.0
Incr Delay (d2), s/veh	0.1	1.7	0.1	0.4	1.0	1.0	0.7	0.0	0.4	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.1	0.7	0.3	2.9	3.0	1.5	0.0	0.7	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.4	12.8	8.3	8.5	10.2	10.2	18.4	0.0	15.8	16.4	0.0	15.2
LnGrp LOS	A	B	A	A	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1331			1090			258				64
Approach Delay, s/veh		12.2			10.1			17.5				15.4
Approach LOS		B			B			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		13.7	7.8	24.0		13.7	6.4	25.4				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.0	5.0	22.5		19.0	5.0	22.5				
Max Q Clear Time (g_c+I1), s		8.5	3.2	14.6		4.5	2.5	11.4				
Green Ext Time (p_c), s		0.7	0.0	4.9		0.2	0.0	4.9				
Intersection Summary												
HCM 6th Ctrl Delay				11.9								
HCM 6th LOS				B								

HCM 6th TWSC
2: SE 142nd Avenue & SE Wenzel Drive

02/02/2022

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	14	136	8	7	155
Future Vol, veh/h	8	14	136	8	7	155
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	15	148	9	8	168

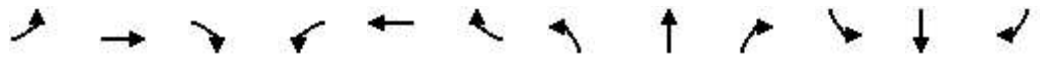
Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	337	153	0	0	157
Stage 1	153	-	-	-	-
Stage 2	184	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	658	893	-	-	1423
Stage 1	875	-	-	-	-
Stage 2	848	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	654	893	-	-	1423
Mov Cap-2 Maneuver	654	-	-	-	-
Stage 1	870	-	-	-	-
Stage 2	848	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	788	1423
HCM Lane V/C Ratio	-	-	0.03	0.005
HCM Control Delay (s)	-	-	9.7	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0

HCM 6th Signalized Intersection Summary
 1: SE 142nd Avenue & SE Sunnyside Road

02/03/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	1602	253	129	1041	7	146	15	77	13	19	34
Future Volume (veh/h)	64	1602	253	129	1041	7	146	15	77	13	19	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	68	1704	241	137	1107	6	155	16	73	14	20	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	400	2018	899	264	2095	11	309	52	238	274	112	185
Arrive On Green	0.05	0.56	0.56	0.07	0.57	0.57	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	3610	1609	1795	3653	20	1358	294	1343	1304	633	1045
Grp Volume(v), veh/h	68	1704	241	137	543	570	155	0	89	14	0	53
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1795	1791	1882	1358	0	1638	1304	0	1678
Q Serve(g_s), s	1.0	27.1	5.3	2.1	12.7	12.7	7.5	0.0	3.2	0.6	0.0	1.8
Cycle Q Clear(g_c), s	1.0	27.1	5.3	2.1	12.7	12.7	9.4	0.0	3.2	3.9	0.0	1.8
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.82	1.00		0.62
Lane Grp Cap(c), veh/h	400	2018	899	264	1027	1079	309	0	290	274	0	297
V/C Ratio(X)	0.17	0.84	0.27	0.52	0.53	0.53	0.50	0.00	0.31	0.05	0.00	0.18
Avail Cap(c_a), veh/h	449	2182	972	286	1083	1137	454	0	465	414	0	477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.5	12.6	7.9	14.4	9.0	9.0	28.0	0.0	24.6	26.3	0.0	24.0
Incr Delay (d2), s/veh	0.2	3.0	0.2	1.6	0.4	0.4	1.3	0.0	0.6	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	9.0	1.5	1.1	3.8	4.0	2.4	0.0	1.2	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.7	15.7	8.0	15.9	9.4	9.4	29.3	0.0	25.2	26.4	0.0	24.3
LnGrp LOS	A	B	A	B	A	A	C	A	C	C	A	C
Approach Vol, veh/h		2013			1250			244				67
Approach Delay, s/veh		14.5			10.1			27.8				24.7
Approach LOS		B			B			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		16.6	9.1	42.9		16.6	8.1	43.9				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5	5.5	41.5		19.5	5.5	41.5				
Max Q Clear Time (g_c+I1), s		11.4	4.1	29.1		5.9	3.0	14.7				
Green Ext Time (p_c), s		0.5	0.0	9.3		0.2	0.0	7.7				
Intersection Summary												
HCM 6th Ctrl Delay			14.0									
HCM 6th LOS			B									

HCM 6th TWSC
2: SE 142nd Avenue & SE Wenzel Drive

02/03/2022

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	11	21	162	12	23	297
Future Vol, veh/h	11	21	162	12	23	297
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	7	7	2	2	5	5
Mvmt Flow	12	22	172	13	24	316

























Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	543	179	0	0	185
Stage 1	179	-	-	-	-
Stage 2	364	-	-	-	-
Critical Hdwy	6.47	6.27	-	-	4.15
Critical Hdwy Stg 1	5.47	-	-	-	-
Critical Hdwy Stg 2	5.47	-	-	-	-
Follow-up Hdwy	3.563	3.363	-	-	2.245
Pot Cap-1 Maneuver	492	851	-	-	1372
Stage 1	840	-	-	-	-
Stage 2	692	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	482	851	-	-	1372
Mov Cap-2 Maneuver	482	-	-	-	-
Stage 1	822	-	-	-	-
Stage 2	692	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	674	1372
HCM Lane V/C Ratio	-	-	0.051	0.018
HCM Control Delay (s)	-	-	10.6	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1

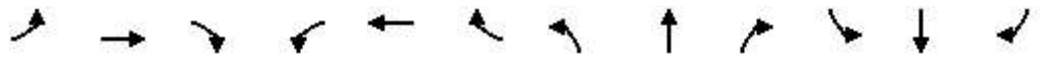
HCM 6th Signalized Intersection Summary
 3: SE 142nd Avenue & Highway 224/212

02/03/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	2311	50	25	1579	38	30	10	17	133	13	132
Future Volume (veh/h)	143	2311	50	25	1579	38	30	10	17	133	13	132
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1767	1767	1767	1856	1856	1856
Adj Flow Rate, veh/h	147	2382	0	26	1628	9	31	10	0	137	13	112
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	9	9	9	3	3	3
Cap, veh/h	251	2485		107	2400	1069	192	55	275	186	16	121
Arrive On Green	0.04	0.69	0.00	0.02	0.68	0.68	0.18	0.18	0.00	0.18	0.18	0.18
Sat Flow, veh/h	1795	3582	1598	1781	3554	1583	793	302	1497	794	84	656
Grp Volume(v), veh/h	147	2382	0	26	1628	9	41	0	0	262	0	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1781	1777	1583	1095	0	1497	1534	0	0
Q Serve(g_s), s	3.4	82.5	0.0	0.6	37.3	0.3	0.0	0.0	0.0	18.7	0.0	0.0
Cycle Q Clear(g_c), s	3.4	82.5	0.0	0.6	37.3	0.3	4.0	0.0	0.0	22.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.76		1.00	0.52		0.43
Lane Grp Cap(c), veh/h	251	2485		107	2400	1069	248	0	275	322	0	0
V/C Ratio(X)	0.58	0.96		0.24	0.68	0.01	0.17	0.00	0.00	0.81	0.00	0.00
Avail Cap(c_a), veh/h	366	2513		131	2400	1069	261	0	290	337	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.7	19.0	0.0	34.4	13.2	7.2	46.7	0.0	0.0	54.1	0.0	0.0
Incr Delay (d2), s/veh	2.2	10.0	0.0	1.2	0.8	0.0	0.3	0.0	0.0	13.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	31.9	0.0	0.6	13.3	0.1	1.2	0.0	0.0	9.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.8	29.0	0.0	35.6	14.0	7.2	47.0	0.0	0.0	67.7	0.0	0.0
LnGrp LOS	B	C		D	B	A	D	A	A	E	A	A
Approach Vol, veh/h		2529	A		1663			41			262	
Approach Delay, s/veh		28.4			14.3			47.0			67.7	
Approach LOS		C			B			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	98.6		29.4	10.1	96.1		29.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	95.2		26.3	14.3	85.9		26.3				
Max Q Clear Time (g_c+I1), s	2.6	84.5		24.7	5.4	39.3		6.0				
Green Ext Time (p_c), s	0.0	9.6		0.2	0.2	17.7		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			25.6									
HCM 6th LOS			C									
Notes												
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.												

HCM 6th Signalized Intersection Summary
 3: SE 142nd Avenue & Highway 224/212

02/18/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↗	↗		↕	
Traffic Volume (veh/h)	53	1161	20	4	2341	59	56	10	15	48	4	178
Future Volume (veh/h)	53	1161	20	4	2341	59	56	10	15	48	4	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1826	1826	1826	1870	1870	1870	1796	1796	1796	1841	1841	1841
Adj Flow Rate, veh/h	55	1209	0	4	2439	49	58	10	0	50	4	121
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	5	5	5	2	2	2	7	7	7	4	4	4
Cap, veh/h	141	2612		359	2566	1144	154	22	196	88	15	140
Arrive On Green	0.04	0.75	0.00	0.01	0.72	0.72	0.12	0.12	0.00	0.12	0.12	0.12
Sat Flow, veh/h	1739	3469	1547	1781	3554	1585	771	177	1522	387	119	1135
Grp Volume(v), veh/h	55	1209	0	4	2439	49	68	0	0	175	0	0
Grp Sat Flow(s),veh/h/ln	1739	1735	1547	1781	1777	1585	948	0	1522	1641	0	0
Q Serve(g_s), s	0.9	15.1	0.0	0.1	69.4	1.0	0.0	0.0	0.0	3.5	0.0	0.0
Cycle Q Clear(g_c), s	0.9	15.1	0.0	0.1	69.4	1.0	8.2	0.0	0.0	11.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.85		1.00	0.29		0.69
Lane Grp Cap(c), veh/h	141	2612		359	2566	1144	176	0	196	243	0	0
V/C Ratio(X)	0.39	0.46		0.01	0.95	0.04	0.39	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	154	2612		428	2602	1161	219	0	248	295	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	31.9	5.3	0.0	4.8	14.1	4.5	47.2	0.0	0.0	48.8	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.1	0.0	0.0	8.7	0.0	1.4	0.0	0.0	6.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	4.0	0.0	0.0	23.6	0.3	1.9	0.0	0.0	5.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.7	5.5	0.0	4.9	22.8	4.6	48.6	0.0	0.0	55.3	0.0	0.0
LnGrp LOS	C	A		A	C	A	D	A	A	E	A	A
Approach Vol, veh/h		1264	A		2492			68				175
Approach Delay, s/veh		6.7			22.4			48.6				55.3
Approach LOS		A			C			D				E
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	90.4		18.6	8.6	86.8		18.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	83.5		18.0	5.0	83.5		18.0				
Max Q Clear Time (g_c+I1), s	2.1	17.1		13.7	2.9	71.4		10.2				
Green Ext Time (p_c), s	0.0	11.1		0.3	0.0	10.9		0.1				

Intersection Summary

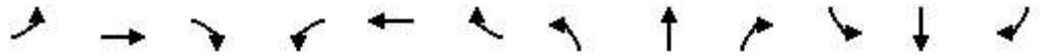
HCM 6th Ctrl Delay	19.3
HCM 6th LOS	B

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

HCM 6th Signalized Intersection Summary
 1: SE 142nd Avenue & SE Sunnyside Road

02/18/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	36	1065	126	83	912	11	159	10	75	13	12	34
Future Volume (veh/h)	36	1065	126	83	912	11	159	10	75	13	12	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1841	1841	1841
Adj Flow Rate, veh/h	38	1133	134	88	970	12	169	11	80	14	13	36
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	4	4	4
Cap, veh/h	380	1516	675	359	1648	20	407	41	296	363	89	247
Arrive On Green	0.04	0.42	0.42	0.07	0.45	0.45	0.21	0.21	0.21	0.21	0.21	0.21
Sat Flow, veh/h	1795	3582	1596	1795	3623	45	1362	196	1425	1280	430	1190
Grp Volume(v), veh/h	38	1133	134	88	479	503	169	0	91	14	0	49
Grp Sat Flow(s),veh/h/ln	1795	1791	1596	1795	1791	1877	1362	0	1621	1280	0	1620
Q Serve(g_s), s	0.5	12.2	2.4	1.2	9.1	9.1	5.3	0.0	2.2	0.4	0.0	1.1
Cycle Q Clear(g_c), s	0.5	12.2	2.4	1.2	9.1	9.1	6.4	0.0	2.2	2.6	0.0	1.1
Prop In Lane	1.00		1.00	1.00		0.02	1.00		0.88	1.00		0.73
Lane Grp Cap(c), veh/h	380	1516	675	359	815	854	407	0	337	363	0	336
V/C Ratio(X)	0.10	0.75	0.20	0.25	0.59	0.59	0.42	0.00	0.27	0.04	0.00	0.15
Avail Cap(c_a), veh/h	502	1781	793	423	890	933	685	0	668	625	0	667
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.4	11.1	8.3	8.1	9.3	9.3	17.4	0.0	15.2	16.3	0.0	14.8
Incr Delay (d2), s/veh	0.1	1.5	0.1	0.4	0.9	0.8	0.7	0.0	0.4	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	4.0	0.7	0.4	2.8	3.0	1.5	0.0	0.7	0.1	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.5	12.6	8.4	8.5	10.1	10.1	18.1	0.0	15.6	16.3	0.0	15.0
LnGrp LOS	A	B	A	A	B	B	B	A	B	B	A	B
Approach Vol, veh/h		1305			1070			260				63
Approach Delay, s/veh		12.0			10.0			17.2				15.3
Approach LOS		B			A			B				B
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		14.0	7.9	23.8		14.0	6.4	25.3				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		18.8	5.0	22.7		18.8	5.0	22.7				
Max Q Clear Time (g_c+I1), s		8.4	3.2	14.2		4.6	2.5	11.1				
Green Ext Time (p_c), s		0.7	0.0	5.1		0.2	0.0	4.9				
Intersection Summary												
HCM 6th Ctrl Delay				11.8								
HCM 6th LOS				B								

HCM 6th TWSC
2: SE 142nd Avenue & SE Wenzel Drive

02/18/2022

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	4	8	0	14	4	136	8	7	155	6
Future Vol, veh/h	7	0	4	8	0	14	4	136	8	7	155	6
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	86	86	86	86	86	86	86	86	86	86	86	86
Heavy Vehicles, %	0	0	0	5	5	5	2	2	2	3	3	3
Mvmt Flow	8	0	5	9	0	16	5	158	9	8	180	7

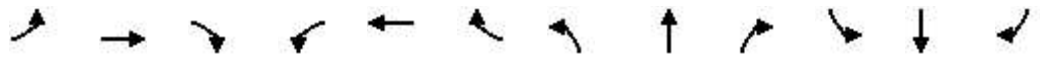
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	381	377	184	375	376	163	187	0	0	167	0	0
Stage 1	200	200	-	173	173	-	-	-	-	-	-	-
Stage 2	181	177	-	202	203	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.15	6.55	6.25	4.12	-	-	4.13	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.15	5.55	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.15	5.55	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.545	4.045	3.345	2.218	-	-	2.227	-	-
Pot Cap-1 Maneuver	581	558	864	577	551	874	1387	-	-	1405	-	-
Stage 1	806	739	-	822	750	-	-	-	-	-	-	-
Stage 2	825	756	-	793	728	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	566	552	864	569	545	874	1387	-	-	1405	-	-
Mov Cap-2 Maneuver	566	552	-	569	545	-	-	-	-	-	-	-
Stage 1	803	735	-	819	747	-	-	-	-	-	-	-
Stage 2	806	753	-	784	724	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10.7		10.1		0.2		0.3	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1387	-	-	647	731	1405	-	-
HCM Lane V/C Ratio	0.003	-	-	0.02	0.035	0.006	-	-
HCM Control Delay (s)	7.6	0	-	10.7	10.1	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

HCM 6th Signalized Intersection Summary
 1: SE 142nd Avenue & SE Sunnyside Road

02/18/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	64	1602	260	136	1041	7	150	15	81	13	19	34
Future Volume (veh/h)	64	1602	260	136	1041	7	150	15	81	13	19	34
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1900	1900	1885	1885	1885	1885	1885	1885	1870	1870	1870
Adj Flow Rate, veh/h	68	1704	249	145	1107	6	160	16	77	14	20	33
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	0	0	0	1	1	1	1	1	1	2	2	2
Cap, veh/h	398	2011	896	262	2090	11	312	51	244	274	114	188
Arrive On Green	0.05	0.56	0.56	0.07	0.57	0.57	0.18	0.18	0.18	0.18	0.18	0.18
Sat Flow, veh/h	1810	3610	1609	1795	3653	20	1358	281	1355	1300	633	1045
Grp Volume(v), veh/h	68	1704	249	145	543	570	160	0	93	14	0	53
Grp Sat Flow(s),veh/h/ln	1810	1805	1609	1795	1791	1882	1358	0	1636	1300	0	1678
Q Serve(g_s), s	1.1	27.4	5.6	2.3	12.9	12.9	7.8	0.0	3.4	0.7	0.0	1.8
Cycle Q Clear(g_c), s	1.1	27.4	5.6	2.3	12.9	12.9	9.7	0.0	3.4	4.1	0.0	1.8
Prop In Lane	1.00		1.00	1.00		0.01	1.00		0.83	1.00		0.62
Lane Grp Cap(c), veh/h	398	2011	896	262	1024	1076	312	0	295	274	0	302
V/C Ratio(X)	0.17	0.85	0.28	0.55	0.53	0.53	0.51	0.00	0.32	0.05	0.00	0.18
Avail Cap(c_a), veh/h	446	2166	965	283	1075	1129	451	0	461	406	0	473
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	6.6	12.9	8.0	14.6	9.1	9.1	28.1	0.0	24.7	26.4	0.0	24.0
Incr Delay (d2), s/veh	0.2	3.2	0.2	2.0	0.4	0.4	1.3	0.0	0.6	0.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	9.3	1.6	1.2	3.9	4.1	2.5	0.0	1.3	0.2	0.0	0.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	6.8	16.0	8.2	16.6	9.5	9.5	29.4	0.0	25.3	26.5	0.0	24.3
LnGrp LOS	A	B	A	B	A	A	C	A	C	C	A	C
Approach Vol, veh/h		2021			1258			253				67
Approach Delay, s/veh		14.8			10.3			27.9				24.7
Approach LOS		B			B			C				C
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		17.0	9.2	43.0		17.0	8.1	44.1				
Change Period (Y+Rc), s		4.5	4.5	4.5		4.5	4.5	4.5				
Max Green Setting (Gmax), s		19.5	5.5	41.5		19.5	5.5	41.5				
Max Q Clear Time (g_c+I1), s		11.7	4.3	29.4		6.1	3.1	14.9				
Green Ext Time (p_c), s		0.6	0.0	9.1		0.2	0.0	7.7				
Intersection Summary												
HCM 6th Ctrl Delay				14.3								
HCM 6th LOS				B								

HCM 6th TWSC
2: SE 142nd Avenue & SE Wenzel Drive

02/18/2022

Intersection												
Int Delay, s/veh	1.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	8	0	5	11	0	21	9	162	12	23	297	14
Future Vol, veh/h	8	0	5	11	0	21	9	162	12	23	297	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	0	5	12	0	23	10	176	13	25	323	15

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	595	590	331	586	591	183	338	0	0	189	0	0
Stage 1	381	381	-	203	203	-	-	-	-	-	-	-
Stage 2	214	209	-	383	388	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	416	420	711	422	420	859	1221	-	-	1385	-	-
Stage 1	641	613	-	799	733	-	-	-	-	-	-	-
Stage 2	788	729	-	640	609	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	396	407	711	409	407	859	1221	-	-	1385	-	-
Mov Cap-2 Maneuver	396	407	-	409	407	-	-	-	-	-	-	-
Stage 1	635	600	-	792	726	-	-	-	-	-	-	-
Stage 2	760	722	-	621	596	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12.8		11.1		0.4		0.5	
HCM LOS	B		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1221	-	-	477	623	1385	-	-
HCM Lane V/C Ratio	0.008	-	-	0.03	0.056	0.018	-	-
HCM Control Delay (s)	8	0	-	12.8	11.1	7.6	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.2	0.1	-	-

HCM 6th Signalized Intersection Summary
 3: SE 142nd Avenue & Highway 224/212

02/18/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↘	↑↑	↗	↘	↑↑	↗		↗	↗		↕	
Traffic Volume (veh/h)	147	2311	50	25	1579	43	30	10	17	135	13	135
Future Volume (veh/h)	147	2311	50	25	1579	43	30	10	17	135	13	135
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1870	1870	1870	1767	1767	1767	1856	1856	1856
Adj Flow Rate, veh/h	152	2382	0	26	1628	14	31	10	0	139	13	115
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	1	1	1	2	2	2	9	9	9	3	3	3
Cap, veh/h	251	2480		106	2391	1065	193	56	279	187	15	123
Arrive On Green	0.04	0.69	0.00	0.02	0.67	0.67	0.19	0.19	0.00	0.19	0.19	0.19
Sat Flow, veh/h	1795	3582	1598	1781	3554	1583	789	299	1497	791	82	661
Grp Volume(v), veh/h	152	2382	0	26	1628	14	41	0	0	267	0	0
Grp Sat Flow(s),veh/h/ln	1795	1791	1598	1781	1777	1583	1088	0	1497	1534	0	0
Q Serve(g_s), s	3.6	83.6	0.0	0.6	37.8	0.4	0.0	0.0	0.0	19.3	0.0	0.0
Cycle Q Clear(g_c), s	3.6	83.6	0.0	0.6	37.8	0.4	4.1	0.0	0.0	23.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.76		1.00	0.52		0.43
Lane Grp Cap(c), veh/h	251	2480		106	2391	1065	249	0	279	325	0	0
V/C Ratio(X)	0.61	0.96		0.25	0.68	0.01	0.16	0.00	0.00	0.82	0.00	0.00
Avail Cap(c_a), veh/h	373	2506		130	2391	1065	252	0	282	329	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.4	19.3	0.0	34.8	13.5	7.4	46.8	0.0	0.0	54.5	0.0	0.0
Incr Delay (d2), s/veh	2.4	10.3	0.0	1.2	0.8	0.0	0.3	0.0	0.0	15.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.3	32.5	0.0	0.6	13.6	0.1	1.2	0.0	0.0	10.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	18.8	29.6	0.0	36.0	14.3	7.4	47.1	0.0	0.0	69.5	0.0	0.0
LnGrp LOS	B	C		D	B	A	D	A	A	E	A	A
Approach Vol, veh/h		2534	A		1668			41			267	
Approach Delay, s/veh		29.0			14.6			47.1			69.5	
Approach LOS		C			B			D			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.6	99.2		29.9	10.3	96.5		29.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	95.7		25.8	15.1	85.6		25.8				
Max Q Clear Time (g_c+I1), s	2.6	85.6		25.4	5.6	39.8		6.1				
Green Ext Time (p_c), s	0.0	9.1		0.1	0.2	17.6		0.1				

Intersection Summary

HCM 6th Ctrl Delay	26.2
HCM 6th LOS	C

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.