EXHIBIT H

TRAFFIC DOCUMENTS

1. TRANSPORTATION CONCURRENCY APPLICATION
(March 23, 2021)
2. TRAFFIC IMPACT ANALASYS
GIBSON TRAFFIC CONSULTANTS (October 2019)
3. TRAFFIC IMPACT ANALYSIS ADDENDUM
Kimley-Horn and Associates (June 9, 2022)
4. LAND USE COMPREHENSIVE PLAN, TRANSPORTATION ELEMENT, FIGURE TR-3

EXHIBIT H.1
TRANSPORTATION
CONCURRENCY

City of Poulsbo

200 NE Moe Street
Poulsbo, WA 98370
(360) 779-4078

TRANSPORTATION CONCURRENCY APPLICATION

See PMC 14.04 for full Code Requirements

DATE: March 23, 2021

PROJECT: Winslow Ridge - PRD

ASSESSOR #: 092601-1-041-2005
(Tax Lot #)

LOCATION *(address/street)*: 22180 Rhododendron Lane NW

APPLICANT: MTT Holdings, LLC Phone: 206-851-9909
(Company name if applicable)

Address: 16000 Christensen Road, Suite 150

Print Name of Individual: Sharon Snook

Signature: Date: 3.23.21

OWNER: Philip J Swenson Phone:

Address: PO Box 656 Poulsbo, WA 98370

Legal status of Applicant with respect to the land:

PROJECT INFORMATION	**New Average Daily Trips (ADT)**
☐ **Short Plat** Number of Lots 86	802
☐ **Long Plat** Number of Lots	
☐ **Commercial / Multi-family / Other**	
Proposed Land Use	
Square Feet of Gross Floor Area	
Number of Dwelling Units	
Total	
Existing Land Use (credit)	
Total New Average Daily Trips	

Traffic Impact Analysis Required (>300 new ADT) ☑ Yes ☐ No

EXHIBIT H.2
TRAFFIC IMPACT ANALYSIS

Gibson Traffic Consultants, Inc.
2813 Rockefeller Avenue
Suite B
Everett, WA 98201
425.339.8266

SWENSON PLAT
Traffic Impact Analysis

Jurisdiction: City of Poulsbo

October 2019

GTC #19-165

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ATTACHMENTS

1. INTRODUCTION

Gibson Traffic Consultants, Inc. (GTC) has been retained to complete a traffic impact analysis (TIA) for the proposed Swenson Plat. The development is located on the east side of Rhododendron Lane NW, north of NW Finn Hill Road, in City of Poulsbo. The proposed development will consist of 85 single-family residential units. The site is currently undeveloped. A site vicinity map is included in Figure 1.

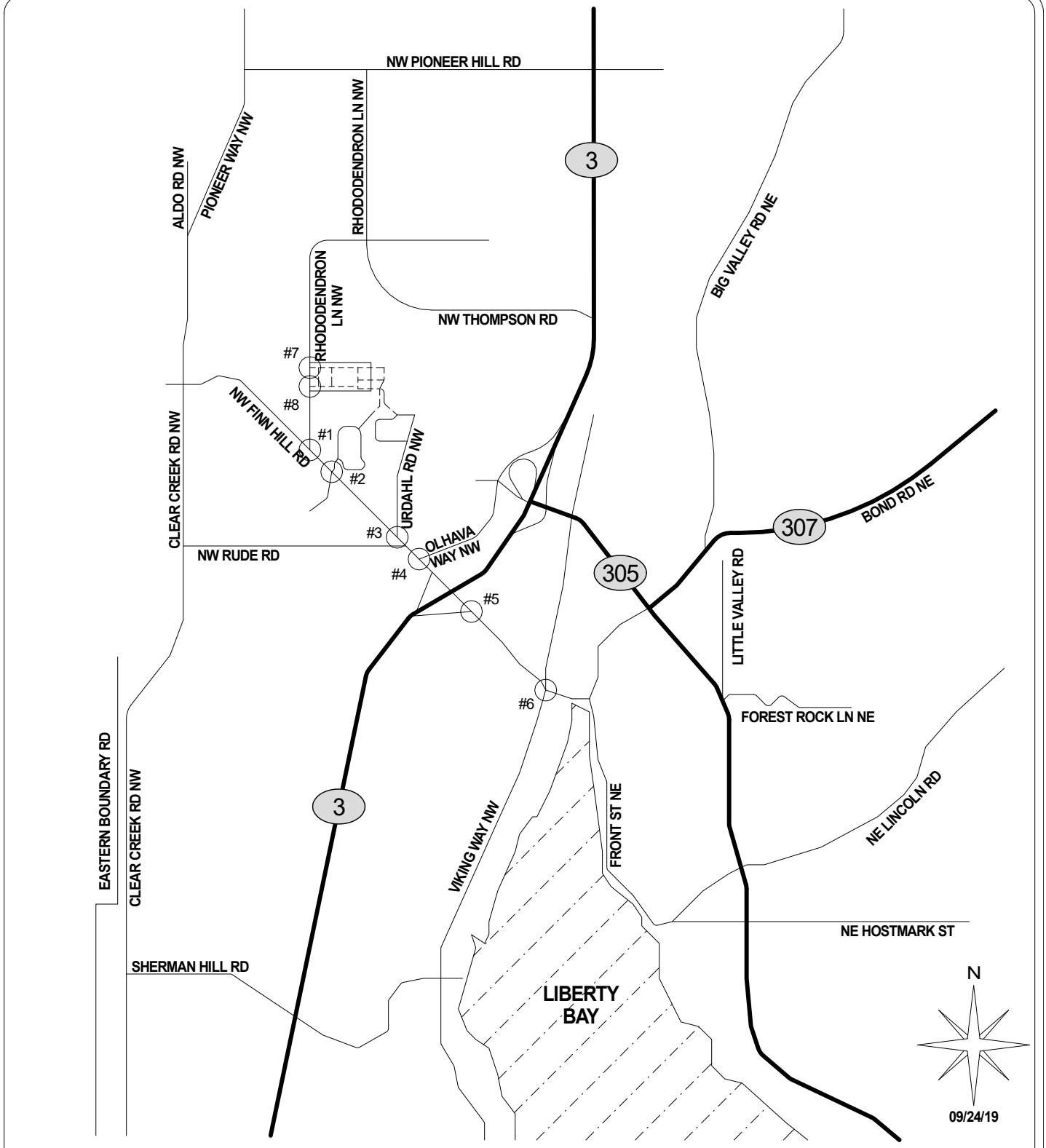
The scoping and analysis methodology for the Swenson Plat follows the City of Poulsbo's TIA Guidelines. This memorandum report summarizes GTC's traffic analysis and findings that include:

1) Proposed site development and access
2) Existing site conditions
3) Trip generation, trip distribution, and trip assignment of the development trips
4) Existing and future without development volumes and LOS
5) Future with development volumes and LOS
6) Collision Analysis
7) Mitigation fee identification

Matthew Palmer, responsible for the traffic analysis and report, is a licensed professional engineer (Civil) in the State of Washington and a current member of the Washington State section of ITE.

2. PROPOSED SITE DEVELOPMENT & ACCESS

The proposed Swenson Plat is proposing to construct 85 single-family detached residential units. The development is proposed to be located along the east side of Rhododendron Lane NW, north of NW Finn Hill Road. The development is proposing four accesses, one access to Urdahl Road NW via the Westwood Crossing development, one access to NW Finn Hill Road via the Vinland Pointe development, and two accesses to Rhododendron Lane NW. The Urdahl Road and NW Finn Hill Road accesses must first pass through the pipeline development, Spencer Plat before traveling through the Westwood Crossing and Vinland Pointe developments. The development is scheduled for occupancy in by the end of 2021. The City requires a minimum of 5-years after build-out/occupancy for the horizon year; therefore, the year 2026 has been used as the horizon year in the analysis.



GIBSON TRAFFIC CONSULTANTS

TRAFFIC IMPACT STUDY
GTC #19-165

SWENSON PLAT
85 NEW SINGLE-FAMILY DETACHED UNITS

CITY OF POULSBO

LEGEND

PROJECT SITE

FUTURE INTERNAL ROAD NETWORK

STUDY INTERSECTION

FIGURE 1
SITE VICINITY MAP

3. METHODOLOGY & ANALYSIS SCOPING

A PM peak-hour level of service (LOS) determination at the site accesses and off-site intersections is determined using the methodology described in the *Highway Capacity Manual*, *6th Edition* (HCM) and *Synchro 10.2* software developed by Trafficware. Site traffic generation estimates for the new use is based on data in the Institute of Transportation Engineers (ITE) *Trip Generation, 10th Edition* (2017). Average trip generation rates were utilized to estimate the weekday daily, AM and PM peak-hour trips.

GTC utilized a 2.0-percent annual compounded growth rate to account for background traffic growth in the site vicinity based on the City of Poulsbo Comprehensive Plan.

Poulsbo has an analysis horizon year of 5-years after full build-out and occupancy. The Swenson Plat is expected to be fully built out and occupied by 2021; therefore, a horizon year of 2026 was used.

Traffic congestion on roadways is generally measured in terms of LOS at critical intersections. In accordance with the *Highway Capacity Manual 6th Edition*, roadway facilities and intersections are rated between LOS A and F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. The LOS at signalized intersections and all-way stop-controlled intersections are based on the average stopped delay for all entering vehicles. The LOS at two-way stop-controlled intersections is based on stopped delay times for the critical approach or movement(s). Geometric characteristics and conflicting traffic movements are taken into consideration when determining LOS values. A summary of the level of service criteria has been included in Table 1. The City of Poulsbo has a concurrency level of service standard of LOS F for the study intersection of Lindvig Way/Finn Hill Road at Viking Avenue. All of the other study intersections have a concurrency level of service standard of LOS E.

Table 1: Level of Service Criteria for Intersections

Level of[1] Service	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized Intersections	**Signalized** Intersections
A	Little/No Delay	≤10	≤10
B	Short Delays	>10 and ≤15	>10 and ≤20
C	Average Delays	>15 and ≤25	>20 and ≤35
D	Long Delays	>25 and ≤35	>35 and ≤55
E	Very Long Delays	>35 and ≤50	>55 and ≤80
F	Extreme Delays[2]	>50	>80

Per scoping discussions, six intersections were identified for existing, baseline, and future with development analysis, in addition to the two access points to Rhododendron Lane:

1. Rhododendron Lane NW at NW Finn Hill Road – TWSC
2. Claret Loop NW at NW Finn Hill Road – TWSC
3. Urdahl Road NW at NW Finn Hill Road – TWSC
4. Olhava Way NW at NW Finn Hill Road – TWSC
5. SR-3 Northbound Off Ramp at NW Finn Hill Road – Signalized
6. Viking Way NW at NW Finn Hill Road/NW Lindvig Way – Signalized
7. Rhododendron Lane NW at North Site Access – TWSC
8. Rhododendron Lane NW at South Site Access – TWSC

It is important to note that the intersection of SR-3 southbound on ramp at NW Finn Hill Road was not analyzed as a part of this report due to the intersection not being signalized or having a stop-controlled approach which is required for analysis.

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[1] **Source:** *Highway Capacity Manual 6th Edition.*

LOS A: Free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).
LOS B: Generally stable traffic flow conditions.
LOS C: Occasional back-ups may develop, but delay to vehicles is short term and still tolerable.
LOS D: During short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e. vehicles delayed one cycle or less at signal).
LOS E: Intersections operate at or near capacity, with long queues developing on all approaches and long delays.
LOS F: Jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

[2] When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.

4. EXISTING CONDITIONS

4.1. Transit Service

Kitsap Transit, route 32, which travels between Poulsbo and Silverdale with busses arriving hourly from 6:30 AM until 6:20 PM during the weekday.

4.2. Road Network

NW Finn Hill Road is a 2-lane roadway and a posted speed limit of 40 mph west of Urdahl Road NW and 35 mph east of Urdahl Road NW. It is classified as a minor arterial per the City's Transportation Element. There is a paved shoulder in the site vicinity.

Urdahl Road NW is a 2-lane roadway with a posted speed limit of 25 mph. Urdahl Road NW is classified as a local roadway per the City's Transportation Element. There is curb, gutter and sidewalk along portions of the roadway that have recently been developed in the site vicinity.

Rhododendron Lane NW is a 2-lane roadway with a posted speed limit of 25 mph. Rhododendron Lane NW is classified as a local roadway per the City's Transportation Element. There is a separated sidewalk along the east side of the roadway in the site vicinity.

4.3. Collision Analysis

Collision data near the study intersections was requested from WSDOT from January 2016 through December 2018. Table 2 summarizes the data received by WSDOT.

Table 2: 3-Year Collision Data Summary

Intersection	Collision Type							Total Collisions	Collisions Per Year
	Rear-End	Entering at Angle	Opp. Dir.	Sideswipe	Same Dir.	Ped. / Cyclist	Fixed Object/ Other		
Rhododendron Ln NW at NW Finn Hill Rd	0	0	0	0	0	0	0	0	0.0
Claret Loop NW at NW Finn Hill Rd	0	0	0	0	1	0	0	1	0.3
Urdahl Rd NW at NW Finn Hill Rd	0	1	0	0	0	0	0	1	0.3
Olhava Way NW at NW Finn Hill Rd	0	1	0	0	0	0	0	1	0.3
SR-3 NB Off Ramp at NW Finn Hill Rd	2	2	1	0	0	0	0	5	1.7
Viking Way NW at NW Finn Hill Rd	4	1	0	3	1	0	0	9	3.0

It is important to note that there were no collisions along Rhododendron Lane NW from NW Finn Hill Road and the northern property boundary.

The 3-year collision rate has been calculated using PM peak-hour volumes and a K-factor of 10 for conversion to average daily traffic. The 3-year collision rates for the intersections are summarized in Table 3.

Table 3: 3-Year Collision Rate Calculation

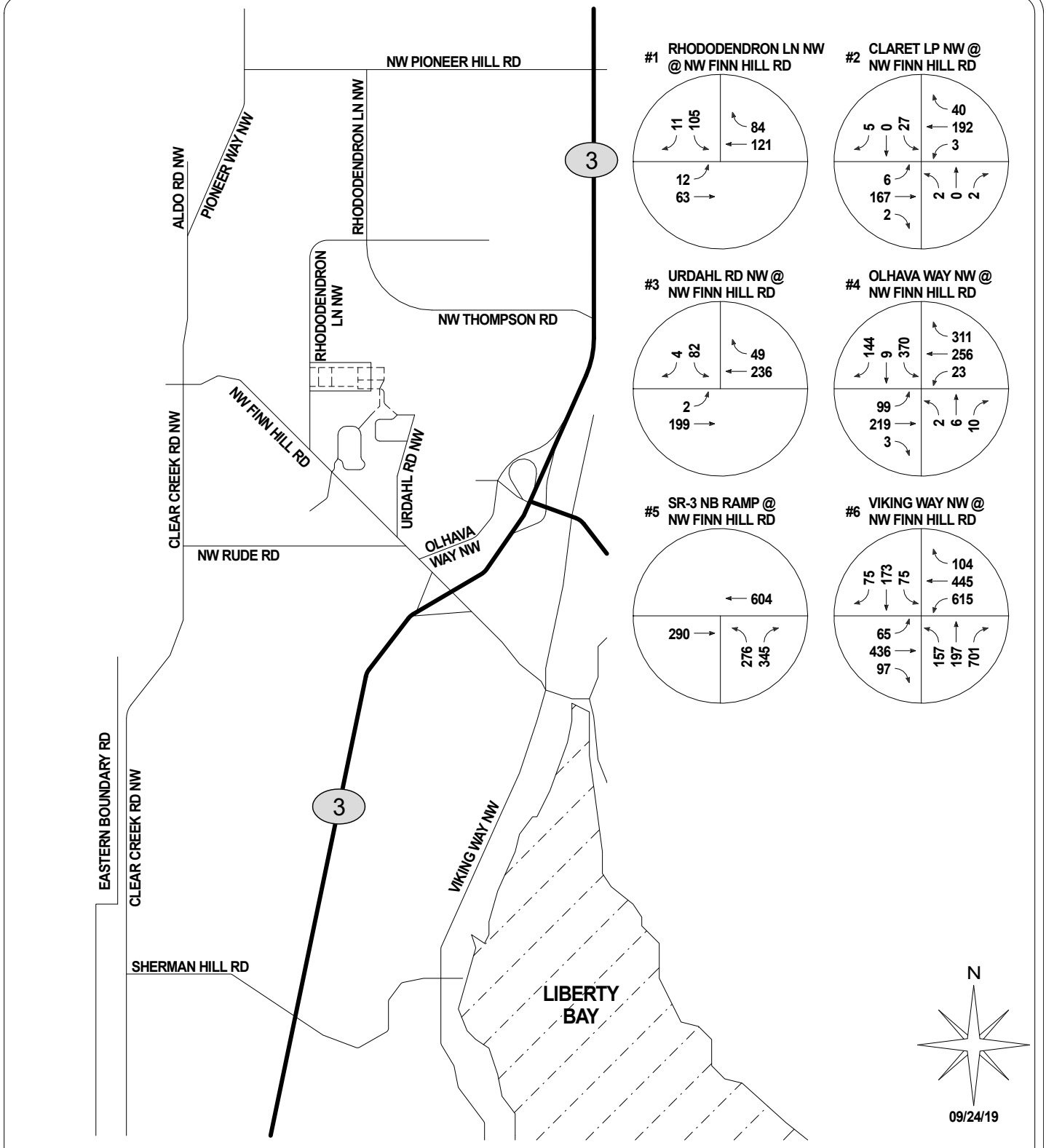
Intersection	PM Peak-Hour Intersection Vol.	K-Factor	Total Collisions	Collision Rate[3]
Rhododendron Ln NW at NW Finn Hill Rd	396	10	0	0.00
Claret Loop NW at NW Finn Hill Rd	446	10	1	0.20
Urdahl Rd NW at NW Finn Hill Rd	572	10	1	0.16
Olhava Way NW at NW Finn Hill Rd	1,452	10	1	0.06
SR-3 NB Off Ramp at NW Finn Hill Rd	1,515	10	5	0.30
Viking Way NW at NW Finn Hill Rd	3,140	10	9	0.26

The intersection of SR-3 northbound off ramp at NW Finn Hill Road had the highest collision rate of the study area with rear-end and at angle collision collisions as the most common. WSDOT has published collision data for the Olympic Region in the *2011 Annual Collision Summary* (the latest report that provides data for different road types). The average collision rate for State Routes in the Olympic Region is 1.82 collisions per Million Vehicle Miles (equivalent to Million Entering Vehicles at an intersection) for principal arterials. All the intersections have collision rates per million entering vehicles below 1.00, which is below the average rate for the area.

4.4. Existing Volumes and Level of Service

Existing turning movement count at the study intersection was conducted by the independent count firm, Traffic Count Consultants, on September 17, 2019. The existing PM peak-hour turning movement volumes at the study intersections are shown in Figure 2. Based on the existing counts, channelization and intersection control, the study intersections operate at LOS E or better. The existing level of service is summarized in Table 4.

[3] The collision rate is based on Million Entering Vehicles.



GIBSON TRAFFIC CONSULTANTS

TRAFFIC IMPACT STUDY
GTC #19-165

SWENSON PLAT
85 NEW SINGLE-FAMILY DETACHED UNITS

CITY OF POULSBO

LEGEND

XXX → PM PEAK HOUR TURNING MOVEMENT VOLUMES

FIGURE 2
EXISTING TURNING MOVEMENTS PM PEAK-HOUR

Table 4: Existing Level of Service Summary – Weekday PM Peak-Hour

Intersections	Existing Conditions	
	LOS	Delay
1. Rhododendron Ln NW at NW Finn Hill Rd	B	10.8 sec
2. Claret Loop NW at NW Finn Hill Rd	B	11.7 sec
3. Urdahl Rd NW at NW Finn Hill Rd	B	13.1 sec
4. Olhava Way NW at NW Finn Hill Rd	D	36.3 sec
5. SR-3 NB Off Ramp at NW Finn Hill Rd	B	12.0 sec
6. Viking Way NW at NW Finn Hill Rd	E	64.0 sec

5. FUTURE CONDITIONS

5.1. Trip Generation

Trip generation calculations for the Swenson Plat are based on national statistics contained in the Institute of Transportation Engineers' (ITE) *Trip Generation, 10th Edition (2017)*. The average trip generation rates for the ITE Land Use Code (LUC) LUC 210, single-family detached have been used. The Swenson Plat is proposing to construct a total of 85 single-family detached units. The trip generation is summarized in Table 5.

Table 5: Trip Generation Summary

Swenson Plat 85 New SFD	Average Daily Trips			AM Peak-Hour Trips			PM Peak-Hour Trips		
	Inbound	Outbound	Total	Inbound	Outbound	Total	Inbound	Outbound	Total
Generation Rate	9.44 Trips per Unit			0.74 Trips per Unit			0.99 Trips per Unit		
Splits	50%	50%	100%	25%	75%	100%	63%	37%	100%
Trips	401.20	401.20	802.40	15.73	47.17	62.90	53.01	31.14	84.15

The 85 units in the Swenson Plat are anticipated to generate 802.40 new daily trips, 62.90 new AM peak-hour trips and 84.15 new PM peak-hour trips. The trip generation calculations are included in the attachments.

5.2. Trip Distribution

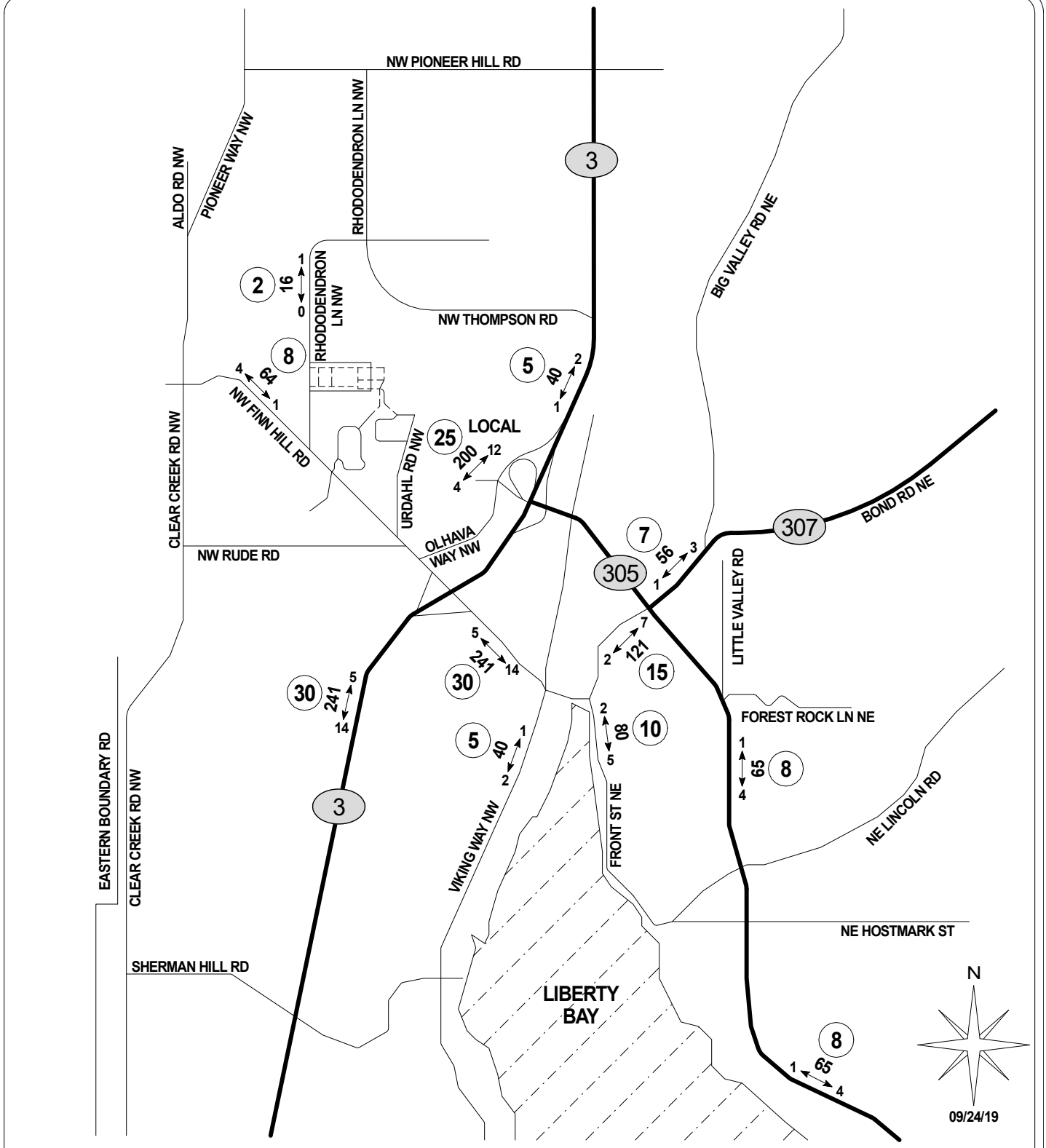
The trip distribution is based prior approved distribution in the site vicinity and residential/commercial draw areas by the site. It is anticipated that 7% of the site traffic is expected to travel to and from the north, two percent along Rhododendron Lane NW and five percent along SR-3. Another 8% is expected to travel to and from the west on NW Finn Hill Road. Approximately 30% of the site traffic is expected to travel to and from the east along NE Finn Hill Road. An estimated 30% of the site traffic is expected to travel to and from the south along SR-3. The final 25% is expected to be local trips. A detailed trip distribution for the AM and PM peak-hours is shown in Figure 3 and Figure 4 respectively.

5.3. 2026 Baseline Volumes and Level of Service

The 2026 baseline (future without development) turning movement volumes are estimated by applying a 2.0% annual compounded growth rate to the existing turning movement volumes per the City's Comprehensive Plan. Additionally, pipeline trips from the Spencer Plat and the Westwood Crossing development were added. The 2026 future without development PM peak-hour turning movement volumes are shown in Figure 5. Under the 2026 baseline conditions, the study intersections will all continue to operate at LOS E or better with the exception of NW Finn Hill Road at Viking Way NW which will operate at LOS F which is acceptable per the City's Transportation Element. The level of service is summarized in Table 6.

5.4. 2026 Future with Development Volumes and Level of Service

The 2026 future with development turning movement volumes are derived by adding development trips to the 2026 future without development turning movement volumes. The 2026 future with development PM peak-hour turning movement volumes are shown in Figure 6. Under the 2026 future with development conditions, the study intersections will all continue to operate at acceptable LOS E or better with the exception of NW Finn Hill Road at Viking Way NW which will operate at LOS F which is acceptable per the City's Transportation Element. The level of service is summarized in Table 6.



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GTC #19-165

SWENSON PLAT
85 NEW SINGLE-FAMILY DETACHED UNITS

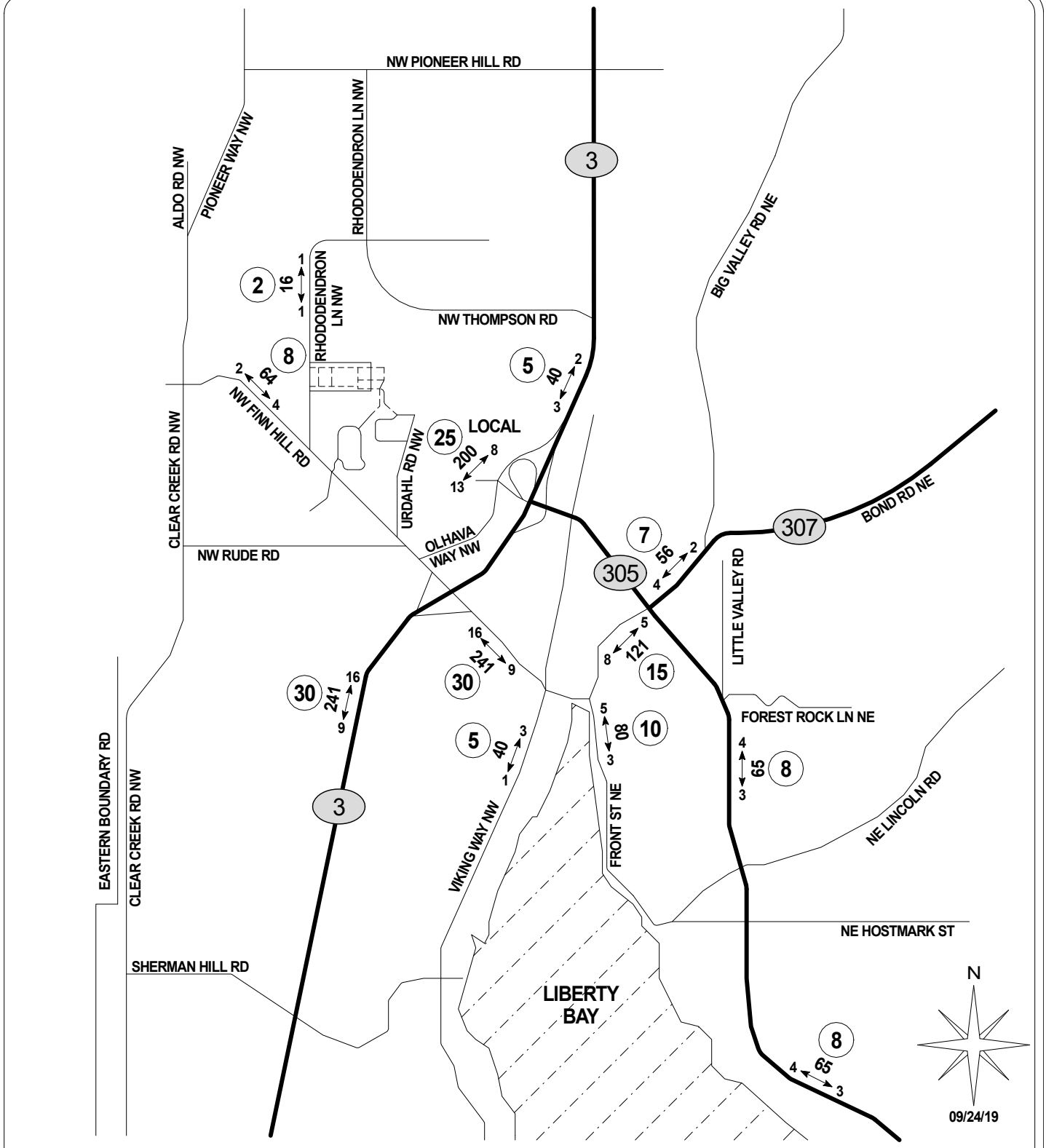
CITY OF POULSBO

LEGEND

AWDT
AM ← → PEAK
30

NEW DAILY TRAFFIC
NEW AM PEAK HOUR TRIPS
TRIP DISTRIBUTION %

FIGURE 3
DEVELOPMENT TRIP DISTRIBUTION AM PEAK-HOUR



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GTC #19-165

SWENSON PLAT
85 NEW SINGLE-FAMILY DETACHED UNITS

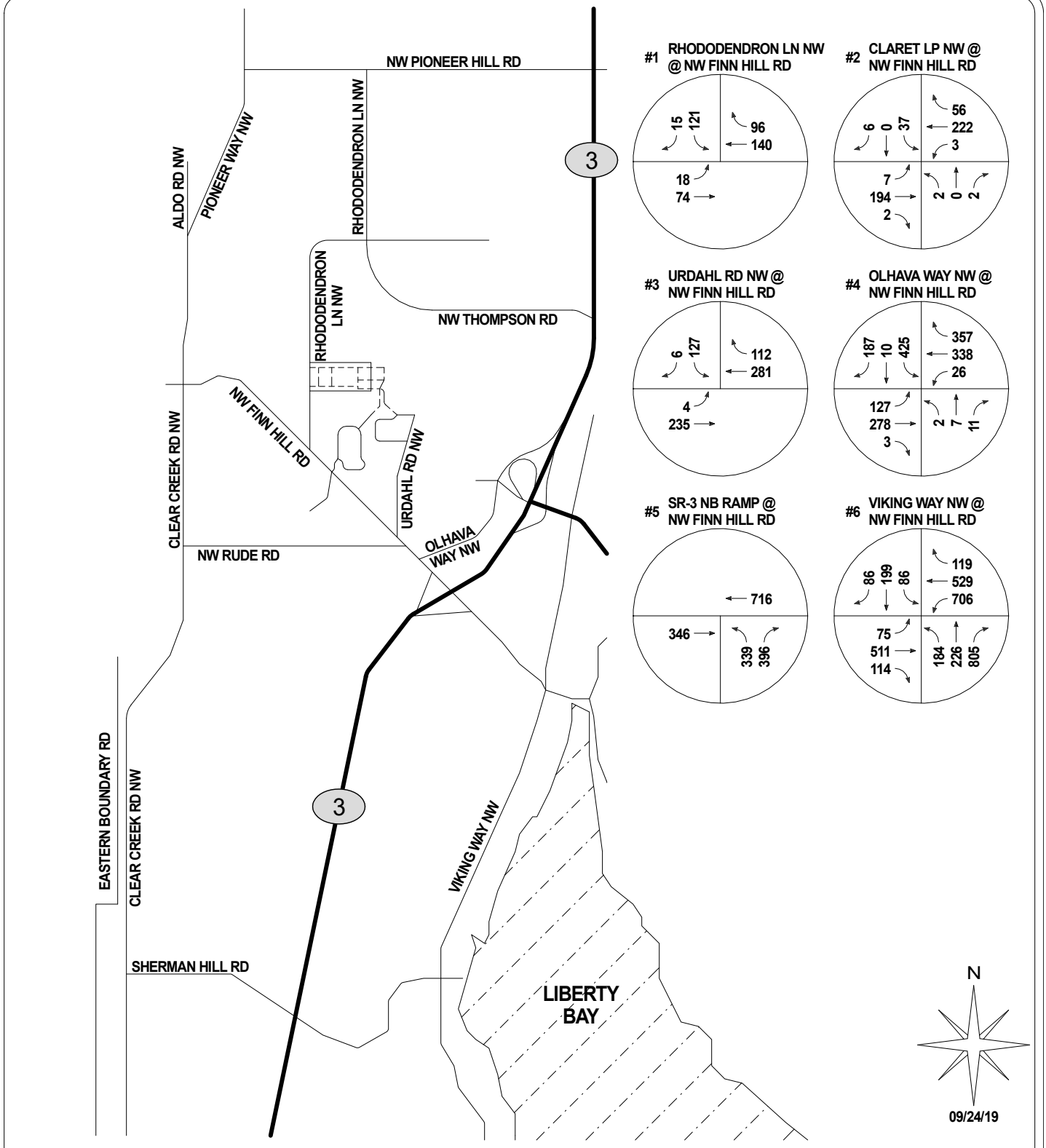
CITY OF POULSBO

LEGEND

AWDT
PM ← → PEAK — NEW DAILY TRAFFIC; NEW PM PEAK HOUR TRIPS

30 — TRIP DISTRIBUTION %

FIGURE 4
DEVELOPMENT TRIP DISTRIBUTION PM PEAK-HOUR



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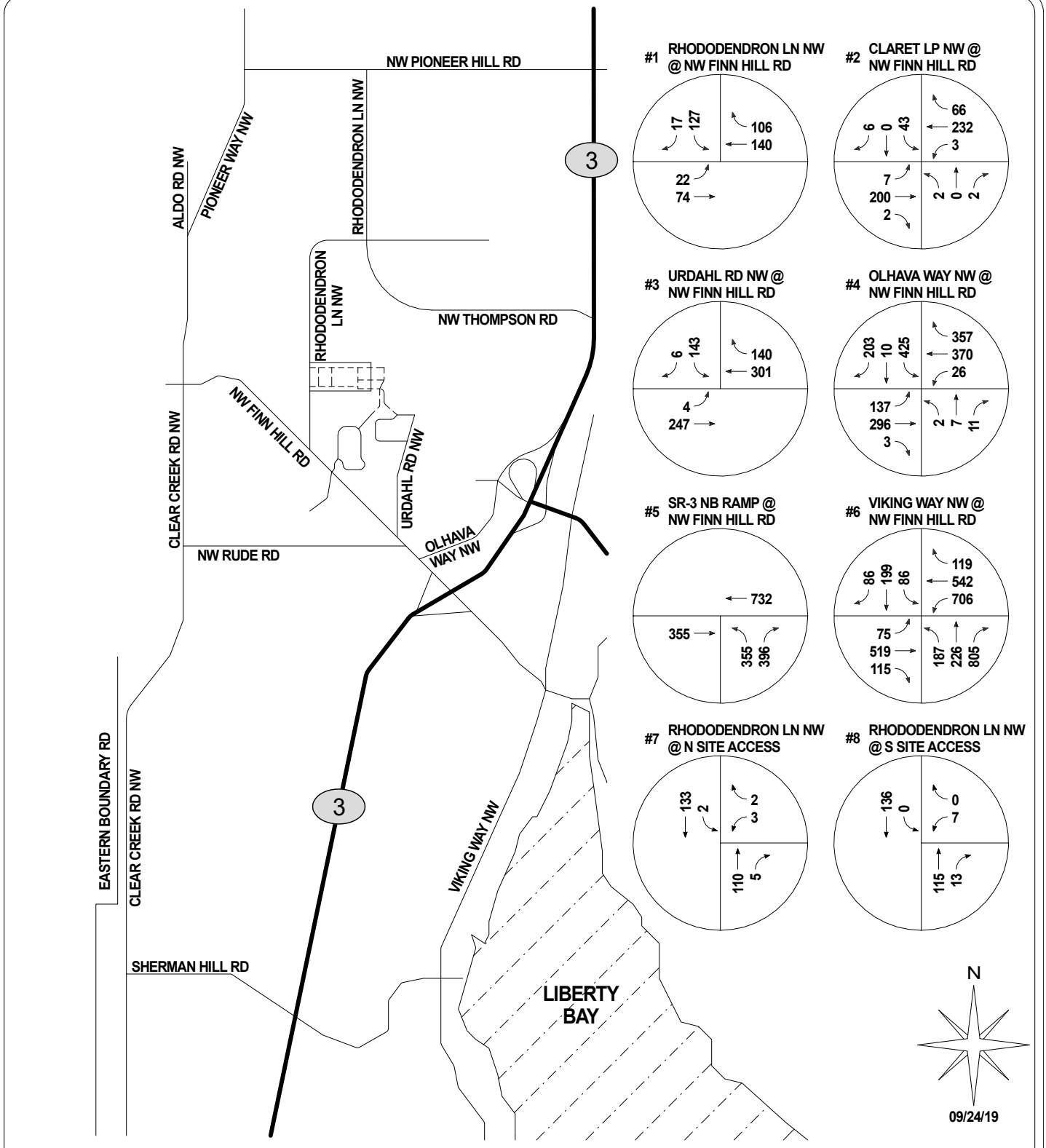
XXX → PM PEAK HOUR TURNING MOVEMENT VOLUMES

FIGURE 5
2026 BASELINE TURNING MOVEMENTS PM PEAK-HOUR



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CITY OF POULSBO

LEGEND

XXX → PM PEAK HOUR TURNING MOVEMENT VOLUMES

FIGURE 6
2026 FUTURE WITH DEVELOPMENT TURNING MOVEMENTS PM PEAK-HOUR

Table 6: Future Level of Service Summary – Weekday PM Peak-Hour

Intersections	Existing Conditions		2026 Future Conditions			
			without Development		with Development	
	LOS	Delay	LOS	Delay	LOS	Delay
1. Rhododendron Ln NW at NW Finn Hill Rd	B	10.8 sec	B	11.6 sec	B	11.8 sec
2. Claret Loop NW at NW Finn Hill Rd	B	11.7 sec	B	12.7 sec	B	13.2 sec
3. Urdahl Rd NW at NW Finn Hill Rd	B	13.1 sec	C	16.7 sec	C	18.8 sec
4. Olhava Way NW at NW Finn Hill Rd	D	36.3 sec	E	65.1 sec	E	74.2 sec
5. SR-3 NB Off Ramp at NW Finn Hill Rd	B	12.0 sec	B	15.1 sec	B	15.8 sec
6. Viking Way NW at NW Finn Hill Rd	E	64.0 sec	F	104.2 sec	F	107.4 sec
7. Rhododendron Ln NW at North Site Access	---	---	---	---	A	9.6 sec
8. Rhododendron Ln NW at South Site Access	---	---	---	---	B	10.1 sec

5.5. Safe Walk to School Path

Students living in the Swenson Plat development will be able to safely walk to the nearest school via the separated sidewalk along the east side of Rhododendron Lane NW on the west side of the development or the walking trail located in the northwest corner of Vinland Pointe development which is located on the south side of the adjacent Spencer Plat development.

5.5. No Spencer Plat Analysis

The above analysis has assumed that the Spencer Plat will be developed, providing two additional access points for the Swenson Plat to the local road system. If the Spencer Plat is not developed, all of the trips generated by the Swenson Plat development will have to access the local road system via Rhododendron Lane NW. Additional level of service analysis was performed under this scenario and found all of the study intersections to operate at LOS E or better with the exception of NW Finn Hill Road at Viking Way NW which will operate at LOS F in the 2026 future with development conditions. The turning movement sheets and level of service calculations for this scenario are included in the attachments.

6. TRAFFIC MITIGATION

The City of Poulsbo has a traffic mitigation fee of $355 per new average daily trip. The development is anticipated to generate 802.40 new average daily trips, which will result in traffic mitigation fees of $284,852.00. The development should not be responsible for off-site improvements due to the study intersections operating at acceptable level of service for the City of Poulsbo threshold for off-site analysis.

Counts and Turning Movement Calculations

Prepared for: **Gibson Traffic Consultants, Inc.**

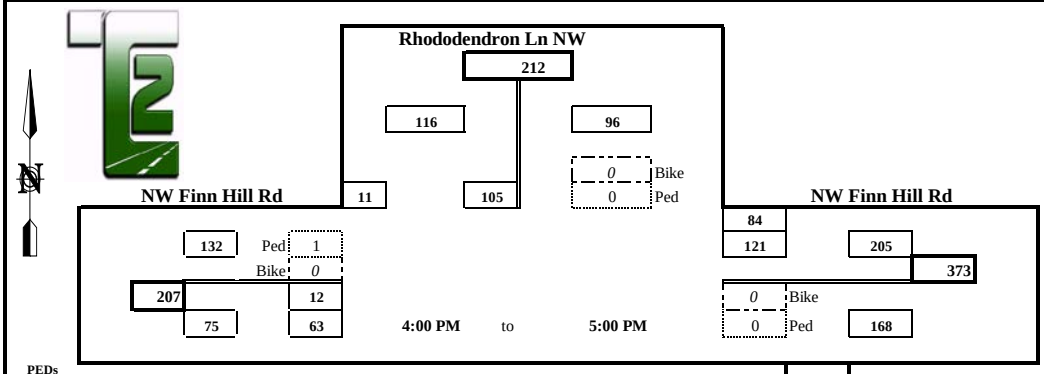
Traffic Count Consultants, Inc.

Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Rhododendron Ln NW & NW Finn Hill Rd
Location: Poulsbo, Washington
Date of Count: Tues 9/17/2019
Checked By: Jess

Time Interval Ending at	From North on (SB) Rhododendron Ln NW				From South on (NB) 0				From East on (WB) NW Finn Hill Rd				From West on (EB) NW Finn Hill Rd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	36	0	3	0	0	0	0	0	0	25	20	0	1	17	0	102
4:30 P	0	21	0	2	0	0	0	0	0	0	31	29	0	7	11	0	101
4:45 P	1	28	0	6	0	0	0	0	2	0	34	17	0	2	12	0	99
5:00 P	0	20	0	0	0	0	0	0	0	0	31	18	1	2	23	0	94
5:15 P	0	22	0	0	0	0	0	0	0	0	37	21	0	0	11	0	91
5:30 P	0	10	0	1	0	0	0	0	0	0	37	15	1	2	25	0	90
5:45 P	0	12	0	0	0	0	0	0	0	0	25	12	0	0	22	0	71
6:00 P	0	9	0	2	0	0	0	0	0	0	34	11	0	1	12	0	69
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	3	158	0	14	0	0	0	0	2	0	254	143	2	15	133	0	717
Peak Hour: 4:00 PM to 5:00 PM																	
Total	3	105	0	11	0	0	0	0	2	0	121	84	1	12	63	0	396
Approach	116				0				205				75				396
%HV	2.6%				n/a				1.0%				1.3%				1.5%
PHF	0.74				n/a				0.85				0.75				0.97



408 *1.0 PHF Peak Hour Volume*

	PHF	%HV
EB	0.75	1.3%
WB	0.85	1.0%
NB	n/a	n/a
SB	0.74	2.6%
T Int.	0.97	1.5%

Check In: 396 Out: 396

Conditions:

PEDs Across:

	N	S	E	W	
INT 01					0
INT 02				1	1
INT 03					0
INT 04					0
INT 05					0
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	1	1

Bicycles From:

	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO BIKES				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

Special Notes

GTC19101M_01p

Prepared for: **Gibson Traffic Consultants, Inc.**

Traffic Count Consultants, Inc.

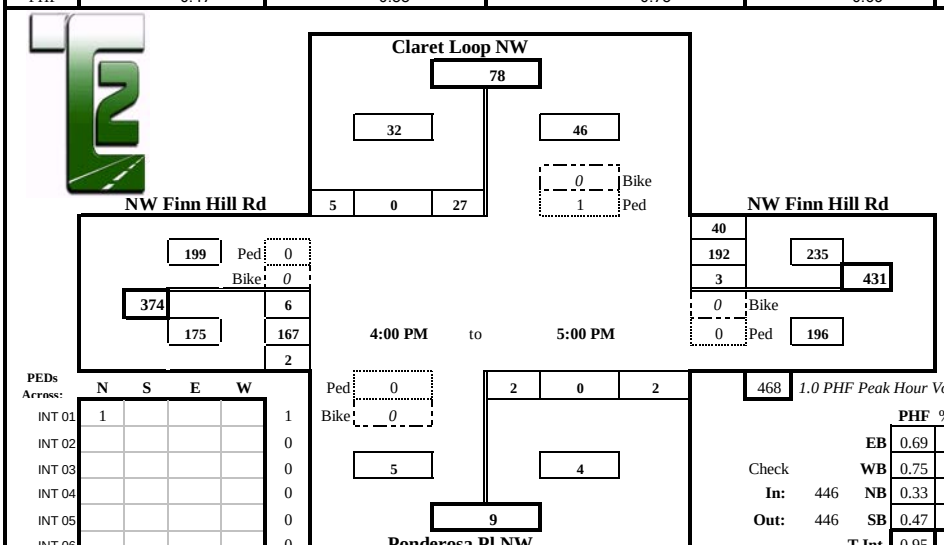
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Claret Loop NW/Ponderosa Pl NW & NW Finn Hill Rd **Date of Count:** Tues 9/17/2019

Location: Poulsbo, Washington **Checked By:** Jess

Time Interval Ending at	From North on (SB) Claret Loop NW				From South on (NB) Ponderosa Pl NW				From East on (WB) NW Finn Hill Rd				From West on (EB) NW Finn Hill Rd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	3	0	1	0	1	0	0	0	1	42	6	5	1	61	1	117
4:30 P	0	7	0	0	0	0	0	0	0	0	63	15	0	0	29	0	114
4:45 P	0	15	0	2	0	0	0	0	3	2	36	7	1	1	39	1	103
5:00 P	0	2	0	2	0	1	0	2	0	0	51	12	1	4	38	0	112
5:15 P	0	5	0	0	0	2	0	0	0	1	56	7	0	1	26	1	99
5:30 P	0	2	0	0	1	0	0	3	0	3	51	11	1	0	33	2	105
5:45 P	0	8	0	1	0	0	0	0	0	0	33	8	0	1	29	0	80
6:00 P	0	7	0	0	0	0	0	3	0	0	47	10	0	0	25	0	92
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	49	0	6	1	4	0	8	3	7	379	76	8	8	280	5	822
Peak Hour: 4:00 PM to 5:00 PM																	
Total	0	27	0	5	0	2	0	2	3	3	192	40	7	6	167	2	446
Approach	32				4				235				175				446
%HV	n/a				n/a				1.3%				4.0%				2.2%
PHF	0.47				0.33				0.75				0.69				0.95



468 *1.0 PHF Peak Hour Volume*

	PHF	%HV
EB	0.69	4.0%
WB	0.75	1.3%
NB	0.33	n/a
SB	0.47	n/a
T Int.	0.95	2.2%

Check In: 446 Out: 446

Conditions:

PEDs Across:	N	S	E	W	
INT 01	1				1
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	1	0	0	0	1

Bicycles From:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO BIKES				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

Special Notes

GTC19101M_02p

Prepared for: **Gibson Traffic Consultants, Inc.**

Traffic Count Consultants, Inc.

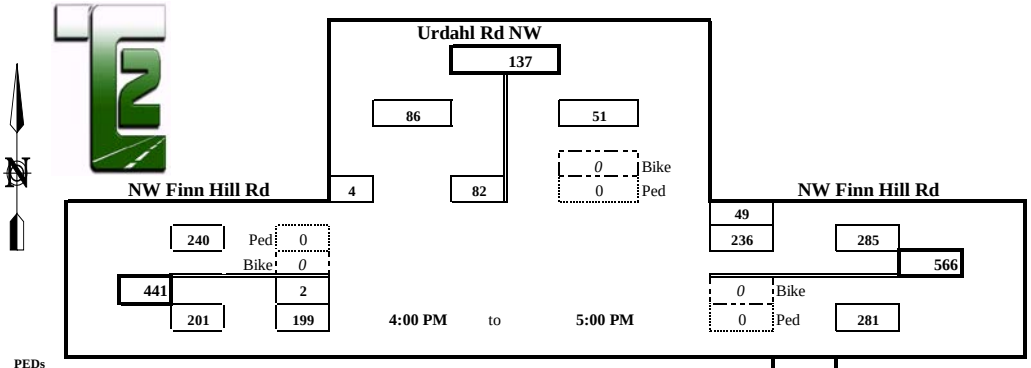
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Urdahl Rd NW & NW Finn Hill Rd **Date of Count:** Tues 9/17/2019

Location: Poulsbo, Washington **Checked By:** Jess

Time Interval Ending at	From North on (SB) Urdahl Rd NW				From South on (NB) 0				From East on (WB) NW Finn Hill Rd				From West on (EB) NW Finn Hill Rd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	2	17	0	1	0	0	0	0	1	0	52	18	5	1	67	0	156
4:30 P	1	18	0	2	0	0	0	0	0	0	61	11	0	0	36	0	128
4:45 P	0	31	0	1	0	0	0	0	1	0	58	3	1	1	53	0	147
5:00 P	0	16	0	0	0	0	0	0	0	0	65	17	1	0	43	0	141
5:15 P	0	8	0	0	0	0	0	0	0	0	63	13	0	0	31	0	115
5:30 P	0	8	0	1	0	0	0	0	0	0	67	13	0	1	37	0	127
5:45 P	0	10	0	0	0	0	0	0	0	0	44	7	1	1	32	0	94
6:00 P	0	5	0	1	0	0	0	0	0	0	44	13	0	1	33	0	97
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	3	113	0	6	0	0	0	0	2	0	454	95	8	5	332	0	1005
	Peak Hour: 4:00 PM to 5:00 PM																
Total	3	82	0	4	0	0	0	0	2	0	236	49	7	2	199	0	572
Approach	86				0				285				201				572
%HV	3.5%				n/a				0.7%				3.5%				2.1%
PHF	0.67				n/a				0.87				0.74				0.92



PEDs Across:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO PEDS				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

Special Notes

Bicycles From:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO BIKES				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

624 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.74	3.5%
Check	WB	0.87	0.7%
In: 572	NB	n/a	n/a
Out: 572	SB	0.67	3.5%
	T Int.	0.92	2.1%

Conditions:

GTC19101M_03p

Prepared for: **Gibson Traffic Consultants, Inc.**

Traffic Count Consultants, Inc.

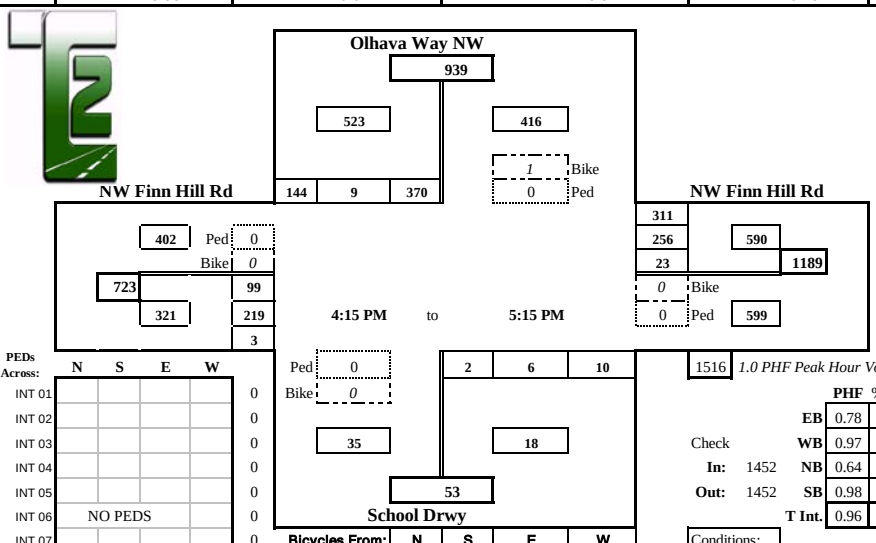
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Olhava Way NW/School Drwy & NW Finn Hill Rd **Date of Count:** Tues 9/17/2019

Location: Poulsbo, Washington **Checked By:** Jess

Time Interval Ending at	From North on (SB) Olhava Way NW				From South on (NB) School Drwy				From East on (WB) NW Finn Hill Rd				From West on (EB) NW Finn Hill Rd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	67	1	34	0	0	0	0	2	1	56	81	6	30	83	0	353
4:30 P	1	96	0	38	0	0	0	1	2	2	70	74	1	17	53	0	351
4:45 P	4	89	4	34	0	0	1	2	1	7	57	82	1	30	73	0	379
5:00 P	2	95	3	31	0	0	3	4	2	8	62	82	2	28	46	3	365
5:15 P	2	90	2	41	1	2	2	3	2	6	67	73	0	24	47	0	357
5:30 P	1	90	1	34	0	1	1	1	2	0	65	62	1	11	45	1	312
5:45 P	2	70	0	20	0	1	1	3	0	0	48	58	0	18	45	0	264
6:00 P	0	76	0	31	0	0	1	0	0	0	51	52	0	16	43	0	270
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	13	673	11	263	1	4	9	14	11	24	476	564	11	174	435	4	2651
Peak Hour: 4:15 PM to 5:15 PM																	
Total	9	370	9	144	1	2	6	10	7	23	256	311	4	99	219	3	1452
Approach	523				18				590				321				1452
%HV	1.7%				5.6%				1.2%				1.2%				1.4%
PHF	0.98				0.64				0.97				0.78				0.96



PEDs Across:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO PEDS				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

Special Notes

Bicycles From:	N	S	E	W	
INT 01				1	1
INT 02					0
INT 03					0
INT 04					0
INT 05	1				1
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	1	0	0	1	2

1516 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.78	1.2%
Check	WB	0.97	1.2%
In: 1452	NB	0.64	5.6%
Out: 1452	SB	0.98	1.7%
	T Int.	0.96	1.4%

Conditions:

GTC19101M_04p

Prepared for: **Gibson Traffic Consultants, Inc.**

Traffic Count Consultants, Inc.

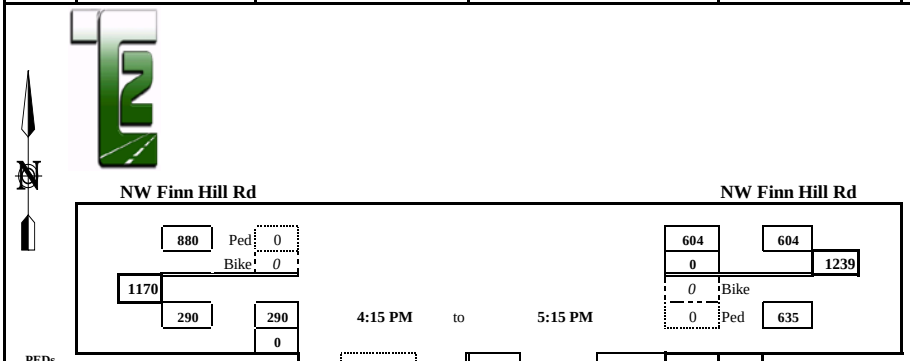
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: SR 3 NB Off Ramp & NW Finn Hill Rd **Date of Count:** Tues 9/17/2019

Location: Poulsbo, Washington **Checked By:** Jess

Time Interval Ending at	From North on (SB) 0				From South on (NB) SR 3 NB Off Ramp				From East on (WB) NW Finn Hill Rd				From West on (EB) NW Finn Hill Rd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	0	0	0	0	4	67	0	74	0	0	123	0	0	0	74	0	338
4:30 P	0	0	0	0	5	83	0	110	3	0	129	0	1	0	78	0	400
4:45 P	0	0	0	0	3	67	0	79	2	0	131	0	2	0	85	0	362
5:00 P	0	0	0	0	1	66	0	85	0	0	167	0	0	0	68	0	386
5:15 P	0	0	0	0	3	60	0	71	0	0	177	0	0	0	59	0	367
5:30 P	0	0	0	0	1	62	0	77	1	0	145	0	0	0	67	0	351
5:45 P	0	0	0	0	1	68	0	75	1	0	115	0	2	0	54	0	312
6:00 P	0	0	0	0	0	46	0	63	0	0	115	0	1	0	60	0	284
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	0	0	0	18	519	0	634	7	0	1102	0	6	0	545	0	2800
	Peak Hour: 4:15 PM to 5:15 PM																
Total	0	0	0	0	12	276	0	345	5	0	604	0	3	0	290	0	1515
Approach	0				621				604				290				1515
%HV	n/a				1.9%				0.8%				1.0%				1.3%
PHF	n/a				0.80				0.85				0.85				0.95



PEDs Across:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO PEDS				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

Special Notes

Bicycles From:	N	S	E	W	
INT 01				1	1
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	1	1

1600 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.85	1.0%
Check	WB	0.85	0.8%
In: 1515	NB	0.80	1.9%
Out: 1515	SB	n/a	n/a
	T Int.	0.95	1.3%

Conditions:

GTC19101M_06p

Prepared for: **Gibson Traffic Consultants, Inc.**

Traffic Count Consultants, Inc.

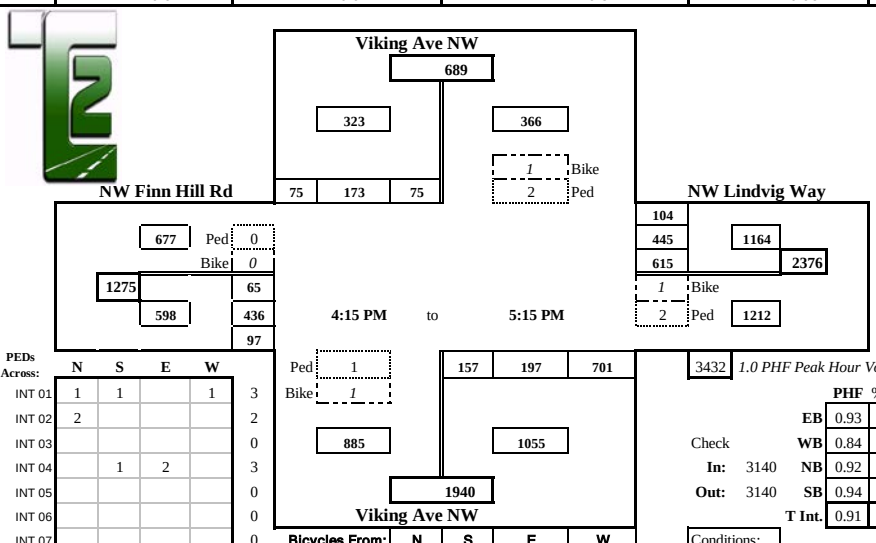
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Viking Ave NW & NW Lindvig Way/NW Finn Hill Rd **Date of Count:** Tues 9/17/2019

Location: Poulsbo, Washington **Checked By:** Jess

Time Interval Ending at	From North on (SB) Viking Ave NW				From South on (NB) Viking Ave NW				From East on (WB) NW Lindvig Way				From West on (EB) NW Finn Hill Rd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	3	19	32	14	2	30	40	155	2	133	88	24	2	13	134	31	713
4:30 P	0	13	42	18	3	27	42	155	4	139	95	22	3	17	116	24	710
4:45 P	0	20	49	17	0	42	49	195	3	154	102	25	4	18	118	25	814
5:00 P	1	21	44	18	5	39	54	190	0	177	136	33	2	17	105	24	858
5:15 P	0	21	38	22	4	49	52	161	2	145	112	24	1	13	97	24	758
5:30 P	0	16	44	16	0	19	34	135	1	183	118	20	1	15	87	18	705
5:45 P	0	14	35	11	0	34	37	165	3	203	133	27	2	13	90	24	786
6:00 P	0	17	50	11	0	28	30	116	1	140	86	32	0	8	92	20	630
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	4	141	334	127	14	268	338	1272	16	1274	870	207	15	114	839	190	5974
Peak Hour: 4:15 PM to 5:15 PM																	
Total	1	75	173	75	12	157	197	701	9	615	445	104	10	65	436	97	3140
Approach	323				1055				1164				598				3140
%HV	0.3%				1.1%				0.8%				1.7%				1.0%
PHF	0.94				0.92				0.84				0.93				0.91



PEDs Across:	N	S	E	W	
INT 01	1	1		1	3
INT 02	2				2
INT 03					0
INT 04		1	2		3
INT 05					0
INT 06					0
INT 07					0
INT 08			2		2
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	3	2	4	1	10

Special Notes

Bicycles From:	N	S	E	W	
INT 01				1	1
INT 02		1			1
INT 03	1				1
INT 04			1		1
INT 05					0
INT 06	2			1	3
INT 07		1			1
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	3	2	1	2	8

3432 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.93	1.7%
Check	WB	0.84	0.8%
In: 3140	NB	0.92	1.1%
Out: 3140	SB	0.94	0.3%
	T Int.	0.91	1.0%

Conditions:

GTC19101M_07p

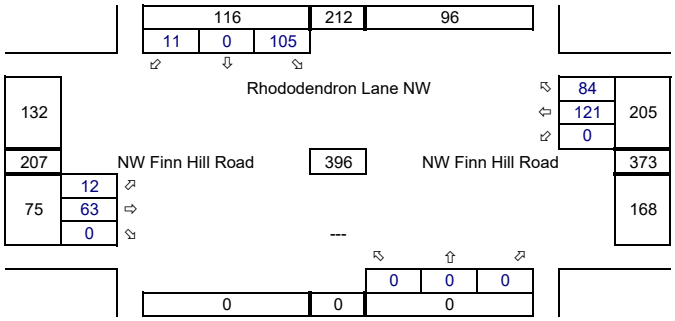
1 Rhododendron Ln @Finn Hill Rd

Synchro ID: 1

Existing
Average Weekday
PM Peak Hour

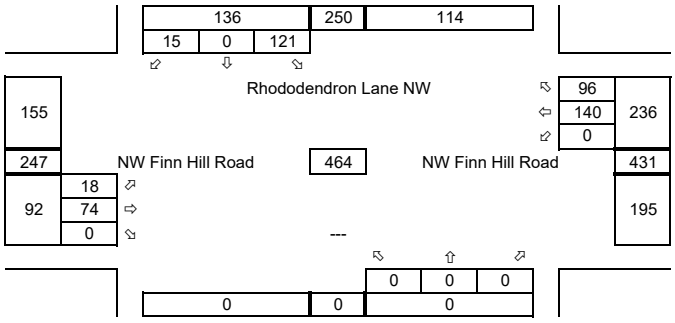
Year: **9/17/19**

Data Source: TCC

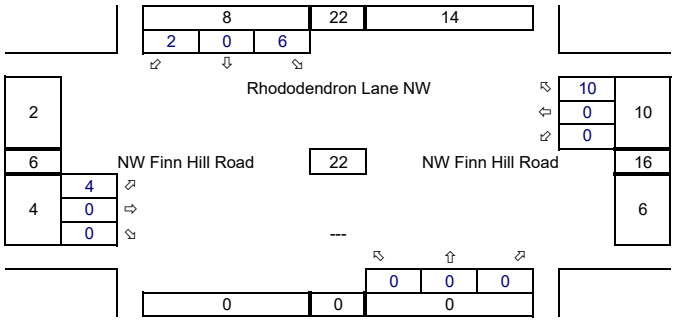


Future without Project
Average Weekday
PM Peak Hour

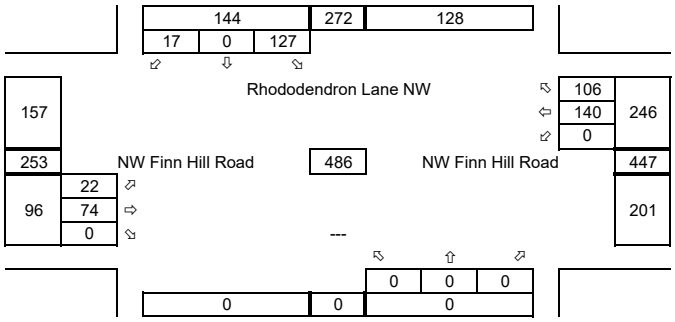
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

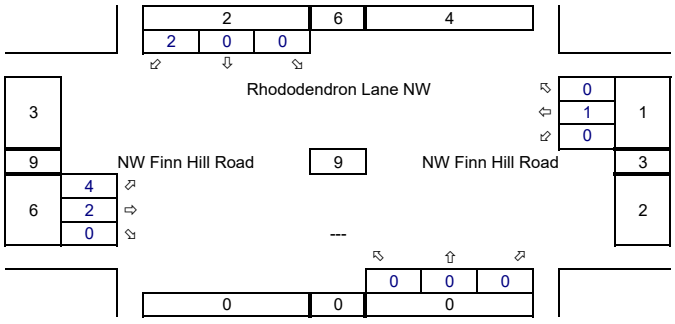


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



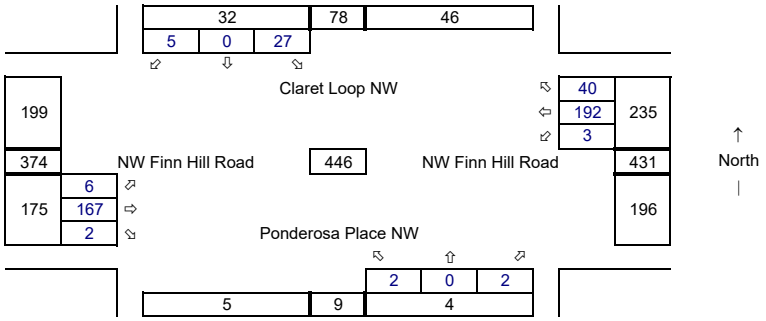
2 Claret Lp @ Finn Hill Rd

Synchro ID: 2

Existing
Average Weekday
PM Peak Hour

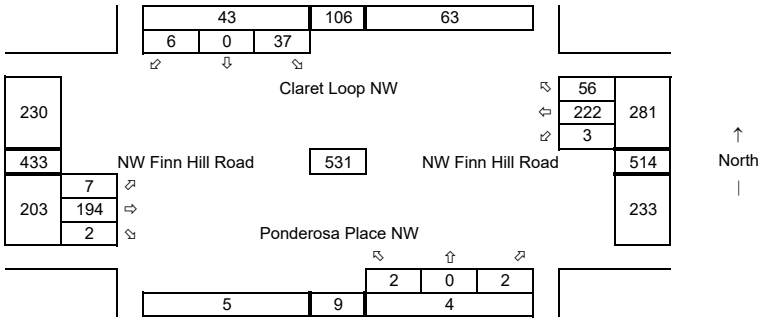
Year: **9/17/19**

Data Source: TCC

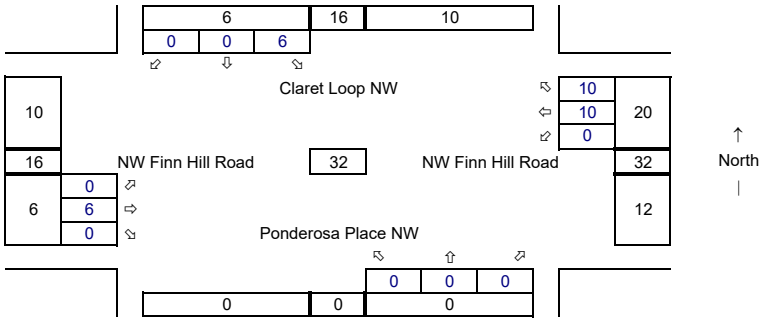


Future without Project
Average Weekday
PM Peak Hour

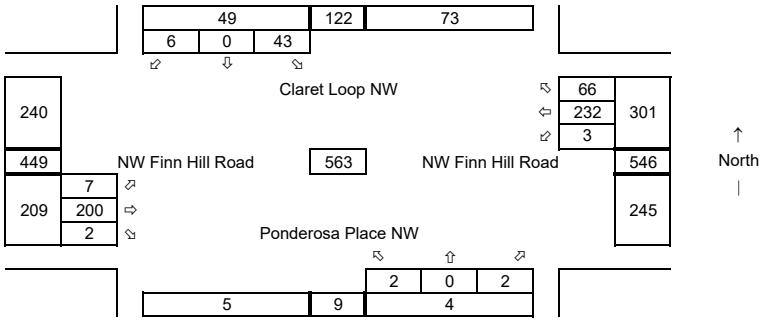
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

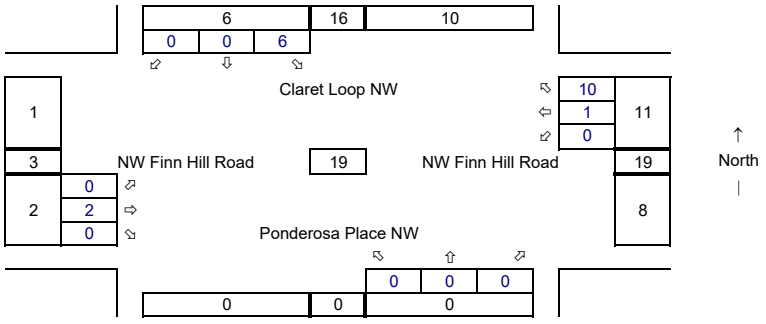


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



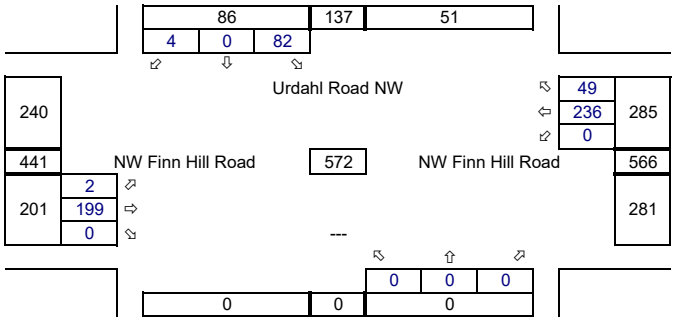
3 Urdahl Rd @ Finn Hill Rd

Synchro ID: 3

Existing
Average Weekday
PM Peak Hour

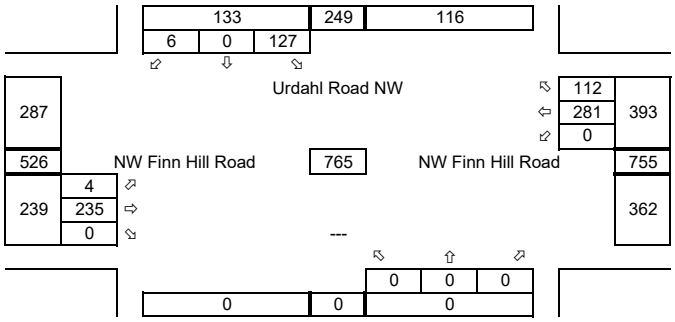
Year: **9/17/19**

Data Source: TCC

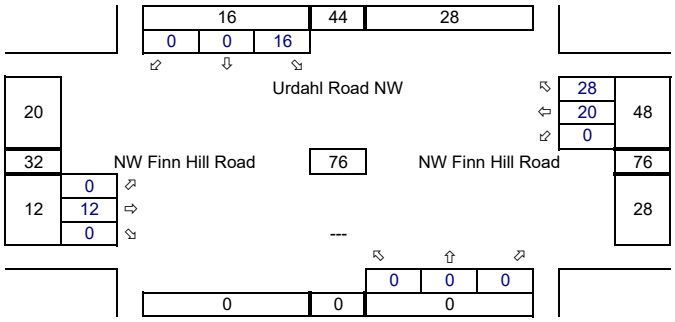


Future without Project
Average Weekday
PM Peak Hour

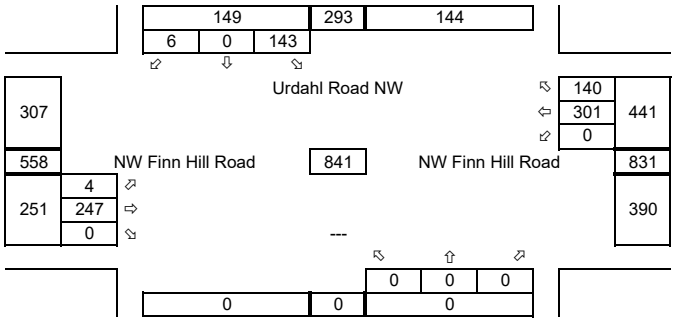
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

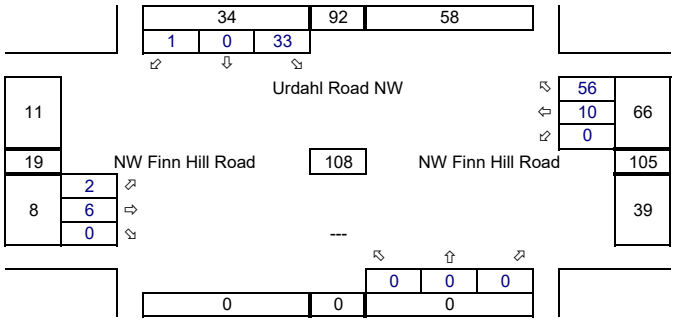


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



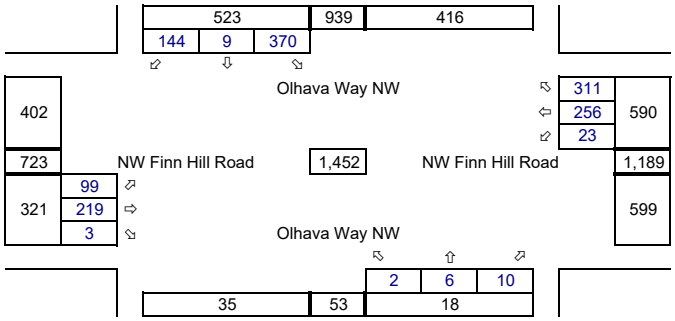
4 Olhava Way @ Finn Hill Rd

Synchro ID: 4

Existing
Average Weekday
PM Peak Hour

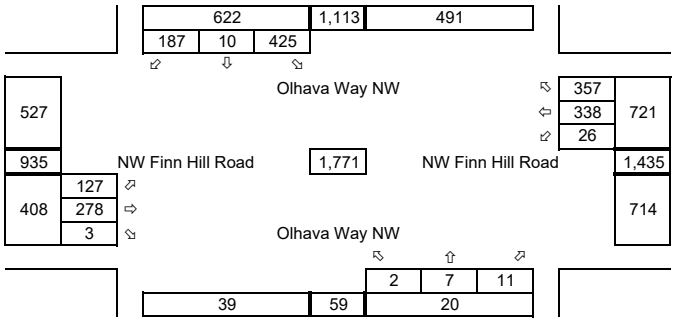
Year: **9/17/19**

Data Source: TCC

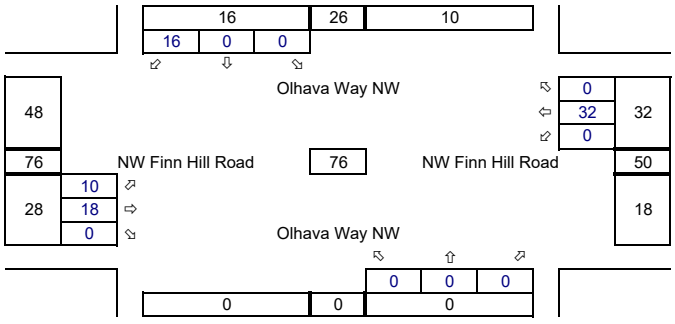


Future without Project
Average Weekday
PM Peak Hour

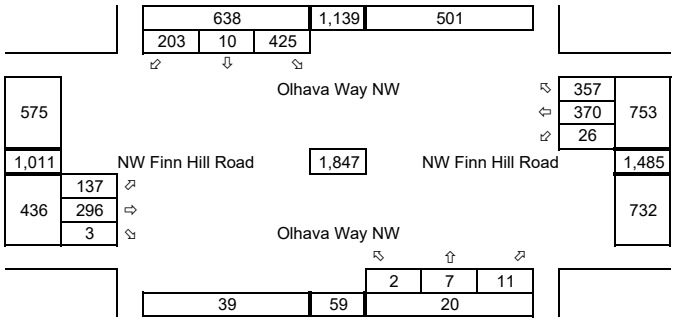
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

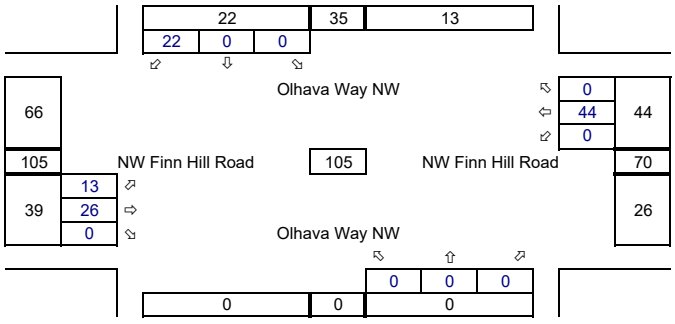


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



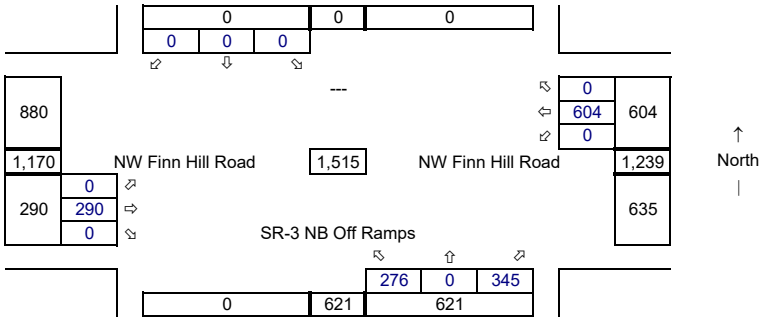
5 SR-3 NB Ramps @ Finn Hill Rd

Synchro ID: 5

Existing
Average Weekday
PM Peak Hour

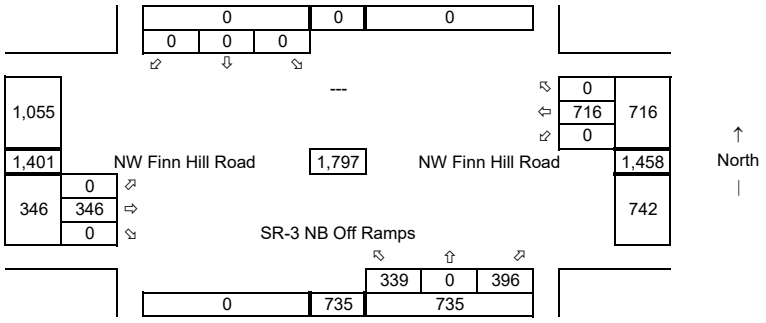
Year: **9/17/19**

Data Source: TCC

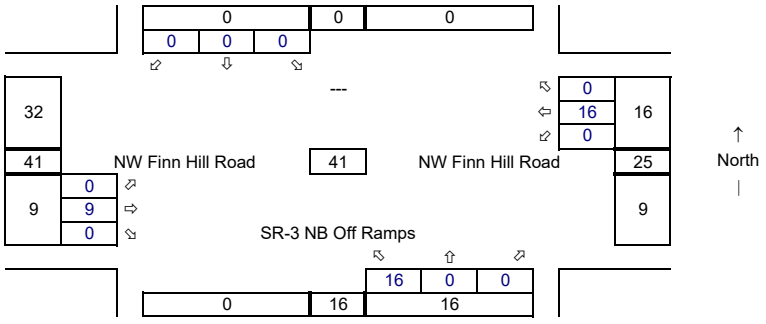


Future without Project
Average Weekday
PM Peak Hour

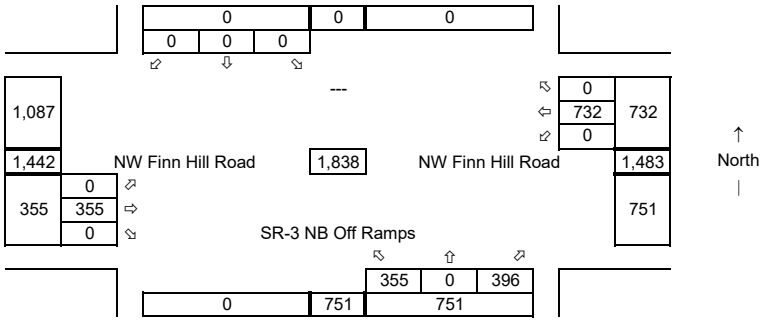
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

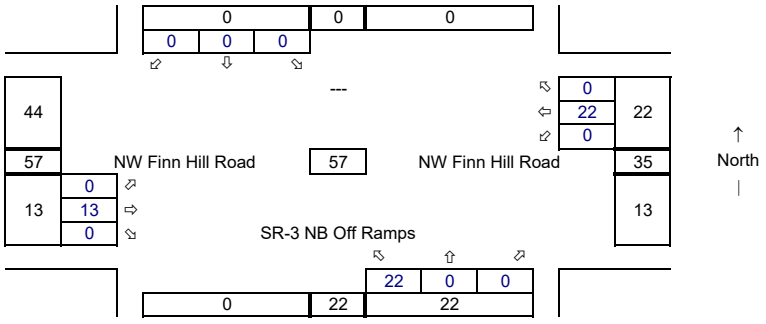


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



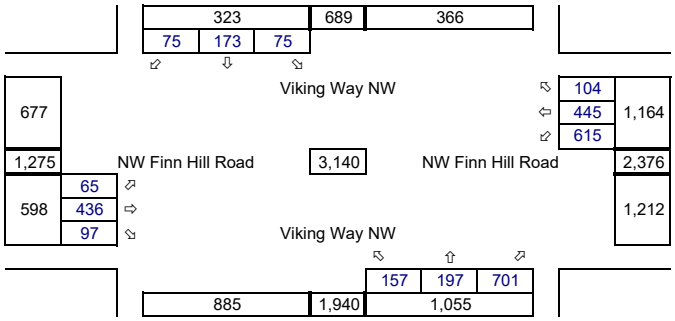
6 Viking Way @ Finn Hill Rd

Synchro ID: 6

Existing
Average Weekday
PM Peak Hour

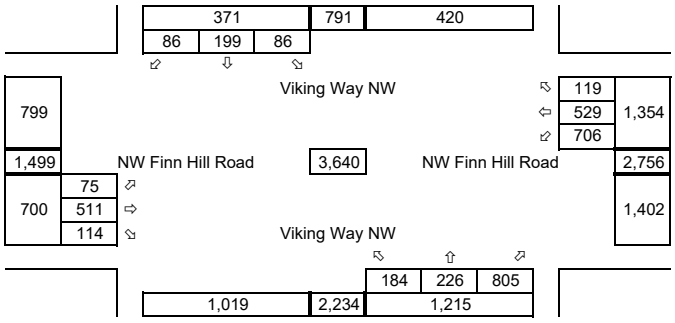
Year: **9/17/19**

Data Source: TCC

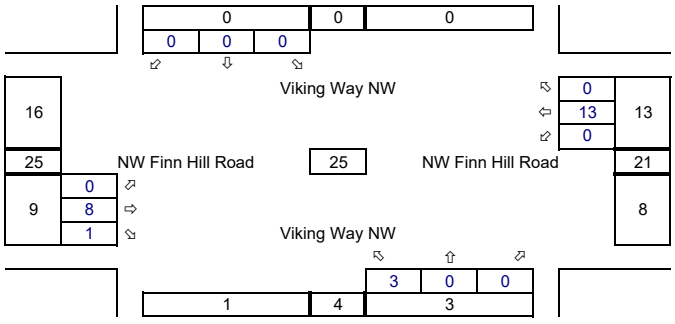


Future without Project
Average Weekday
PM Peak Hour

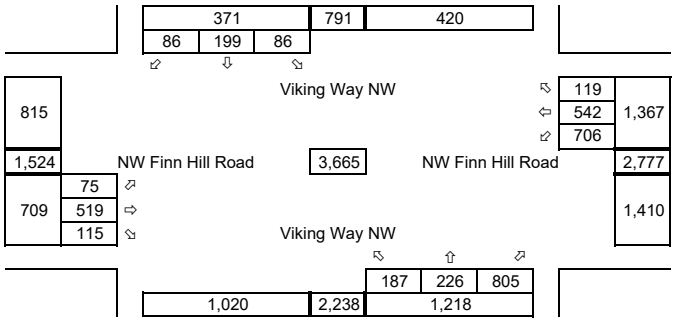
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

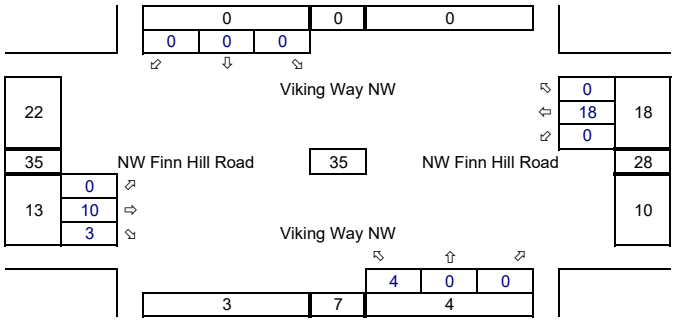


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



7 Rhododendron Ln@N Site Access

Synchro ID: 7

Existing

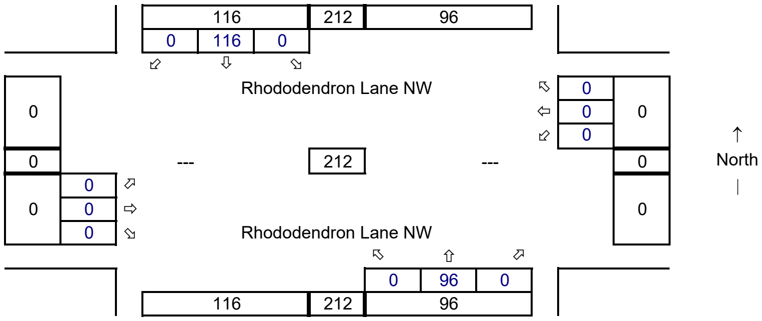
Average Weekday

PM Peak Hour

Year: **9/17/19**

Data Source: TCC

North/South volumes extrapolated from north leg of Rhododendron Lane NW at NW Finn Hill Road.



Future without Project

Average Weekday

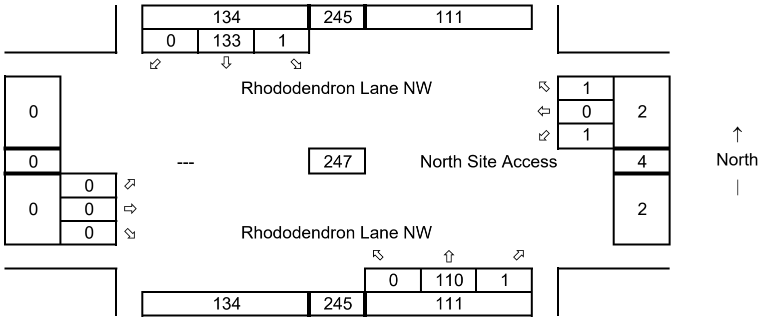
PM Peak Hour

Year: 2026

Growth Rate = 2.0%

Years of Growth = 7

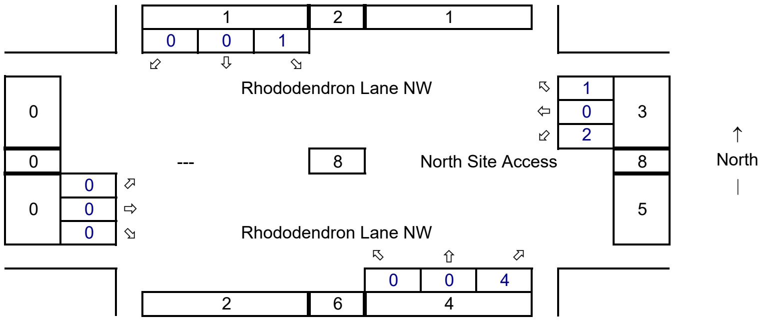
Total Growth = 1.1487



Total Project Trips

Average Weekday

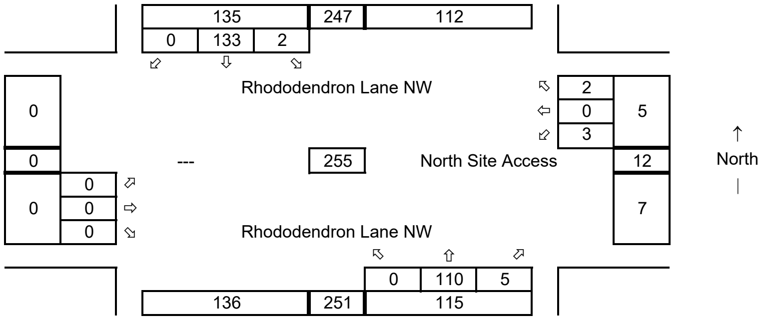
PM Peak Hour



Future with Project

Average Weekday

PM Peak Hour



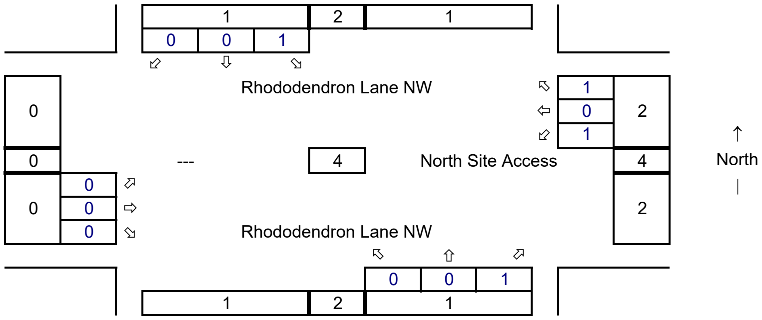
Total Pipeline Project Trips

Average Weekday

PM Peak Hour

Spencer Plat

Westwood Crossing



8 Rhododendron Ln@S Site Access

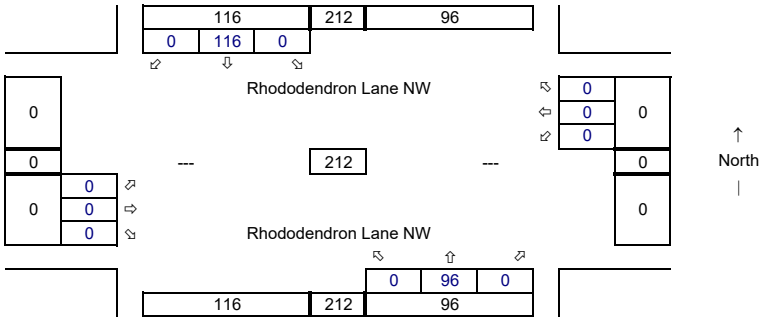
Synchro ID: 6

Existing
Average Weekday
PM Peak Hour

Year: **9/17/19**

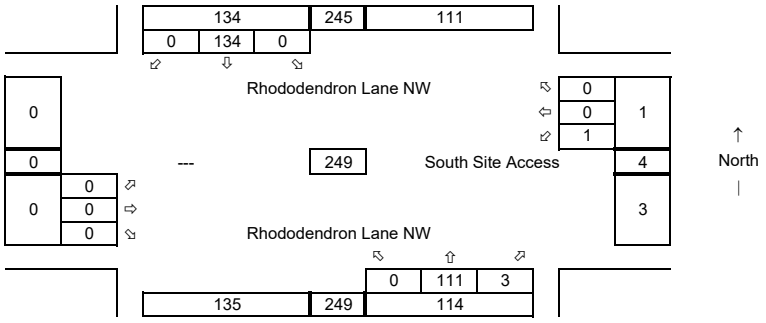
Data Source: TCC

North/South volumes extrapolated from north leg of Rhododendron Lane NW at NW Finn Hill Road.

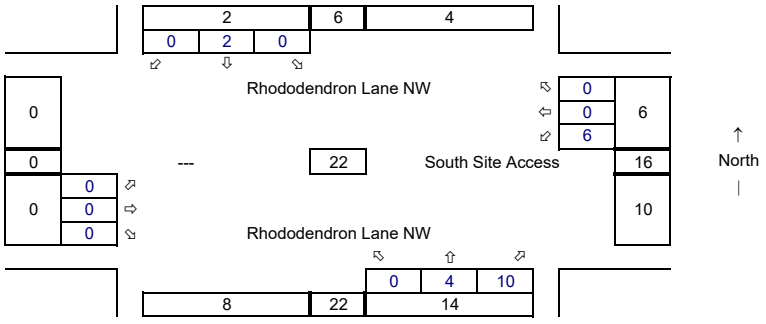


Future without Project
Average Weekday
PM Peak Hour

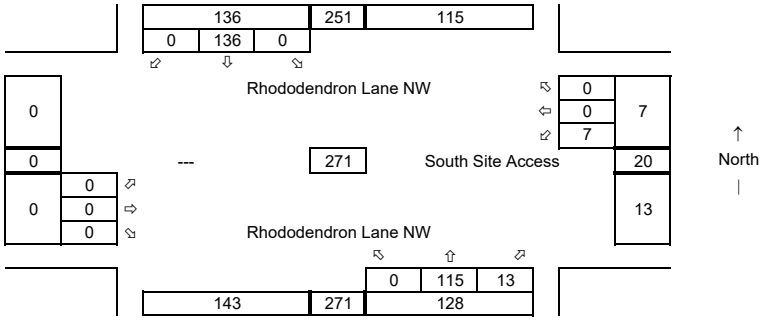
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

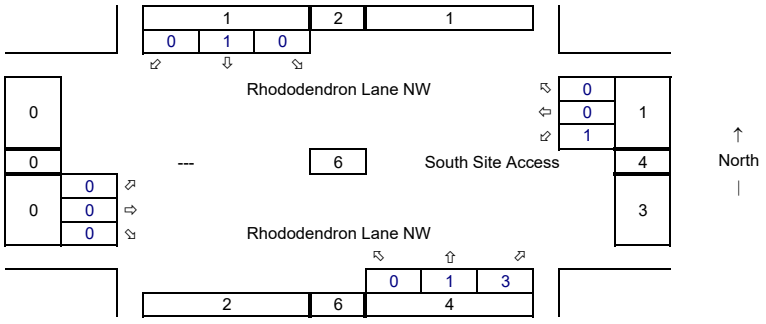


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



Level of Service Calculations

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	12	63	121	84	105	11
Future Vol, veh/h	12	63	121	84	105	11
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	140	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	65	125	87	108	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	212	0	-	0	258	170
Stage 1	-	-	-	-	169	-
Stage 2	-	-	-	-	89	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1358	-	-	-	731	874
Stage 1	-	-	-	-	861	-
Stage 2	-	-	-	-	934	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1358	-	-	-	724	873
Mov Cap-2 Maneuver	-	-	-	-	724	-
Stage 1	-	-	-	-	853	-
Stage 2	-	-	-	-	934	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	10.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1358	-	-	-	736
HCM Lane V/C Ratio	0.009	-	-	-	0.162
HCM Control Delay (s)	7.7	-	-	-	10.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

Intersection												
Int Delay, s/veh	1.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	167	2	3	192	40	2	0	2	27	0	5
Future Vol, veh/h	6	167	2	3	192	40	2	0	2	27	0	5
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	176	2	3	202	42	2	0	2	28	0	5

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	245	0	0	178	0	0	421	440	177	420	420	224
Stage 1	-	-	-	-	-	-	189	189	-	230	230	-
Stage 2	-	-	-	-	-	-	232	251	-	190	190	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1321	-	-	1398	-	-	543	511	866	544	525	815
Stage 1	-	-	-	-	-	-	813	744	-	773	714	-
Stage 2	-	-	-	-	-	-	771	699	-	812	743	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1320	-	-	1398	-	-	536	507	866	539	521	814
Mov Cap-2 Maneuver	-	-	-	-	-	-	536	507	-	539	521	-
Stage 1	-	-	-	-	-	-	809	740	-	768	712	-
Stage 2	-	-	-	-	-	-	764	697	-	806	739	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	10.5	11.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	662	1320	-	-	1398	-	-	569
HCM Lane V/C Ratio	0.006	0.005	-	-	0.002	-	-	0.059
HCM Control Delay (s)	10.5	7.7	0	-	7.6	0	-	11.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.2

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	2	199	236	49	82	4
Future Vol, veh/h	2	199	236	49	82	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	216	257	53	89	4

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	310	0	-	0	504	284
Stage 1	-	-	-	-	284	-
Stage 2	-	-	-	-	220	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1250	-	-	-	528	755
Stage 1	-	-	-	-	764	-
Stage 2	-	-	-	-	817	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1250	-	-	-	527	755
Mov Cap-2 Maneuver	-	-	-	-	527	-
Stage 1	-	-	-	-	762	-
Stage 2	-	-	-	-	817	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1250	-	-	-	535
HCM Lane V/C Ratio	0.002	-	-	-	0.175
HCM Control Delay (s)	7.9	0	-	-	13.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.6

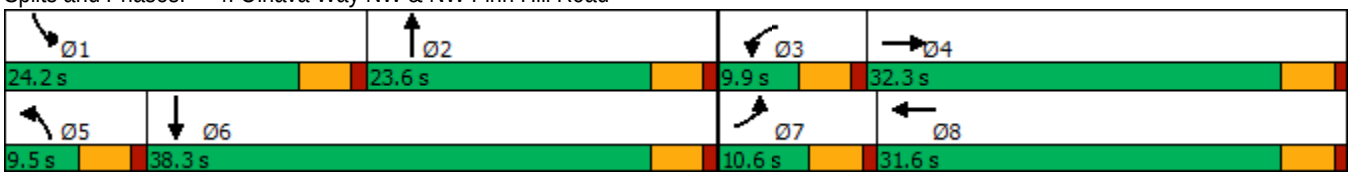
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	99	219	3	23	256	311	2	6	10	370	9	144
Future Volume (vph)	99	219	3	23	256	311	2	6	10	370	9	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		0	110		135	50		0	385		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											0.98	
Frt		0.998			0.918			0.906			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1877	0	1787	1727	0	1787	1704	0	1787	1582	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	1877	0	1787	1727	0	1787	1704	0	1787	1582	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			69			10			150	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			346			782			1372	
Travel Time (s)		25.9			7.9			17.8			31.2	
Confl. Bikes (#/hr)												1
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	103	231	0	24	591	0	2	16	0	385	159	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	10.6	32.3		9.9	31.6		9.5	23.6		24.2	38.3	
Total Split (%)	11.8%	35.9%		11.0%	35.1%		10.6%	26.2%		26.9%	42.6%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	6.1	33.8		5.4	27.1		5.0	6.0		19.7	28.3	
Actuated g/C Ratio	0.08	0.44		0.07	0.35		0.07	0.08		0.26	0.37	
v/c Ratio	0.73	0.28		0.19	0.91		0.02	0.11		0.84	0.23	
Control Delay	65.5	16.5		37.9	41.4		34.5	23.9		46.0	5.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	65.5	16.5		37.9	41.4		34.5	23.9		46.0	5.3	
LOS	E	B		D	D		C	C		D	A	
Approach Delay		31.6			41.2			25.1			34.1	
Approach LOS		C			D			C			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	49	60		11	236		1	3		174	3	
Queue Length 95th (ft)	#128	137		34	#447		8	21		#327	45	
Internal Link Dist (ft)		1060			266			702			1292	
Turn Bay Length (ft)	375			110			50			385		
Base Capacity (vph)	141	824		125	653		115	430		457	779	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.73	0.28		0.19	0.91		0.02	0.04		0.84	0.20	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 76.9
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.91
Intersection Signal Delay: 36.3 Intersection LOS: D
Intersection Capacity Utilization 76.4% ICU Level of Service D
Analysis Period (min) 15
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Olhava Way NW & NW Finn Hill Road



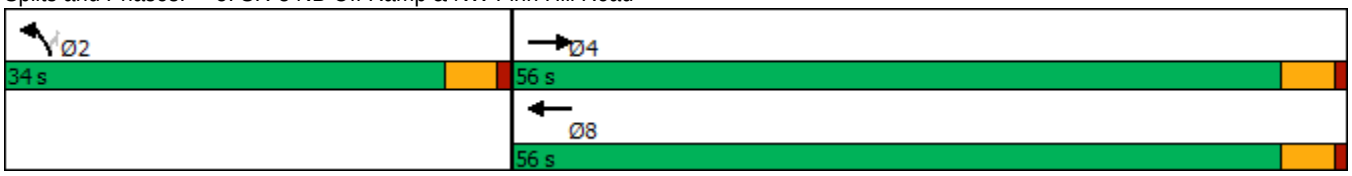
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	290	0	0	604	276	345
Future Volume (vph)	290	0	0	604	276	345
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	205
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1881	0	0	1881	1787	1599
Flt Permitted					0.950	
Satd. Flow (perm)	1881	0	0	1881	1787	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						363
Link Speed (mph)	30			30	30	
Link Distance (ft)	615			2529	1204	
Travel Time (s)	14.0			57.5	27.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	305	0	0	636	291	363
Turn Type	NA			NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0
Minimum Split (s)	22.5			22.5	22.5	22.5
Total Split (s)	56.0			56.0	34.0	34.0
Total Split (%)	62.2%			62.2%	37.8%	37.8%
Yellow Time (s)	3.5			3.5	3.5	3.5
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.5			4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None			None	Min	Min
Act Effct Green (s)	23.2			23.2	14.3	14.3
Actuated g/C Ratio	0.49			0.49	0.30	0.30
v/c Ratio	0.33			0.69	0.54	0.49
Control Delay	8.7			14.1	19.8	4.9
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	8.7			14.1	19.8	4.9
LOS	A			B	B	A
Approach Delay	8.7			14.1	11.5	
Approach LOS	A			B	B	
Queue Length 50th (ft)	41			108	61	0
Queue Length 95th (ft)	110			275	171	53

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Internal Link Dist (ft)	535			2449	1124	
Turn Bay Length (ft)						205
Base Capacity (vph)	1758			1758	1220	1207
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.17			0.36	0.24	0.30

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 47.3
Natural Cycle: 55
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.69
Intersection Signal Delay: 12.0 — Intersection LOS: B
Intersection Capacity Utilization 54.6% — ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 5: SR-3 NB Off Ramp & NW Finn Hill Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	65	436	97	615	445	104	157	197	701	75	173	75
Future Volume (vph)	65	436	97	615	445	104	157	197	701	75	173	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	290		125	105		235	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00	0.97			0.98	1.00	0.99	
Frt		0.973				0.850			0.850		0.955	
Flt Protected	0.950			0.950	0.991		0.950			0.950		
Satd. Flow (prot)	1787	3469	0	1698	1771	1599	1787	1881	1599	1787	3391	0
Flt Permitted	0.950			0.950	0.991		0.950			0.950		
Satd. Flow (perm)	1783	3469	0	1697	1771	1557	1787	1881	1574	1783	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27				127			615		68	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2529			1683			1662			5966	
Travel Time (s)		57.5			38.3			37.8			135.6	
Confl. Peds. (#/hr)	2		1	1		2			2	2		
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)				16%								
Lane Group Flow (vph)	71	586	0	568	597	114	173	216	770	82	272	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	22.5	22.5		31.0	31.0	31.0	13.0	27.0	27.0	9.5	23.5	
Total Split (%)	25.0%	25.0%		34.4%	34.4%	34.4%	14.4%	30.0%	30.0%	10.6%	26.1%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	17.3	17.3		26.5	26.5	26.5	8.5	22.5	22.5	5.0	19.0	
Actuated g/C Ratio	0.19	0.19		0.30	0.30	0.30	0.10	0.25	0.25	0.06	0.21	
v/c Ratio	0.21	0.84		1.13	1.14	0.21	1.02	0.46	0.90	0.82	0.35	
Control Delay	31.9	45.7		112.5	114.4	4.8	117.9	32.2	22.5	96.0	23.8	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	31.9	45.7		112.5	114.4	4.8	117.9	32.2	22.5	96.0	23.8	
LOS	C	D		F	F	A	F	C	C	F	C	
Approach Delay		44.2			103.8			38.5			40.6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		D			F			D			D	
Queue Length 50th (ft)	34	161		~400	~423	0	~103	104	80	47	51	
Queue Length 95th (ft)	71	#242		#608	#635	32	#233	172	#343	#130	87	
Internal Link Dist (ft)		2449			1603			1582			5886	
Turn Bay Length (ft)	125			290		125	105		235	100		
Base Capacity (vph)	360	720		503	525	551	169	474	856	100	774	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.20	0.81		1.13	1.14	0.21	1.02	0.46	0.90	0.82	0.35	

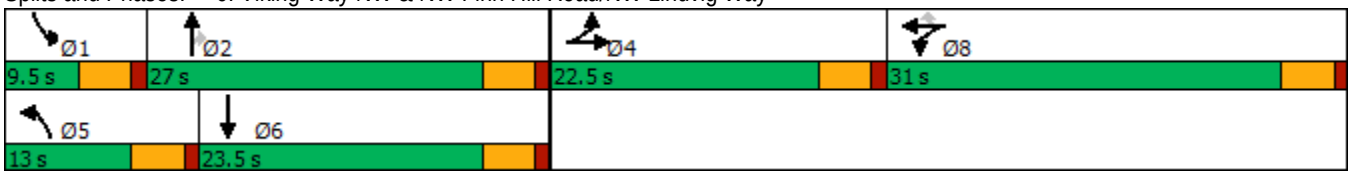
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 89.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 64.0 Intersection LOS: E
Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Viking Way NW & NW Finn Hill Road/NW Lindvig Way



Intersection	
Int Delay, s/veh	3.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	74	140	96	121	15
Future Vol, veh/h	18	74	140	96	121	15
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	140	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	76	144	99	125	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	243	0	-	0	308	195
Stage 1	-	-	-	-	194	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1323	-	-	-	684	846
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1323	-	-	-	674	845
Mov Cap-2 Maneuver	-	-	-	-	674	-
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1323	-	-	-	689
HCM Lane V/C Ratio	0.014	-	-	-	0.203
HCM Control Delay (s)	7.8	-	-	-	11.6
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection												
Int Delay, s/veh	1.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	194	2	3	222	56	2	0	2	37	0	6
Future Vol, veh/h	7	194	2	3	222	56	2	0	2	37	0	6
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	204	2	3	234	59	2	0	2	39	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	294	0	0	206	0	0	492	519	205	491	491	265
Stage 1	-	-	-	-	-	-	219	219	-	271	271	-
Stage 2	-	-	-	-	-	-	273	300	-	220	220	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1268	-	-	1365	-	-	487	461	836	488	478	774
Stage 1	-	-	-	-	-	-	783	722	-	735	685	-
Stage 2	-	-	-	-	-	-	733	666	-	782	721	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1267	-	-	1365	-	-	480	456	836	483	473	773
Mov Cap-2 Maneuver	-	-	-	-	-	-	480	456	-	483	473	-
Stage 1	-	-	-	-	-	-	778	718	-	730	682	-
Stage 2	-	-	-	-	-	-	725	663	-	775	717	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	10.9	12.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	610	1267	-	-	1365	-	-	510
HCM Lane V/C Ratio	0.007	0.006	-	-	0.002	-	-	0.089
HCM Control Delay (s)	10.9	7.9	0	-	7.6	0	-	12.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	235	281	112	127	6
Future Vol, veh/h	4	235	281	112	127	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	255	305	122	138	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	427	0	-	0	629	366
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	263	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1132	-	-	-	446	679
Stage 1	-	-	-	-	702	-
Stage 2	-	-	-	-	781	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1132	-	-	-	444	679
Mov Cap-2 Maneuver	-	-	-	-	444	-
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	781	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1132	-	-	-	451
HCM Lane V/C Ratio	0.004	-	-	-	0.321
HCM Control Delay (s)	8.2	0	-	-	16.7
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	278	3	26	338	357	2	7	11	425	10	187
Future Volume (vph)	127	278	3	26	338	357	2	7	11	425	10	187
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		0	110		135	50		0	385		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											0.98	
Frt		0.998			0.923			0.908			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1877	0	1787	1736	0	1787	1708	0	1787	1580	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	1877	0	1787	1736	0	1787	1708	0	1787	1580	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			60			11			195	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			346			782			1372	
Travel Time (s)		25.9			7.9			17.8			31.2	
Confl. Bikes (#/hr)												1
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	132	293	0	27	724	0	2	18	0	443	205	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	10.6	32.3		9.9	31.6		9.5	23.6		24.2	38.3	
Total Split (%)	11.8%	35.9%		11.0%	35.1%		10.6%	26.2%		26.9%	42.6%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	6.1	33.8		5.4	27.1		5.0	6.1		19.7	28.4	
Actuated g/C Ratio	0.08	0.44		0.07	0.35		0.06	0.08		0.26	0.37	
v/c Ratio	0.94	0.36		0.22	1.12		0.02	0.12		0.97	0.29	
Control Delay	99.9	17.4		38.5	96.2		34.5	23.8		66.6	5.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	99.9	17.4		38.5	96.2		34.5	23.8		66.6	5.0	
LOS	F	B		D	F		C	C		E	A	
Approach Delay		43.0			94.1			24.9			47.1	
Approach LOS		D			F			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	64	79		12	~383		1	3		208	3	
Queue Length 95th (ft)	#169	175		37	#607		8	22		#397	51	
Internal Link Dist (ft)		1060			266			702			1292	
Turn Bay Length (ft)	375			110			50			385		
Base Capacity (vph)	141	823		125	649		115	432		457	802	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.94	0.36		0.22	1.12		0.02	0.04		0.97	0.26	

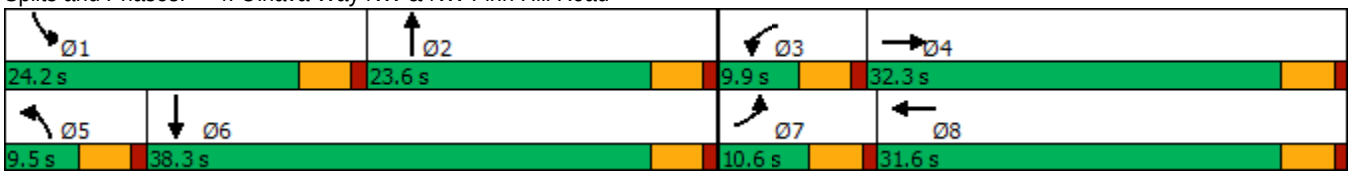
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 77
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 65.1 Intersection LOS: E
Intersection Capacity Utilization 88.1% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Olhava Way NW & NW Finn Hill Road



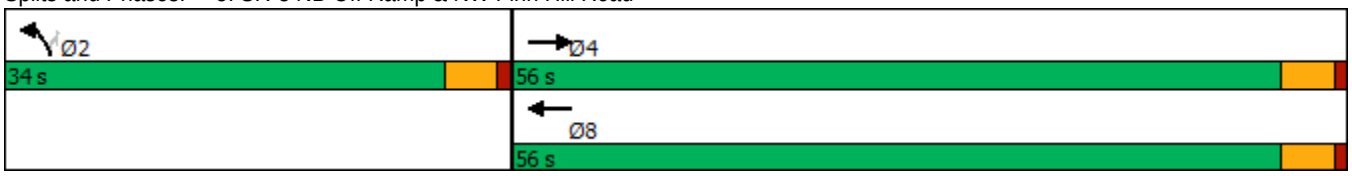
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	0	0	716	339	396
Future Volume (vph)	346	0	0	716	339	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	205
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1881	0	0	1881	1787	1599
Flt Permitted					0.950	
Satd. Flow (perm)	1881	0	0	1881	1787	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						417
Link Speed (mph)	30			30	30	
Link Distance (ft)	615			2529	1204	
Travel Time (s)	14.0			57.5	27.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	364	0	0	754	357	417
Turn Type	NA			NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0
Minimum Split (s)	22.5			22.5	22.5	22.5
Total Split (s)	56.0			56.0	34.0	34.0
Total Split (%)	62.2%			62.2%	37.8%	37.8%
Yellow Time (s)	3.5			3.5	3.5	3.5
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.5			4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None			None	Min	Min
Act Effct Green (s)	31.4			31.4	18.4	18.4
Actuated g/C Ratio	0.53			0.53	0.31	0.31
v/c Ratio	0.37			0.76	0.65	0.53
Control Delay	9.9			17.7	26.2	5.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	9.9			17.7	26.2	5.2
LOS	A			B	C	A
Approach Delay	9.9			17.7	14.9	
Approach LOS	A			B	B	
Queue Length 50th (ft)	66			184	102	0
Queue Length 95th (ft)	156			422	262	62

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Internal Link Dist (ft)	535			2449	1124	
Turn Bay Length (ft)						205
Base Capacity (vph)	1581			1581	979	1065
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.23			0.48	0.36	0.39

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 59.8
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 64.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 5: SR-3 NB Off Ramp & NW Finn Hill Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	511	114	706	529	119	184	226	805	86	199	86
Future Volume (vph)	75	511	114	706	529	119	184	226	805	86	199	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	290		125	105		235	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00	0.97			0.98	1.00	0.99	
Frt		0.973				0.850			0.850		0.955	
Flt Protected	0.950			0.950	0.992		0.950			0.950		
Satd. Flow (prot)	1787	3469	0	1698	1773	1599	1787	1881	1599	1787	3391	0
Flt Permitted	0.950			0.950	0.992		0.950			0.950		
Satd. Flow (perm)	1783	3469	0	1697	1773	1557	1787	1881	1574	1783	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26				127			604		69	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2529			1683			1662			5966	
Travel Time (s)		57.5			38.3			37.8			135.6	
Confl. Peds. (#/hr)	2		1	1		2			2	2		
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)				14%								
Lane Group Flow (vph)	82	687	0	667	690	131	202	248	885	95	314	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	22.5	22.5		31.0	31.0	31.0	13.0	27.0	27.0	9.5	23.5	
Total Split (%)	25.0%	25.0%		34.4%	34.4%	34.4%	14.4%	30.0%	30.0%	10.6%	26.1%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	18.0	18.0		26.5	26.5	26.5	8.5	22.5	22.5	5.0	19.0	
Actuated g/C Ratio	0.20	0.20		0.29	0.29	0.29	0.09	0.25	0.25	0.06	0.21	
v/c Ratio	0.23	0.96		1.34	1.32	0.24	1.20	0.53	1.05	0.96	0.41	
Control Delay	32.2	61.3		193.9	187.2	6.2	172.1	34.0	56.3	126.0	25.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.2	61.3		193.9	187.2	6.2	172.1	34.0	56.3	126.0	25.5	
LOS	C	E		F	F	A	F	C	E	F	C	
Approach Delay		58.2			174.3			69.7			48.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			F			E			D	
Queue Length 50th (ft)	39	198		~524	~540	2	~141	122	~270	55	62	
Queue Length 95th (ft)	79	#314		#745	#762	42	#276	197	#503	#151	102	
Internal Link Dist (ft)		2449			1603			1582			5886	
Turn Bay Length (ft)	125			290		125	105		235	100		
Base Capacity (vph)	357	714		499	522	548	168	470	846	99	770	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.96		1.34	1.32	0.24	1.20	0.53	1.05	0.96	0.41	

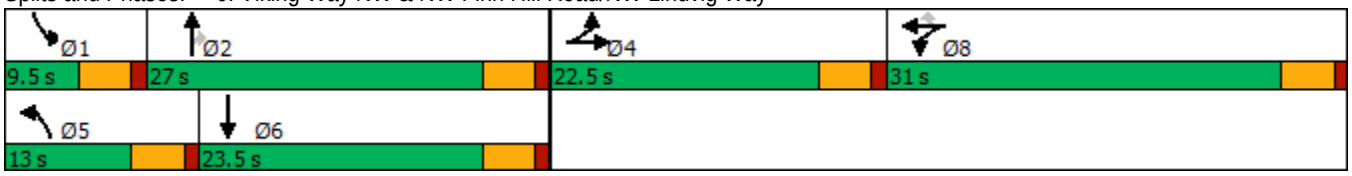
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.34
Intersection Signal Delay: 104.2 Intersection LOS: F
Intersection Capacity Utilization 86.0% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Viking Way NW & NW Finn Hill Road/NW Lindvig Way



Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	22	74	140	106	127	17
Future Vol, veh/h	22	74	140	106	127	17
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	140	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	76	144	109	131	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	253	0	-	0	321	200
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	122	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1312	-	-	-	673	841
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	903	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1312	-	-	-	661	840
Mov Cap-2 Maneuver	-	-	-	-	661	-
Stage 1	-	-	-	-	820	-
Stage 2	-	-	-	-	903	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1312	-	-	-	678
HCM Lane V/C Ratio	0.017	-	-	-	0.219
HCM Control Delay (s)	7.8	-	-	-	11.8
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

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	7	200	2	3	232	66	2	0	2	43	0	6
Future Vol, veh/h	7	200	2	3	232	66	2	0	2	43	0	6
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	211	2	3	244	69	2	0	2	45	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	314	0	0	213	0	0	514	546	212	513	513	280
Stage 1	-	-	-	-	-	-	226	226	-	286	286	-
Stage 2	-	-	-	-	-	-	288	320	-	227	227	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1246	-	-	1357	-	-	471	445	828	472	465	759
Stage 1	-	-	-	-	-	-	777	717	-	721	675	-
Stage 2	-	-	-	-	-	-	720	652	-	776	716	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1245	-	-	1357	-	-	464	441	828	467	460	758
Mov Cap-2 Maneuver	-	-	-	-	-	-	464	441	-	467	460	-
Stage 1	-	-	-	-	-	-	772	713	-	716	672	-
Stage 2	-	-	-	-	-	-	712	649	-	769	712	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	11.1	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	595	1245	-	-	1357	-	-	490
HCM Lane V/C Ratio	0.007	0.006	-	-	0.002	-	-	0.105
HCM Control Delay (s)	11.1	7.9	0	-	7.7	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	3.4					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	247	301	140	143	6
Future Vol, veh/h	4	247	301	140	143	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	268	327	152	155	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	479	0	-	0	679	403
Stage 1	-	-	-	-	403	-
Stage 2	-	-	-	-	276	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1083	-	-	-	417	647
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	771	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1083	-	-	-	415	647
Mov Cap-2 Maneuver	-	-	-	-	415	-
Stage 1	-	-	-	-	672	-
Stage 2	-	-	-	-	771	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1083	-	-	-	421
HCM Lane V/C Ratio	0.004	-	-	-	0.385
HCM Control Delay (s)	8.3	0	-	-	18.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.8

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	137	296	3	26	370	357	2	7	11	425	10	203
Future Volume (vph)	137	296	3	26	370	357	2	7	11	425	10	203
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		0	110		135	50		0	385		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											0.98	
Frt		0.999			0.926			0.908			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1879	0	1787	1742	0	1787	1708	0	1787	1580	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	1879	0	1787	1742	0	1787	1708	0	1787	1580	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			55			11			211	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			346			782			1372	
Travel Time (s)		25.9			7.9			17.8			31.2	
Confl. Bikes (#/hr)												1
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	143	311	0	27	757	0	2	18	0	443	221	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	10.6	32.3		9.9	31.6		9.5	23.6		24.2	38.3	
Total Split (%)	11.8%	35.9%		11.0%	35.1%		10.6%	26.2%		26.9%	42.6%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	6.1	33.8		5.4	27.1		5.0	6.1		19.7	28.4	
Actuated g/C Ratio	0.08	0.44		0.07	0.35		0.06	0.08		0.26	0.37	
v/c Ratio	1.01	0.38		0.22	1.17		0.02	0.12		0.97	0.31	
Control Delay	119.2	17.7		38.5	116.2		34.5	23.8		66.6	4.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	119.2	17.7		38.5	116.2		34.5	23.8		66.6	4.9	
LOS	F	B		D	F		C	C		E	A	
Approach Delay		49.7			113.6			24.9			46.0	
Approach LOS		D			F			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~70	85		12	~420		1	3		208	3	
Queue Length 95th (ft)	#184	186		37	#647		8	22		#397	52	
Internal Link Dist (ft)		1060			266			702			1292	
Turn Bay Length (ft)	375			110			50			385		
Base Capacity (vph)	141	824		125	648		115	432		457	811	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.01	0.38		0.22	1.17		0.02	0.04		0.97	0.27	

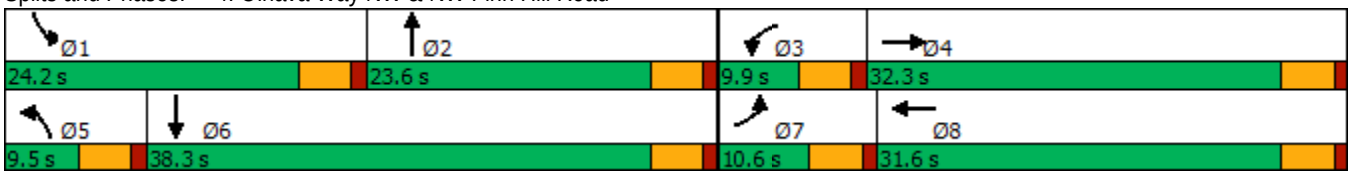
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 77
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.17
Intersection Signal Delay: 74.2 Intersection LOS: E
Intersection Capacity Utilization 90.4% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Olhava Way NW & NW Finn Hill Road



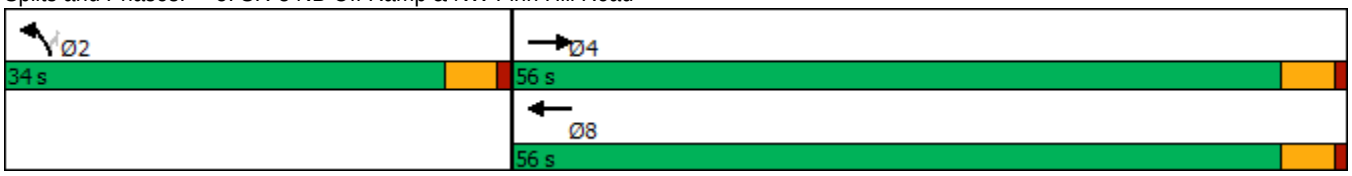
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	355	0	0	732	355	396
Future Volume (vph)	355	0	0	732	355	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	205
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1881	0	0	1881	1787	1599
Flt Permitted					0.950	
Satd. Flow (perm)	1881	0	0	1881	1787	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						417
Link Speed (mph)	30			30	30	
Link Distance (ft)	615			2529	1204	
Travel Time (s)	14.0			57.5	27.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	374	0	0	771	374	417
Turn Type	NA			NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0
Minimum Split (s)	22.5			22.5	22.5	22.5
Total Split (s)	56.0			56.0	34.0	34.0
Total Split (%)	62.2%			62.2%	37.8%	37.8%
Yellow Time (s)	3.5			3.5	3.5	3.5
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.5			4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None			None	Min	Min
Act Effct Green (s)	32.4			32.4	19.1	19.1
Actuated g/C Ratio	0.53			0.53	0.31	0.31
v/c Ratio	0.38			0.78	0.67	0.53
Control Delay	10.2			18.5	27.4	5.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	10.2			18.5	27.4	5.2
LOS	B			B	C	A
Approach Delay	10.2			18.5	15.7	
Approach LOS	B			B	B	
Queue Length 50th (ft)	71			200	113	0
Queue Length 95th (ft)	161			438	276	62

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Internal Link Dist (ft)	535			2449	1124	
Turn Bay Length (ft)						205
Base Capacity (vph)	1554			1554	948	1044
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.24			0.50	0.39	0.40

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 61.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.78
Intersection Signal Delay: 15.8 Intersection LOS: B
Intersection Capacity Utilization 65.7% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: SR-3 NB Off Ramp & NW Finn Hill Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	519	115	706	542	119	187	226	805	86	199	86
Future Volume (vph)	75	519	115	706	542	119	187	226	805	86	199	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	290		125	105		235	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00	0.97			0.98	1.00	0.99	
Frt		0.973				0.850			0.850		0.955	
Flt Protected	0.950			0.950	0.993		0.950			0.950		
Satd. Flow (prot)	1787	3469	0	1698	1775	1599	1787	1881	1599	1787	3391	0
Flt Permitted	0.950			0.950	0.993		0.950			0.950		
Satd. Flow (perm)	1784	3469	0	1697	1774	1557	1787	1881	1574	1783	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26				127			604		69	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2529			1683			1662			5966	
Travel Time (s)		57.5			38.3			37.8			135.6	
Confl. Peds. (#/hr)	2		1	1		2			2	2		
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)				13%								
Lane Group Flow (vph)	82	696	0	675	697	131	205	248	885	95	314	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	22.5	22.5		31.0	31.0	31.0	13.0	27.0	27.0	9.5	23.5	
Total Split (%)	25.0%	25.0%		34.4%	34.4%	34.4%	14.4%	30.0%	30.0%	10.6%	26.1%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	18.0	18.0		26.5	26.5	26.5	8.5	22.5	22.5	5.0	19.0	
Actuated g/C Ratio	0.20	0.20		0.29	0.29	0.29	0.09	0.25	0.25	0.06	0.21	
v/c Ratio	0.23	0.97		1.35	1.34	0.24	1.22	0.53	1.05	0.96	0.41	
Control Delay	32.2	63.9		200.5	192.7	6.2	178.3	34.0	56.3	126.0	25.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.2	63.9		200.5	192.7	6.2	178.3	34.0	56.3	126.0	25.5	
LOS	C	E		F	F	A	F	C	E	F	C	
Approach Delay		60.5			180.0			70.9			48.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			F			E			D	
Queue Length 50th (ft)	39	201		~534	~548	2	~144	122	~270	55	62	
Queue Length 95th (ft)	79	#320		#755	#771	42	#280	197	#503	#151	102	
Internal Link Dist (ft)		2449			1603			1582			5886	
Turn Bay Length (ft)	125			290		125	105		235	100		
Base Capacity (vph)	357	714		499	522	548	168	470	846	99	770	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.97		1.35	1.34	0.24	1.22	0.53	1.05	0.96	0.41	

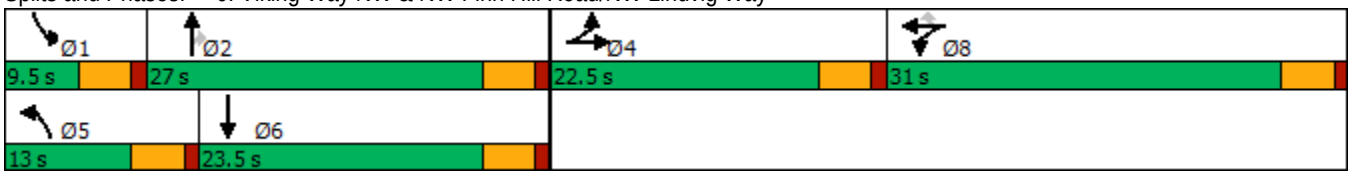
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.35
Intersection Signal Delay: 107.4 Intersection LOS: F
Intersection Capacity Utilization 86.6% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Viking Way NW & NW Finn Hill Road/NW Lindvig Way



Intersection						
Int Delay, s/veh	0.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	110	5	2	133
Future Vol, veh/h	3	2	110	5	2	133
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	3	2	120	5	2	145

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	272	123	0	0	125	0
Stage 1	123	-	-	-	-	-
Stage 2	149	-	-	-	-	-
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	717	928	-	-	1462	-
Stage 1	902	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	716	928	-	-	1462	-
Mov Cap-2 Maneuver	716	-	-	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	879	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	788	1462	-
HCM Lane V/C Ratio	-	-	0.007	0.001	-
HCM Control Delay (s)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection						
Int Delay, s/veh	0.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	0	115	13	0	136
Future Vol, veh/h	7	0	115	13	0	136
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	8	0	125	14	0	148

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	280	132	0	0	139	0
Stage 1	132	-	-	-	-	-
Stage 2	148	-	-	-	-	-
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	710	917	-	-	1445	-
Stage 1	894	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	710	917	-	-	1445	-
Mov Cap-2 Maneuver	710	-	-	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	710	1445	-
HCM Lane V/C Ratio	-	-	0.011	-	-
HCM Control Delay (s)	-	-	10.1	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Pipeline Information

WESTWOOD CROSSING PRELIMINARY PLAT
PLANNING FILE NO. 07-29-15-1

I. GENERAL INFORMATION

Applicant Name and Address:
John Harkness
Copper Ridge LLC
PO Box 73790
Puyallup, WA 98373

Owner Name and Address:
Columbia State Bank
2228 S. 78th St, MS 6115
Tacoma, WA 98409

Consultant Name and Address:
Team 4 Engineering
5819 NE Minder Rd
Poulsbo, WA 98370

Land Use Review: Preliminary Plat

Description of Proposal: The application is for a 37-lot single-family residential subdivision with a two cell storm pond tract on an approximately 9.24 acre site. There will be two access points from Urdahl Road NW. Stubs for future road connections will be provided on the northern and southern boundary of the site. The subdivision proposes to utilize the City's lot averaging regulations (PMC 18.70.050.C) and proposes lots less than the typical Residential Low lot size of 7,500 square feet. Lots vary from approximately 6,300 square feet to 10,315 square feet with an average lot size of approximately 7,505 square feet.

Additional information and analysis regarding roads, traffic, sewer and water, stormwater and critical areas can be found in Sections IV- VI.

Location: The current address of the property is 21735 Urdahl Road NW. It is located on the west side of Urdahl Road.

Legal Description: Kitsap County Assessor's Parcel Number 102601-2-005-2004. A full legal description is included with the application and project narrative in Exhibit 1.

Comprehensive Plan and Zoning Designation:

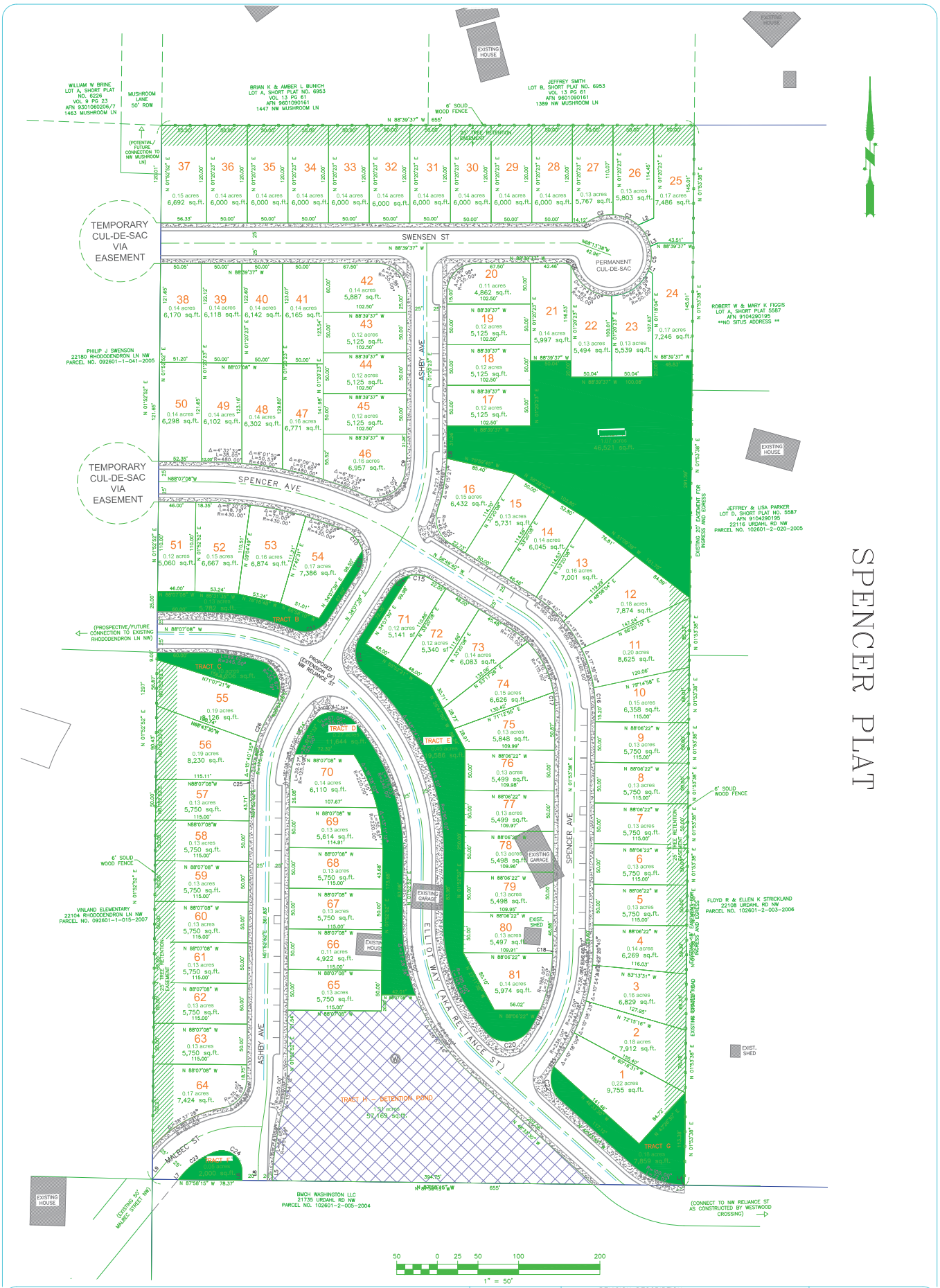
Site:	Residential Low
North:	Residential Low
South:	Residential Low
East:	Residential Low
West:	Residential Low

Westwood Trip Generation

Spencer Plat
GTC #19-166

Trip Generation for: **Weekday, Peak Hour of Adjacent Street Traffic, One Hour between 4 and 6 PM**
(a.k.a.): **Weekday PM Peak Hour**

									NET EXTERNAL TRIPS BY TYPE											
									IN BOTH DIRECTIONS						DIRECTIONAL ASSIGNMENTS					
			Gross Trips				Internal Crossover		TOTAL	PASS-BY		DIVERTED LINK		NEW	PASS-BY		DIVERTED LINK		NEW	
LAND USES	VARIABLE	ITE LU code	Trip Rate	% IN	% OUT	In+Out (Total)	% of Gross Trips	Trips In+Out (Total)	In+Out (Total)	% of Ext. Trips	In+Out (Total)	% of Ext. Trips	In+Out (Total)	In+Out (Total)	In	Out	In	Out	In	Out
Single-Family Detached	37 units	210	0.99	63%	37%	36.63	0%	0.00	36.63	0%	0.00	0%	0.00	36.63	0.00	0.00	0.00	0.00	23.08	13.55
Totals						36.63		0.00	36.63		0.00		0.00	36.63	0.00	0.00	0.00	0.00	23.08	13.55



PROJECT MANAGER: Timothy D Witten, MUP

SIGNATURE:

FILE NO 831A

SHEET 1 OF 2

TEAM 4 ENGINEERING
5819 NE MINDER RD
POULSBO, WA. 98370
(360) 297-5560
(360) 297-7951 (FAX)

TITLE SPENCER PLAT

CLIENT George and June Spencer
2300 NW Circle Drive
Poulsbo, WA 98370

REV NO	REVISION DESCRIPTION	DATE	BY
1	Reconfig lots and streets; reduced open space	7/3/18	TW
2	Re-design per Pre-App conference	1/25/19	TW
3	Rem boulevard; refine graphics	3/22/19	#
#	#	#	#
#	#	#	#
#	#	#	#
#	#	#	#

DESIGN Mark Kuhlman
DRAWN Timothy Witten
CHECKED ###
SEC 10 T 26N R 1E
DISC NO ____ DATE 3/22/19
SCALE 1" = 50'

Collision Data

PRIMARY TRAFFICWAY	INTERSECTING TRAFFICWAY/ REFERENCE POINT NAME	DIST FROM REF POINT	MI or FT	COMP DIR FROM REF POINT	REPORT NUMBER	DATE	TIME	MOST SEVERE INJURY TYPE	# INJ	# FAT	# VEH	# PEDS	# BIKES	FIRST COLLISION TYPE / OBJECT STRUCK
NW FINN HILL RD	CLARET LOOP NW	0			E652755	2017-03-17	17:50	No Apparent Injury	0	0	2	0	0	From same direction - one right turn - one straight
NW FINN HILL RD	URDAHL RD NW	0			E868696	2018-11-28	17:10	No Apparent Injury	0	0	2	0	0	Entering at angle
NW FINN HILL RD	OLHAVA WAY NW	0			E502080	2016-01-04	18:10	Suspected Minor Injury	2	0	2	0	0	Entering at angle
SR-3 ON RAMP		0			E514724	2016-02-11	18:40	No Apparent Injury	0	0	2	0	0	From opposite direction - one left turn - one right turn
SR-3 ON RAMP		0			E677957	2017-06-03	13:44	Suspected Serious Injury	2	0	4	0	0	Entering at angle
SR-3 ON RAMP		0			E680911	2017-06-12	18:00	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
SR-3 ON RAMP		0			E851896	2018-10-22	9:23	No Apparent Injury	0	0	2	0	0	Entering at angle
SR-3 ON RAMP		0			E874022	2018-12-07	16:12	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
NW FINN HILL RD	NW LINDVIG WAY	0			E605365	2016-11-05	13:22	Possible Injury	2	0	3	0	0	From same direction - both going straight - one stopped - rear-end
NW LINDVIG WAY	VIKING AVE NW	0			E600246	2016-10-25	17:00	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - sideswipe
NW LINDVIG WAY	VIKING AVE NW	0			E615572	2016-12-03	15:52	No Apparent Injury	0	0	2	0	0	Same direction -- both turning left -- both moving -- sideswipe
NW LINDVIG WAY	VIKING AVE NW	0			E712589	2017-07-06	19:05	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - sideswipe
VIKING AVE NW	NW FINN HILL RD	0			E571032	2016-08-03	14:33	No Apparent Injury	0	0	2	0	0	From same direction - all others
VIKING AVE NW	NW FINN HILL RD	0			E578376	2016-08-22	12:25	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
VIKING AVE NW	NW FINN HILL RD	0			E572437	2016-07-12	17:10	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - one stopped - rear-end
VIKING AVE NW	NW FINN HILL RD	0			E608866	2016-11-12	20:00	Possible Injury	1	0	2	0	0	Entering at angle
VIKING AVE NW	NW FINN HILL RD	50	F	S	E851944	2018-10-16	16:01	No Apparent Injury	0	0	2	0	0	From same direction - both going straight - both moving - rear-end

Washington State Department of Transportation

2011 Washington State Collision Data Summary

Olympic Region

2011 AVERAGE COLLISION RATES BY FUNCTIONAL CLASS
Olympic Region (State Routes only)

RURAL AREAS	PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	INTERSTATE	ALL HIGHWAYS
Vehicle Miles of Travel (Millions)	1,140.51	371.66	127.49	399.54	2,039.20
Miles of Highway	414.20	178.47	192.00	16.07	800.74
Total Collisions	1,051	584	194	177	2,006
Collision Rate (1)	**0.92**	**1.57**	**1.52**	**0.44**	**0.98**
Property Damage Only Collisions	670	352	110	130	1,262
Property Damage Only Collision Rate (1)	**0.59**	**0.95**	**0.86**	**0.33**	**0.62**
Injury Collisions	374	223	80	46	723
Injury Collision Rate (1)	**0.33**	**0.60**	**0.63**	**0.12**	**0.35**
Fatal Collisions	7	9	4	1	21
Fatal Collision Rate (2)	**0.61**	**2.42**	**3.14**	**0.25**	**1.03**

URBAN AREAS	PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	INTERSTATE	ALL HIGHWAYS
Vehicle Miles of Travel (Millions)	2,491.59	248.84	0.00	1,761.96	4,502.39
Miles of Highway	204.71	60.66	0.00	39.41	304.78
Total Collisions	4,536	522	0	2,597	7,655
Collision Rate (1)	**1.82**	**2.10**	**0.00**	**1.47**	**1.70**
Property Damage Only Collisions	3,032	320	0	1,794	5,146
Property Damage Only Collision Rate (1)	**1.22**	**1.29**	**0.00**	**1.02**	**1.14**
Injury Collisions	1,493	201	0	796	2,490
Injury Collision Rate (1)	**0.60**	**0.81**	**0.00**	**0.45**	**0.55**
Fatal Collisions	11	1	0	7	19
Fatal Collision Rate (2)	**0.44**	**0.40**	**0.00**	**0.40**	**0.42**

ALL AREAS	PRINCIPAL ARTERIAL	MINOR ARTERIAL	COLLECTOR	INTERSTATE	ALL HIGHWAYS
Vehicle Miles of Travel (Millions)	3,632.10	620.50	127.49	2,161.50	6,541.59
Miles of Highway	618.91	239.13	192.00	55.48	1,105.52
Total Collisions	5,587	1,106	194	2,774	9,661
Collision Rate (1)	**1.54**	**1.78**	**1.52**	**1.28**	**1.48**
Property Damage Only Collisions	3,702	672	110	1,924	6,408
Property Damage Only Collision Rate (1)	**1.02**	**1.08**	**0.86**	**0.89**	**0.98**
Injury Collisions	1,867	424	80	842	3,213
Injury Collision Rate (1)	**0.51**	**0.68**	**0.63**	**0.39**	**0.49**
Fatal Collisions	18	10	4	8	40
Fatal Collision Rate (2)	**0.50**	**1.61**	**3.14**	**0.37**	**0.61**

(1) Per Million Vehicle Miles of Travel
(2) Per 100 Million Vehicle Miles of Travel

No Swenson Plat Scenario Analysis

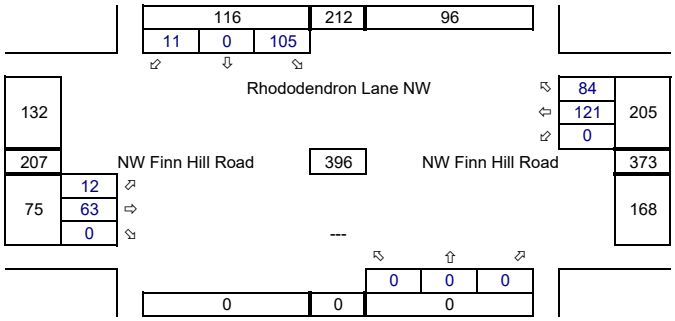
1 Rhododendron Ln @Finn Hill Rd

Synchro ID: 1

Existing
Average Weekday
PM Peak Hour

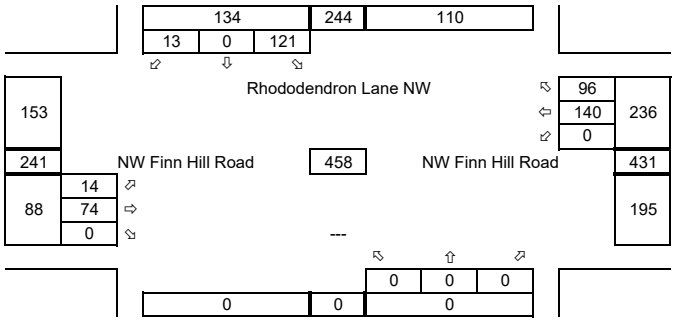
Year: **9/17/19**

Data Source: TCC

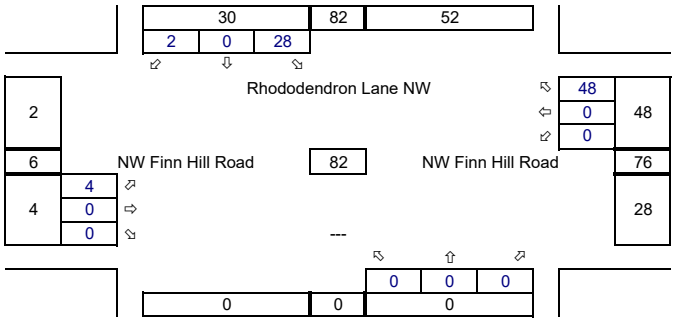


Future without Project
Average Weekday
PM Peak Hour

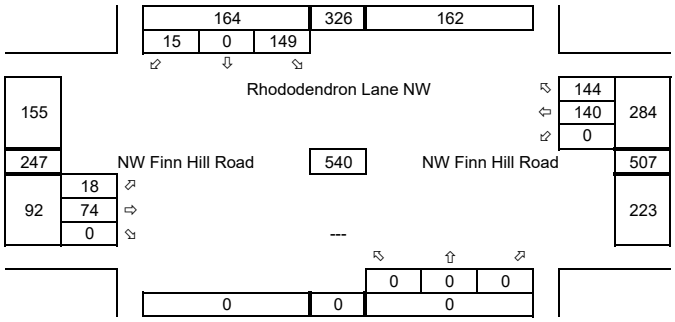
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

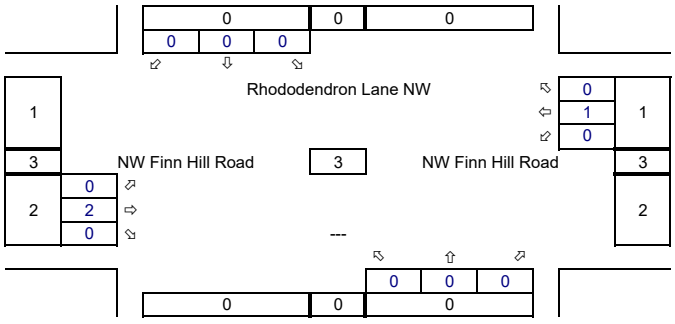


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Westwood Crossing



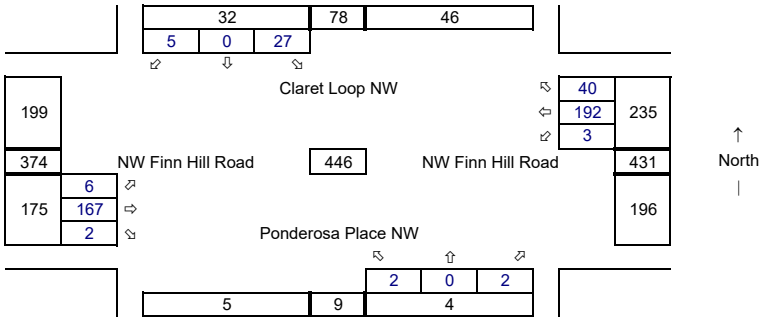
2 Claret Lp @ Finn Hill Rd

Synchro ID: 2

Existing
Average Weekday
PM Peak Hour

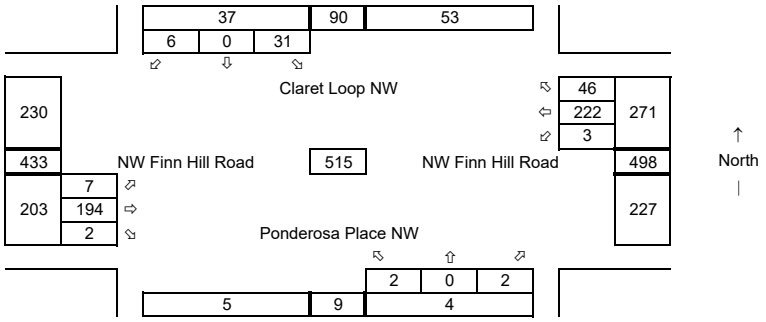
Year: **9/17/19**

Data Source: TCC

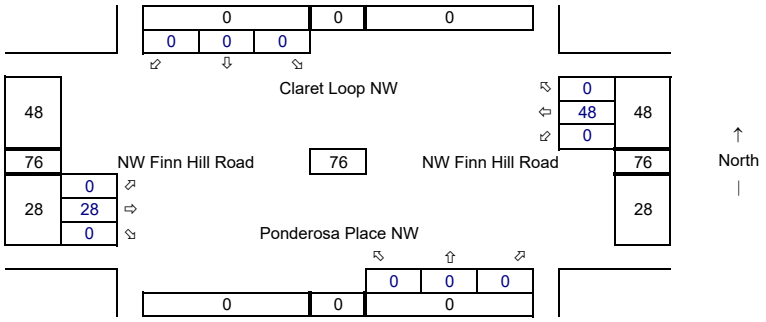


Future without Project
Average Weekday
PM Peak Hour

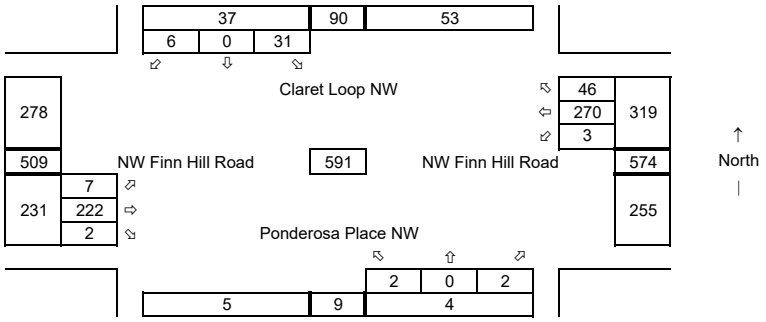
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

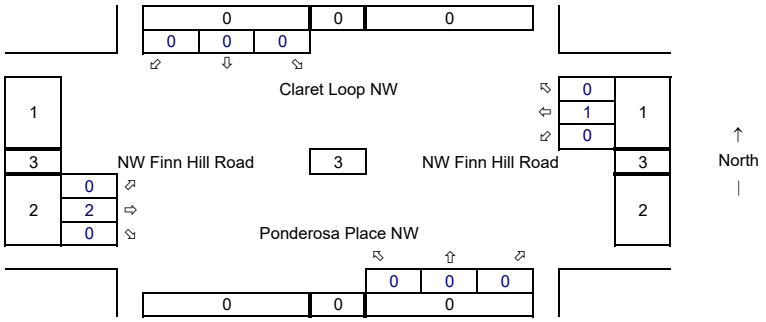


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Westwood Crossing



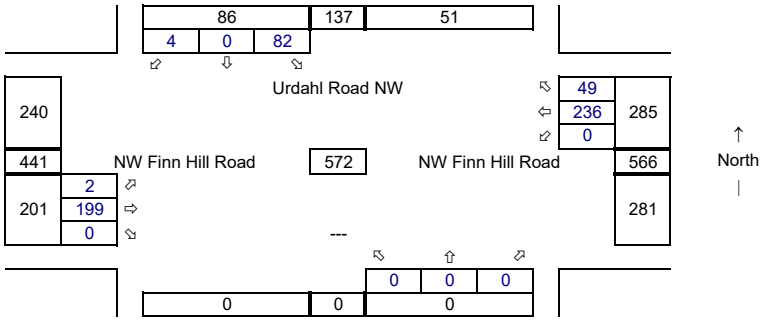
3 Urdahl Rd @ Finn Hill Rd

Synchro ID: 3

Existing
Average Weekday
PM Peak Hour

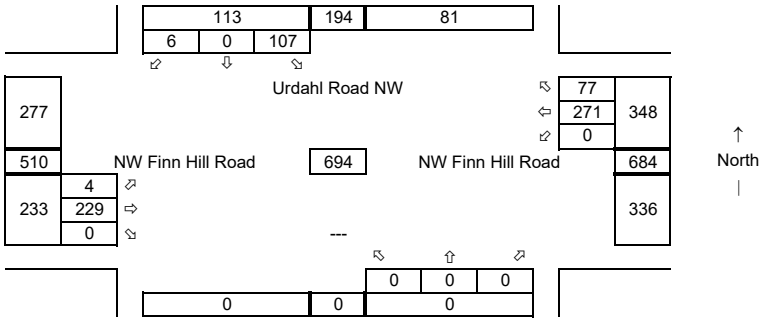
Year: **9/17/19**

Data Source: TCC

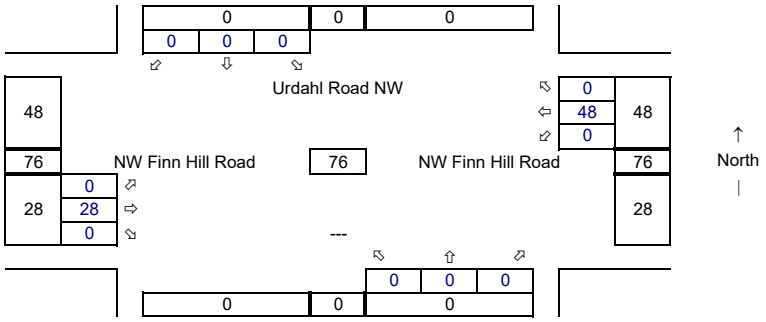


Future without Project
Average Weekday
PM Peak Hour

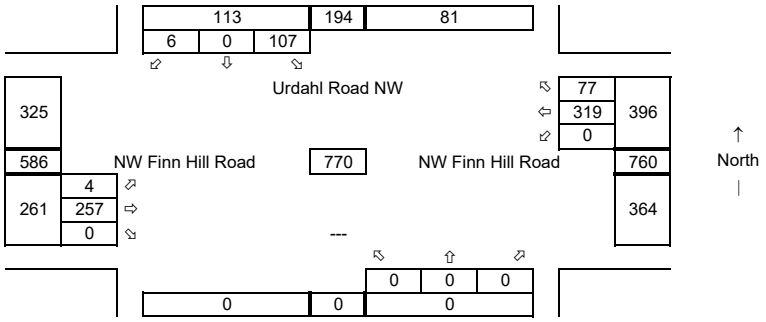
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

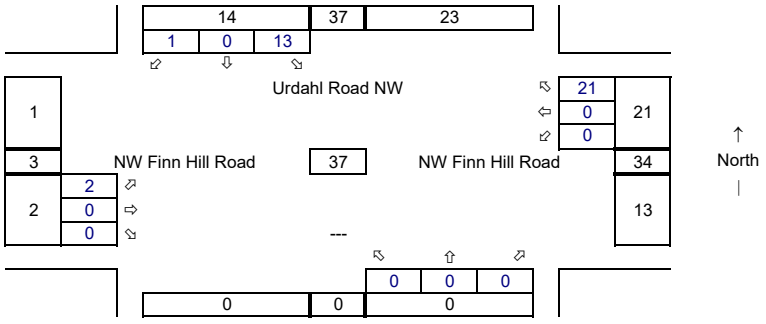


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Westwood Crossing



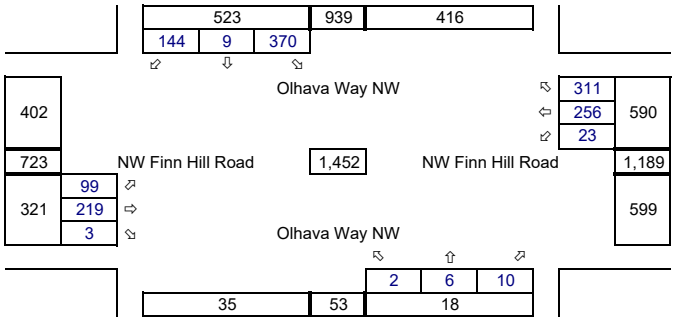
4 Olhava Way @ Finn Hill Rd

Synchro ID: 4

Existing
Average Weekday
PM Peak Hour

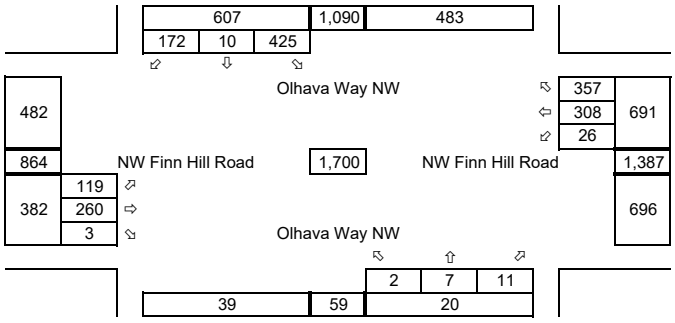
Year: **9/17/19**

Data Source: TCC

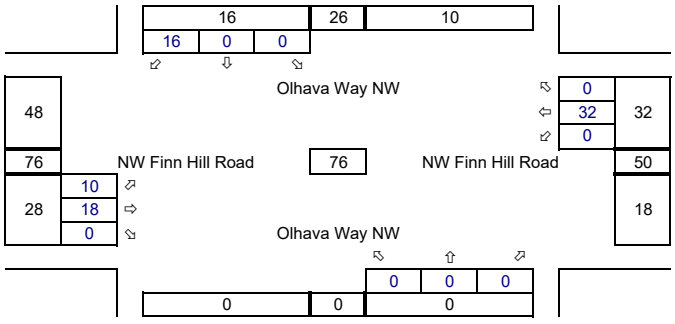


Future without Project
Average Weekday
PM Peak Hour

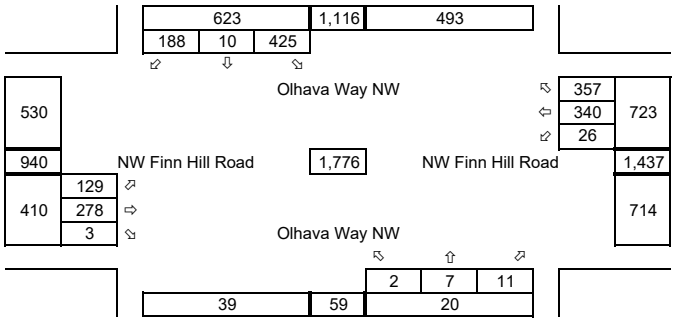
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

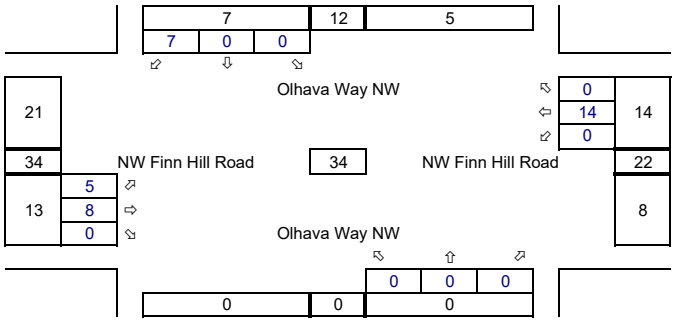


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Westwood Crossing



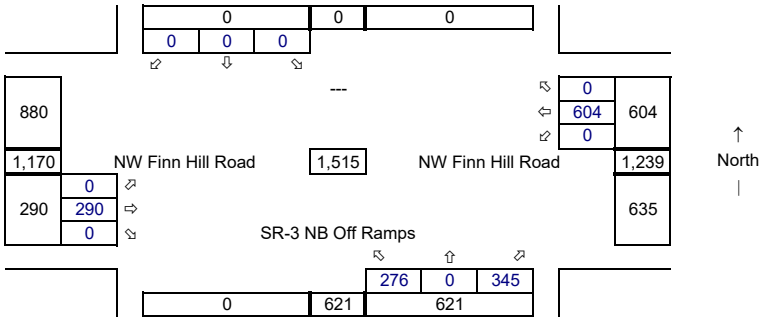
5 SR-3 NB Ramps @ Finn Hill Rd

Synchro ID: 5

Existing
Average Weekday
PM Peak Hour

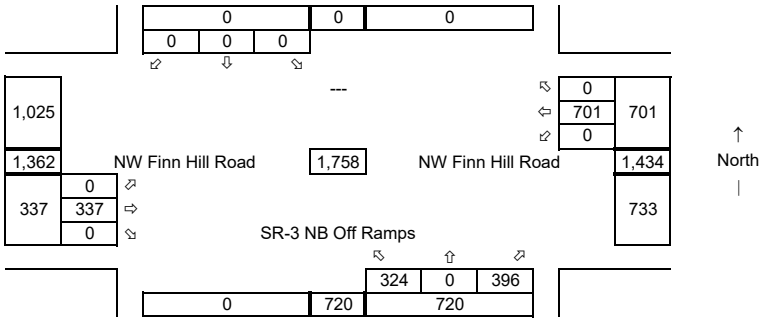
Year: **9/17/19**

Data Source: TCC

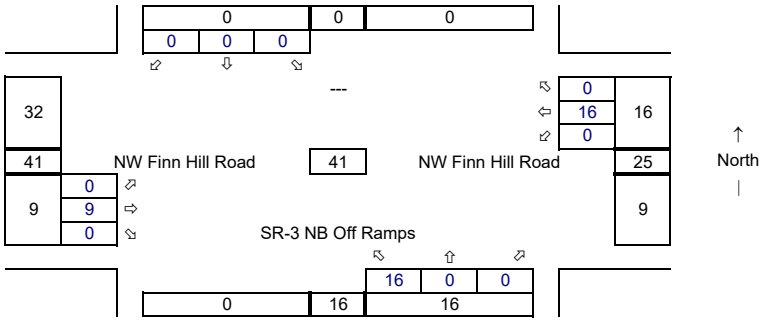


Future without Project
Average Weekday
PM Peak Hour

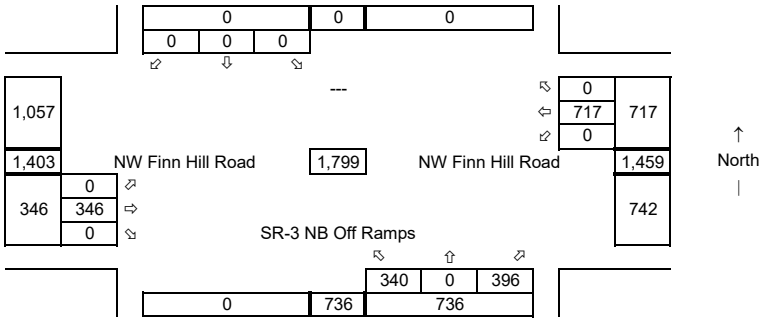
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

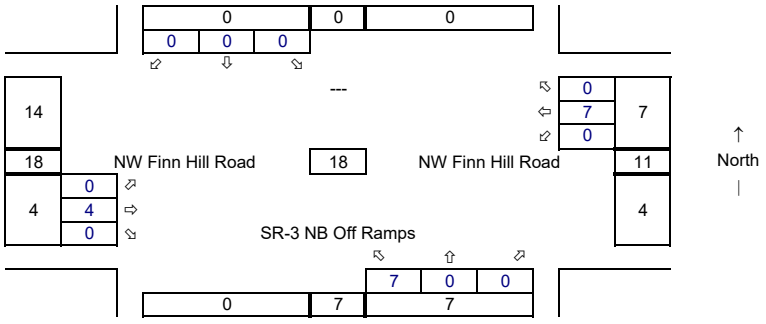


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Westwood Crossing

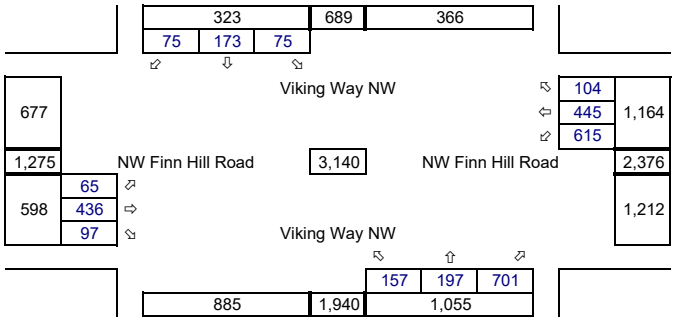


Synchro ID: 6

Existing
Average Weekday
PM Peak Hour

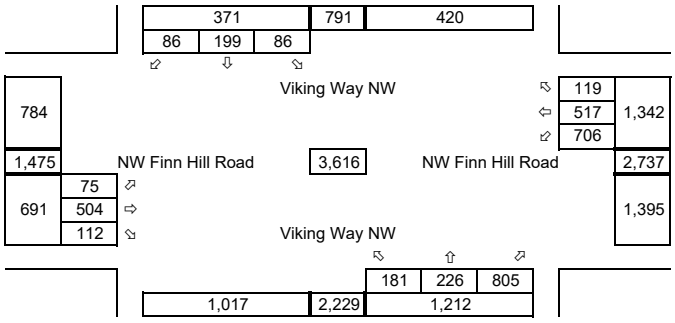
Year: **9/17/19**

Data Source: TCC

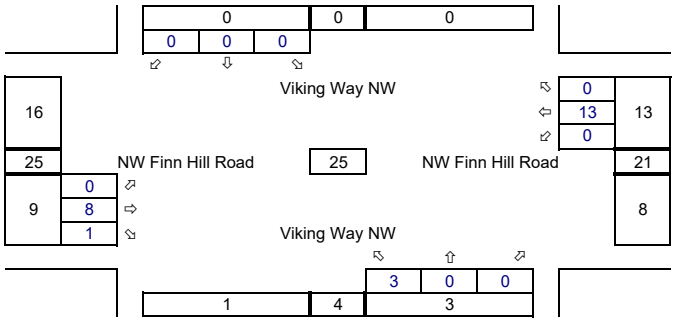


Future without Project
Average Weekday
PM Peak Hour

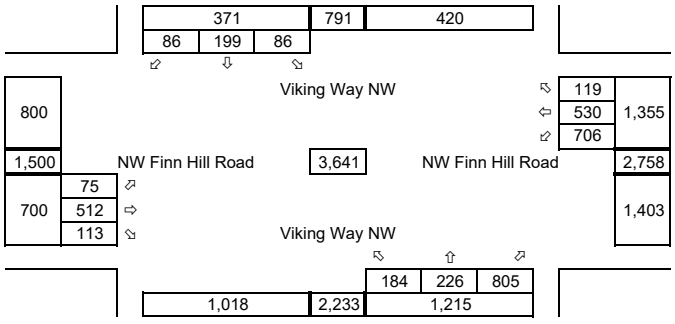
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

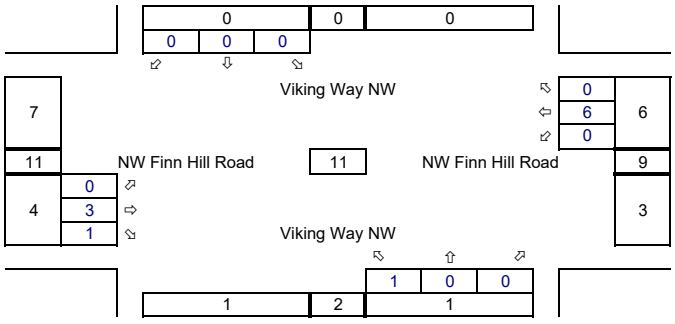


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Westwood Crossing



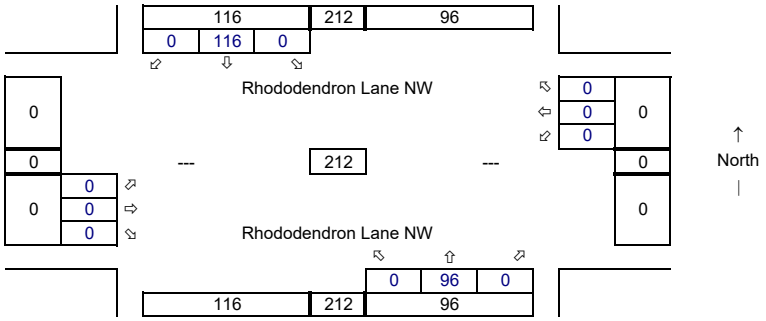
Synchro ID: 7

Existing
Average Weekday
PM Peak Hour

Year: **9/17/19**

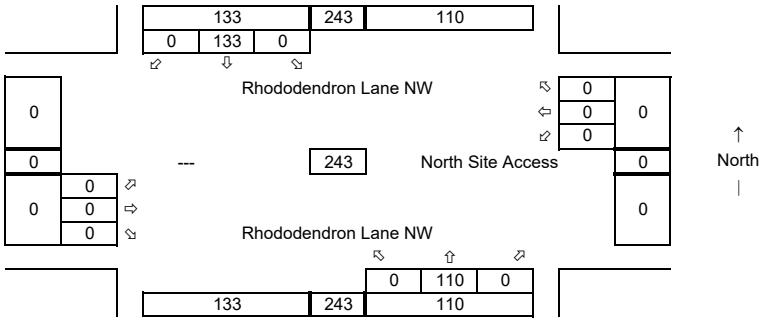
Data Source: TCC

North/South volumes extrapolated from north leg of Rhododendron Lane NW at NW Finn Hill Road.

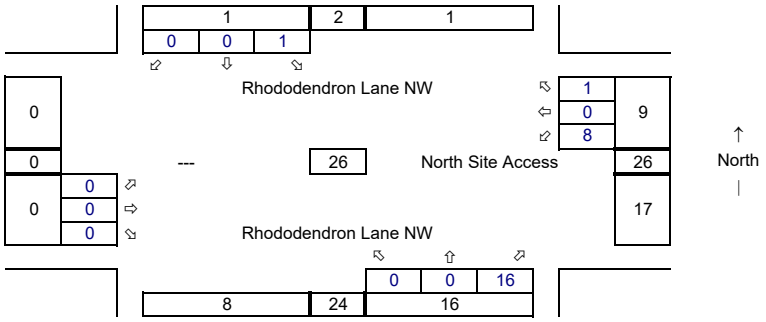


Future without Project
Average Weekday
PM Peak Hour

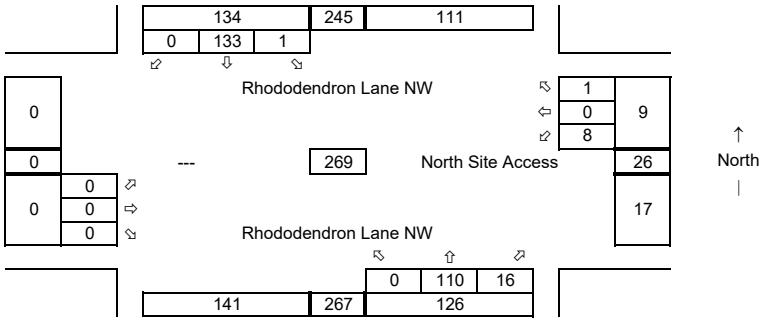
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

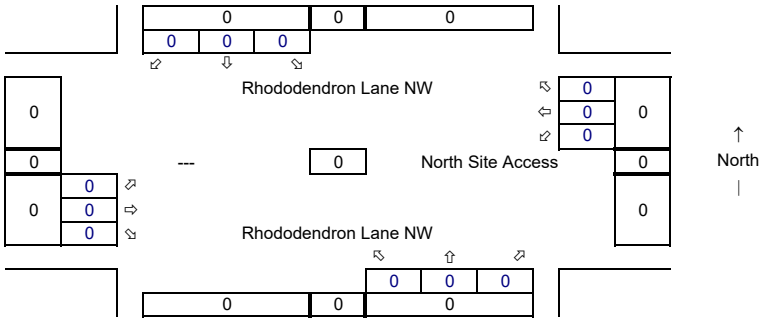


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Westwood Crossing



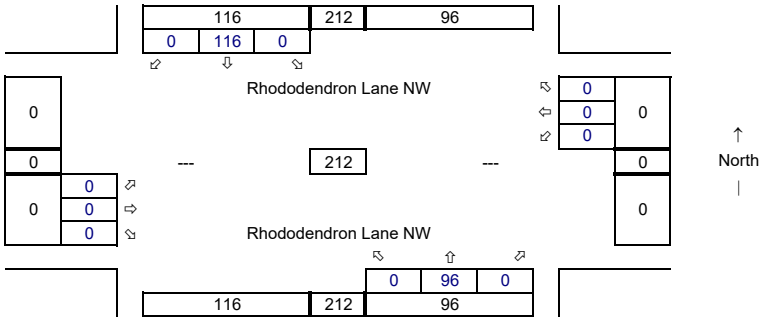
Synchro ID: 8

Existing
Average Weekday
PM Peak Hour

Year: **9/17/19**

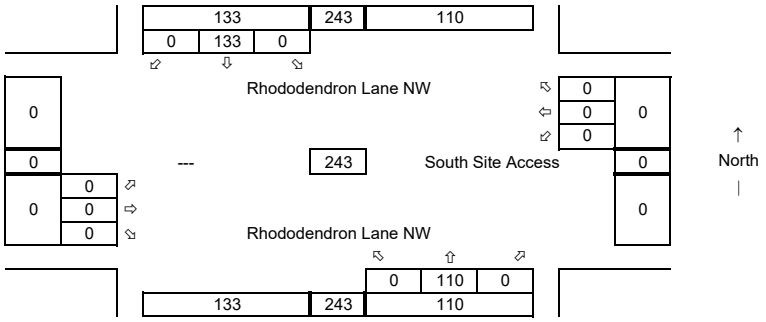
Data Source: TCC

North/South volumes extrapolated from north leg of Rhododendron Lane NW at NW Finn Hill Road.

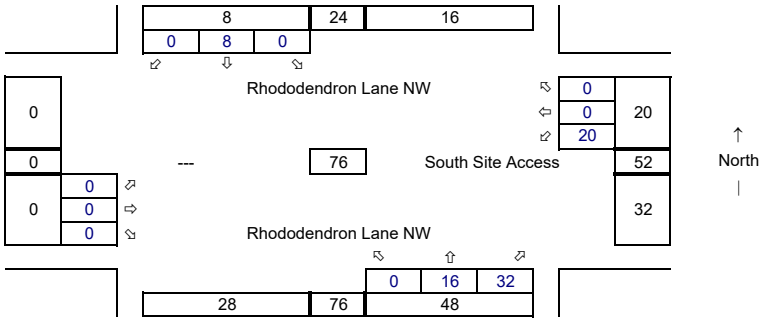


Future without Project
Average Weekday
PM Peak Hour

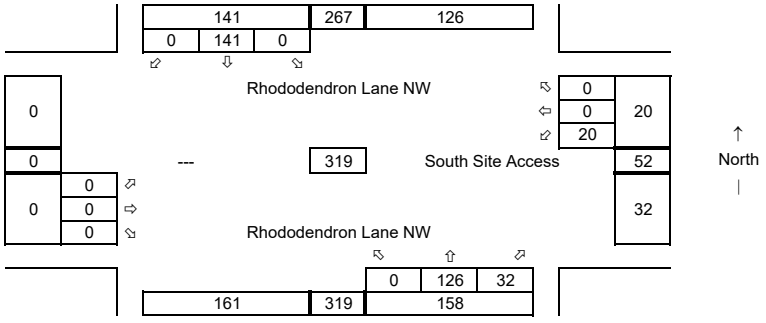
Year: 2026
Growth Rate = 2.0%
Years of Growth = 7
Total Growth = 1.1487



Total Project Trips
Average Weekday
PM Peak Hour

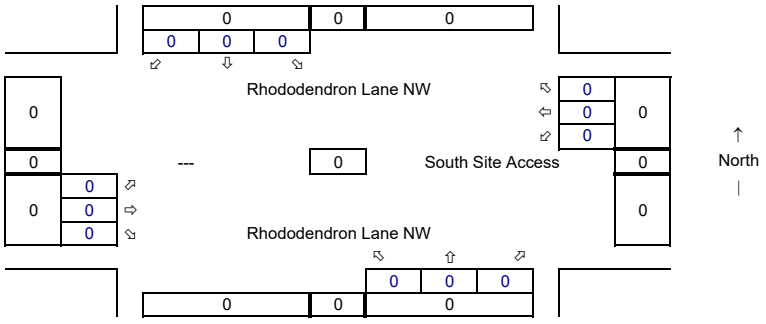


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Westwood Crossing



Intersection	
Int Delay, s/veh	4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	18	74	140	144	149	15
Future Vol, veh/h	18	74	140	144	149	15
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	140	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	19	76	144	148	154	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	292	0	-	0	332	219
Stage 1	-	-	-	-	218	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1270	-	-	-	663	821
Stage 1	-	-	-	-	818	-
Stage 2	-	-	-	-	911	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1270	-	-	-	653	820
Mov Cap-2 Maneuver	-	-	-	-	653	-
Stage 1	-	-	-	-	806	-
Stage 2	-	-	-	-	911	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1270	-	-	-	665
HCM Lane V/C Ratio	0.015	-	-	-	0.254
HCM Control Delay (s)	7.9	-	-	-	12.2
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	1

Intersection												
Int Delay, s/veh	1.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	222	2	3	270	46	2	0	2	31	0	6
Future Vol, veh/h	7	222	2	3	270	46	2	0	2	31	0	6
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	234	2	3	284	48	2	0	2	33	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	333	0	0	236	0	0	566	588	235	565	565	309
Stage 1	-	-	-	-	-	-	249	249	-	315	315	-
Stage 2	-	-	-	-	-	-	317	339	-	250	250	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1226	-	-	1331	-	-	435	421	804	436	434	731
Stage 1	-	-	-	-	-	-	755	701	-	696	656	-
Stage 2	-	-	-	-	-	-	694	640	-	754	700	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1225	-	-	1331	-	-	428	416	804	431	429	730
Mov Cap-2 Maneuver	-	-	-	-	-	-	428	416	-	431	429	-
Stage 1	-	-	-	-	-	-	750	696	-	690	653	-
Stage 2	-	-	-	-	-	-	686	637	-	747	695	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	11.5	13.5
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	559	1225	-	-	1331	-	-	462
HCM Lane V/C Ratio	0.008	0.006	-	-	0.002	-	-	0.084
HCM Control Delay (s)	11.5	8	0	-	7.7	0	-	13.5
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	257	319	77	107	6
Future Vol, veh/h	4	257	319	77	107	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	279	347	84	116	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	431	0	-	0	676	389
Stage 1	-	-	-	-	389	-
Stage 2	-	-	-	-	287	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1129	-	-	-	419	659
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	762	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1129	-	-	-	417	659
Mov Cap-2 Maneuver	-	-	-	-	417	-
Stage 1	-	-	-	-	682	-
Stage 2	-	-	-	-	762	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1129	-	-	-	425
HCM Lane V/C Ratio	0.004	-	-	-	0.289
HCM Control Delay (s)	8.2	0	-	-	16.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	129	278	3	26	340	357	2	7	11	425	10	188
Future Volume (vph)	129	278	3	26	340	357	2	7	11	425	10	188
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		0	110		135	50		0	385		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											0.98	
Frt		0.998			0.923			0.908			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1877	0	1787	1736	0	1787	1708	0	1787	1580	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	1877	0	1787	1736	0	1787	1708	0	1787	1580	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			60			11			196	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			346			782			1372	
Travel Time (s)		25.9			7.9			17.8			31.2	
Confl. Bikes (#/hr)												1
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	293	0	27	726	0	2	18	0	443	206	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	10.6	32.3		9.9	31.6		9.5	23.6		24.2	38.3	
Total Split (%)	11.8%	35.9%		11.0%	35.1%		10.6%	26.2%		26.9%	42.6%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	6.1	33.8		5.4	27.1		5.0	6.1		19.7	28.4	
Actuated g/C Ratio	0.08	0.44		0.07	0.35		0.06	0.08		0.26	0.37	
v/c Ratio	0.95	0.36		0.22	1.12		0.02	0.12		0.97	0.29	
Control Delay	103.2	17.4		38.5	97.3		34.5	23.8		66.6	5.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	103.2	17.4		38.5	97.3		34.5	23.8		66.6	5.0	
LOS	F	B		D	F		C	C		E	A	
Approach Delay		44.3			95.2			24.9			47.0	
Approach LOS		D			F			C			D	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	65	79		12	~385		1	3		208	3	
Queue Length 95th (ft)	#173	175		37	#609		8	22		#397	51	
Internal Link Dist (ft)		1060			266			702			1292	
Turn Bay Length (ft)	375			110			50			385		
Base Capacity (vph)	141	823		125	649		115	432		457	803	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.95	0.36		0.22	1.12		0.02	0.04		0.97	0.26	

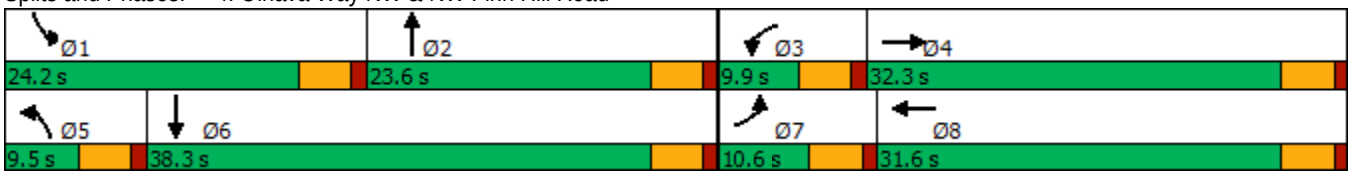
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 77
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.12
Intersection Signal Delay: 65.8 Intersection LOS: E
Intersection Capacity Utilization 88.3% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Olhava Way NW & NW Finn Hill Road



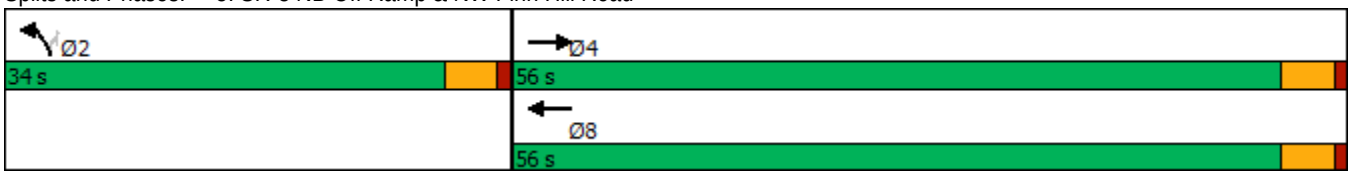
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	346	0	0	717	340	396
Future Volume (vph)	346	0	0	717	340	396
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	205
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1881	0	0	1881	1787	1599
Flt Permitted					0.950	
Satd. Flow (perm)	1881	0	0	1881	1787	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						417
Link Speed (mph)	30			30	30	
Link Distance (ft)	615			2529	1204	
Travel Time (s)	14.0			57.5	27.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	364	0	0	755	358	417
Turn Type	NA			NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0
Minimum Split (s)	22.5			22.5	22.5	22.5
Total Split (s)	56.0			56.0	34.0	34.0
Total Split (%)	62.2%			62.2%	37.8%	37.8%
Yellow Time (s)	3.5			3.5	3.5	3.5
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.5			4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None			None	Min	Min
Act Effct Green (s)	31.4			31.4	18.5	18.5
Actuated g/C Ratio	0.52			0.52	0.31	0.31
v/c Ratio	0.37			0.77	0.65	0.53
Control Delay	10.0			17.8	26.2	5.2
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	10.0			17.8	26.2	5.2
LOS	A			B	C	A
Approach Delay	10.0			17.8	14.9	
Approach LOS	A			B	B	
Queue Length 50th (ft)	66			185	103	0
Queue Length 95th (ft)	156			422	263	62

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Internal Link Dist (ft)	535			2449	1124	
Turn Bay Length (ft)						205
Base Capacity (vph)	1580			1580	978	1064
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.23			0.48	0.37	0.39

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 59.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 15.1 Intersection LOS: B
Intersection Capacity Utilization 64.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: SR-3 NB Off Ramp & NW Finn Hill Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	512	113	706	530	119	184	226	805	86	199	86
Future Volume (vph)	75	512	113	706	530	119	184	226	805	86	199	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	290		125	105		235	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00	0.97			0.98	1.00	0.99	
Frt		0.973				0.850			0.850		0.955	
Flt Protected	0.950			0.950	0.992		0.950			0.950		
Satd. Flow (prot)	1787	3469	0	1698	1773	1599	1787	1881	1599	1787	3391	0
Flt Permitted	0.950			0.950	0.992		0.950			0.950		
Satd. Flow (perm)	1784	3469	0	1697	1773	1557	1787	1881	1574	1783	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26				127			604		69	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2529			1683			1662			5966	
Travel Time (s)		57.5			38.3			37.8			135.6	
Confl. Peds. (#/hr)	2		1	1		2			2	2		
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)				14%								
Lane Group Flow (vph)	82	687	0	667	691	131	202	248	885	95	314	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	22.5	22.5		31.0	31.0	31.0	13.0	27.0	27.0	9.5	23.5	
Total Split (%)	25.0%	25.0%		34.4%	34.4%	34.4%	14.4%	30.0%	30.0%	10.6%	26.1%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	18.0	18.0		26.5	26.5	26.5	8.5	22.5	22.5	5.0	19.0	
Actuated g/C Ratio	0.20	0.20		0.29	0.29	0.29	0.09	0.25	0.25	0.06	0.21	
v/c Ratio	0.23	0.96		1.34	1.32	0.24	1.20	0.53	1.05	0.96	0.41	
Control Delay	32.2	61.3		193.9	188.0	6.2	172.1	34.0	56.3	126.0	25.5	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.2	61.3		193.9	188.0	6.2	172.1	34.0	56.3	126.0	25.5	
LOS	C	E		F	F	A	F	C	E	F	C	
Approach Delay		58.2			174.6			69.7			48.9	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			F			E			D	
Queue Length 50th (ft)	39	198		~524	~541	2	~141	122	~270	55	62	
Queue Length 95th (ft)	79	#314		#745	#763	42	#276	197	#503	#151	102	
Internal Link Dist (ft)		2449			1603			1582			5886	
Turn Bay Length (ft)	125			290		125	105		235	100		
Base Capacity (vph)	357	714		499	522	548	168	470	846	99	770	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.23	0.96		1.34	1.32	0.24	1.20	0.53	1.05	0.96	0.41	

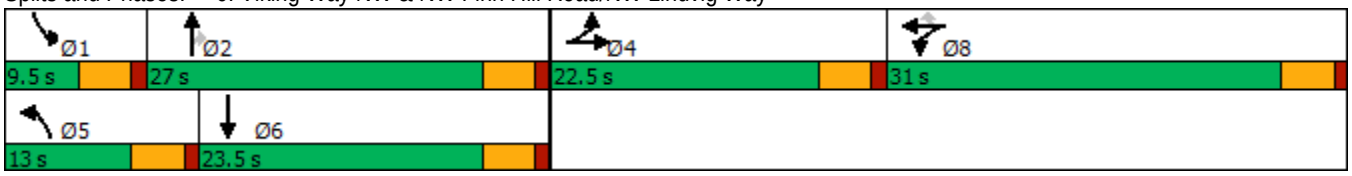
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 130
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.34
Intersection Signal Delay: 104.4 Intersection LOS: F
Intersection Capacity Utilization 86.0% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Viking Way NW & NW Finn Hill Road/NW Lindvig Way



Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	1	110	16	1	133
Future Vol, veh/h	8	1	110	16	1	133
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	1	120	17	1	145

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	276	129	0	0	137	0
Stage 1	129	-	-	-	-	-
Stage 2	147	-	-	-	-	-
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	714	921	-	-	1447	-
Stage 1	897	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	713	921	-	-	1447	-
Mov Cap-2 Maneuver	713	-	-	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	731	1447	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	10	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	0	126	32	0	141
Future Vol, veh/h	20	0	126	32	0	141
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	22	0	137	35	0	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	308	155	0	0	172	0
Stage 1	155	-	-	-	-	-
Stage 2	153	-	-	-	-	-
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	684	891	-	-	1405	-
Stage 1	873	-	-	-	-	-
Stage 2	875	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	684	891	-	-	1405	-
Mov Cap-2 Maneuver	684	-	-	-	-	-
Stage 1	873	-	-	-	-	-
Stage 2	875	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	684	1405	-
HCM Lane V/C Ratio	-	-	0.032	-	-
HCM Control Delay (s)	-	-	10.4	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

EXHIBIT H.3
TRAFFIC IMPACT ANALYSIS ADDENDUM

MEMORANDUM

To: Anthony Burgess, Engineer 1 – City of Poulsbo
From: Matthew Palmer, PE
Project: Winslow Ridge, KH #090222185
Subject: Updated LOS and Comment Response
Date: June 9, 2022

Kimley-Horn and Associates, Inc. has been requested to provide updated level of service analysis and to address City of Poulsbo comments. The development is located on the east side of Rhododendron Lane NW, north of NW Finn Hill Road, in City of Poulsbo. The proposed development will consist of 86 single-family residential units and there will be two accesses to Rhododendron Lane NW. The development is scheduled for occupancy in by the end of 2024. The City requires a minimum of 5-years after build-out/occupancy for the horizon year; therefore, the year 2029 has been used as the horizon year in the analysis. Analysis had previously been conducted for a future year of 2026.

Level of Service

The City of Poulsbo has a requirement that traffic counts be less than 12-months old. The counts used in the Original October 2019 TIA were collected in September 2019. A new check count was conducted at the intersection of Olhava Way NW at NW Finn Hill Road on Thursday June 2, 2022 from 4 to 6 PM. The new count shows a total intersection volume of 1,420 PM peak-hour trips and a 2-hour volume of 2,506 trips. The count from September 2019 had a PM peak-hour intersection volume of 1,452 trips and a 2-hour volume of 2,651 trips. Therefore, the use of the 2019 counts for the analysis with a 2% annual compounded growth rate for the additional 3-years (2019 to 2022) would be conservative for the analysis. In addition, a 2% annual compounded growth rate was used to get to the 2029 baseline year.

The peak-hour level of service (LOS) analysis calculations were completed using the *Synchro 11* software. This software applies the operational analysis methodology of the current *Highway Capacity Manual (HCM)*. Traffic congestion is generally measured in terms of level of service. In accordance with the HCM 6th Edition, road facilities and intersections are rated between LOS A and LOS F, with LOS A being free flow and LOS F being forced flow or over-capacity conditions. The level of service criteria is summarized in Table 1. The level of service at two-way stop-controlled intersections is based on the average delay of the worst approach. The level of service at signalized and all-way stop-controlled intersections is based on the average delay for all approaches. Geometric characteristics and conflicting traffic movements are taken into consideration when determining level of service values.

Table 1: Level of Service Criteria for Intersections

Level of Service[1]	Expected Delay	Intersection Control Delay (Seconds per Vehicle)	
		Unsignalized Intersections	**Signalized** Intersections
A	Little/No Delay	≤10	≤10
B	Short Delays	>10 and ≤15	>10 and ≤20
C	Average Delays	>15 and ≤25	>20 and ≤35
D	Long Delays	>25 and ≤35	>35 and ≤55
E	Very Long Delays	>35 and ≤50	>55 and ≤80
F	Extreme Delays[2]	>50	>80

The City of Poulsbo per the 2016 Poulsbo Comprehensive Plan has a concurrency level of service standard of LOS F for the study intersection of Lindvig Way/Finn Hill Road at Viking Avenue and for intersections with LOS failures where corrective action is not physically or technically feasible. All the other study intersections have a concurrency level of service standard of LOS E.

Per Poulsbo Municipal Code (PMC) 14.04.100(B): intersections with adopted LOF may require mitigation measures which address impacts associated with the LOS F standard, but do not necessarily add capacity. Mitigation measures may include TDM or TSM or projects such as: Transit and nonmotorized facilities, signal timing optimization, or other measures to encourage shifts from SOV use.

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[1] **Source:** *Highway Capacity Manual 6th Edition*.

LOS A: Free-flow traffic conditions, with minimal delay to stopped vehicles (no vehicle is delayed longer than one cycle at signalized intersection).
LOS B: Generally stable traffic flow conditions.
LOS C: Occasional back-ups may develop, but delay to vehicles is short term and still tolerable.
LOS D: During short periods of the peak hour, delays to approaching vehicles may be substantial but are tolerable during times of less demand (i.e. vehicles delayed one cycle or less at signal).
LOS E: Intersections operate at or near capacity, with long queues developing on all approaches and long delays.
LOS F: Jammed conditions on all approaches with excessively long delays and vehicles unable to move at times.

[2] When demand volume exceeds the capacity of the lane, extreme delays will be encountered with queuing which may cause severe congestion affecting other traffic movements in the intersection.

The level of service analysis for the 2029 baseline (future without development) and 2028 future with development conditions is summarized in Table 2.

Table 2: Intersection Level of Service Summary

Intersections		2029 Future Conditions			
		without Development		with Development	
		LOS	Delay	LOS	Delay
1.	Rhododendron Ln NW at NW Finn Hill Rd	B	11.9 sec	B	12.1 sec
2.	Claret Loop NW at NW Finn Hill Rd	B	13.2 sec	B	13.7 sec
3.	Urdahl Rd NW at NW Finn Hill Rd	C	17.8 sec	C	20.4 sec
4.	Olhava Way NW at NW Finn Hill Rd	E	79.1 sec	F	88.6 sec
5.	SR-3 NB Off Ramp at NW Finn Hill Rd	B	16.2 sec	B	17.0 sec
6.	Viking Way NW at NW Finn Hill Rd	F	125.0 sec	F	128.6 sec
7.	Rhododendron Ln NW at North Site Access	---	---	A	9.7 sec
8.	Rhododendron Ln NW at South Site Access	---	---	B	10.2 sec

As there are two intersections that will experience increased delay and will operate at LOS F. The development is proposing to construct a 10-foot wide shared-use path along Rhododendron Lane along the site frontage connecting south to the recently constructed shared-use path that ends at the north end of Vinland Elementary School. The existing shared-use path continues south along NW Finn Hill Road to Olhava Way NW. With the posted speed limit of 25 mph along Rhododendron Lane the shared-use path should include a minimum of 2-foot gravel drainage on both sides and 3-foot buffer from the roadway. The WSDOT shared-use path cross section is included in the attachments.

Attachments

A1 – A35

Attachments

Prepared for: **Gibson Traffic Consultants, Inc.**

Traffic Count Consultants, Inc.

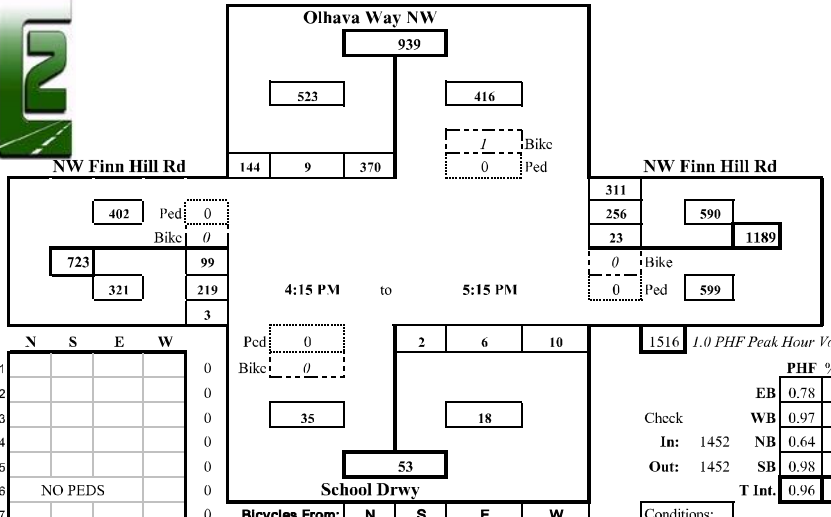
Phone: (253) 770-1407 FAX: (253) 770-1411 E-Mail: Team@TC2inc.com

WBE/DBE

Intersection: Olhava Way NW/School Drwy & NW Finn Hill Rd **Date of Count:** Tues 9/17/2019

Location: Poulsbo, Washington **Checked By:** Jess

Time Interval Ending at	From North on (SB) Olhava Way NW				From South on (NB) School Drwy				From East on (WB) NW Finn Hill Rd				From West on (EB) NW Finn Hill Rd				Interval Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
4:15 P	1	67	1	34	0	0	0	0	2	1	56	81	6	30	83	0	353
4:30 P	1	96	0	38	0	0	0	1	2	2	70	74	1	17	53	0	351
4:45 P	4	89	4	34	0	0	1	2	1	7	57	82	1	30	73	0	379
5:00 P	2	95	3	31	0	0	3	4	2	8	62	82	2	28	46	3	365
5:15 P	2	90	2	41	1	2	2	3	2	6	67	73	0	24	47	0	357
5:30 P	1	90	1	34	0	1	1	1	2	0	65	62	1	11	45	1	312
5:45 P	2	70	0	20	0	1	1	3	0	0	48	58	0	18	45	0	264
6:00 P	0	76	0	31	0	0	1	0	0	0	51	52	0	16	43	0	270
6:15 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 P	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	13	673	11	263	1	4	9	14	11	24	476	564	11	174	435	4	2651
Peak Hour: 4:15 PM to 5:15 PM																	
Total	9	370	9	144	1	2	6	10	7	23	256	311	4	99	219	3	1452
Approach	523				18				590				321				1452
%HV	1.7%				5.6%				1.2%				1.2%				1.4%
PHF	0.98				0.64				0.97				0.78				0.96



PEDs Across:	N	S	E	W	
INT 01					0
INT 02					0
INT 03					0
INT 04					0
INT 05					0
INT 06	NO PEDS				0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	0	0	0	0	0

Special Notes

Bicycles From:	N	S	E	W	
INT 01				1	1
INT 02					0
INT 03					0
INT 04					0
INT 05	1				1
INT 06					0
INT 07					0
INT 08					0
INT 09					0
INT 10					0
INT 11					0
INT 12					0
	1	0	0	1	2

1516 *1.0 PHF Peak Hour Volume*

		PHF	%HV
	EB	0.78	1.2%
Check	WB	0.97	1.2%
In: 1452	NB	0.64	5.6%
Out: 1452	SB	0.98	1.7%
	T Int.	0.96	1.4%

Conditions:

GTC19101M_04p

Project No.: KH 090222185
Project Name: Poulsbo, Washington
Prepared by: Team 4 Eng
Checked by: KB
Location: Olhava Way NW/School Drwy & NW Finn Hill Rd

Day & Date: Thursday 6-2-2022
Time Start: 4:00 PM
Time End: 6:00 PM
Weather:

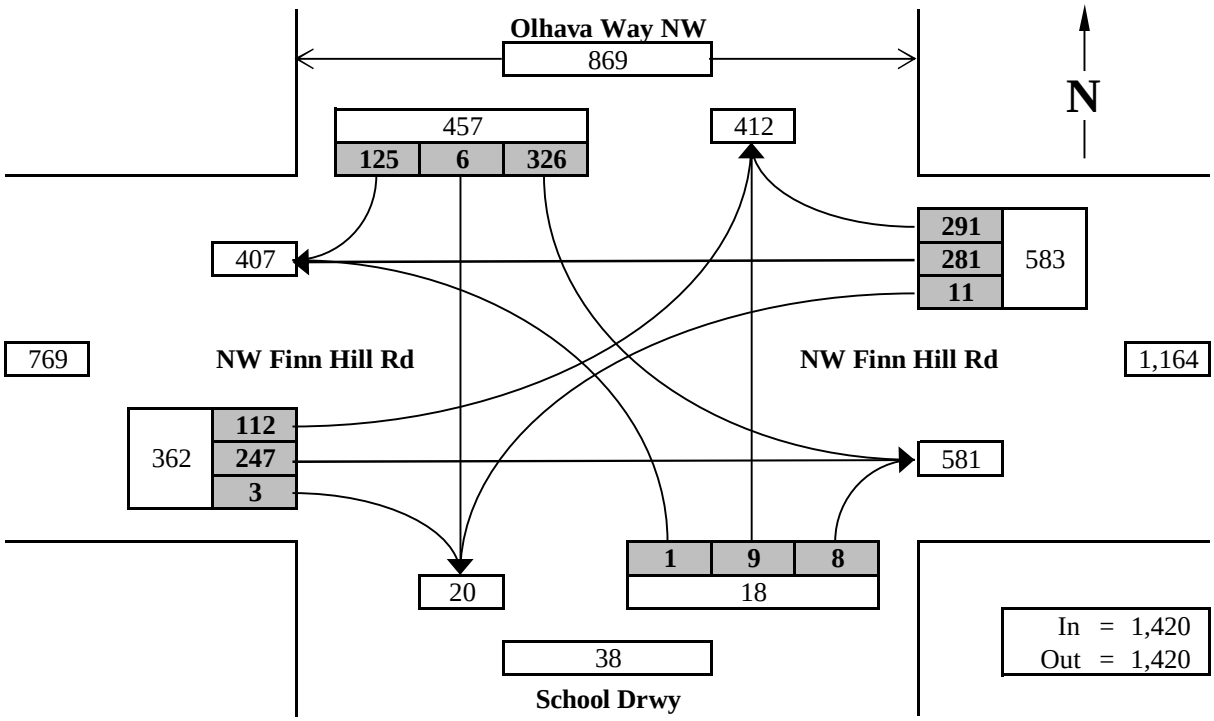
Time Interval Ending At	NW Finn Hill Rd Eastbound				NW Finn Hill Rd Westbound				School Drwy Northbound				Olhava Way NW Southbound				Total
	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	ALL APP
15 Minute Interval Volumes																	
4:15 PM	4	**44**	**103**	**0**	10	**0**	**87**	**73**	0	**0**	**0**	**1**	6	**80**	**1**	**22**	411
4:30 PM	2	**26**	**52**	**0**	8	**2**	**68**	**63**	0	**0**	**2**	**2**	7	**76**	**2**	**38**	331
4:45 PM	2	**23**	**44**	**2**	6	**4**	**61**	**85**	1	**0**	**3**	**2**	7	**85**	**2**	**28**	339
5:00 PM	3	**19**	**48**	**1**	4	**5**	**65**	**70**	0	**1**	**4**	**3**	4	**85**	**1**	**37**	339
5:15 PM	4	**28**	**42**	**1**	3	**3**	**43**	**55**	0	**1**	**1**	**3**	1	**79**	**1**	**26**	283
5:30 PM	1	**15**	**29**	**0**	1	**1**	**57**	**58**	0	**0**	**0**	**3**	2	**77**	**1**	**28**	269
5:45 PM	1	**13**	**52**	**0**	0	**0**	**48**	**51**	0	**0**	**1**	**0**	3	**74**	**1**	**24**	264
6:00 PM	0	**16**	**46**	**0**	1	**0**	**46**	**64**	0	**0**	**2**	**3**	2	**51**	**1**	**41**	270
Hourly Volumes																	
5:00 PM	11	**112**	**247**	**3**	28	**11**	**281**	**291**	1	**1**	**9**	**8**	24	**326**	**6**	**125**	1,420
5:15 PM	11	**96**	**186**	**4**	21	**14**	**237**	**273**	1	**2**	**10**	**10**	19	**325**	**6**	**129**	1,292
5:30 PM	10	**85**	**163**	**4**	14	**13**	**226**	**268**	1	**2**	**8**	**11**	14	**326**	**5**	**119**	1,230
5:45 PM	9	**75**	**171**	**2**	8	**9**	**213**	**234**	0	**2**	**6**	**9**	10	**315**	**4**	**115**	1,155
6:00 PM	6	**72**	**169**	**1**	5	**4**	**194**	**228**	0	**1**	**4**	**9**	8	**281**	**4**	**119**	1,086

EXISTING PEAK HOUR: 4:00 PM — 5:00 PM, Thursday 6-2-2022

Peak Hour	Eastbound				Westbound				Northbound				Southbound				Total
4:00 PM	T	L	S	R	T	L	S	R	T	L	S	R	T	L	S	R	
- 5:00 PM	11	**112**	**247**	**3**	28	**11**	**281**	**291**	1	**1**	**9**	**8**	24	**326**	**6**	**125**	1,420
Approach	11	**362**			28	**583**			1	**18**			24	**457**			1,420
PHF	0.62				0.91				0.56				0.93				0.86
% HV	3.0%				4.8%				5.6%				5.3%				

KIMLEY-HORN AND ASSOCIATES, INC.

EXISTING PEAK HOUR: 4:00 PM to 5:00 PM, Thursday 6-2-2022					
Intersection	**Eastbound**	**Westbound**	**Northbound**	**Southbound**	**Total**
Approach Name	NW Finn Hill Rd	NW Finn Hill Rd	School Drwy	Olhava Way NW	
Peak Hour Factor (PHF)	0.62	0.91	0.56	0.93	**0.86**
% of Heavy Vehicles	3.0%	4.8%	5.6%	5.3%	



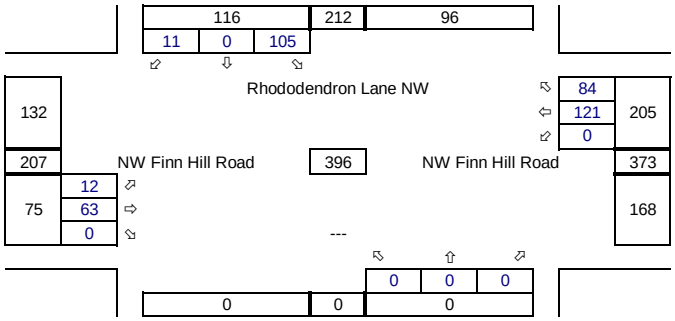
1 Rhododendron Ln @Finn Hill Rd

Synchro ID: 1

Existing
Average Weekday
PM Peak Hour

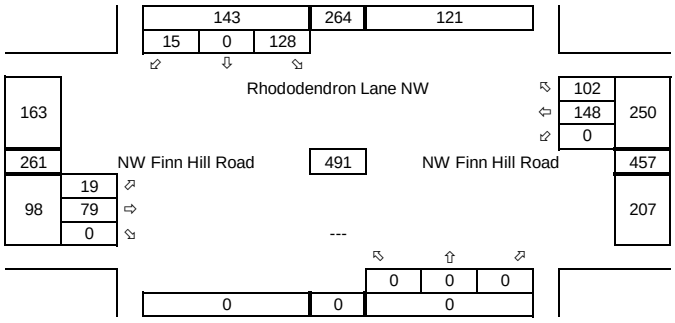
Year: **9/17/19**

Data Source: TCC

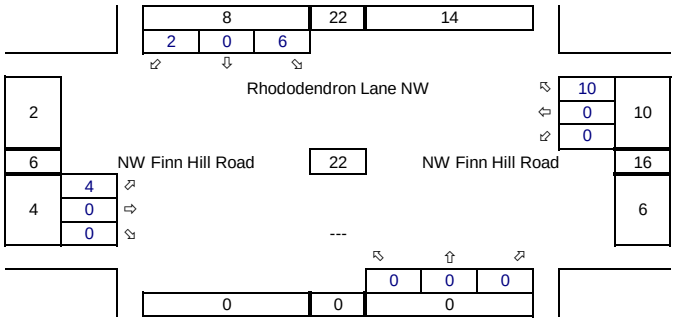


Future without Project
Average Weekday
PM Peak Hour

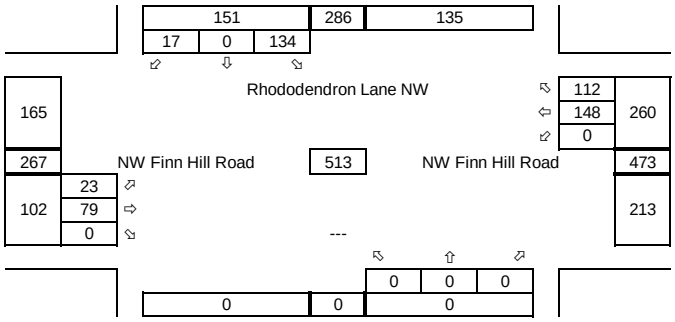
Year: 2029
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

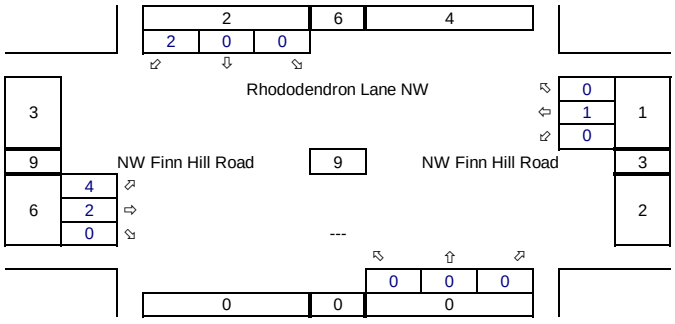


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



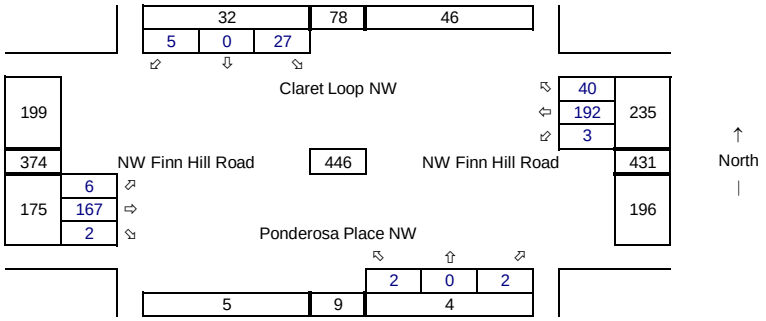
2 Claret Lp @ Finn Hill Rd

Synchro ID: 2

Existing
Average Weekday
PM Peak Hour

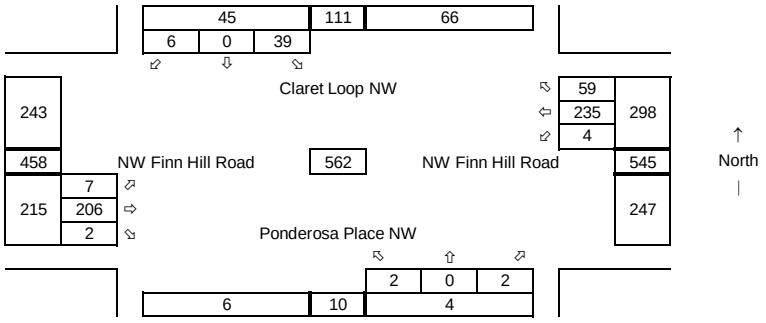
Year: **9/17/19**

Data Source: TCC

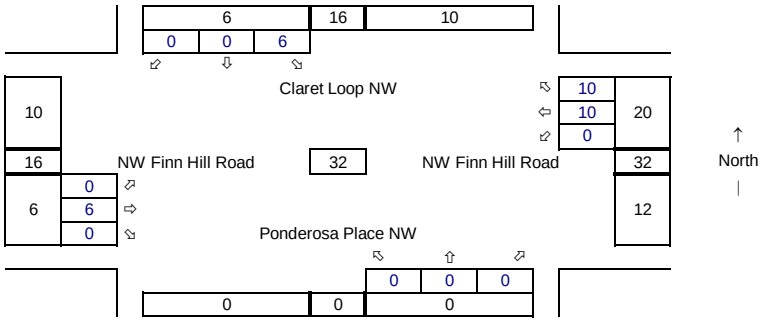


Future without Project
Average Weekday
PM Peak Hour

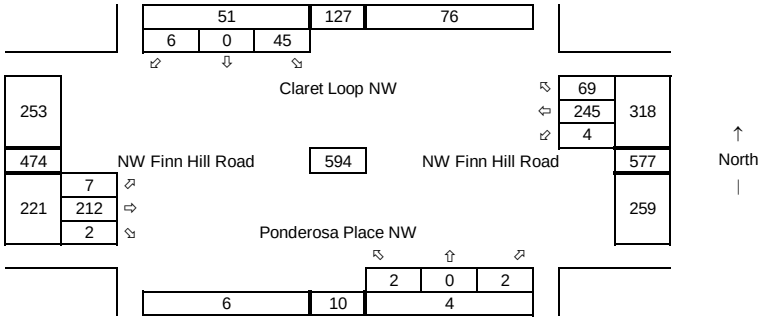
Year: 2029
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

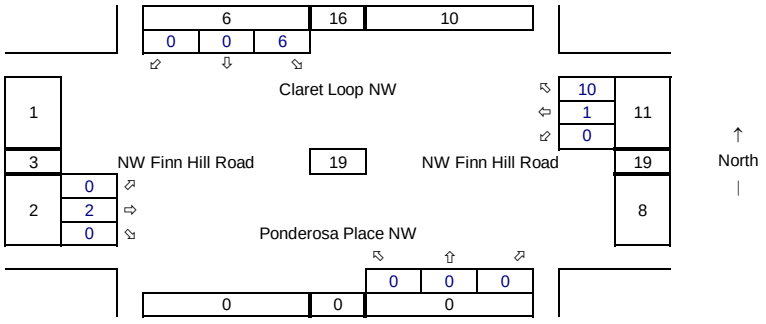


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



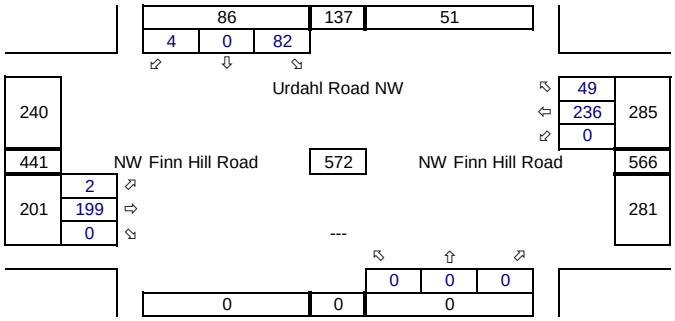
3 Urdahl Rd @ Finn Hill Rd

Synchro ID: 3

Existing
Average Weekday
PM Peak Hour

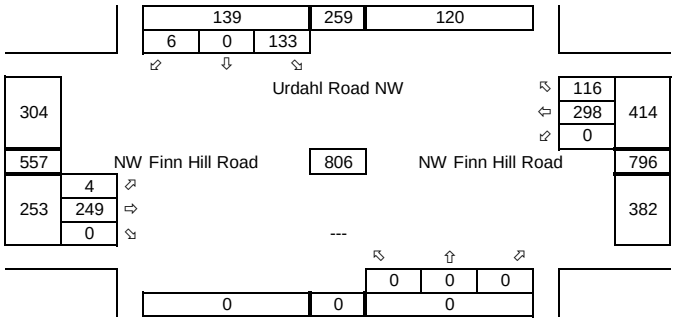
Year: **9/17/19**

Data Source: TCC

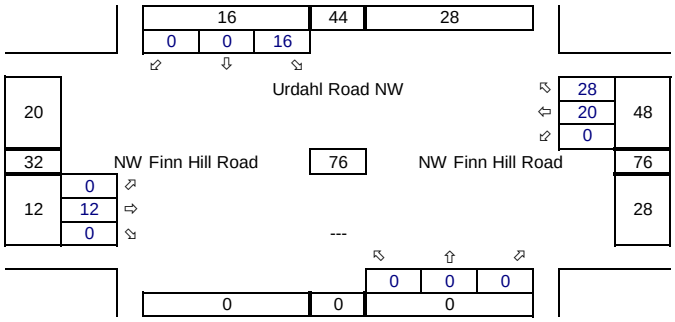


Future without Project
Average Weekday
PM Peak Hour

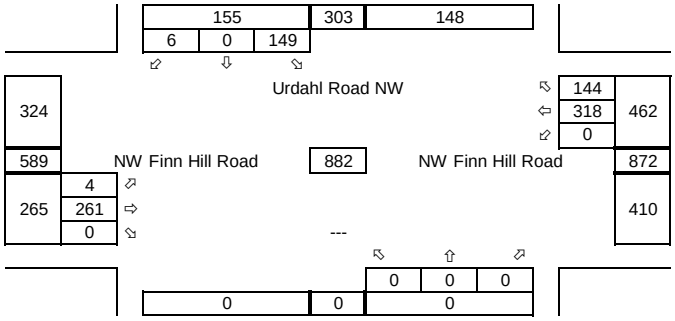
Year: 2029
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

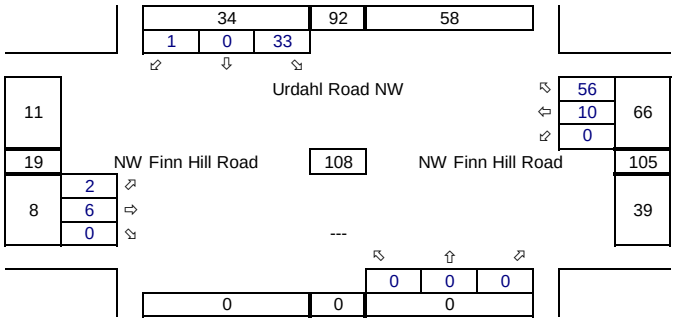


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



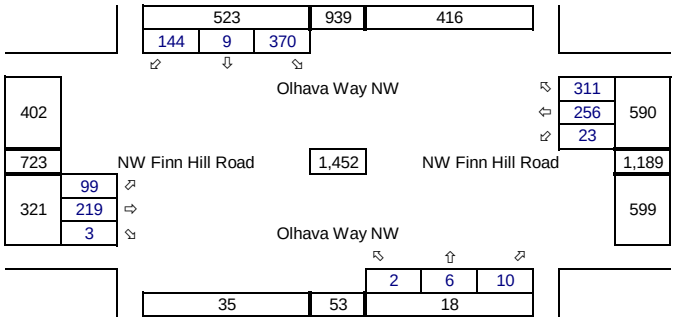
4 Olhava Way @ Finn Hill Rd

Synchro ID: 4

Existing
Average Weekday
PM Peak Hour

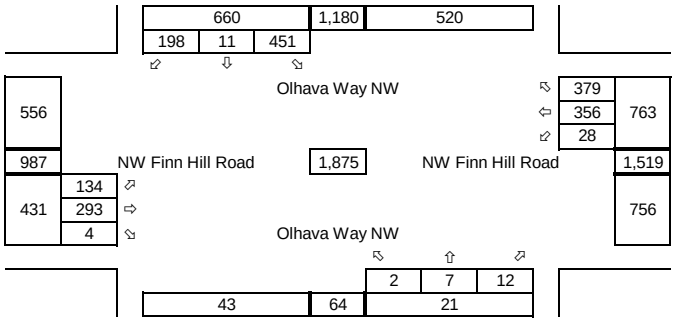
Year: **9/17/19**

Data Source: TCC

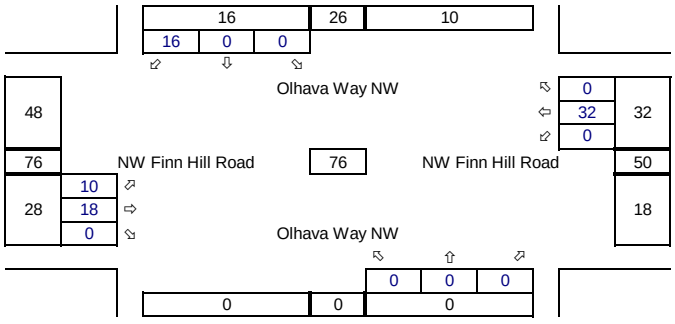


Future without Project
Average Weekday
PM Peak Hour

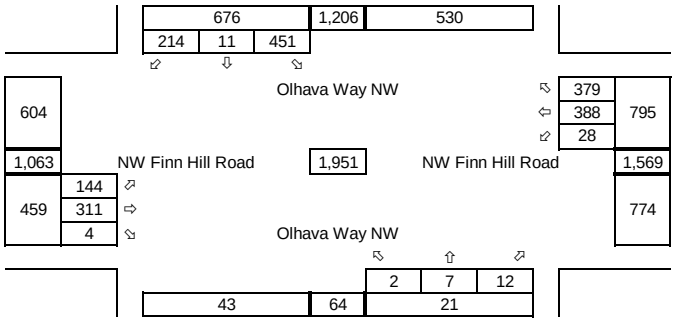
Year: 2029
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

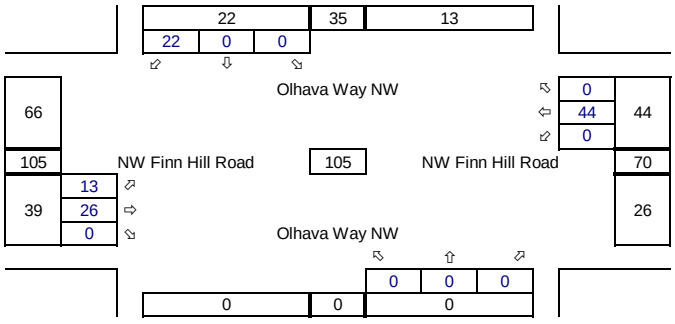


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



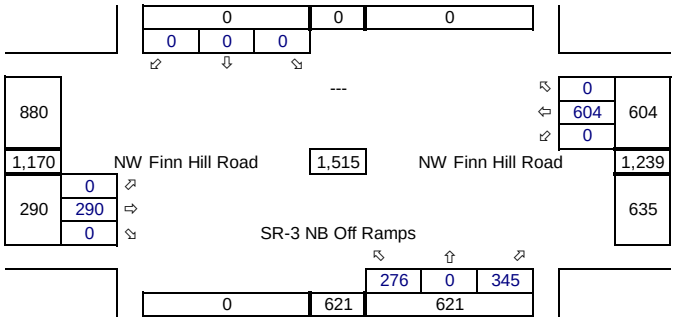
5 SR-3 NB Ramps @ Finn Hill Rd

Synchro ID: 5

Existing
Average Weekday
PM Peak Hour

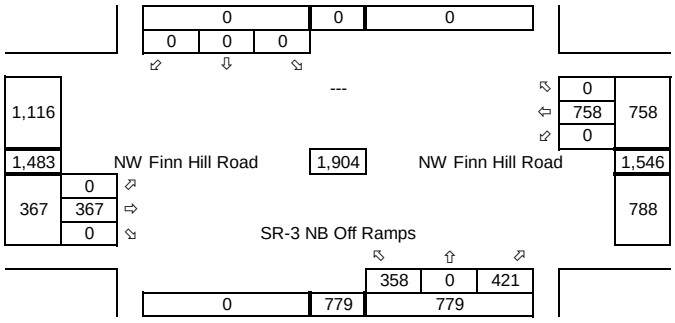
Year: **9/17/19**

Data Source: TCC

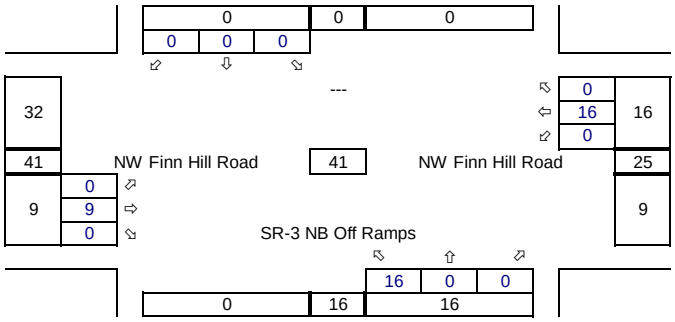


Future without Project
Average Weekday
PM Peak Hour

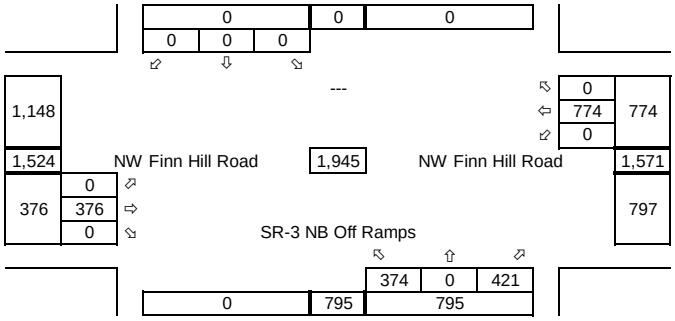
Year: 2029
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

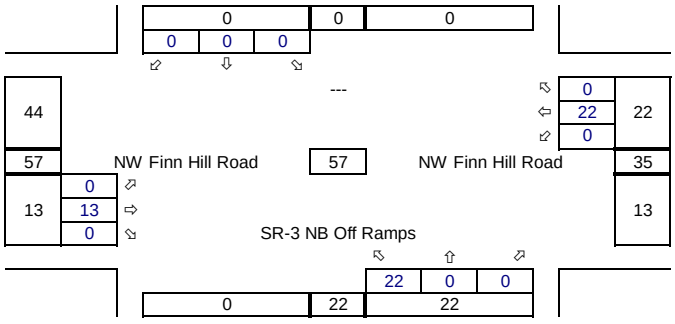


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



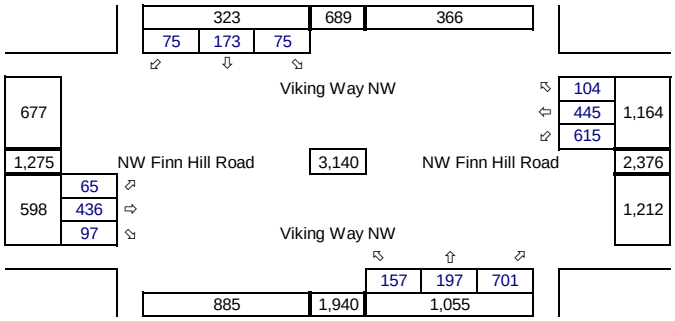
6 Viking Way @ Finn Hill Rd

Synchro ID: 6

Existing
Average Weekday
PM Peak Hour

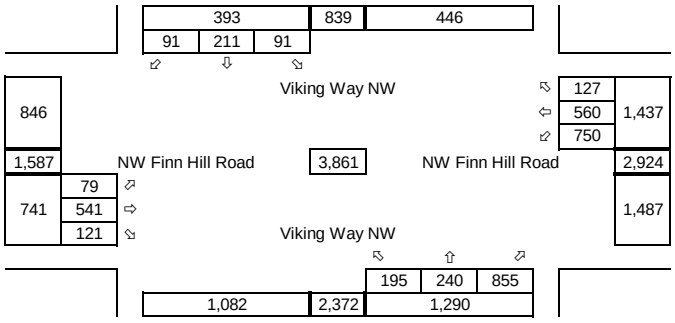
Year: **9/17/19**

Data Source: TCC

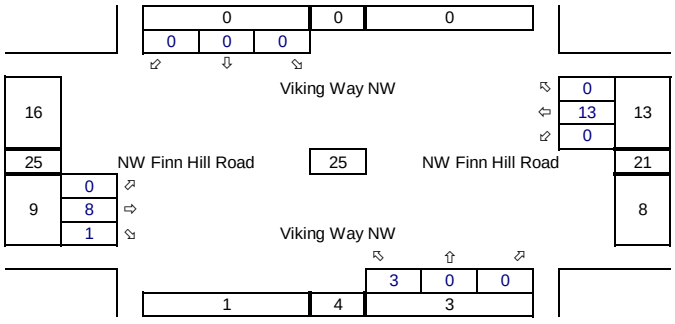


Future without Project
Average Weekday
PM Peak Hour

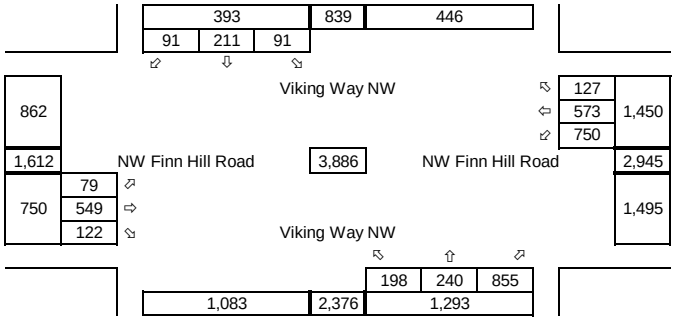
Year: 2029
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

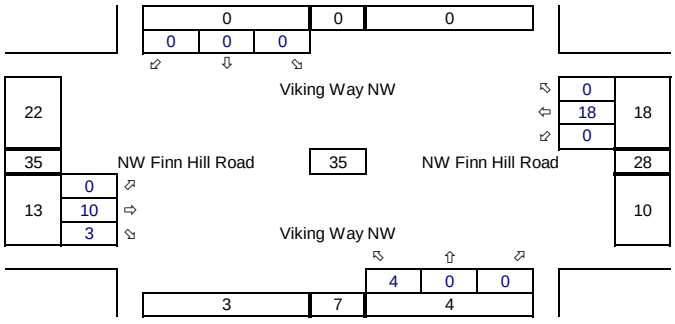


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



7 Rhododendron Ln@N Site Access

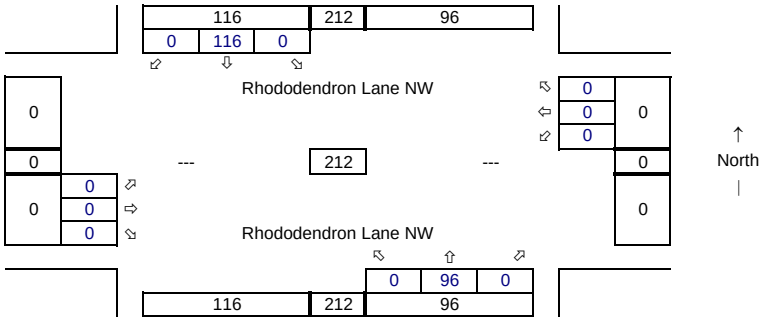
Synchro ID: 7

Existing
Average Weekday
PM Peak Hour

Year: **9/17/19**

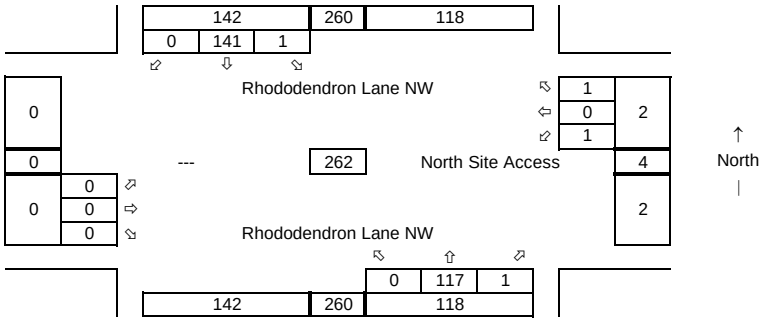
Data Source: TCC

North/South volumes extrapolated from north leg of Rhododendron Lane NW at NW Finn Hill Road.

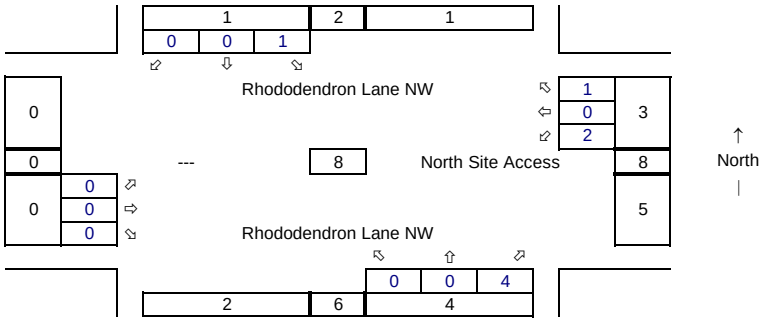


Future without Project
Average Weekday
PM Peak Hour

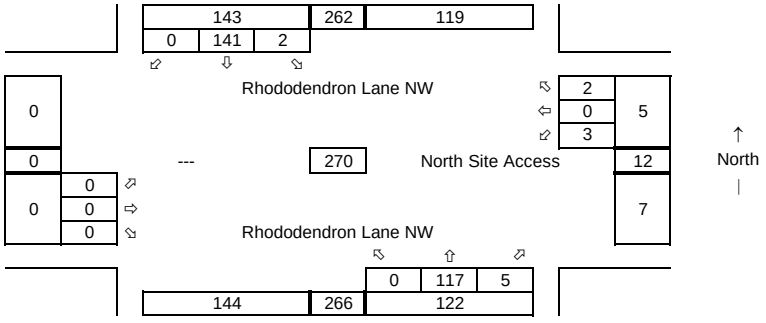
Year: 2029
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

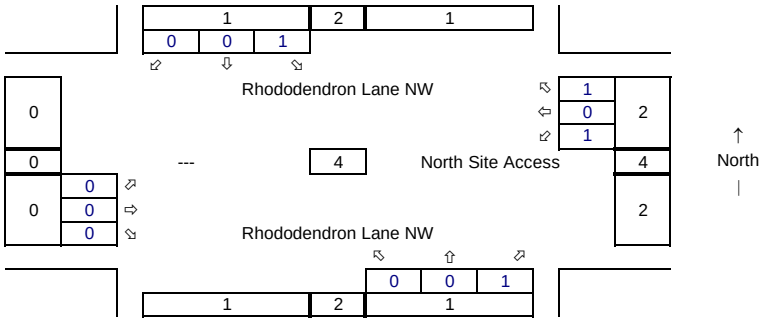


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



8 Rhododendron Ln@S Site Access

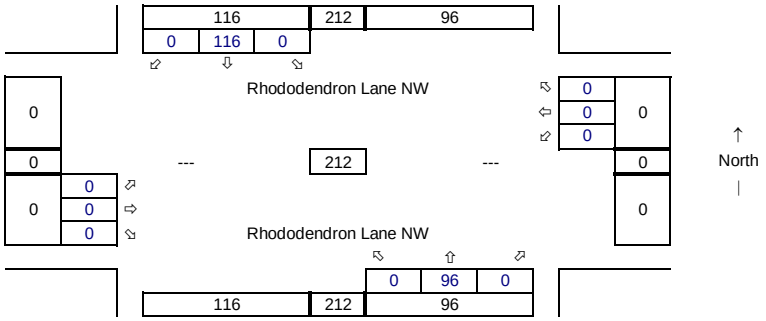
Synchro ID: 8

Existing
Average Weekday
PM Peak Hour

Year: **9/17/19**

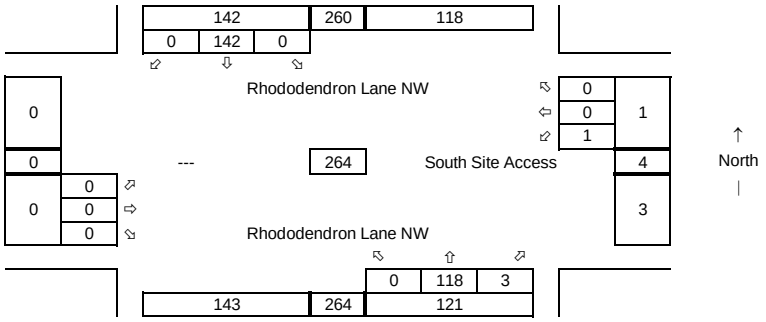
Data Source: TCC

North/South volumes extrapolated from north leg of Rhododendron Lane NW at NW Finn Hill Road.

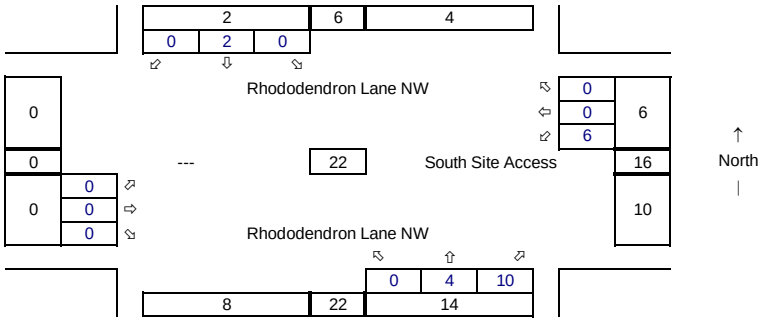


Future without Project
Average Weekday
PM Peak Hour

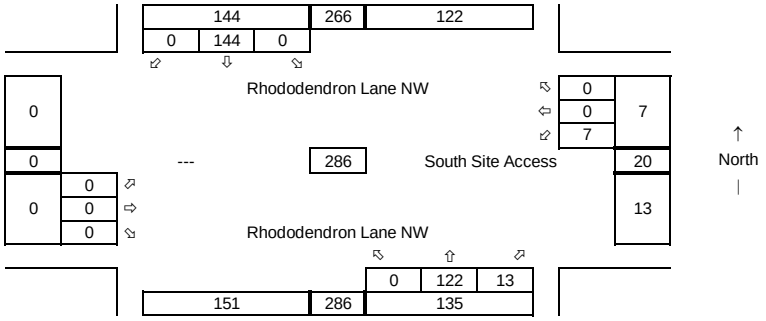
Year: 2029
Growth Rate = 2.0%
Years of Growth = 10
Total Growth = 1.2190



Total Project Trips
Average Weekday
PM Peak Hour

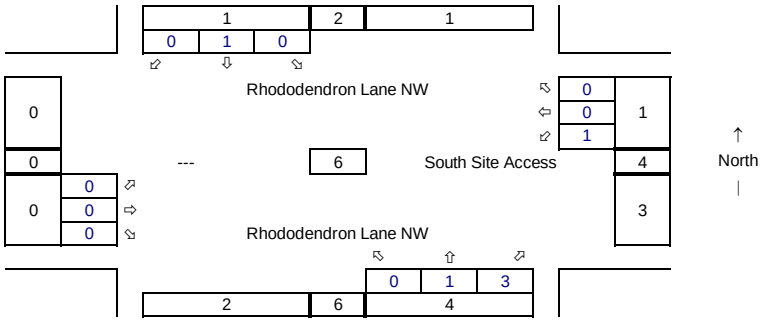


Future with Project
Average Weekday
PM Peak Hour



Total Pipeline Project Trips
Average Weekday
PM Peak Hour

Spencer Plat
Westwood Crossing



Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	19	79	148	102	128	15
Future Vol, veh/h	19	79	148	102	128	15
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	140	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	81	153	105	132	15

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	258	0	-	0	327	207
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	121	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1307	-	-	-	667	833
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	904	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1307	-	-	-	657	832
Mov Cap-2 Maneuver	-	-	-	-	657	-
Stage 1	-	-	-	-	817	-
Stage 2	-	-	-	-	904	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1307	-	-	-	672
HCM Lane V/C Ratio	0.015	-	-	-	0.219
HCM Control Delay (s)	7.8	-	-	-	11.9
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Intersection												
Int Delay, s/veh	1.3											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	206	2	4	235	59	2	0	2	39	0	6
Future Vol, veh/h	7	206	2	4	235	59	2	0	2	39	0	6
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	217	2	4	247	62	2	0	2	41	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	310	0	0	219	0	0	521	550	218	520	520	279
Stage 1	-	-	-	-	-	-	232	232	-	287	287	-
Stage 2	-	-	-	-	-	-	289	318	-	233	233	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1250	-	-	1350	-	-	466	443	822	467	461	760
Stage 1	-	-	-	-	-	-	771	713	-	720	674	-
Stage 2	-	-	-	-	-	-	719	654	-	770	712	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1249	-	-	1350	-	-	459	438	822	462	456	759
Mov Cap-2 Maneuver	-	-	-	-	-	-	459	438	-	462	456	-
Stage 1	-	-	-	-	-	-	766	709	-	715	671	-
Stage 2	-	-	-	-	-	-	710	651	-	763	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	11.2	13.2
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	589	1249	-	-	1350	-	-	487
HCM Lane V/C Ratio	0.007	0.006	-	-	0.003	-	-	0.097
HCM Control Delay (s)	11.2	7.9	0	-	7.7	0	-	13.2
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.3

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	249	298	116	133	6
Future Vol, veh/h	4	249	298	116	133	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	271	324	126	145	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	450	0	-	0	666	387
Stage 1	-	-	-	-	387	-
Stage 2	-	-	-	-	279	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1110	-	-	-	425	661
Stage 1	-	-	-	-	686	-
Stage 2	-	-	-	-	768	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1110	-	-	-	423	661
Mov Cap-2 Maneuver	-	-	-	-	423	-
Stage 1	-	-	-	-	683	-
Stage 2	-	-	-	-	768	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1110	-	-	-	430
HCM Lane V/C Ratio	0.004	-	-	-	0.351
HCM Control Delay (s)	8.3	0	-	-	17.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	1.6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	134	293	4	28	356	379	2	7	12	451	11	198
Future Volume (vph)	134	293	4	28	356	379	2	7	12	451	11	198
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		0	110		135	50		0	385		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											0.98	
Frt		0.998			0.923			0.902			0.858	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1877	0	1787	1736	0	1787	1697	0	1787	1582	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	1877	0	1787	1736	0	1787	1697	0	1787	1582	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			61			13			206	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			346			782			1372	
Travel Time (s)		25.9			7.9			17.8			31.2	
Confl. Bikes (#/hr)												1
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	140	309	0	29	766	0	2	20	0	470	217	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	10.6	32.3		9.9	31.6		9.5	23.6		24.2	38.3	
Total Split (%)	11.8%	35.9%		11.0%	35.1%		10.6%	26.2%		26.9%	42.6%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	6.1	33.8		5.4	27.1		5.0	6.1		19.7	28.4	
Actuated g/C Ratio	0.08	0.44		0.07	0.35		0.06	0.08		0.26	0.37	
v/c Ratio	0.99	0.38		0.23	1.18		0.02	0.14		1.03	0.30	
Control Delay	113.9	17.7		39.0	120.4		34.5	22.9		81.3	5.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	113.9	17.7		39.0	120.4		34.5	22.9		81.3	5.0	
LOS	F	B		D	F		C	C		F	A	
Approach Delay		47.7			117.4			24.0			57.2	
Approach LOS		D			F			C			E	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	68	84		13	~426		1	3		~233	3	
Queue Length 95th (ft)	#181	185		39	#656		8	23		#430	52	
Internal Link Dist (ft)		1060			266			702			1292	
Turn Bay Length (ft)	375			110			50			385		
Base Capacity (vph)	141	823		125	650		115	430		456	809	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.99	0.38		0.23	1.18		0.02	0.05		1.03	0.27	

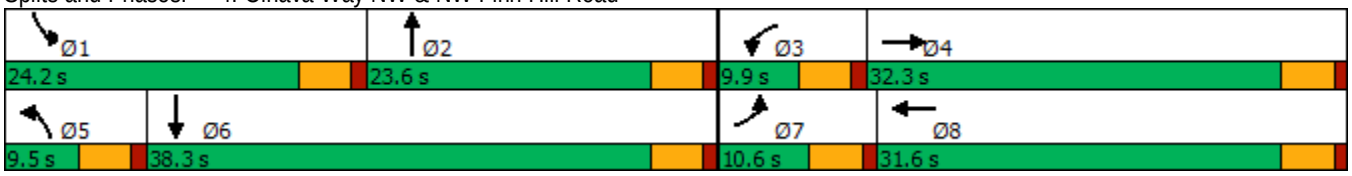
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 77
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.18
Intersection Signal Delay: 79.1 Intersection LOS: E
Intersection Capacity Utilization 92.3% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Olhava Way NW & NW Finn Hill Road



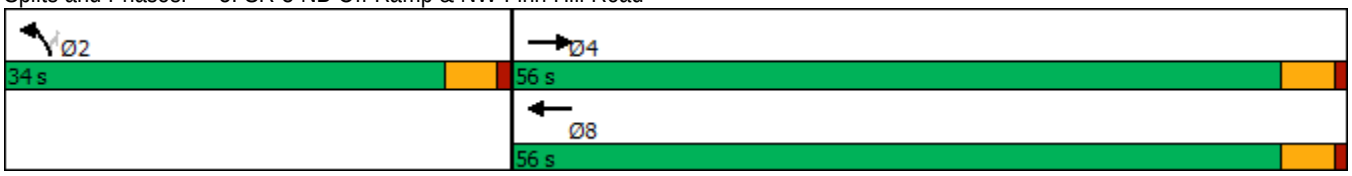
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	367	0	0	758	358	421
Future Volume (vph)	367	0	0	758	358	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	205
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1881	0	0	1881	1787	1599
Flt Permitted					0.950	
Satd. Flow (perm)	1881	0	0	1881	1787	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						443
Link Speed (mph)	30			30	30	
Link Distance (ft)	615			2529	1204	
Travel Time (s)	14.0			57.5	27.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	386	0	0	798	377	443
Turn Type	NA			NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0
Minimum Split (s)	22.5			22.5	22.5	22.5
Total Split (s)	56.0			56.0	34.0	34.0
Total Split (%)	62.2%			62.2%	37.8%	37.8%
Yellow Time (s)	3.5			3.5	3.5	3.5
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.5			4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None			None	Min	Min
Act Effct Green (s)	33.8			33.8	19.6	19.6
Actuated g/C Ratio	0.53			0.53	0.31	0.31
v/c Ratio	0.38			0.80	0.68	0.55
Control Delay	10.3			19.4	28.3	5.4
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	10.3			19.4	28.3	5.4
LOS	B			B	C	A
Approach Delay	10.3			19.4	15.9	
Approach LOS	B			B	B	
Queue Length 50th (ft)	77			221	123	0
Queue Length 95th (ft)	167			465	278	64

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Internal Link Dist (ft)	535			2449	1124	
Turn Bay Length (ft)						205
Base Capacity (vph)	1525			1525	918	1037
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.25			0.52	0.41	0.43

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 63.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 16.2 Intersection LOS: B
Intersection Capacity Utilization 67.2% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: SR-3 NB Off Ramp & NW Finn Hill Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	541	121	750	560	127	195	240	855	91	211	91
Future Volume (vph)	79	541	121	750	560	127	195	240	855	91	211	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	290		125	105		235	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00	0.97			0.98	1.00	0.99	
Frt		0.973				0.850			0.850		0.955	
Flt Protected	0.950			0.950	0.992		0.950			0.950		
Satd. Flow (prot)	1787	3469	0	1698	1773	1599	1787	1881	1599	1787	3391	0
Flt Permitted	0.950			0.950	0.992		0.950			0.950		
Satd. Flow (perm)	1784	3469	0	1697	1773	1557	1787	1881	1574	1783	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		27				127			601		68	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2529			1683			1662			5966	
Travel Time (s)		57.5			38.3			37.8			135.6	
Confl. Peds. (#/hr)	2		1	1		2			2	2		
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)				14%								
Lane Group Flow (vph)	87	728	0	709	730	140	214	264	940	100	332	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	22.5	22.5		31.0	31.0	31.0	13.0	27.0	27.0	9.5	23.5	
Total Split (%)	25.0%	25.0%		34.4%	34.4%	34.4%	14.4%	30.0%	30.0%	10.6%	26.1%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	18.0	18.0		26.5	26.5	26.5	8.5	22.5	22.5	5.0	19.0	
Actuated g/C Ratio	0.20	0.20		0.29	0.29	0.29	0.09	0.25	0.25	0.06	0.21	
v/c Ratio	0.24	1.02		1.42	1.40	0.26	1.27	0.56	1.11	1.01	0.43	
Control Delay	32.4	74.1		229.1	219.2	7.0	197.4	34.9	81.1	139.1	26.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.4	74.1		229.1	219.2	7.0	197.4	34.9	81.1	139.1	26.3	
LOS	C	E		F	F	A	F	C	F	F	C	
Approach Delay		69.6			204.8			90.1			52.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			F			F			D	
Queue Length 50th (ft)	42	~218		~577	~590	5	~155	131	~340	~59	67	
Queue Length 95th (ft)	84	#342		#801	#816	47	#292	210	#576	#161	108	
Internal Link Dist (ft)		2449			1603			1582			5886	
Turn Bay Length (ft)	125			290		125	105		235	100		
Base Capacity (vph)	357	715		499	522	548	168	470	844	99	769	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.24	1.02		1.42	1.40	0.26	1.27	0.56	1.11	1.01	0.43	

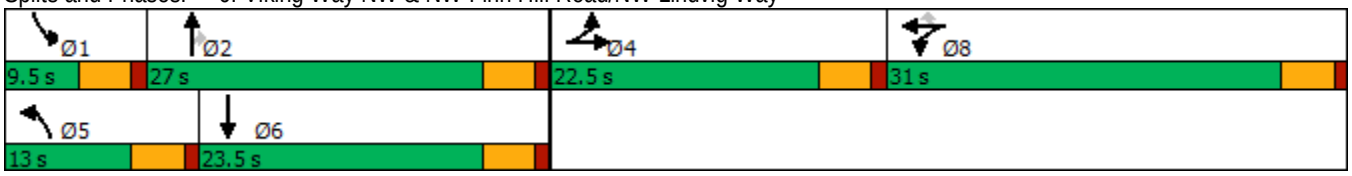
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.42
Intersection Signal Delay: 125.0 Intersection LOS: F
Intersection Capacity Utilization 89.4% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Viking Way NW & NW Finn Hill Road/NW Lindvig Way



Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	23	79	148	112	134	17
Future Vol, veh/h	23	79	148	112	134	17
Conflicting Peds, #/hr	0	0	0	0	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	140	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	81	153	115	138	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	268	0	-	0	340	212
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	129	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1296	-	-	-	656	828
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	897	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1296	-	-	-	644	827
Mov Cap-2 Maneuver	-	-	-	-	644	-
Stage 1	-	-	-	-	808	-
Stage 2	-	-	-	-	897	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	12.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1296	-	-	-	660
HCM Lane V/C Ratio	0.018	-	-	-	0.236
HCM Control Delay (s)	7.8	-	-	-	12.1
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.9

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	7	212	2	4	245	69	2	0	2	45	0	6
Future Vol, veh/h	7	212	2	4	245	69	2	0	2	45	0	6
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	223	2	4	258	73	2	0	2	47	0	6

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	332	0	0	225	0	0	544	578	224	543	543	296
Stage 1	-	-	-	-	-	-	238	238	-	304	304	-
Stage 2	-	-	-	-	-	-	306	340	-	239	239	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
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	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1227	-	-	1344	-	-	450	427	815	451	447	743
Stage 1	-	-	-	-	-	-	765	708	-	705	663	-
Stage 2	-	-	-	-	-	-	704	639	-	764	708	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1226	-	-	1344	-	-	442	422	815	446	442	742
Mov Cap-2 Maneuver	-	-	-	-	-	-	442	422	-	446	442	-
Stage 1	-	-	-	-	-	-	760	703	-	699	660	-
Stage 2	-	-	-	-	-	-	695	636	-	757	703	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.1	11.3	13.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	573	1226	-	-	1344	-	-	468
HCM Lane V/C Ratio	0.007	0.006	-	-	0.003	-	-	0.115
HCM Control Delay (s)	11.3	8	0	-	7.7	0	-	13.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0.4

Intersection						
Int Delay, s/veh	3.6					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	4	261	318	144	149	6
Future Vol, veh/h	4	261	318	144	149	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	284	346	157	162	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	503	0	-	0	717	425
Stage 1	-	-	-	-	425	-
Stage 2	-	-	-	-	292	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1061	-	-	-	396	629
Stage 1	-	-	-	-	659	-
Stage 2	-	-	-	-	758	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1061	-	-	-	394	629
Mov Cap-2 Maneuver	-	-	-	-	394	-
Stage 1	-	-	-	-	656	-
Stage 2	-	-	-	-	758	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	20.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1061	-	-	-	400
HCM Lane V/C Ratio	0.004	-	-	-	0.421
HCM Control Delay (s)	8.4	0	-	-	20.4
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	2

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	311	4	28	388	379	2	7	12	451	11	214
Future Volume (vph)	144	311	4	28	388	379	2	7	12	451	11	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	375		0	110		135	50		0	385		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor											0.98	
Frt		0.998			0.926			0.902			0.857	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1877	0	1787	1742	0	1787	1697	0	1787	1580	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1787	1877	0	1787	1742	0	1787	1697	0	1787	1580	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1			56			13			223	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1140			346			782			1372	
Travel Time (s)		25.9			7.9			17.8			31.2	
Confl. Bikes (#/hr)												1
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
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	150	328	0	29	799	0	2	20	0	470	234	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases												
Detector Phase	7	4		3	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5		9.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	10.6	32.3		9.9	31.6		9.5	23.6		24.2	38.3	
Total Split (%)	11.8%	35.9%		11.0%	35.1%		10.6%	26.2%		26.9%	42.6%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Min		None	Min	
Act Effct Green (s)	6.1	33.8		5.4	27.1		5.0	6.1		19.7	28.4	
Actuated g/C Ratio	0.08	0.44		0.07	0.35		0.06	0.08		0.26	0.37	
v/c Ratio	1.06	0.40		0.23	1.23		0.02	0.14		1.03	0.32	
Control Delay	132.0	18.0		39.0	141.8		34.5	22.9		81.3	4.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	132.0	18.0		39.0	141.8		34.5	22.9		81.3	4.9	
LOS	F	B		D	F		C	C		F	A	
Approach Delay		53.8			138.2			24.0			55.9	
Approach LOS		D			F			C			E	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	~80	91		13	~463		1	3		~233	3	
Queue Length 95th (ft)	#195	197		39	#696		8	23		#430	54	
Internal Link Dist (ft)		1060			266			702			1292	
Turn Bay Length (ft)	375			110			50			385		
Base Capacity (vph)	141	823		125	649		115	430		456	818	
Starvation Cap Reductn	0	0		0	0		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	1.06	0.40		0.23	1.23		0.02	0.05		1.03	0.29	

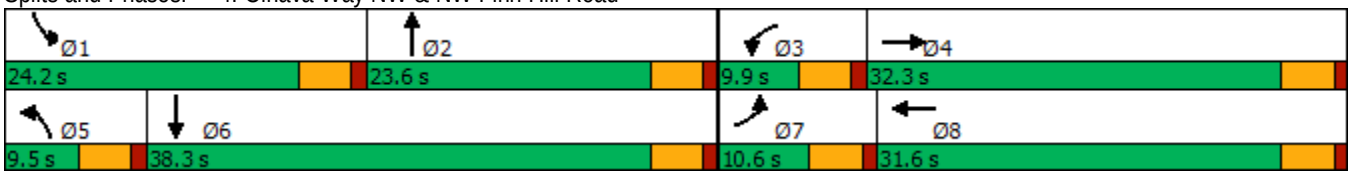
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 77
Natural Cycle: 140
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.23
Intersection Signal Delay: 88.6 Intersection LOS: F
Intersection Capacity Utilization 94.5% ICU Level of Service F
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 4: Olhava Way NW & NW Finn Hill Road



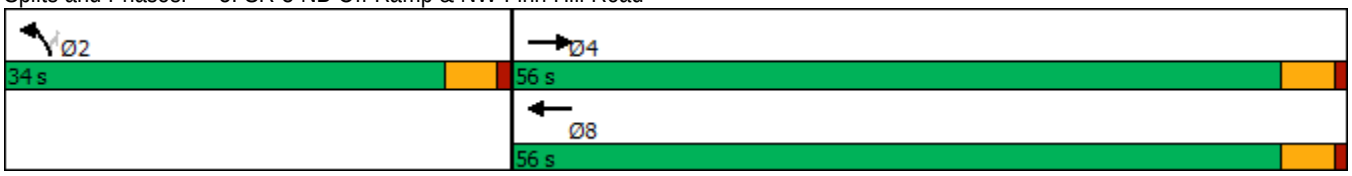
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	376	0	0	774	374	421
Future Volume (vph)	376	0	0	774	374	421
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)		0	0		0	205
Storage Lanes		0	0		1	1
Taper Length (ft)			25		25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt						0.850
Flt Protected					0.950	
Satd. Flow (prot)	1881	0	0	1881	1787	1599
Flt Permitted					0.950	
Satd. Flow (perm)	1881	0	0	1881	1787	1599
Right Turn on Red		Yes				Yes
Satd. Flow (RTOR)						443
Link Speed (mph)	30			30	30	
Link Distance (ft)	615			2529	1204	
Travel Time (s)	14.0			57.5	27.4	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	396	0	0	815	394	443
Turn Type	NA			NA	Prot	Perm
Protected Phases	4			8	2	
Permitted Phases						2
Detector Phase	4			8	2	2
Switch Phase						
Minimum Initial (s)	5.0			5.0	5.0	5.0
Minimum Split (s)	22.5			22.5	22.5	22.5
Total Split (s)	56.0			56.0	34.0	34.0
Total Split (%)	62.2%			62.2%	37.8%	37.8%
Yellow Time (s)	3.5			3.5	3.5	3.5
All-Red Time (s)	1.0			1.0	1.0	1.0
Lost Time Adjust (s)	0.0			0.0	0.0	0.0
Total Lost Time (s)	4.5			4.5	4.5	4.5
Lead/Lag						
Lead-Lag Optimize?						
Recall Mode	None			None	Min	Min
Act Effct Green (s)	35.2			35.2	20.5	20.5
Actuated g/C Ratio	0.54			0.54	0.31	0.31
v/c Ratio	0.39			0.81	0.71	0.55
Control Delay	10.6			20.3	29.8	5.3
Queue Delay	0.0			0.0	0.0	0.0
Total Delay	10.6			20.3	29.8	5.3
LOS	B			C	C	A
Approach Delay	10.6			20.3	16.9	
Approach LOS	B			C	B	
Queue Length 50th (ft)	84			240	136	0
Queue Length 95th (ft)	173			483	294	64

Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Internal Link Dist (ft)	535			2449	1124	
Turn Bay Length (ft)						205
Base Capacity (vph)	1496			1496	887	1016
Starvation Cap Reductn	0			0	0	0
Spillback Cap Reductn	0			0	0	0
Storage Cap Reductn	0			0	0	0
Reduced v/c Ratio	0.26			0.54	0.44	0.44

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 65.6
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 17.0 Intersection LOS: B
Intersection Capacity Utilization 69.0% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 5: SR-3 NB Off Ramp & NW Finn Hill Road



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	79	549	122	750	573	127	198	240	855	91	211	91
Future Volume (vph)	79	549	122	750	573	127	198	240	855	91	211	91
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	125		0	290		125	105		235	100		0
Storage Lanes	1		0	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	0.95
Ped Bike Factor	1.00	1.00		1.00	1.00	0.97			0.98	1.00	0.99	
Frt		0.973				0.850			0.850		0.955	
Flt Protected	0.950			0.950	0.992		0.950			0.950		
Satd. Flow (prot)	1787	3469	0	1698	1773	1599	1787	1881	1599	1787	3391	0
Flt Permitted	0.950			0.950	0.992		0.950			0.950		
Satd. Flow (perm)	1784	3469	0	1697	1773	1557	1787	1881	1574	1783	3391	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		26				127			600		68	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2529			1683			1662			5966	
Travel Time (s)		57.5			38.3			37.8			135.6	
Confl. Peds. (#/hr)	2		1	1		2			2	2		
Confl. Bikes (#/hr)						1			1			1
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Shared Lane Traffic (%)				14%								
Lane Group Flow (vph)	87	737	0	709	745	140	218	264	940	100	332	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA	Perm	Prot	NA	
Protected Phases	4	4		8	8		5	2		1	6	
Permitted Phases						8			2			
Detector Phase	4	4		8	8	8	5	2	2	1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5	22.5	9.5	22.5	22.5	9.5	22.5	
Total Split (s)	22.5	22.5		31.0	31.0	31.0	13.0	27.0	27.0	9.5	23.5	
Total Split (%)	25.0%	25.0%		34.4%	34.4%	34.4%	14.4%	30.0%	30.0%	10.6%	26.1%	
Yellow Time (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	
Lead/Lag							Lead	Lag	Lag	Lead	Lag	
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	
Recall Mode	None	None		None	None	None	None	Max	Max	None	Max	
Act Effct Green (s)	18.0	18.0		26.5	26.5	26.5	8.5	22.5	22.5	5.0	19.0	
Actuated g/C Ratio	0.20	0.20		0.29	0.29	0.29	0.09	0.25	0.25	0.06	0.21	
v/c Ratio	0.24	1.03		1.42	1.43	0.26	1.30	0.56	1.12	1.01	0.43	
Control Delay	32.4	77.8		229.1	231.3	7.0	206.2	34.9	81.7	139.1	26.3	
Queue Delay	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	32.4	77.8		229.1	231.3	7.0	206.2	34.9	81.7	139.1	26.3	
LOS	C	E		F	F	A	F	C	F	F	C	
Approach Delay		73.0			210.6			92.1			52.4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Approach LOS		E			F			F			D	
Queue Length 50th (ft)	42	~232		~577	~608	5	~160	131	~341	~59	67	
Queue Length 95th (ft)	84	#347		#801	#836	47	#300	210	#577	#161	108	
Internal Link Dist (ft)		2449			1603			1582			5886	
Turn Bay Length (ft)	125			290		125	105		235	100		
Base Capacity (vph)	357	714		499	522	548	168	470	843	99	769	
Starvation Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Spillback Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Storage Cap Reductn	0	0		0	0	0	0	0	0	0	0	
Reduced v/c Ratio	0.24	1.03		1.42	1.43	0.26	1.30	0.56	1.12	1.01	0.43	

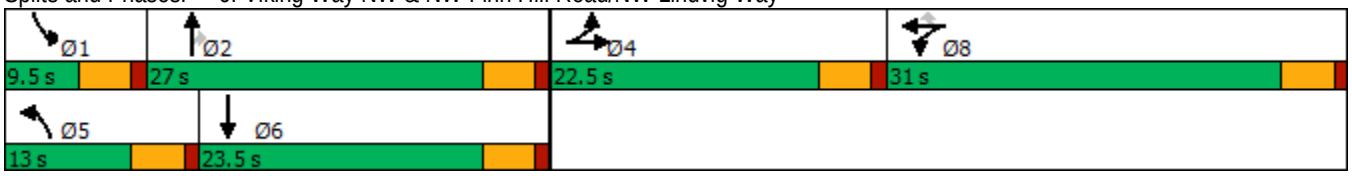
Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Natural Cycle: 150
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.43
Intersection Signal Delay: 128.6 Intersection LOS: F
Intersection Capacity Utilization 90.0% ICU Level of Service E
Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 6: Viking Way NW & NW Finn Hill Road/NW Lindvig Way



Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	2	117	5	2	141
Future Vol, veh/h	3	2	117	5	2	141
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	3	2	127	5	2	153

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	287	130	0	0	132	0
Stage 1	130	-	-	-	-	-
Stage 2	157	-	-	-	-	-
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	703	920	-	-	1453	-
Stage 1	896	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	702	920	-	-	1453	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	869	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	776	1453	-
HCM Lane V/C Ratio	-	-	0.007	0.001	-
HCM Control Delay (s)	-	-	9.7	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	7	0	122	13	0	144
Future Vol, veh/h	7	0	122	13	0	144
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	8	0	133	14	0	157

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	297	140	0	0	147	0
Stage 1	140	-	-	-	-	-
Stage 2	157	-	-	-	-	-
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	694	908	-	-	1435	-
Stage 1	887	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	694	908	-	-	1435	-
Mov Cap-2 Maneuver	694	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	871	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	694	1435	-
HCM Lane V/C Ratio	-	-	0.011	-	-
HCM Control Delay (s)	-	-	10.2	0	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Chapter 4. Transportation



4.1 Community Key Goals – Transportation

- Emphasize development of complete streets that are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders regardless of age, ability or mode of transportation.
- Develop standards to improve the function, safety, and appearance of the City street system.
- Maintain a consistent level of service on the City's street system that is appropriate for existing and future growth to improve traffic flow.
- Participate in efforts to enhance the City's connectivity to the region, including telecommuting.

4.2 Plan Context

The Transportation Chapter provides the policy framework to guide short-range and long-term development and maintenance of the multi-modal transportation system that includes roadways, bikeways, pedestrian facilities, and public transit within the city limits of Poulsbo. It addresses the mandates of the Growth Management Act under the Revised Code of Washington (RCW) 36.70A.070 and supports the vision of Poulsbo.

The Transportation Chapter of the Comprehensive Plan provides the overall policy vision for Poulsbo's transportation system. Additional policy and programmatic guidance is found in a series of more detailed documents, including:

- Section 2 – Capital Facilities Plan
- 2016 Poulsbo Transportation Plan Update
- Poulsbo 6-year Transportation Improvement Plan

An overview of Poulsbo's transportation system inventory is included in the 2016 Poulsbo Transportation Plan Update, included in full as Appendix B-4 of this comprehensive plan. It describes the existing transportation system including: highways, streets and roads, public transportation, bicycle and pedestrian. The transportation facility improvement plan is presented in the Capital Facility Plan and identifies the transportation infrastructure improvements needed to support the projected land use through 2036. The transportation improvements needed by 2036

alternative alignment and/or connection that meets the intent of the 2036 New Roadway Segments map.

LEVEL OF SERVICE AND CONCURRENCY

Transportation level-of-service standards and concurrency are key requirements of the Washington Growth Management Act. By policy and regulation, the City of Poulsbo is required to ensure that transportation facilities needed to serve growth are in place when development occurs, or within six years of the completion of the development.

GOAL TR-2

Maintain adopted level of service on City streets that mitigates the impacts of new growth and is adequate to serve adjoining land uses.

Policy TR-2.1

A concurrency level of service (LOS) standard of LOS E is hereby established for all transportation facilities (except as otherwise designated) in the City of Poulsbo in order to serve as a gauge to judge performance of the City's transportation system. A concurrency standard of LOS F is established for all local roadway sections designated Residential Collector and Residential Access.

Policy TR-2.2

A concurrency level of service standard of LOS F is established for the following roadway segments:

- *Front Street from Bond to Jensen*
- *Torval Canyon from Front Street to 4th Avenue*
- *Viking Way from the southern City Limits to Bovela*
- *Lindvig from Viking Avenue to Bond Road*

A concurrency level of service standard of LOS F is established for the following intersections:

- *all legs of 7th and Liberty intersection;*
- *all legs of 10th Avenue and Forest Rock Lane intersection;*
- *all legs of 8th Avenue and Lincoln Road intersection;*
- *Front Street and Torval Canyon intersection;*
- *Front and Jensen intersections;*
- *all legs of Front, Fjord and Hostmark intersection(s);*
- *Lindvig Way at Bond Road,*
- *Lindvig Way/Finn Hill Road at Viking Avenue; and*
- *LOS failures where corrective action is not physically or technically feasible or fails to satisfy warrants or design requirements.*

Policy TR-2.3

Transportation facilities to which the level of service standard applies include both intersections and roadway sections, and different methods of calculating level of service apply to each type of facility. For intersections, the definitions of level of service and capacity shall be based on the most recent edition of the Highway Capacity Manual published by the Transportation Research Board of the National Research Council.

For roadway sections between intersections, level of service and capacity shall be as defined in "Allowable Capacity of Roadways based on Design Features," identified as Appendix A to the City's Transportation Plan Update 2016, prepared for the City of Poulsbo by Parametrix and David Evans and Associates; and is included in Appendix B to this Comprehensive Plan and incorporated herein by this reference as if fully set forth.

Policy TR-2.4

The City shall strive to achieve level of service standard of LOS C on all City transportation facilities, but shall, for concurrency purposes, maintain the level of service on such transportation facilities as fully identified in Policies TR-2.1 and TR-2.2.

Policy TR-2.5

For those roadway segments and intersections with an adopted LOS F designation, the City may implement mitigation measures that address impacts associated with adoption of the LOS F standard, but that do not necessarily add capacity. These mitigation measures may include transportation demand management (TDM) or transportation system management (TSM) actions or projects that encourage and support other transportation modes including transit and non-motorized facilities, as well as safety improvements such as pedestrian enhancements, signal timing optimization, pavement striping, signage and lighting, geometric modifications or other measures.

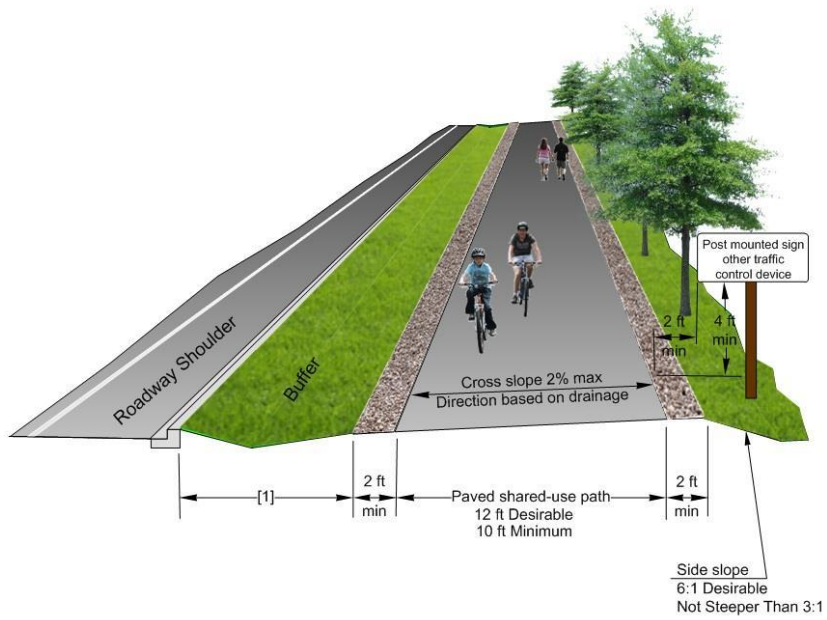
Policy TR-2.6

Development projects that contribute traffic to LOS F designated roadway segments and intersections may be required to partially or fully participate in funding or constructing the mitigation measures identified pursuant to Policy TR-2.5 if the mitigation project is not already part of the City's adopted TIP. These mitigation measures would be identified and developed through a Traffic Impact Assessment prepared pursuant to applicable sections of Poulsbo Municipal Code (PMC).

Policy TR-2.7

The City will seek funding for TDM and TSM actions and projects that help to mitigate and alleviate adoption of the LOS F standard. These actions and projects will be designed to encourage shifts from single occupancy vehicles, increase the availability and quality of non-motorized facilities, and support development of complete street projects that address multiple transportation modes as well as economic development and safety.

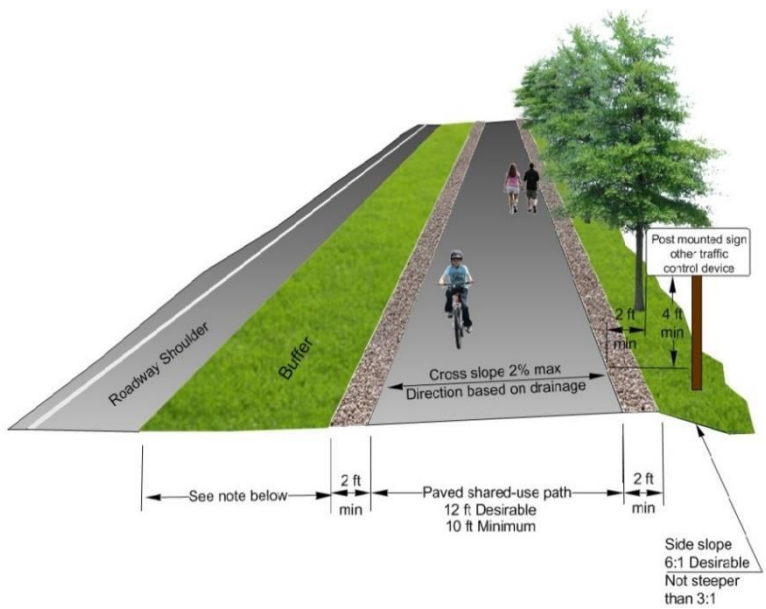
Exhibit 1515-4 Two-Way Shared-Use Path: Adjacent to Roadway (≤ 35 mph)



Note:

[1] 3 ft minimum. Provide as much separation from the roadway as practicable.

Exhibit 1515-5 Two-Way Shared-Use Path: Adjacent to Roadway (> 35mph)



Notes:

A separation greater than 5 feet is required for path user comfort. If separation greater than 5 feet cannot be obtained, provide barrier separation in accordance with Exhibit 1515-6.

See Chapter 1600 for roadway clear zone design guidance for fixed objects.

EXHIBIT H.4
LAND USE COMPREHENSIVE PLAN TRANSPORTATION ELEMENT FIGURE TR-3

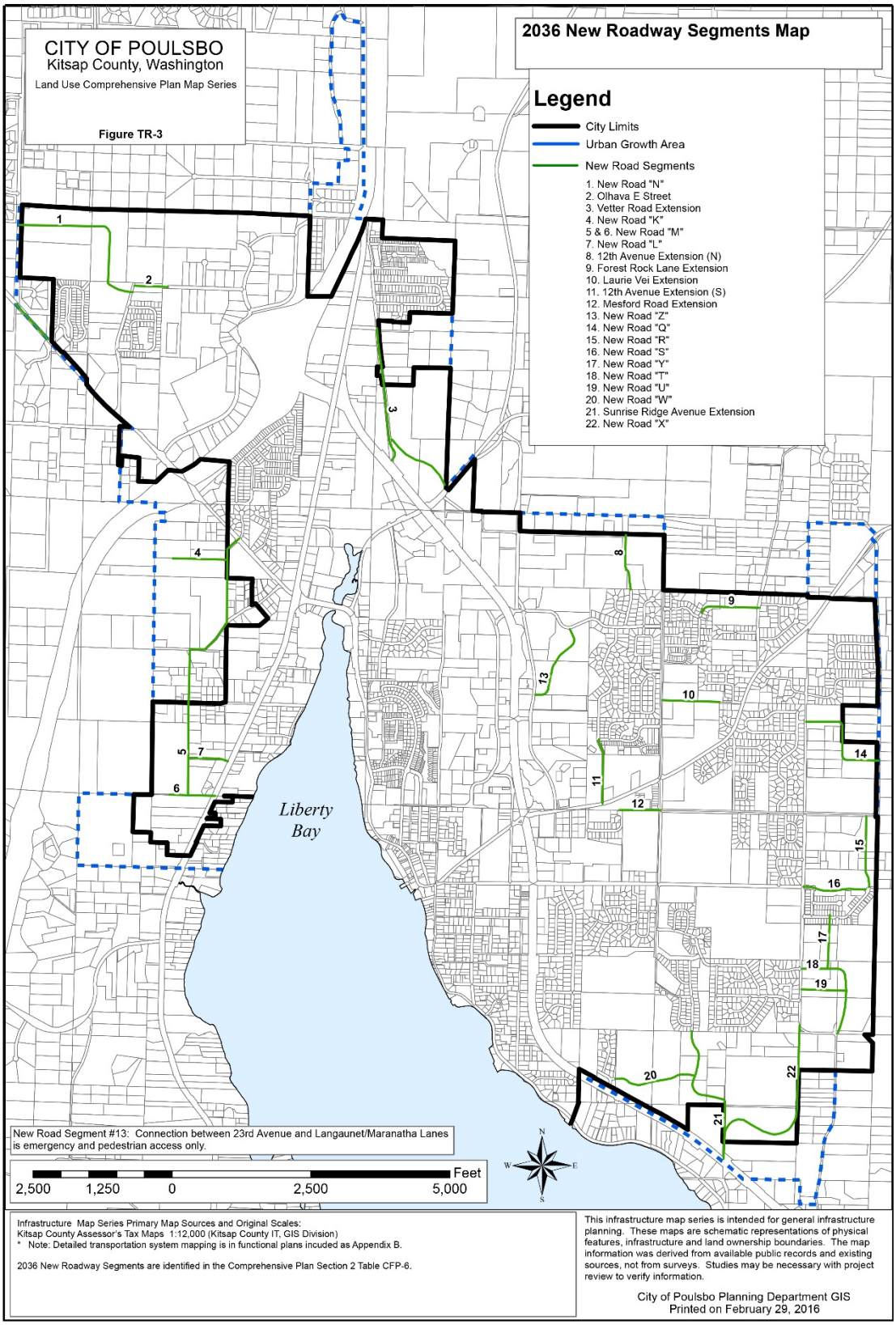


Figure 9. New Roadway Segments