BELL CREEK - SEQUIM

Sequim, WA

TRAFFIC IMPACT ANALYSIS (TIA)

March 22, 2024



HEATH & ASSOCIATES

Transportation Planning & Engineering

BELL CREEK - SEQUIM
TRAFFIC IMPACT ANALYSIS

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BELL CREEK - SEQUIM
TRAFFIC IMPACT ANALYSIS

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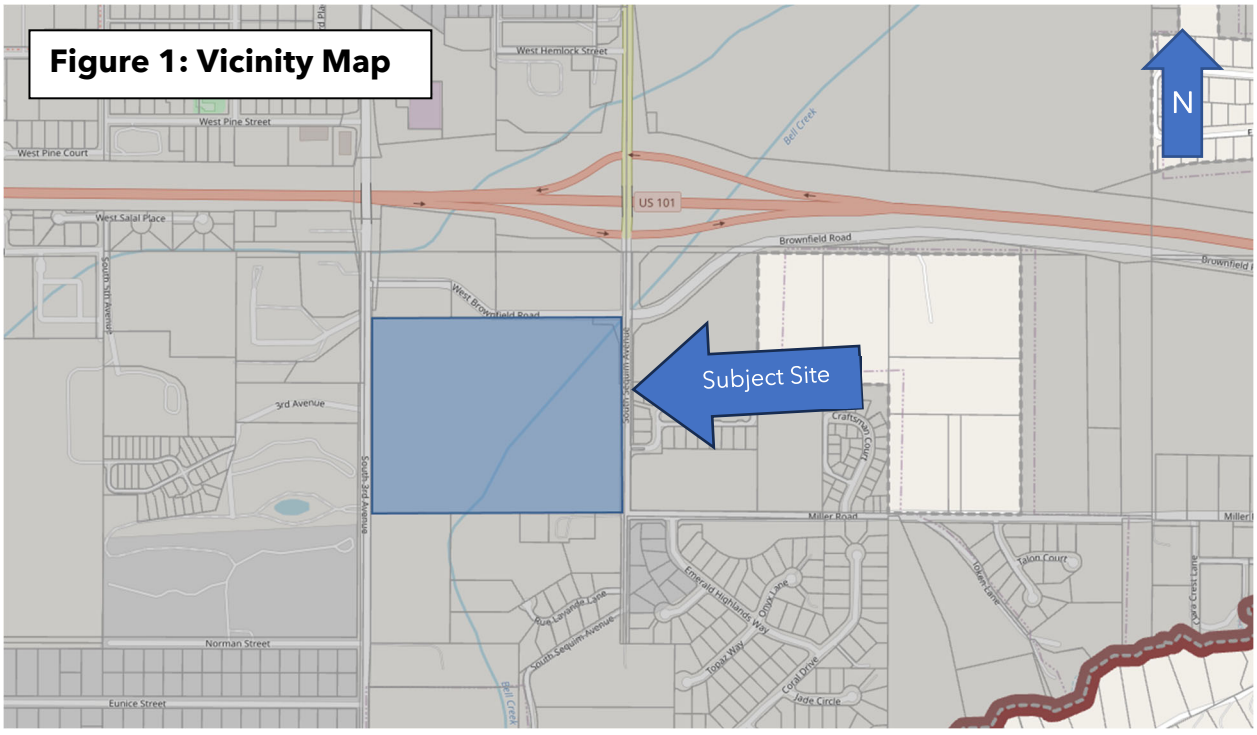
BELL CREEK - SEQUIM
TRAFFIC IMPACT ANALYSIS

1. INTRODUCTION

The main goals of this study focus on the assessment of existing roadway conditions and forecasts of newly generated project traffic. The first task includes the review of general roadway information on the adjacent street system and baseline vehicular volumes. Forecasts of future traffic and dispersion patterns on the street system are then determined using established trip generation and distribution techniques. As a final step, appropriate conclusions and mitigation measures are defined if needed.

2. PROJECT DESCRIPTION

Bell Creek – Sequim proposes for the construction of up to 110 single-family residential dwelling units within the city of Sequim. The subject site comprises 28.38-acre tax parcel #: 033030110000, bordered to the north by W Brownfield Road, to the east by S Sequim Avenue and to the west by S 3rd Avenue. Three driveways extending east from S 3rd Avenue and three driveways extending west from S Sequim Avenue are proposed for site access. A vicinity map is provided below Figure 1 with the subject site highlighted in blue. A conceptual site plan is presented in Figure 2.



N

BROWNFIELD RD

ROW C

TRACT A
(OPEN SPACE)

TRACT E
(OPEN SPACE)

TRACT H
(OPEN SPACE)

ROAD A

ROAD B

ROAD C

ROAD D

ROAD E

ROAD F

ROAD G

TRACT B
(OPEN SPACE)

TRACT C
(OPEN SPACE)

TRACT D
(OPEN SPACE)

TRACT F
(CRITICAL AREA)

TRACT G
(OPEN SPACE)

TRACT J

TRACT K

TRACT L

ROW A

ROW B

TOP OF SLOPE (TYP)

100' BUFFER (TYP)

EDGE OF BELL CREEK (TYP)

S 3RD AVE

S SEQUIM AVE

ALPINE LOOP

MILLE

PROVENCE VIEW LN

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104

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CONCEPTUAL SITE PLAN
FIGURE 2

3. EXISTING CONDITIONS

3.1 Existing Street System

The street network serving the proposed project consists of a variety of roadways. The major roadways and arterials defined in the study area are listed and described below.

Table 1: Roadway Network

Functional Classification	Roadway	Speed Limit	Lanes	Street Parking	Sidewalk	Bike Facilities
State Route	US 101	55-mph	2	No	No	No
Collector	S Sequim Ave	25-30 mph	2	No	n/o Brownfield Rd	
	Brownfield Rd	25-35 mph	2	No	No	~200' e/o Sequim Ave
	S 3rd Ave	25-30 mph	2	No	Some	No

3.2 Transit Service

A review of the Clallam Transit and Jefferson Transit regional bus schedules indicates that transit service is provided near the site. Table 2 below provides further route details.

Table 2: Bus Routes

Route	Description	Weekday Service	Saturday	Sunday	Nearest Stop
8	Sequim: Sequim TC to Haines Place P & R (Port Townsend)	6:11 AM – 7:23 PM (every ~2-4 hrs)	7:00 AM – 6:36 PM (every ~10 hrs)	N/A	~0.7-miles
30	101 Commuter: Gateway TC to Sequim TC	5:30 AM – 10:05 PM (every ~30 min.)	7:25 AM – 8:30 PM (every ~30-60 min.)	N/A	~0.7-miles
50	Jamestown: Sequim TC to JTC	7:40 AM – 5:20 PM (every ~2-4 hrs)	N/A	N/A	~0.7-miles
52	Diamond Point: Sequim TC to Veach Rd	6:40 AM – 6:20 PM (every 5-6 hrs)	N/A	N/A	~0.7-miles
123	Straight Shot: Gateway TC to Bainbridge Ferry Terminal	7:25 AM – 10:05 PM (every 5-6 hrs)	7:25 AM – 8:59 PM (every 5-6 hrs)	8:05 AM – 8:10 PM (every 7 hrs)	~0.7-miles

It should be noted that all nearest stops outlined above are located at the Sequim Transit Center, ~0.7-miles northwest walking-distance from the subject site. Complete sidewalks from E Brownfield to/from the Transit Center along S Sequim Avenue are available. Refer to the Clallam Transit and Jefferson Transit service schedules for more information.

3.3 Existing Peak Hour Volumes

Field data for this study was collected by our firm in December of 2023. The following intersections were included in analysis:

1. N/S 3rd Avenue & W Washington Street
2. S 3rd Avenue & W Prairie Street
3. S 3rd Avenue & W Brownfield Road
4. S Sequim Avenue & E Brownfield Road
5. S Sequim Avenue & US 101 Eastbound Ramps
6. S Sequim Avenue & US 101 Westbound Ramp
7. S Sequim Avenue & W Prairie Street

Counts were performed between the PM peak period of 11:00 AM - 2:00 PM. The single hour exhibiting highest overall intersection volumes is then derived (peak hour) and is used for analysis for each respective location. Figure 3 on the following page identifies existing PM peak hour volumes. Full count sheets have been attached in the appendix for reference for respective intersection peak hours and volumes.

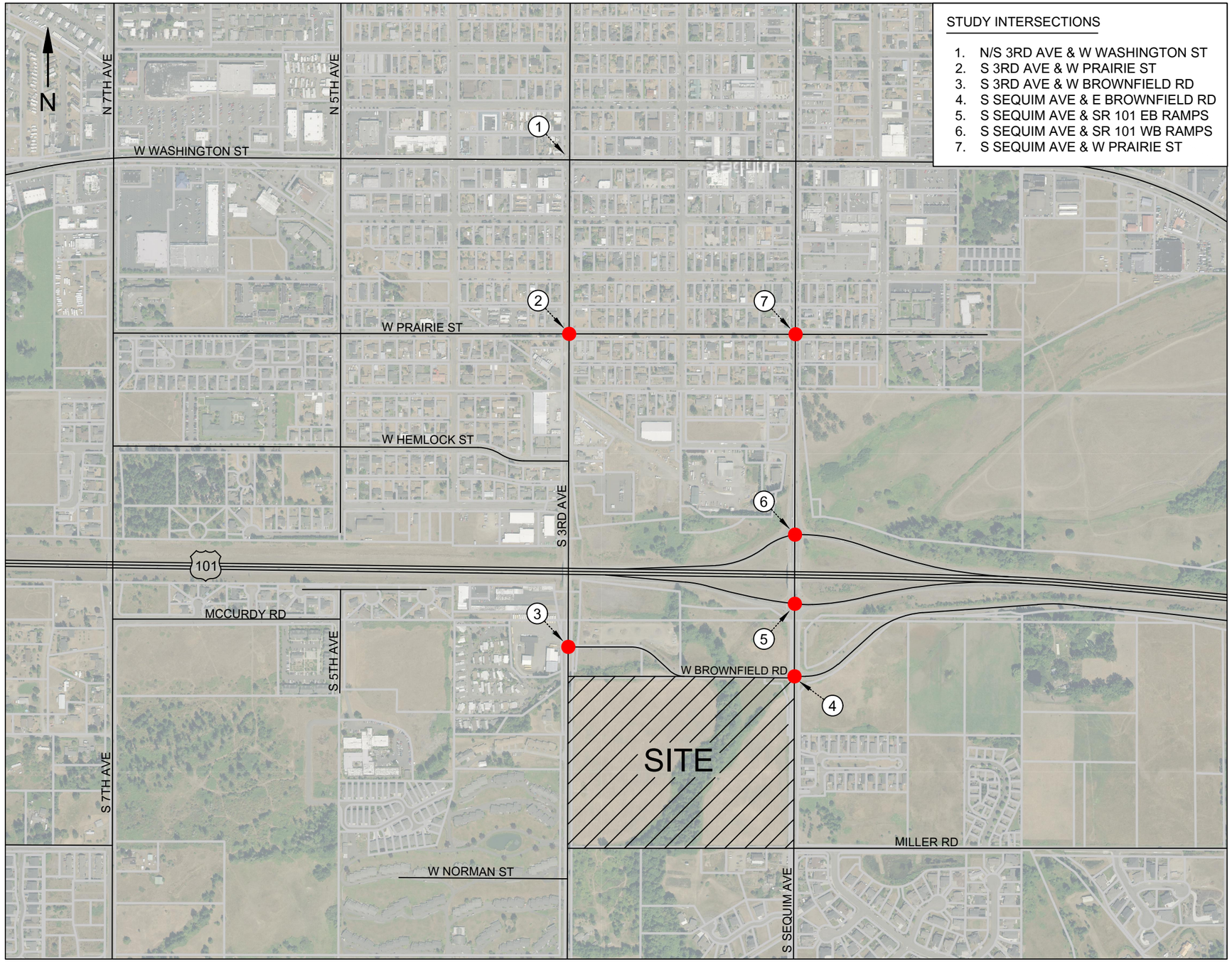
3.4 Non-Motorist Infrastructure

Non-motorist volumes were observed at the study intersections nearest the subject site, Brownfield Road's intersections with S 3rd Avenue and S Sequim Avenue, during routine peak hour movement counts. No pedestrians or bicyclists were observed at the study intersections during the PM peak hour.

Sidewalk and bike lanes are available on S Sequim Avenue north of Brownfield Road. Bike lanes are available on Brownfield Road east of S Sequim Ave. The City has planned non-motorist infrastructure infill that would further improve pedestrian connectivity along S Sequim Avenue, Washington Street, S 7th Avenue, S 3rd Avenue and other nearby corridors. Sidewalks are to be constructed along the roadways internal to the subject site and along the S Sequim Avenue and S 3rd Street frontages.

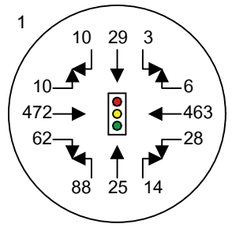
School-aged children residing in the site may attend Helen Haller Elementary School and Sequim Middle/High Schools – both located in excess of 1.0-mile walking-distance from the subject site. In review of the Sequim School District bus routes for the 2023-2024 school year, school-aged children would likely utilize bus service to and from school. One existing bus stop is located along the S Sequim Avenue project frontage at Alpine Loop, which may meet the needs of the Bell Creek site (to be verified with city).

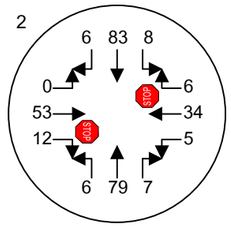
Overall, any required frontage or street improvements to S 3rd Avenue, S Sequim Avenue and E Brownfield Road should be coordinated with the City.

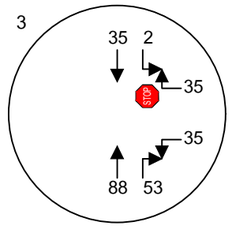


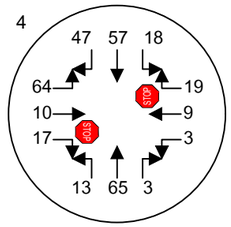
STUDY INTERSECTIONS

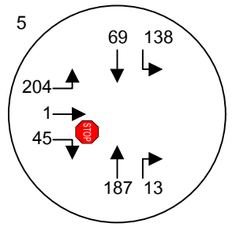
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2. S 3RD AVE & W PRAIRIE ST
3. S 3RD AVE & W BROWNFIELD RD
4. S SEQUIM AVE & E BROWNFIELD RD
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6. S SEQUIM AVE & SR 101 WB RAMPS
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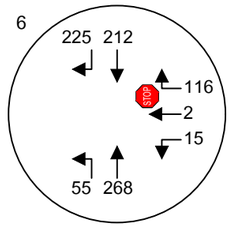


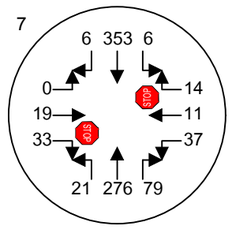












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EXISTING PM PEAK HOUR VOLUMES
FIGURE 3

3.5 Roadway Improvements

The most recently available City of Sequim 2023-2028 Transportation Improvement Program was reviewed. Several improvement projects are planned in the vicinity of the subject site, which are summarized in Table 3 below.

Table 3: Transportation Improvement Projects

Name	Location	Improvement	Cost
Pavement Rehab. (#2)	N Sequim Ave	Rehab pavement and improve ADA accessibility	$1,000,000
Pavement Rehab. (#3)	Washington St: River Rd to Simdars Rd	Rehab pavement and improve ADA and ped. accessibility and mobility	$6,398,000
S 7th Improvement (#8)	Comfort to McCurdy	Improve roadway	$3,472,000
S Sequim Ave Complete Street (#9)	Corridor	Create safe and encouraging multi-modal transportation options	$3,690,000
W Washington from River Rd Modification (#11)	Corridor	Eastbound Auxiliary Lane modification	$100,000
S 5th Ave Ext. (#13)	McCurdy Rd to Driveway	Construct a southerly roadway extension from McCurdy to Driveway	$150,000
N Sequim Ave Sidewalk & Bike Lanes (#18)	Corridor	Construct bicycle facilities and sidewalk	$2,150,000
E and E Washington St Bicycle Facilities (#22)	Sequim to Simdars Rd; Priest Rd to 5th Ave	Construct bicycle facilities	$240,000
N Sequim Ave Bicycle Facilities (#23)	Washington St to Fir St	Construct bicycle facilities	$30,000
S 3rd Ave Pedestrian Sidewalk/Pathways (#27)	Corridor	Construct pedestrian facilities	$300,000
Prairie St & S Sequim Ave (#31)	Intersection	Construct new signal	$375,000
US-101 Ramps & S Sequim Ave New Signals (#33)	US-101 Ramps & S Sequim Ave	*Construct new signals at the US-101 ramps on S Sequim Ave.	$705,000
W Wash. St & 2nd Ave (#35)	Intersection	Construct intersection improvement	$275,000
E Silberhorn Rd & S 7th Ave Improvements (#36)	Intersection	Intersection improvements, sidewalk, curb ramps, aligned lanes and traffic control	$500,000

Table 3: Transportation Improvement Projects (Cont.)

Name	Location	Improvement	Cost
E Washington St (#37)	Sequim to Rhodefer	E Washington St Bus Turn-outs	$149,000
S 7th Avenue new construction (#39)	McCurdy Rd to Reservoir Rd	Construct a new S 7th Ave roadway from McCurdy Rd to Reservoir Rd	$3,700,00
W Norman St New Construction (#40)	S 7th Ave to S 3rd Ave	Construct a W Norman St roadway from S 7th Ave to S 3rd Ave	$1,000,000
W Brownfield Rd Realignment (#41)	Sequim Ave to S 3rd Ave	Remove the roadway's curve, widen the roadway, adding sidewalks	$1,374,000
W Maple St Ext. (#42)	S 5th Ave to S 4th Ave	Roadway extension	$800,000
Wash. St Traffic Signals (#43)	Sequim to S 3rd Ave	Replace traffic signal with updated controllers	$550,000
S 5th Ave Int. & Traffic Signal Improvements (#44)	Corridor	Int. improvements; turn lane realignments/additions; updated signal equipment	$811,000
S 7th Ave Int. & Traffic Signal Improvements (#45)	Corridor	Int. improvements; turn lane realignments/ additions; updated signal equipment	$770,000

*An Intersection Control Evaluation (ICE) was conducted by WSDOT for the S Sequim Avenue & US 101 Ramp intersections (7/24/2023), which indicated that roundabouts are the preferred recommendation for the interchange improvements.

Moreover, WSDOT's Statewide Transportation Improvement Program (2023-2026) indicates that a project is planned at the US 101 & Sequim ramps. The project, *US 101/East Sequim Corridor Improvements (STIP ID: 310154S-5),* entails corridor and interchange improvements at the Sequim Avenue ramps. Preliminary engineering is currently underway, which has allocated approximately $1,090,000. The final improvement design and total construction cost are to be determined. As previously noted in the Table 2 footnote, an ICE was conducted for the S Sequim Avenue & US 101 Ramp interchanges (7/24/2023) and submitted to WSDOT. The ICE's findings recommended roundabouts at both eastbound and westbound ramps. However, final costs, design, and timing are still unknown at this time.

3.6 Level of Service

Existing intersection delays were determined using the *Highway Capacity Manual 7*th Edition. Capacity analysis is used to establish level of service (LOS) which is a measure of congestion for transportation facilities. The range[1] for intersection level of service is LOS A to LOS F with the former indicating the best operating conditions with low control delays and the latter indicating saturated conditions with heavy control delays. Level of service calculations were made using the *Synchro 12* analysis program. For signalized intersections, LOS is determined by the intersection's overall weighted average delay for each approaching leg. Side-street or two-way stop-controlled (TWSC) intersection LOS is determined by the approach with the highest delay. Per *WSDOT Synchro & SimTraffic Protocol* (August 2018), it is not recommended to use a peak hour factor (PHF) below 0.80. As such, all WSDOT intersections comprising PHF's below the noted threshold were increased to 0.80. Table 4 presents existing PM peak hour LOS delays.

Table 4: Existing Weekday PM Peak Hour Level of Service

Delays given in seconds per vehicle

Ref. #	Intersection	Control	Movement	LOS	Delay
1	S 3rd Ave & W Washington St	Signal	Overall	A	9.4
2	S 3rd Ave & W Prairie St	Stop	EB	B	10.6
3	S 3rd Ave & W Brownfield Rd	Stop	WB	A	9.9
4	S Sequim Ave & Brownfield Rd	Stop	EB	B	10.9
5	S Sequim Ave & US 101 EB Ramps	Stop	EB	D	29.4
6	S Sequim Ave & US 101 WB Ramps	Stop	WB	B	11.6
7	S Sequim Ave & W Prairie St	Stop	WB	C	18.5

The City of Sequim has an adopted level of service standard of LOS D or better[2]. As shown in Table 4, all study intersections are shown to operate with LOS D or better conditions, meeting City standards.

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[1] *Signalized Intersections - Level of Service*

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Stop Controlled Intersections – Level of Service

Level of Service	Control Delay per Vehicle (sec)
A	≤10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	>50

Highway Capacity Manual, 7th Edition

[2] City of Sequim 2015-2035 Comprehensive Plan, Chapter 4 – Transportation

4. FORECAST TRAFFIC DEMAND & ANALYSIS

4.1 Project Trip Generation

Trip generation is defined as the number of vehicle movements that enter or exit the respective project site during a designated time period such as the PM peak hour or an entire day. The magnitude of the anticipated vehicle trip generation for the proposed project was derived from the Institute of Transportation Engineers (ITE) publication, *Trip Generation Manual, 11th Edition*. The selected land use for the proposed development project is Land Use Code (LUC) *210 – Single-Family Housing Detached*. The proposed development may comprise up to 110 dwelling units. Table 5 below summarizes the estimated project trip generation using ITE equations with dwelling units as the input variable. Included are the average weekday daily traffic (AWDT) and the AM and PM peak hours. Refer to the appendix for trip generation output.

Table 5: Project Trip Generation

Land Use	Size	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Single-Family Detached (LUC 210)	110 DU's	1102	20	61	**81**	68	41	**109**

The project is estimated to generate 1102 total average weekday daily trips with 81 total trips (20 inbound / 61 outbound) occurring in the AM peak hour and 109 total trips (68 inbound / 41 outbound) occurring in the PM peak hour.

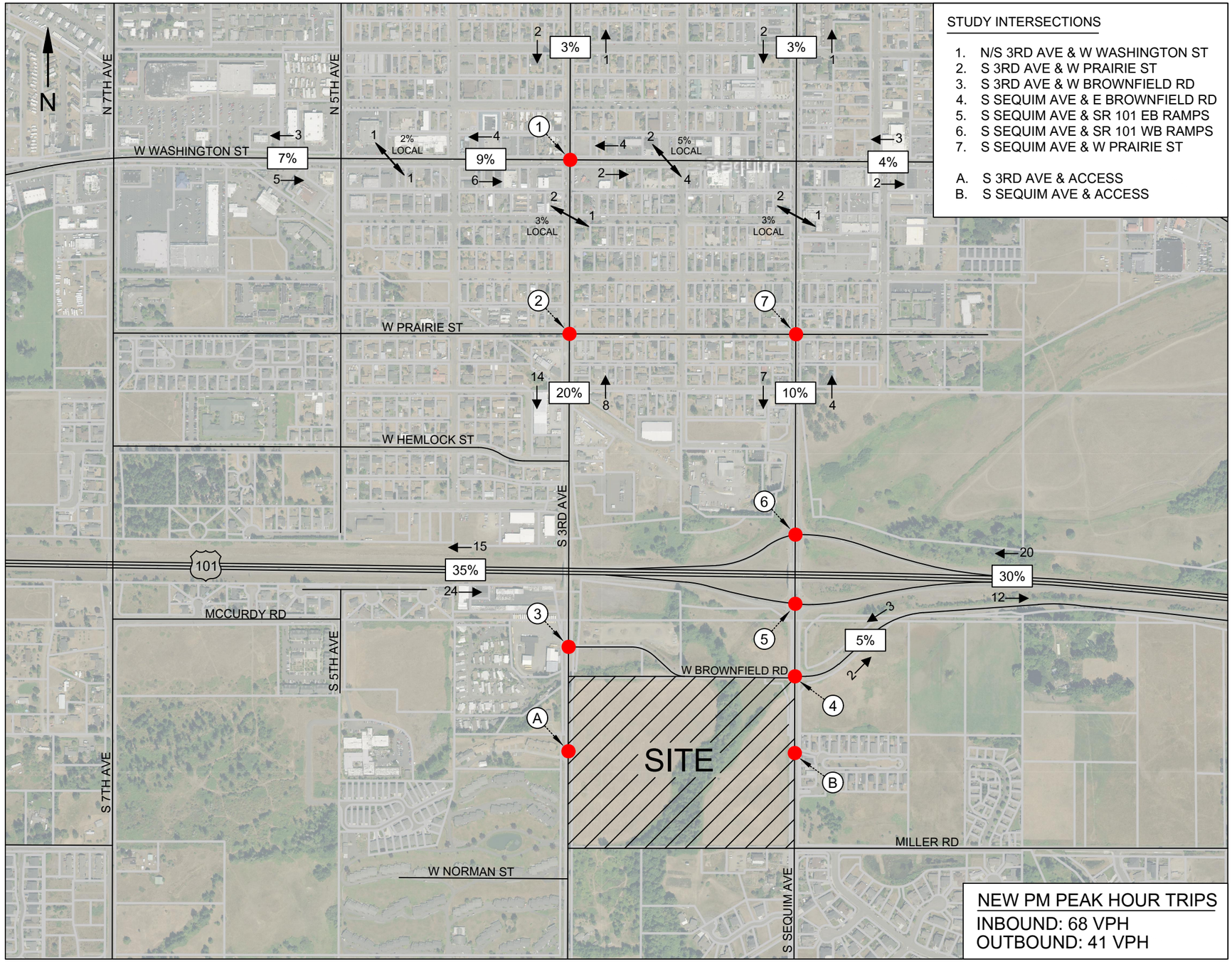
4.2 Distribution & Assignment

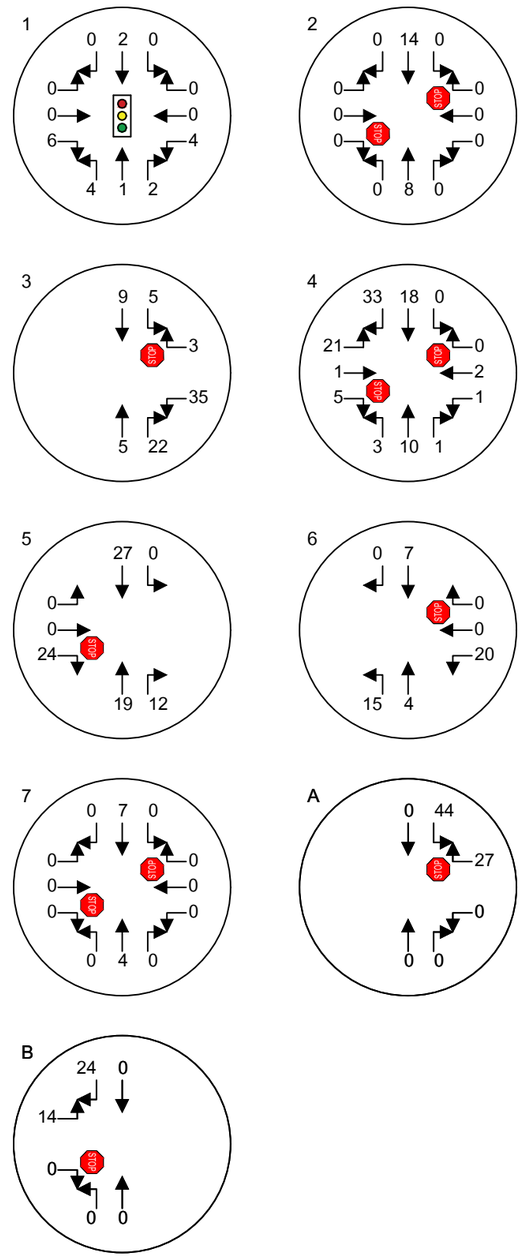
Trip distribution describes the anticipated travel routes for inbound and outbound project traffic during the peak hour study period. PM peak hour trips are primarily comprised of commuter-based (returning home) and recreational-based trips. Project-generated PM peak hour trips are expected to follow the general pattern as shown in Figure 4. Project-generated trips were disseminated between the proposed accesses on S 3rd Avenue (~65% of site-generated traffic) and S Sequim Avenue (~35% of site-generated traffic) based on site layout. Moreover, it should be noted that four accesses are proposed on S 3rd Avenue and two accesses are proposed on S Sequim Avenue. However, to present a conservative analysis, all site-generated trips were consolidated to a single access per fronting roadway. Outlying percentages emulate past projects in the vicinity of the subject site.

4.3 Future Peak Hour Volumes

A 5-year horizon of 2029 was used for future traffic delay analysis. Forecast 2029 background traffic volumes were derived by applying a 2.0 percent compound annual growth rate to the existing volumes of Figure 3. This growth rate was derived from the 2015-2035 City of Sequim Comprehensive Plan[3]. Moreover, pipeline volumes associated with the proposed Habitat for Humanity – Clallam, Rainshadow Loop Plat, Rolling Hills, Effie Estates, Legacy Development and Home A/Home B projects were accounted for within forecast analysis. PM peak hour pipeline volumes are illustrated in Figure 5. Forecast 2029 PM peak hour volumes without and with the addition of project-generated traffic are shown in Figures 6 and 7, respectively.

[3] City of Sequim 2015-2035 Comprehensive Plan, Chapter 2 – Urban Growth

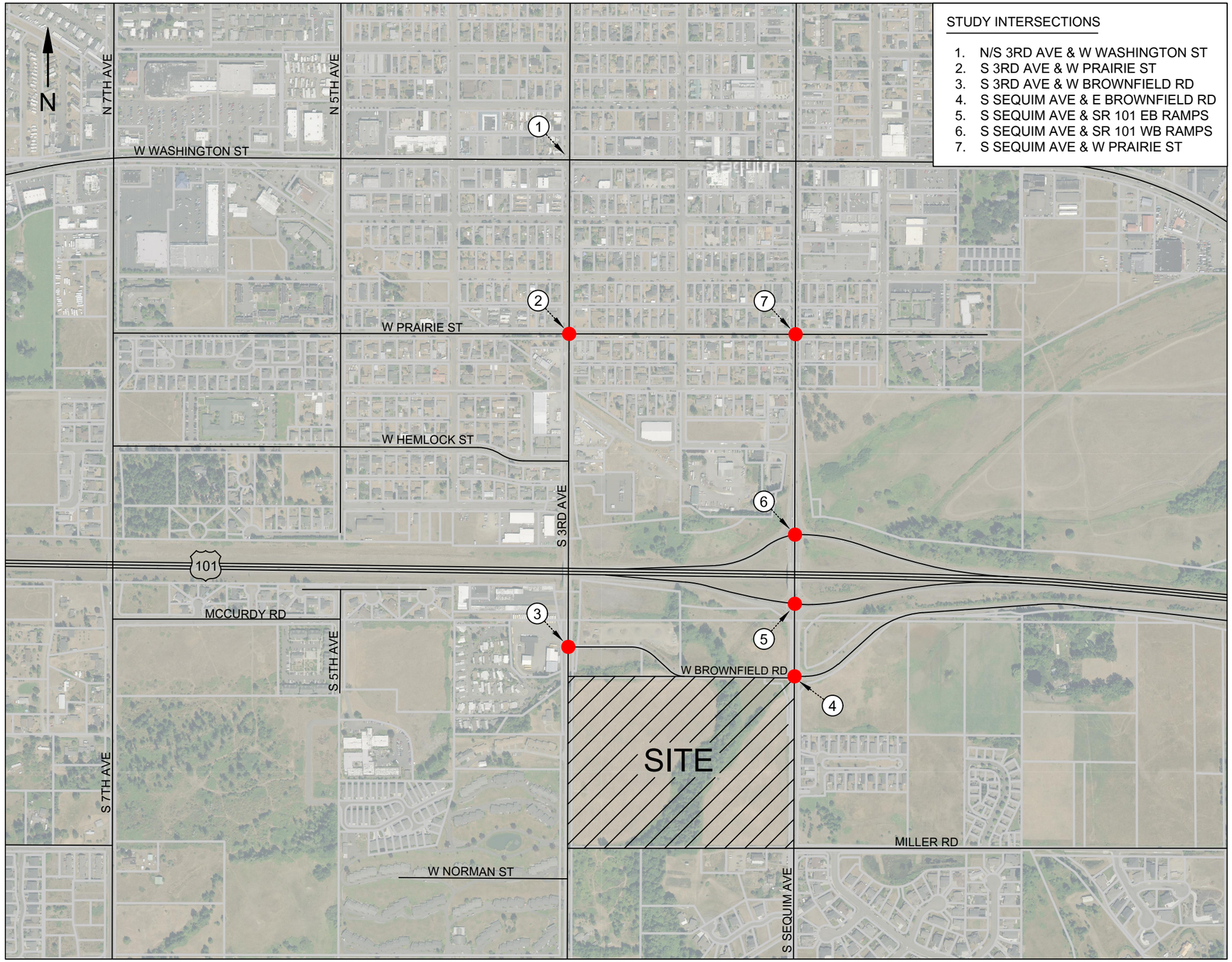




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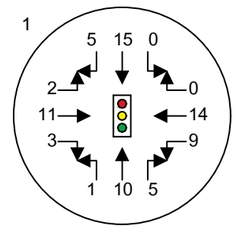
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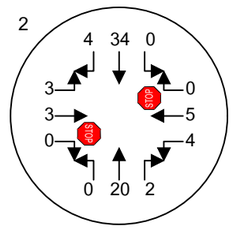
PM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT
FIGURE 4

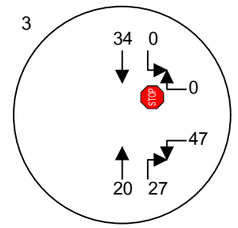


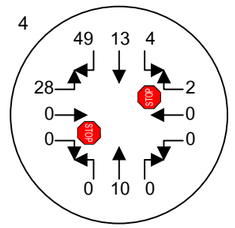
STUDY INTERSECTIONS

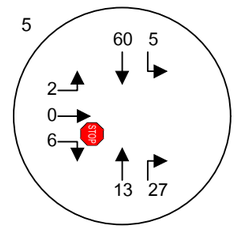
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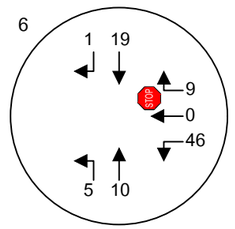


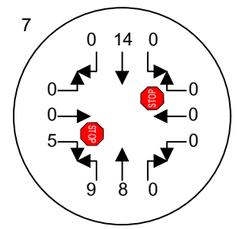








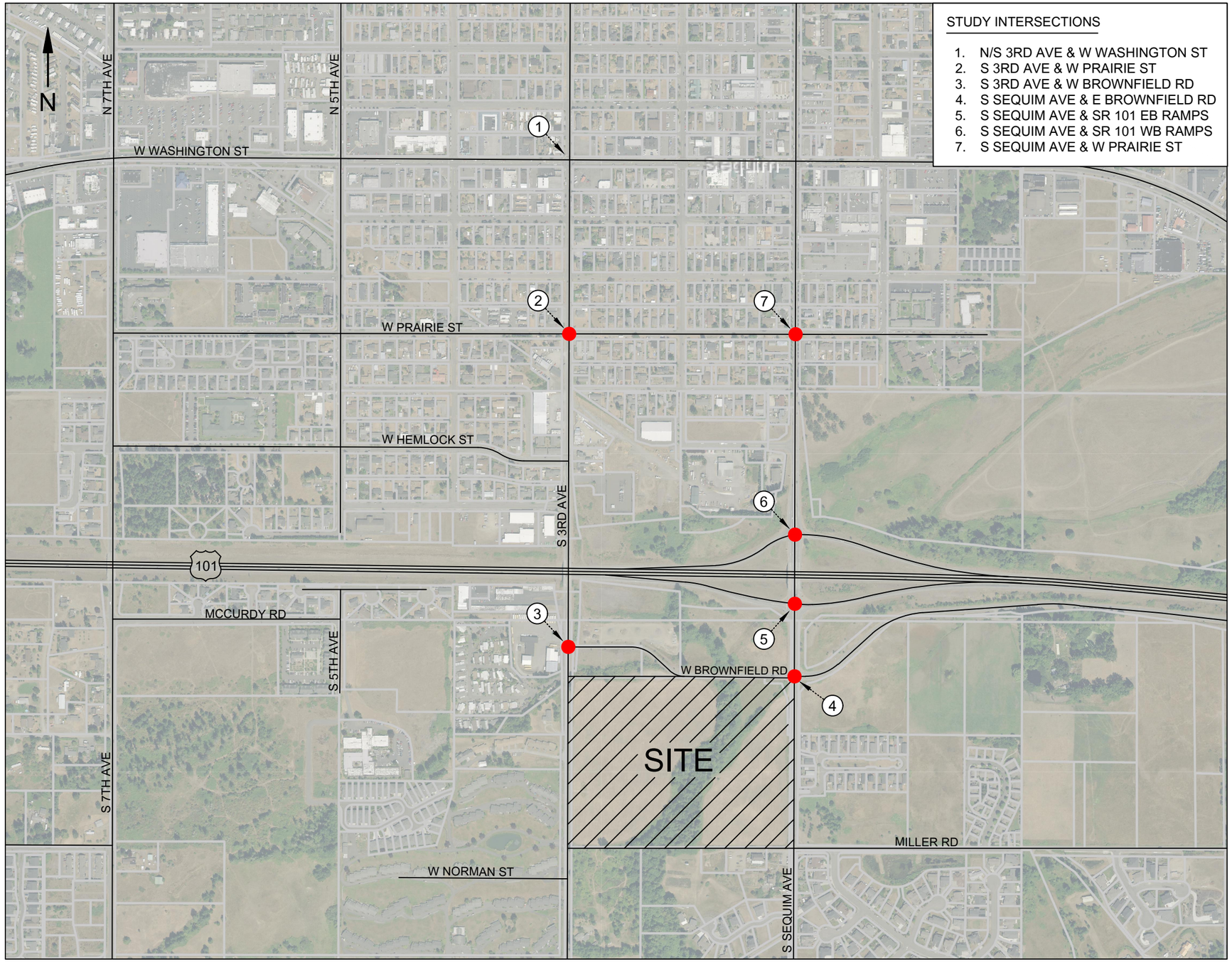




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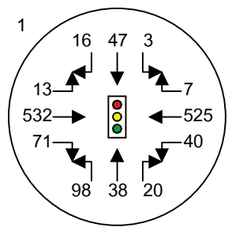
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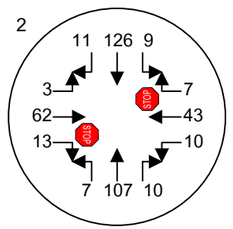
PM PEAK HOUR PIPELINE VOLUMES
FIGURE 5

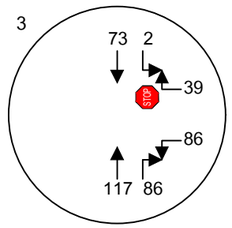


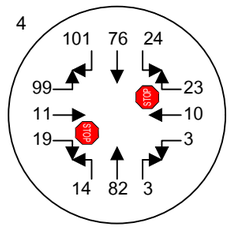
STUDY INTERSECTIONS

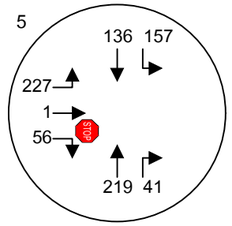
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2. S 3RD AVE & W PRAIRIE ST
3. S 3RD AVE & W BROWNFIELD RD
4. S SEQUIM AVE & E BROWNFIELD RD
5. S SEQUIM AVE & SR 101 EB RAMPS
6. S SEQUIM AVE & SR 101 WB RAMPS
7. S SEQUIM AVE & W PRAIRIE ST

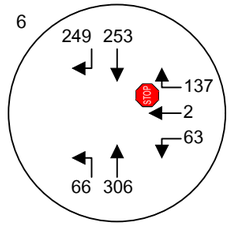


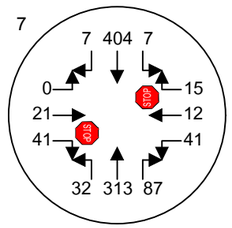








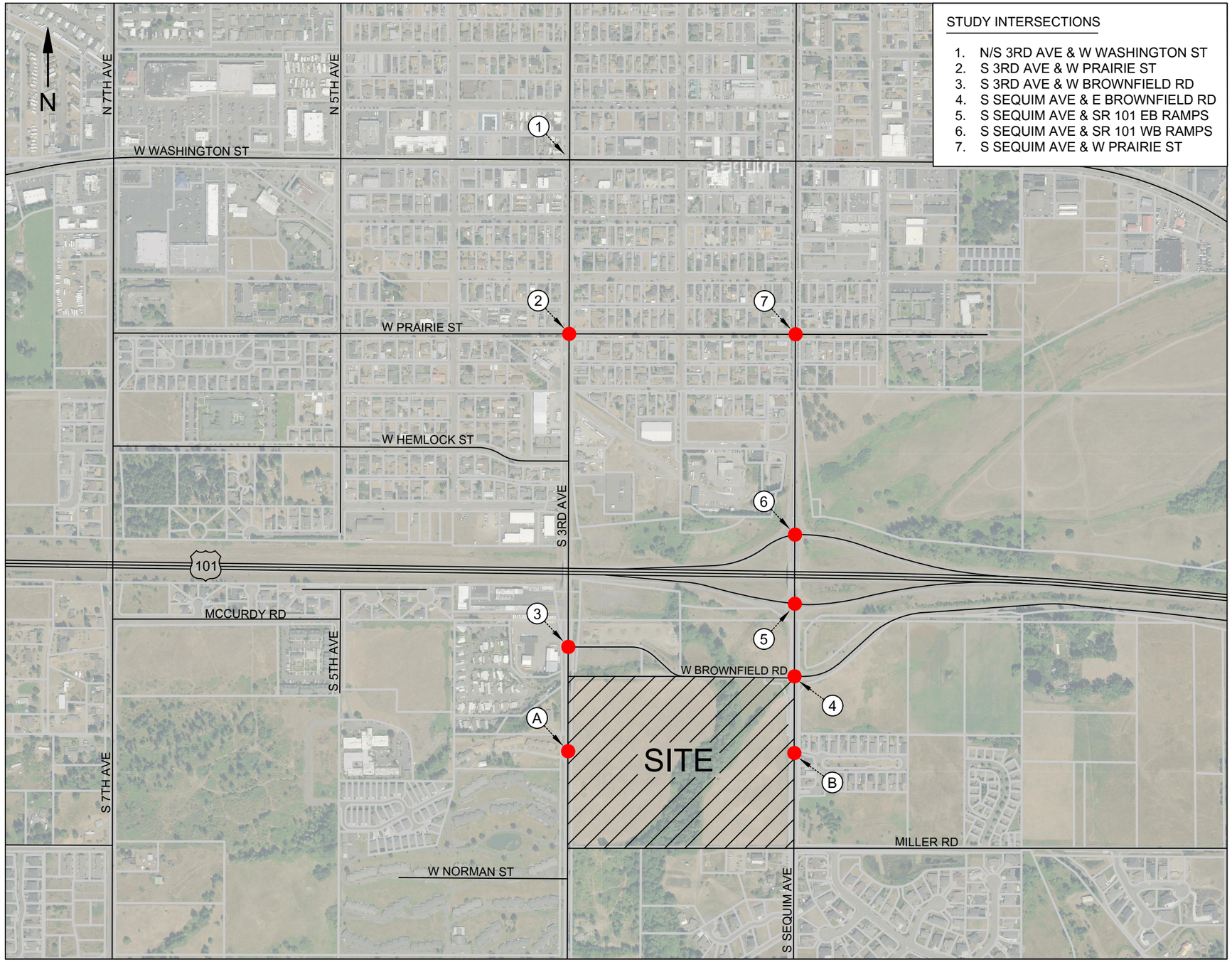




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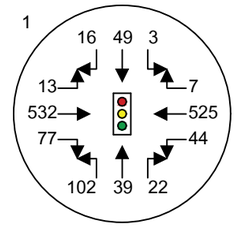
BELL CREEK - SEQUIM

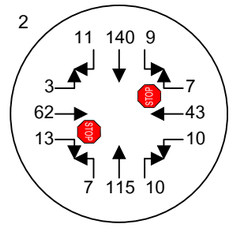
FORECAST 2029 PM PEAK HOUR BACKGROUND VOLUMES
FIGURE 6

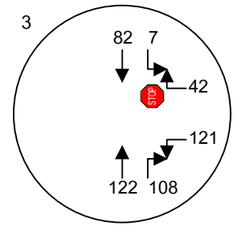


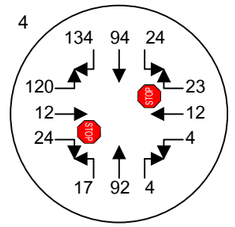
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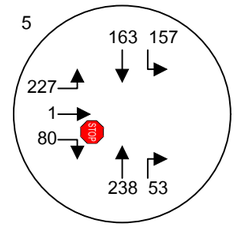
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2. S 3RD AVE & W PRAIRIE ST
3. S 3RD AVE & W BROWNFIELD RD
4. S SEQUIM AVE & E BROWNFIELD RD
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6. S SEQUIM AVE & SR 101 WB RAMPS
7. S SEQUIM AVE & W PRAIRIE ST

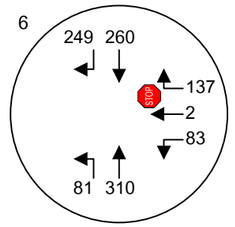


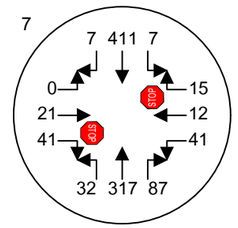


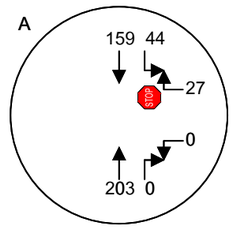


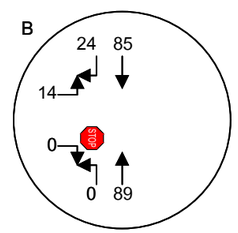












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BELL CREEK - SEQUIM

FORECAST 2029 PM PEAK HOUR VOLUMES WITH PROJECT
FIGURE 7

4.4 Future Level of Service

Level of service analyses were made of the future PM peak hour volumes without (background) and with project related trips added to the key roadways and intersections. This analysis again involved the use of the *Synchro 12* program. Delays for the outlying study intersections and project accesses under future conditions are shown below in Table 6.

Table 6: Forecast 2029 Weekday PM Peak Hour Level of Service

Delays Given in Seconds per Vehicle

				Without Project		*With Project*	
Ref. #	**Intersection**	**Control**	**Movement**	**LOS**	**Delay**	**LOS**	**Delay**
1	S 3rd Ave & Washington St	Signal	Overall	B	11.1	B	11.5
2	S 3rd Ave & W Prairie St	Stop	WB	B	11.6	B	11.8
3	S 3rd Ave & W Brownfield Rd	Stop	WB	B	11.4	B	12.6
4	S Sequim Ave & Brownfield Rd	Stop	EB	B	12.7	B	14.3
5	S Sequim Ave & US 101 EB Ramps	Stop	EB	C	24.9	D	26.7
6	S Sequim Ave & US 101 WB Ramps	Stop	EB	B	14.7	C	16.7
7	S Sequim Ave & W Prairie St	Stop	WB	C	23.4	C	23.9
A	S 3rd Ave & Access	Stop	WB	-	-	A	9.5
B	S Sequim Ave & Access	Stop	EB	-	-	A	9.7

Forecast 2029 PM peak hour level of service at the outlying study intersections are estimated to operate with LOS D or better conditions without and with project-generated traffic, meeting City service level standards. Moreover, the project accesses on S 3rd Avenue and S Sequim Avenue were shown to operate with LOS A conditions. HCM 95th percentile vehicle queues indicate that there are no queuing deficiencies anticipated at the proposed project accesses as a result of the development proposal.

It should be noted that an *Intersection Control Evaluation* (ICE) conducted for the US 101 & S Sequim Avenue interchanges (7/24/2023) indicated failing service levels at the eastbound ramps under forecast 2025 conditions. Our analysis indicated LOS D

conditions with project under forecast 2029 conditions. The discrepancy in LOS output is contributed to higher baseline volumes observed within the ICE. Ultimately, it should be noted that the proposed development minimally impacts the US 101 & S Sequim Avenue ramps. As such, no mitigation on behalf of the development is identified at this time. This analysis indicated that peak hour volumes are variable at the interchange and actual driver delay may vary depending on season. Lastly, the ICE recommended upgrading the interchange ramps (both eastbound and westbound) to roundabouts which is projected to improve conditions to LOS A.

4.5 Turn Lane Warrants

The respective accesses on S 3rd Avenue (left-turn) and S Sequim Avenue (right-turn) were reviewed for turn lane accommodations using WSDOT's warrant criteria. Moreover, the intersection of S Sequim Avenue & Brownfield Road was evaluated for left-turn storage needs on the north-south roadway. No turn lane warrants were met at either of the accesses or at S Sequim Avenue & Brownfield Road. Therefore, no turn lane improvements are recommended.

4.6 City Roadway Design Standards

Roadway cross section design standards internal to the development are based in part on a function of AWDT. As such, estimates of AWDT along the roadways within the proposed development were prepared based on ITE data. AWDT estimates per roadway segment were derived based on the total number of lots anticipated to access each street. All roadways internal to the Bell Creek development are anticipated to support less than 300 AWDT, aligning with Neighborhood standards. Refer to Figure A in the appendix for AWDT volumes.

4.7 Project Access & Sight Distance

Access to/from the subject site is proposed via four roadways extending east from S 3rd Avenue and 2 roadways extending west from S Sequim Avenue (see Figure 2). Sight distance was examined at the proposed accesses using AASHTO[4] standards. Based on the 30-mph posted speed (40-mph design speed) on S 3rd Avenue and S Sequim Avenue, approximately 445-feet of visibility would be required. Sight line availability and other pertinent information related to the proposed accesses are sustainedly outlined.

S 3rd Avenue: All Proposed Accesses
Sight lines are available in excess of 500-feet looking both north and south for all proposed accesses on S 3rd Avenue. No sight line deficiencies are identified.

S Sequim Avenue: North Access
On S Sequim Avenue, sight lines in excess of 500-feet are available both north and south at the proposed northerly access. No sight line deficiencies are identified.

S Sequim Avenue: South Access
The north-south S Sequim Avenue roadway jogs easterly, transitioning into east-west Miller Road. This 90-degree curve occurs approximately 130-feet south of the proposed southerly access on S Sequim Avenue. The City of Sequim Transportation Master Plan outlines that Miller Road is planned to be extended westerly from S Sequim Avenue to S 3rd Avenue along the southern property line of the subject site. However, a deviation was prepared by Core Design (see appendix) requesting that Miller Road not be extended as a collector roadway. Critical area, topographic and neighborhood property concerns preclude the development of the roadway extension.

In review of entering sight distance at the proposed southerly S Sequim Avenue access, sight lines to the south are limited due to the roadway's easterly Miller Road curve. As stated in the Miller Road Deviation, signage such as MUTCD's W1-1 or W1-2 notifying advancing drivers of the horizontal curve is not present. These signs are often accompanied by advisory speeds based on the angle of the approach which would likely be lower than the posted speed limit of 30 mph. As such, it is recommended that the applicant coordinate with the City regarding installing potential speed limit restrictions and proper signage near the horizontal alignment thereby improving the safety for vehicles navigating the curve. Sight distance can be examined depending on the final outcome of the deviation.

[4] *American Association of State Highway and Transportation Officials (*AASHTO).

5. CONCLUSIONS & MITIGATION

The Bell Creek - Sequim project proposes for the development of up to 110 single-family dwelling units in the city of Sequim. Development is to occur within 28.38-acre tax parcel #: 033030110000, which is bordered to the west by S 3rd Avenue, to the east by S Sequim Avenue and partially to the north by W Brownfield Road. Six new accesses are proposed to serve the subject site with four extending east from S 3rd Avenue and two extending west from S Sequim Avenue. Refer to Figure 2, the conceptual site plan, for more details.

The proposed project is estimated to generate 1102 average weekday daily trips, 81 AM peak hour trips, and 109 PM peak hour trips. Existing PM peak hour level of service (LOS) at the intersections of study indicated LOS D or better conditions. Forecast LOS analysis was performed using a five-year horizon which included a background growth rate, pipeline volumes and project-generated traffic added to the roadway network. Forecast 2029 PM peak hour delays are anticipated to operate with LOS D or better delays at all outlying study intersections. It is acknowledged that failing future service levels are anticipated at the US 101 Eastbound Ramps & S Sequim Avenue intersection in a recently conducted ICE by WSDOT. However, the proposed Bell Creek project was not shown to have a significant impact to the interchange.

The project driveways on S 3rd Avenue and S Sequim Avenue were shown to operate acceptably with LOS A conditions. Lastly, right- and left-turn lanes were not warranted at the project accesses based on forecast 2029 PM peak hour conditions.

Based on this analysis, recommended mitigation is as follows:

1. Any frontage and/or roadway improvements on S 3rd Avenue and S Sequim Avenue should be coordinated with the city of Sequim's Development Engineering regarding requirements and standards. This includes installation of signage at the Miller Road/S Sequim Avenue curve to improve safety and entering sight lines at the proposed southerly S Sequim Avenue access—dependent upon the *Miller Road Deviation Request* outcome.

2. The proposed development may be subject to Traffic Impact Fees (TIF) as imposed by the city of Sequim. Fees are based on new dwelling unit, assessed at $2,491.00 per net new dwelling unit (single-family residence). Therefore, an estimated fee calculation is as follows:

   110 dwelling units x $2,491.00 per daily trip = $274,010.00

   Actual traffic impact fees will be calculated and determined by the City prior to building permit issuance.

No other mitigation is identified at this time.

BELL CREEK - SEQUIM
TRAFFIC IMPACT ANALYSIS

APPENDIX

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File Name : 5262g
Site Code : 00005262
Start Date : 12/5/2023
Page No : 1

Groups Printed- Passenger + - Heavy

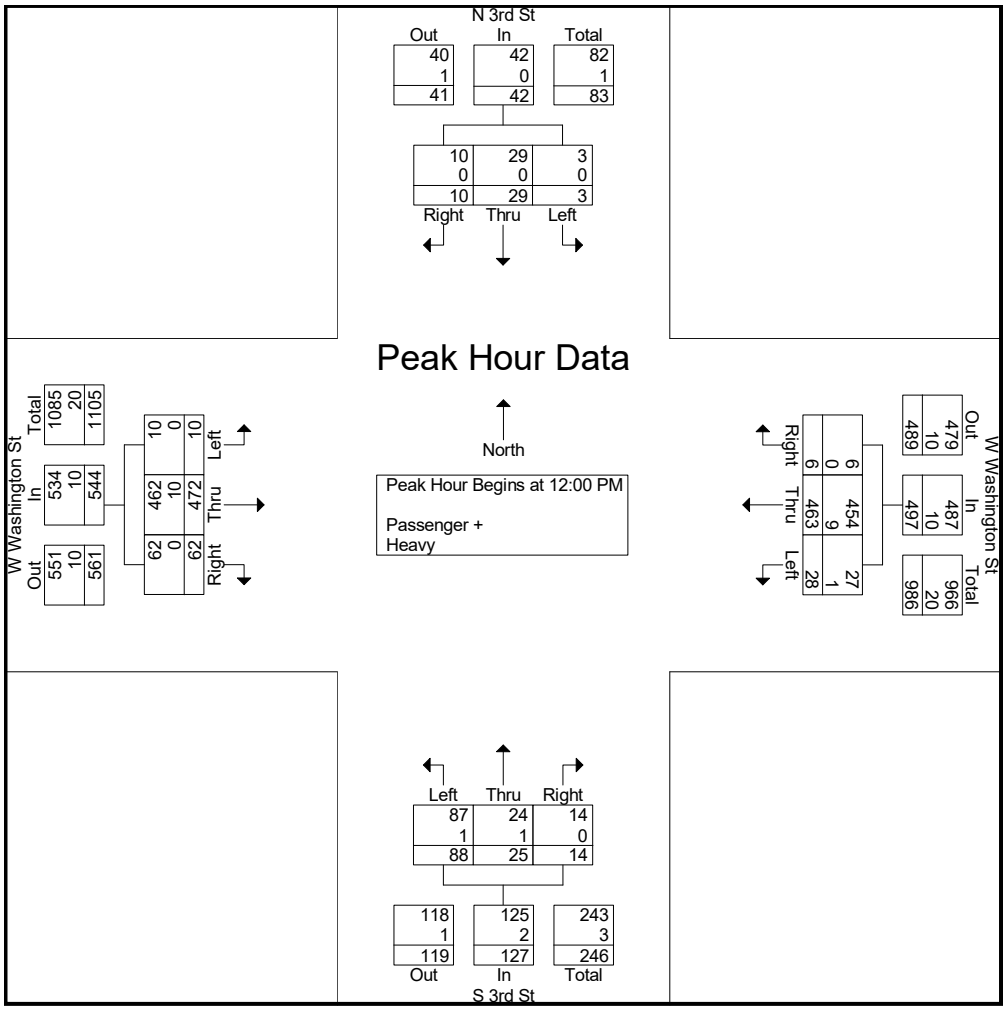
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11:15 AM	4	4	1	9	1	103	3	107	3	0	20	23	5	109	1	115	254
11:30 AM	1	5	2	8	0	113	3	116	8	1	21	30	6	122	3	131	285
11:45 AM	4	2	1	7	1	119	7	127	8	3	19	30	16	104	3	123	287
Total	10	13	6	29	2	430	16	448	21	5	78	104	31	437	8	476	1057
12:00 PM	2	9	3	14	3	112	12	127	1	6	19	26	18	110	1	129	296
12:15 PM	3	9	0	12	0	120	4	124	2	7	21	30	11	111	0	122	288
12:30 PM	1	6	0	7	0	112	6	118	5	5	20	30	9	135	3	147	302
12:45 PM	4	5	0	9	3	119	6	128	6	7	28	41	24	116	6	146	324
Total	10	29	3	42	6	463	28	497	14	25	88	127	62	472	10	544	1210
01:00 PM	2	3	0	5	1	100	12	113	6	7	24	37	17	114	6	137	292
01:15 PM	4	8	4	16	1	127	2	130	3	9	18	30	8	105	2	115	291
01:30 PM	6	4	1	11	2	109	5	116	7	5	16	28	19	88	1	108	263
01:45 PM	3	5	6	14	0	98	5	103	4	7	12	23	11	126	4	141	281
Total	15	20	11	46	4	434	24	462	20	28	70	118	55	433	13	501	1127
Grand Total	35	62	20	117	12	1327	68	1407	55	58	236	349	148	1342	31	1521	3394
Apprch %	29.9	53	17.1		0.9	94.3	4.8		15.8	16.6	67.6		9.7	88.2	2		
Total %	1	1.8	0.6	3.4	0.4	39.1	2	41.5	1.6	1.7	7	10.3	4.4	39.5	0.9	44.8	
Passenger +	33	60	20	113	12	1303	64	1379	55	55	233	343	147	1314	31	1492	3327
% Passenger +	94.3	96.8	100	96.6	100	98.2	94.1	98	100	94.8	98.7	98.3	99.3	97.9	100	98.1	98
Heavy	2	2	0	4	0	24	4	28	0	3	3	6	1	28	0	29	67
% Heavy	5.7	3.2	0	3.4	0	1.8	5.9	2	0	5.2	1.3	1.7	0.7	2.1	0	1.9	2

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File Name : 5262g
Site Code : 00005262
Start Date : 12/5/2023
Page No : 2

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Peak Hour for Entire Intersection Begins at 12:00 PM																	
12:00 PM	2	**9**	**3**	**14**	**3**	112	**12**	127	1	6	19	26	18	110	1	129	296
12:15 PM	3	9	0	12	0	**120**	4	124	2	**7**	21	30	11	111	0	122	288
12:30 PM	1	6	0	7	0	112	6	118	5	5	20	30	9	**135**	3	**147**	302
12:45 PM	**4**	5	0	9	3	119	6	**128**	**6**	7	**28**	**41**	**24**	116	**6**	146	**324**
Total Volume	10	29	3	42	6	463	28	497	14	25	88	127	62	472	10	544	1210
% App. Total	23.8	69	7.1		1.2	93.2	5.6		11	19.7	69.3		11.4	86.8	1.8		
PHF	.625	.806	.250	.750	.500	.965	.583	.971	.583	.893	.786	.774	.646	.874	.417	.925	.934
Passenger +	10	29	3	42	6	454	27	487	14	24	87	125	62	462	10	534	1188
% Passenger +	100	100	100	100	100	98.1	96.4	98.0	100	96.0	98.9	98.4	100	97.9	100	98.2	98.2
Heavy	0	0	0	0	0	9	1	10	0	1	1	2	0	10	0	10	22
% Heavy	0	0	0	0	0	1.9	3.6	2.0	0	4.0	1.1	1.6	0	2.1	0	1.8	1.8



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Start Date : 12/5/2023
Page No : 1

Groups Printed- Passenger + - Heavy

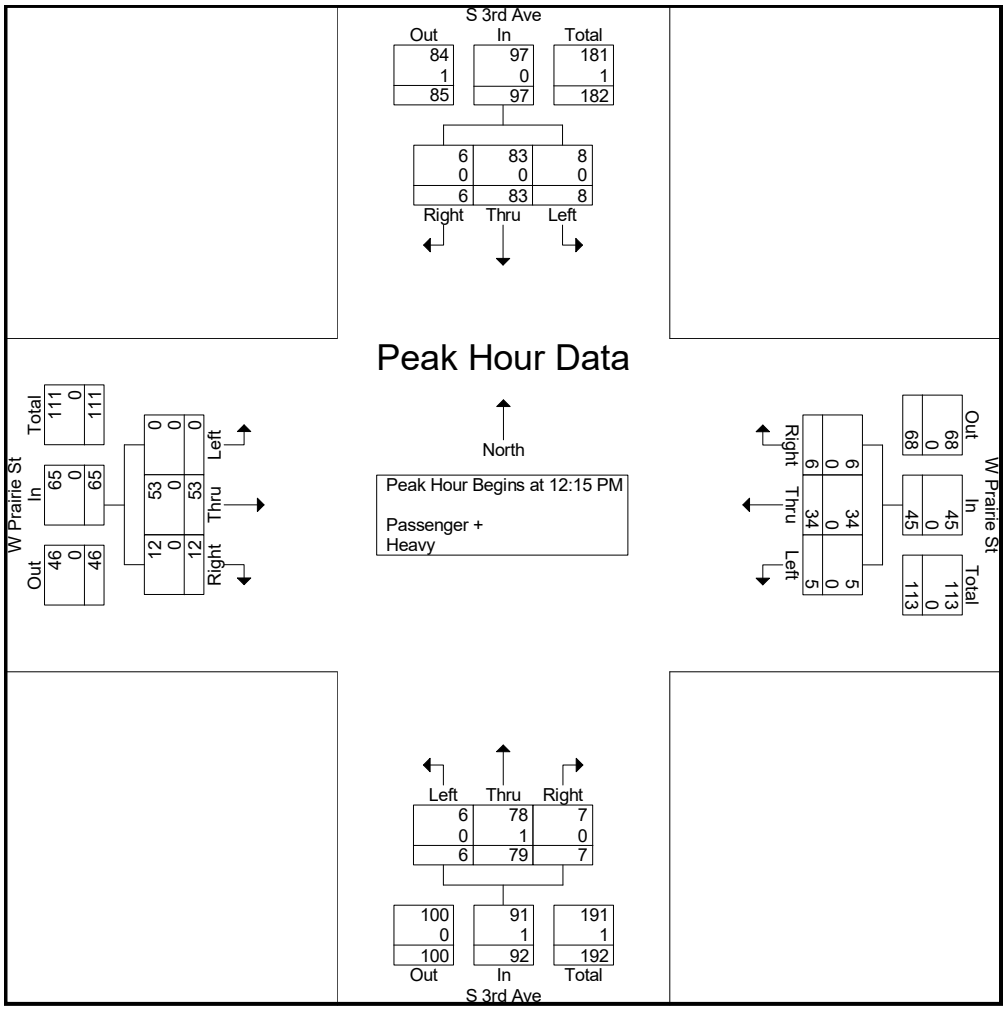
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11:15 AM	0	15	0	15	0	3	0	3	1	17	1	19	0	6	1	7	44
11:30 AM	0	13	0	13	0	3	1	4	0	15	0	15	0	8	0	8	40
11:45 AM	0	14	6	20	2	4	1	7	2	16	3	21	0	11	1	12	60
Total	0	53	6	59	3	14	2	19	3	62	5	70	1	30	2	33	181
12:00 PM	0	22	1	23	1	3	0	4	1	18	2	21	0	5	2	7	55
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12:45 PM	2	23	5	30	1	4	0	5	1	20	3	24	1	8	0	9	68
Total	5	82	8	95	3	28	5	36	5	75	6	86	12	41	2	55	272
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01:30 PM	2	19	2	23	2	8	0	10	1	19	1	21	2	8	1	11	65
01:45 PM	0	10	6	16	3	10	1	14	2	20	0	22	1	7	1	9	61
Total	3	67	9	79	13	33	3	49	7	84	6	97	4	48	2	54	279
Grand Total	8	202	23	233	19	75	10	104	15	221	17	253	17	119	6	142	732
Apprch %	3.4	86.7	9.9		18.3	72.1	9.6		5.9	87.4	6.7		12	83.8	4.2		
Total %	1.1	27.6	3.1	31.8	2.6	10.2	1.4	14.2	2	30.2	2.3	34.6	2.3	16.3	0.8	19.4	
Passenger +	7	199	23	229	19	75	9	103	15	217	17	249	17	119	6	142	723
% Passenger +	87.5	98.5	100	98.3	100	100	90	99	100	98.2	100	98.4	100	100	100	100	98.8
Heavy	1	3	0	4	0	0	1	1	0	4	0	4	0	0	0	0	9
% Heavy	12.5	1.5	0	1.7	0	0	10	1	0	1.8	0	1.6	0	0	0	0	1.2

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Start Date : 12/5/2023
Page No : 2

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Peak Hour for Entire Intersection Begins at 12:15 PM																	
12:15 PM	0	**23**	1	24	0	**11**	**4**	**15**	1	17	0	18	5	14	0	19	76
12:30 PM	**3**	14	1	18	1	10	1	12	2	20	1	23	**6**	14	0	**20**	73
12:45 PM	2	23	**5**	**30**	1	4	0	5	1	20	**3**	24	1	8	0	9	68
01:00 PM	1	23	1	25	**4**	9	0	13	**3**	**22**	2	**27**	0	**17**	0	17	**82**
Total Volume	6	83	8	97	6	34	5	45	7	79	6	92	12	53	0	65	299
% App. Total	6.2	85.6	8.2		13.3	75.6	11.1		7.6	85.9	6.5		18.5	81.5	0		
PHF	.500	.902	.400	.808	.375	.773	.313	.750	.583	.898	.500	.852	.500	.779	.000	.813	.912
Passenger +	6	83	8	97	6	34	5	45	7	78	6	91	12	53	0	65	298
% Passenger +	100	100	100	100	100	100	100	100	100	98.7	100	98.9	100	100	0	100	99.7
Heavy	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
% Heavy	0	0	0	0	0	0	0	0	0	1.3	0	1.1	0	0	0	0	0.3



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File Name : 5262d
Site Code : 00005262
Start Date : 12/5/2023
Page No : 1

Groups Printed- Passenger + - Heavy

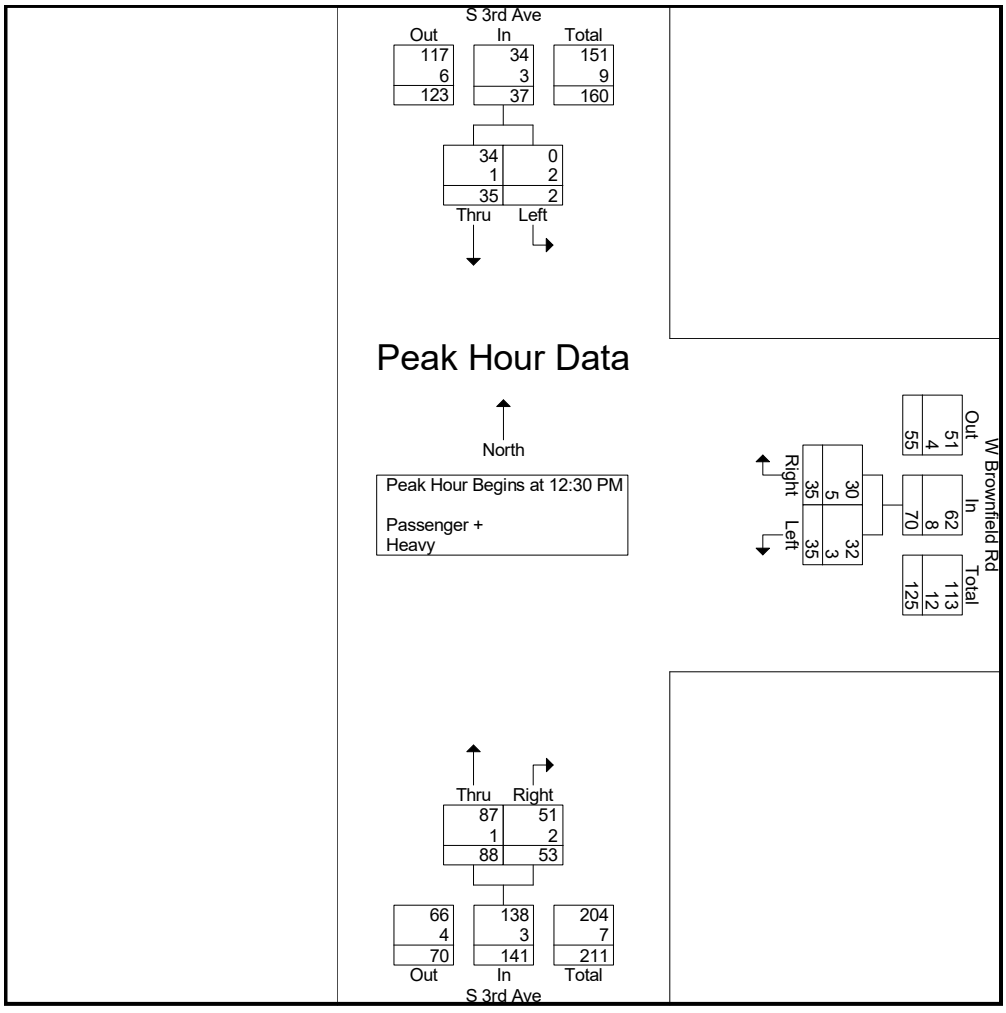
	S 3rd Ave Southbound			W Brownfield Rd Westbound			S 3rd Ave Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
11:00 AM	4	0	4	5	5	10	3	11	14	28
11:15 AM	8	0	8	6	7	13	4	14	18	39
11:30 AM	7	1	8	9	7	16	7	15	22	46
11:45 AM	9	4	13	7	8	15	9	23	32	60
Total	28	5	33	27	27	54	23	63	86	173
12:00 PM	6	0	6	8	9	17	4	14	18	41
12:15 PM	11	0	11	8	4	12	5	17	22	45
12:30 PM	7	0	7	6	9	15	18	24	42	64
12:45 PM	9	1	10	12	7	19	16	32	48	77
Total	33	1	34	34	29	63	43	87	130	227
01:00 PM	12	0	12	9	12	21	11	16	27	60
01:15 PM	7	1	8	8	7	15	8	16	24	47
01:30 PM	6	0	6	11	7	18	16	21	37	61
01:45 PM	8	0	8	13	4	17	4	13	17	42
Total	33	1	34	41	30	71	39	66	105	210
Grand Total	94	7	101	102	86	188	105	216	321	610
Apprch %	93.1	6.9		54.3	45.7		32.7	67.3		
Total %	15.4	1.1	16.6	16.7	14.1	30.8	17.2	35.4	52.6	
Passenger +	92	0	92	92	80	172	102	215	317	581
% Passenger +	97.9	0	91.1	90.2	93	91.5	97.1	99.5	98.8	95.2
Heavy	2	7	9	10	6	16	3	1	4	29
% Heavy	2.1	100	8.9	9.8	7	8.5	2.9	0.5	1.2	4.8

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PO Box 397 Puyallup, WA 98371

File Name : 5262d
Site Code : 00005262
Start Date : 12/5/2023
Page No : 2

	S 3rd Ave Southbound			W Brownfield Rd Westbound			S 3rd Ave Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:30 PM										
12:30 PM	7	0	7	6	9	15	**18**	24	42	64
12:45 PM	9	**1**	10	**12**	7	19	16	**32**	**48**	**77**
01:00 PM	**12**	0	**12**	9	**12**	**21**	11	16	27	60
01:15 PM	7	1	8	8	7	15	8	16	24	47
Total Volume	35	2	37	35	35	70	53	88	141	248
% App. Total	94.6	5.4		50	50		37.6	62.4		
PHF	.729	.500	.771	.729	.729	.833	.736	.688	.734	.805
Passenger +	34	0	34	30	32	62	51	87	138	234
% Passenger +	97.1	0	91.9	85.7	91.4	88.6	96.2	98.9	97.9	94.4
Heavy	1	2	3	5	3	8	2	1	3	14
% Heavy	2.9	100	8.1	14.3	8.6	11.4	3.8	1.1	2.1	5.6



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File Name : 5262h
Site Code : 00005262
Start Date : 12/5/2023
Page No : 1

Groups Printed- Passenger + - Heavy

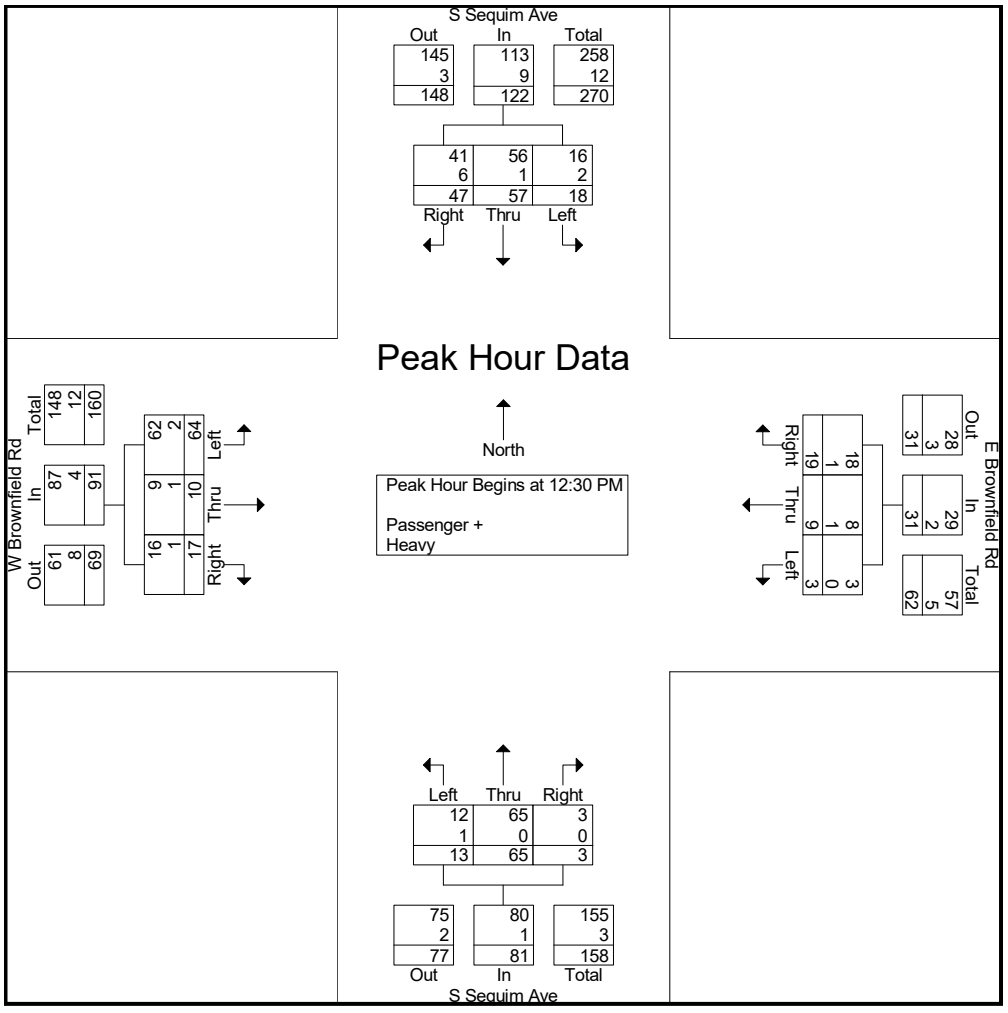
	S Sequim Ave Southbound				E Brownfield Rd Westbound				S Sequim Ave Northbound				W Brownfield Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
11:00 AM	8	11	2	21	4	1	0	5	2	17	0	19	0	3	3	6	51
11:15 AM	10	15	4	29	5	0	0	5	1	18	0	19	1	2	5	8	61
11:30 AM	8	15	3	26	4	0	0	4	3	13	0	16	2	3	5	10	56
11:45 AM	9	19	4	32	4	0	0	4	0	21	5	26	4	3	13	20	82
Total	35	60	13	108	17	1	0	18	6	69	5	80	7	11	26	44	250
12:00 PM	12	12	4	28	4	2	1	7	0	19	3	22	3	0	6	9	66
12:15 PM	9	14	2	25	3	1	1	5	0	13	3	16	7	1	7	15	61
12:30 PM	10	11	5	26	4	2	0	6	0	15	2	17	3	4	21	28	77
12:45 PM	17	10	5	32	8	3	2	13	1	17	2	20	3	3	19	25	90
Total	48	47	16	111	19	8	4	31	1	64	10	75	16	8	53	77	294
01:00 PM	13	19	6	38	3	3	0	6	1	17	6	24	7	1	13	21	89
01:15 PM	7	17	2	26	4	1	1	6	1	16	3	20	4	2	11	17	69
01:30 PM	11	16	3	30	0	1	0	1	3	9	8	20	3	2	14	19	70
01:45 PM	10	23	4	37	4	4	0	8	0	19	2	21	3	4	8	15	81
Total	41	75	15	131	11	9	1	21	5	61	19	85	17	9	46	72	309
Grand Total	124	182	44	350	47	18	5	70	12	194	34	240	40	28	125	193	853
Apprch %	35.4	52	12.6		67.1	25.7	7.1		5	80.8	14.2		20.7	14.5	64.8		
Total %	14.5	21.3	5.2	41	5.5	2.1	0.6	8.2	1.4	22.7	4	28.1	4.7	3.3	14.7	22.6	
Passenger +	111	178	42	331	45	17	5	67	12	190	32	234	39	27	116	182	814
% Passenger +	89.5	97.8	95.5	94.6	95.7	94.4	100	95.7	100	97.9	94.1	97.5	97.5	96.4	92.8	94.3	95.4
Heavy	13	4	2	19	2	1	0	3	0	4	2	6	1	1	9	11	39
% Heavy	10.5	2.2	4.5	5.4	4.3	5.6	0	4.3	0	2.1	5.9	2.5	2.5	3.6	7.2	5.7	4.6

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File Name : 5262h
Site Code : 00005262
Start Date : 12/5/2023
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	S Sequim Ave Southbound				E Brownfield Rd Westbound				S Sequim Ave Northbound				W Brownfield Rd Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 12:30 PM																	
12:30 PM	10	11	5	26	4	2	0	6	0	15	2	17	3	**4**	**21**	**28**	77
12:45 PM	**17**	10	5	32	**8**	**3**	**2**	**13**	**1**	**17**	2	20	3	3	19	25	**90**
01:00 PM	13	**19**	**6**	**38**	3	3	0	6	1	17	**6**	**24**	**7**	1	13	21	89
01:15 PM	7	17	2	26	4	1	1	6	1	16	3	20	4	2	11	17	69
Total Volume	47	57	18	122	19	9	3	31	3	65	13	81	17	10	64	91	325
% App. Total	38.5	46.7	14.8		61.3	29	9.7		3.7	80.2	16		18.7	11	70.3		
PHF	.691	.750	.750	.803	.594	.750	.375	.596	.750	.956	.542	.844	.607	.625	.762	.813	.903
Passenger +	41	56	16	113	18	8	3	29	3	65	12	80	16	9	62	87	309
% Passenger +	87.2	98.2	88.9	92.6	94.7	88.9	100	93.5	100	100	92.3	98.8	94.1	90.0	96.9	95.6	95.1
Heavy	6	1	2	9	1	1	0	2	0	0	1	1	1	1	2	4	16
% Heavy	12.8	1.8	11.1	7.4	5.3	11.1	0	6.5	0	0	7.7	1.2	5.9	10.0	3.1	4.4	4.9



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File Name : 5262e
Site Code : 00005262
Start Date : 12/5/2023
Page No : 1

Groups Printed- Passenger + - Heavy

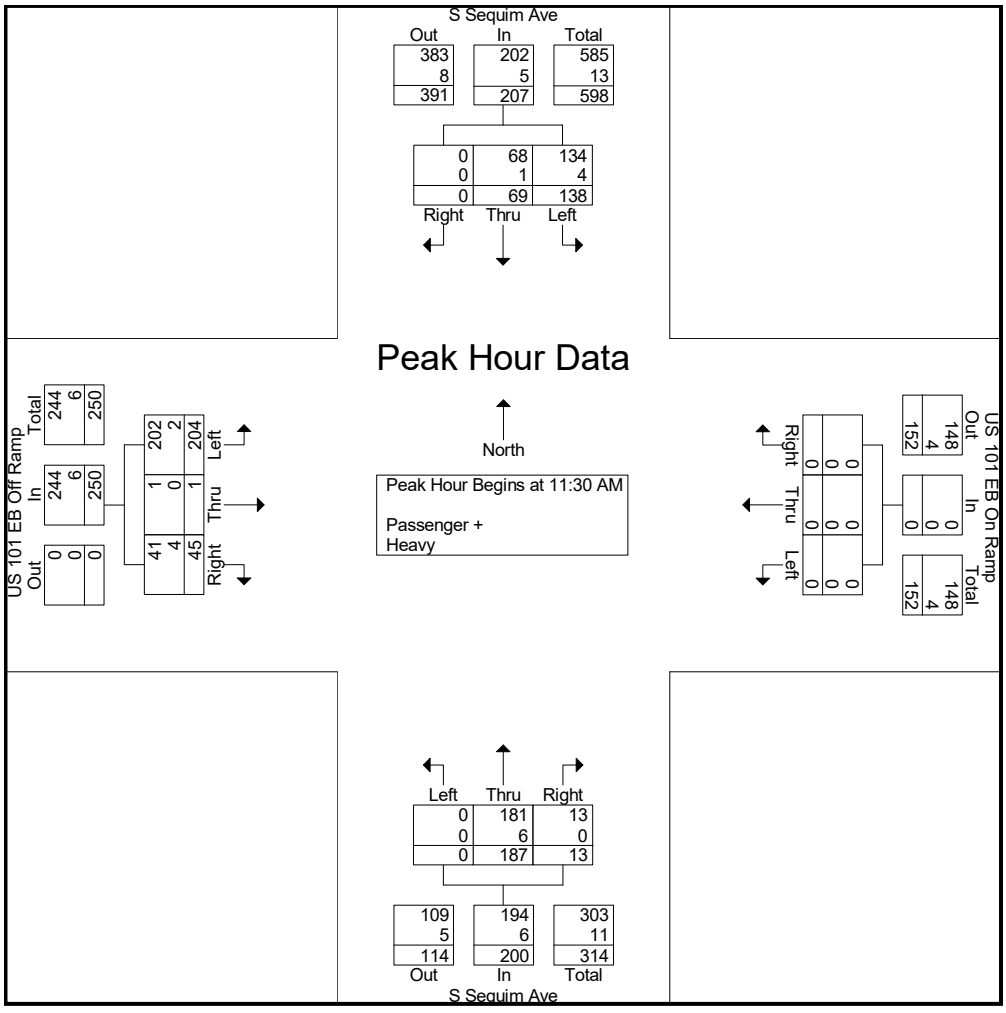
	S Sequim Ave Southbound				US 101 EB On Ramp Westbound				S Sequim Ave Northbound				US 101 EB Off Ramp Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
11:00 AM	0	12	13	25	0	0	0	0	4	21	0	25	9	0	20	29	79
11:15 AM	0	19	24	43	0	0	0	0	4	25	0	29	12	0	49	61	133
11:30 AM	0	19	30	49	0	0	0	0	3	59	0	62	8	0	36	44	155
11:45 AM	0	21	37	58	0	0	0	0	3	82	0	85	11	1	61	73	216
Total	0	71	104	175	0	0	0	0	14	187	0	201	40	1	166	207	583
12:00 PM	0	14	38	52	0	0	0	0	4	26	0	30	14	0	52	66	148
12:15 PM	0	15	33	48	0	0	0	0	3	20	0	23	12	0	55	67	138
12:30 PM	0	16	37	53	0	0	0	0	3	36	0	39	11	0	36	47	139
12:45 PM	0	16	35	51	0	0	0	0	6	37	0	43	15	1	53	69	163
Total	0	61	143	204	0	0	0	0	16	119	0	135	52	1	196	249	588
01:00 PM	0	21	36	57	0	0	0	0	2	34	0	36	16	0	59	75	168
01:15 PM	0	19	36	55	0	0	0	0	2	29	0	31	7	0	49	56	142
01:30 PM	0	17	35	52	0	0	0	0	4	18	0	22	12	1	52	65	139
01:45 PM	0	17	48	65	0	0	0	0	3	28	0	31	21	0	50	71	167
Total	0	74	155	229	0	0	0	0	11	109	0	120	56	1	210	267	616
Grand Total	0	206	402	608	0	0	0	0	41	415	0	456	148	3	572	723	1787
Apprch %	0	33.9	66.1		0	0	0		9	91	0		20.5	0.4	79.1		
Total %	0	11.5	22.5	34	0	0	0	0	2.3	23.2	0	25.5	8.3	0.2	32	40.5	
Passenger +	0	203	395	598	0	0	0	0	39	407	0	446	142	3	564	709	1753
% Passenger +	0	98.5	98.3	98.4	0	0	0	0	95.1	98.1	0	97.8	95.9	100	98.6	98.1	98.1
Heavy	0	3	7	10	0	0	0	0	2	8	0	10	6	0	8	14	34
% Heavy	0	1.5	1.7	1.6	0	0	0	0	4.9	1.9	0	2.2	4.1	0	1.4	1.9	1.9

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File Name : 5262e
Site Code : 00005262
Start Date : 12/5/2023
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	S Sequim Ave Southbound				US 101 EB On Ramp Westbound				S Sequim Ave Northbound				US 101 EB Off Ramp Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 11:30 AM																	
11:30 AM	0	19	30	49	0	0	0	0	3	59	0	62	8	0	36	44	155
11:45 AM	0	**21**	37	**58**	0	0	0	0	3	**82**	0	**85**	11	**1**	**61**	**73**	**216**
12:00 PM	0	14	**38**	52	0	0	0	0	**4**	26	0	30	**14**	0	52	66	148
12:15 PM	0	15	33	48	0	0	0	0	3	20	0	23	12	0	55	67	138
Total Volume	0	69	138	207	0	0	0	0	13	187	0	200	45	1	204	250	657
% App. Total	0	33.3	66.7		0	0	0		6.5	93.5	0		18	0.4	81.6		
PHF	.000	.821	.908	.892	.000	.000	.000	.000	.813	.570	.000	.588	.804	.250	.836	.856	.760
Passenger +	0	68	134	202	0	0	0	0	13	181	0	194	41	1	202	244	640
% Passenger +	0	98.6	97.1	97.6	0	0	0	0	100	96.8	0	97.0	91.1	100	99.0	97.6	97.4
Heavy	0	1	4	5	0	0	0	0	0	6	0	6	4	0	2	6	17
% Heavy	0	1.4	2.9	2.4	0	0	0	0	0	3.2	0	3.0	8.9	0	1.0	2.4	2.6



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File Name : 5262a
Site Code : 00005262
Start Date : 12/5/2023
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Groups Printed- Passenger + - Heavy

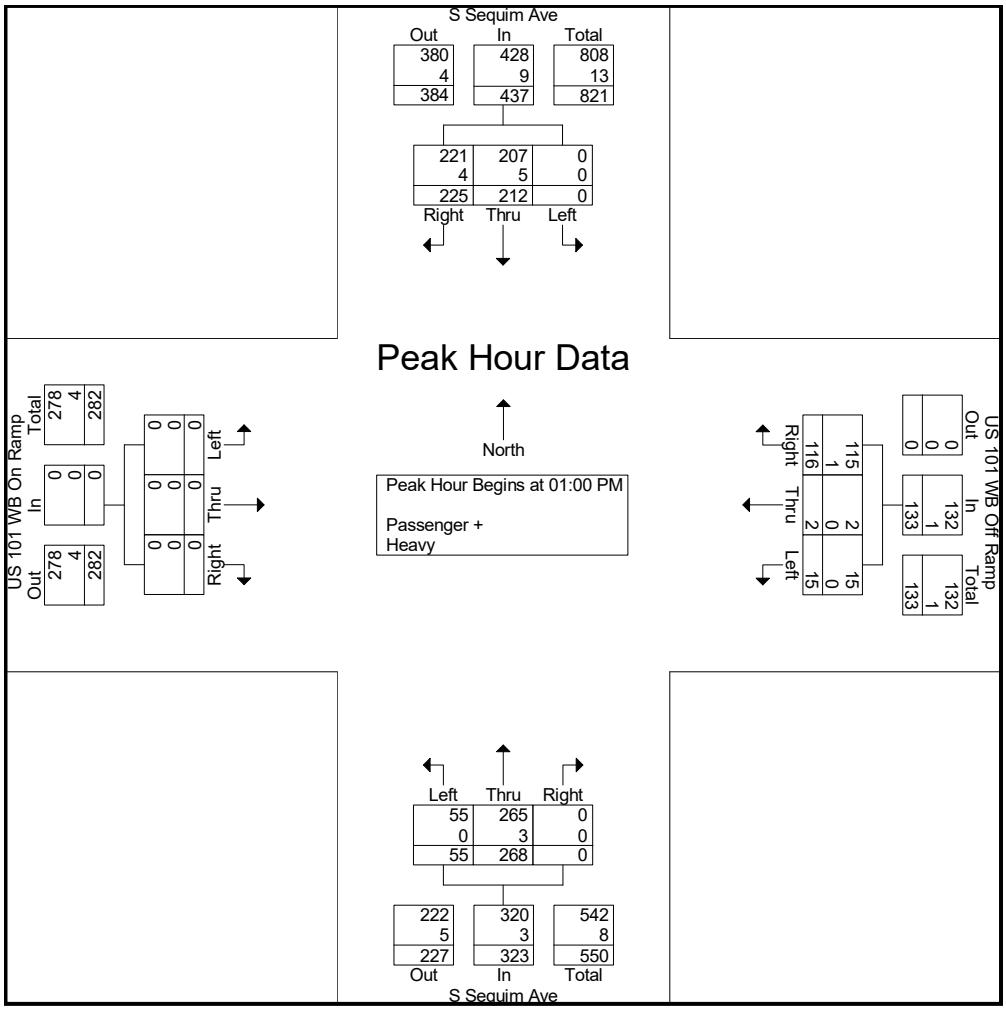
	S Sequim Ave Southbound				US 101 WB Off Ramp Westbound				S Sequim Ave Northbound				US 101 WB On Ramp Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
11:00 AM	36	24	0	60	21	0	1	22	0	40	4	44	0	0	0	0	126
11:15 AM	52	39	0	91	31	0	3	34	0	61	9	70	0	0	0	0	195
11:30 AM	57	40	0	97	40	1	3	44	0	71	5	76	0	0	0	0	217
11:45 AM	47	59	0	106	26	1	1	28	0	77	20	97	0	0	0	0	231
Total	192	162	0	354	118	2	8	128	0	249	38	287	0	0	0	0	769
12:00 PM	47	47	0	94	22	0	4	26	0	61	19	80	0	0	0	0	200
12:15 PM	47	47	0	94	34	1	2	37	0	63	11	74	0	0	0	0	205
12:30 PM	50	52	0	102	35	0	1	36	0	59	13	72	0	0	0	0	210
12:45 PM	47	47	0	94	25	0	3	28	0	68	22	90	0	0	0	0	212
Total	191	193	0	384	116	1	10	127	0	251	65	316	0	0	0	0	827
01:00 PM	61	53	0	114	28	1	4	33	0	70	19	89	0	0	0	0	236
01:15 PM	53	51	0	104	26	1	4	31	0	68	13	81	0	0	0	0	216
01:30 PM	49	49	0	98	31	0	3	34	0	63	7	70	0	0	0	0	202
01:45 PM	62	59	0	121	31	0	4	35	0	67	16	83	0	0	0	0	239
Total	225	212	0	437	116	2	15	133	0	268	55	323	0	0	0	0	893
Grand Total	608	567	0	1175	350	5	33	388	0	768	158	926	0	0	0	0	2489
Apprch %	51.7	48.3	0		90.2	1.3	8.5		0	82.9	17.1		0	0	0		
Total %	24.4	22.8	0	47.2	14.1	0.2	1.3	15.6	0	30.9	6.3	37.2	0	0	0	0	
Passenger +	591	553	0	1144	343	5	30	378	0	756	153	909	0	0	0	0	2431
% Passenger +	97.2	97.5	0	97.4	98	100	90.9	97.4	0	98.4	96.8	98.2	0	0	0	0	97.7
Heavy	17	14	0	31	7	0	3	10	0	12	5	17	0	0	0	0	58
% Heavy	2.8	2.5	0	2.6	2	0	9.1	2.6	0	1.6	3.2	1.8	0	0	0	0	2.3

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File Name : 5262a
Site Code : 00005262
Start Date : 12/5/2023
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	S Sequim Ave Southbound				US 101 WB Off Ramp Westbound				S Sequim Ave Northbound				US 101 WB On Ramp Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 01:00 PM																	
01:00 PM	61	53	0	114	28	1	4	33	0	70	19	89	0	0	0	0	236
01:15 PM	53	51	0	104	26	1	4	31	0	68	13	81	0	0	0	0	216
01:30 PM	49	49	0	98	31	0	3	34	0	63	7	70	0	0	0	0	202
01:45 PM	62	59	0	121	31	0	4	35	0	67	16	83	0	0	0	0	239
Total Volume	225	212	0	437	116	2	15	133	0	268	55	323	0	0	0	0	893
% App. Total	51.5	48.5	0		87.2	1.5	11.3		0	83	17		0	0	0		
PHF	.907	.898	.000	.903	.935	.500	.938	.950	.000	.957	.724	.907	.000	.000	.000	.000	.934
Passenger +	221	207	0	428	115	2	15	132	0	265	55	320	0	0	0	0	880
% Passenger +	98.2	97.6	0	97.9	99.1	100	100	99.2	0	98.9	100	99.1	0	0	0	0	98.5
Heavy	4	5	0	9	1	0	0	1	0	3	0	3	0	0	0	0	13
% Heavy	1.8	2.4	0	2.1	0.9	0	0	0.8	0	1.1	0	0.9	0	0	0	0	1.5



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File Name : 5262b
Site Code : 00005262
Start Date : 12/5/2023
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Groups Printed- Passenger + - Heavy

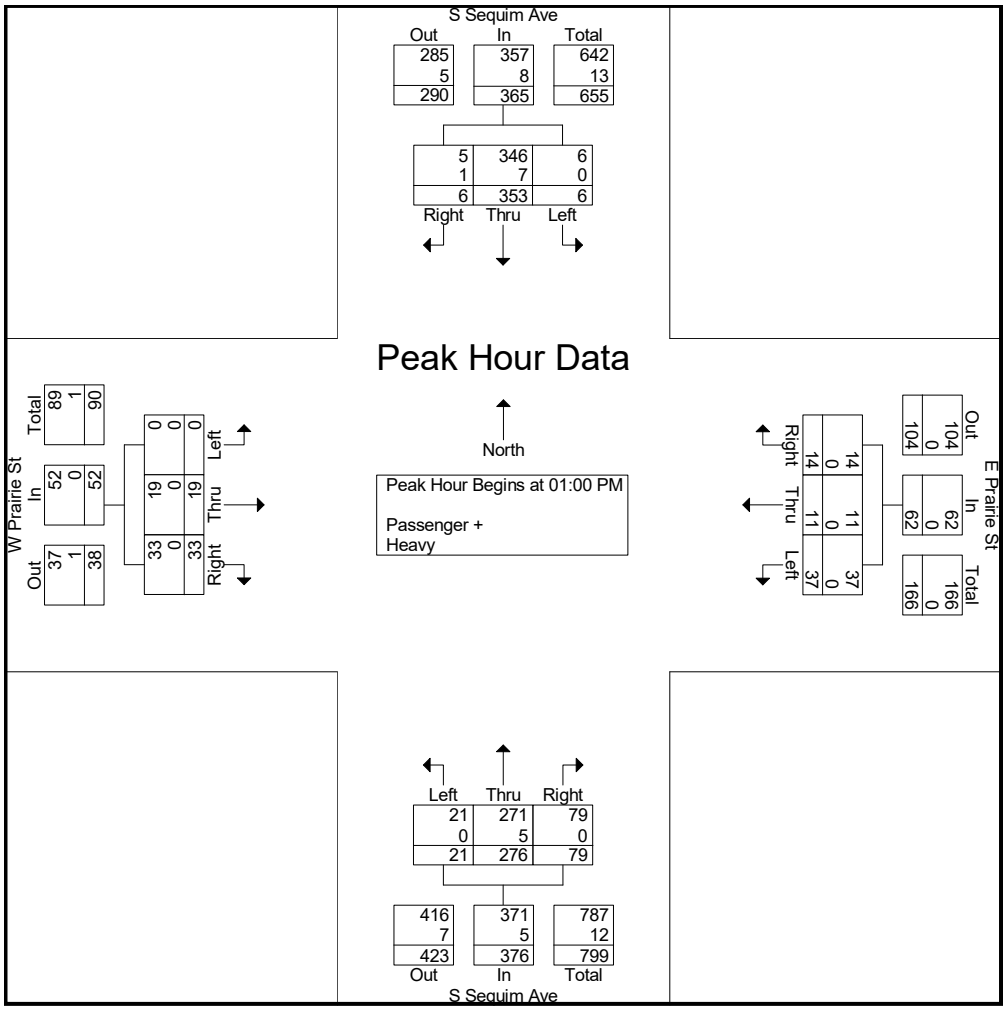
	S Sequim Ave Southbound				E Prairie St Westbound				S Sequim Ave Northbound				W Prairie St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
11:00 AM	0	54	0	54	2	1	2	5	15	52	0	67	4	2	1	7	133
11:15 AM	0	70	3	73	3	2	11	16	18	65	8	91	8	2	2	12	192
11:30 AM	0	63	6	69	3	1	18	22	19	91	2	112	5	6	1	12	215
11:45 AM	0	87	4	91	2	2	16	20	19	76	3	98	5	6	0	11	220
Total	0	274	13	287	10	6	47	63	71	284	13	368	22	16	4	42	760
12:00 PM	2	80	4	86	4	8	8	20	11	60	6	77	9	8	0	17	200
12:15 PM	5	63	1	69	3	4	13	20	16	73	4	93	5	10	0	15	197
12:30 PM	1	79	1	81	5	0	10	15	19	68	4	91	7	4	2	13	200
12:45 PM	3	74	2	79	5	4	11	20	23	61	5	89	15	5	3	23	211
Total	11	296	8	315	17	16	42	75	69	262	19	350	36	27	5	68	808
01:00 PM	1	85	1	87	4	2	13	19	19	72	6	97	5	9	0	14	217
01:15 PM	1	84	1	86	3	1	10	14	19	70	5	94	10	1	0	11	205
01:30 PM	2	83	2	87	3	6	9	18	20	68	2	90	7	5	0	12	207
01:45 PM	2	101	2	105	4	2	5	11	21	66	8	95	11	4	0	15	226
Total	6	353	6	365	14	11	37	62	79	276	21	376	33	19	0	52	855
Grand Total	17	923	27	967	41	33	126	200	219	822	53	1094	91	62	9	162	2423
Apprch %	1.8	95.4	2.8		20.5	16.5	63		20	75.1	4.8		56.2	38.3	5.6		
Total %	0.7	38.1	1.1	39.9	1.7	1.4	5.2	8.3	9	33.9	2.2	45.2	3.8	2.6	0.4	6.7	
Passenger +	16	894	27	937	41	33	126	200	218	804	53	1075	91	62	9	162	2374
% Passenger +	94.1	96.9	100	96.9	100	100	100	100	99.5	97.8	100	98.3	100	100	100	100	98
Heavy	1	29	0	30	0	0	0	0	1	18	0	19	0	0	0	0	49
% Heavy	5.9	3.1	0	3.1	0	0	0	0	0.5	2.2	0	1.7	0	0	0	0	2

Heath & Associates

PO Box 397 Puyallup, WA 98371

File Name : 5262b
Site Code : 00005262
Start Date : 12/5/2023
Page No : 2

	S Sequim Ave Southbound				E Prairie St Westbound				S Sequim Ave Northbound				W Prairie St Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 01:00 PM																	
01:00 PM	1	85	1	87	**4**	2	**13**	**19**	19	**72**	6	**97**	5	**9**	0	14	217
01:15 PM	1	84	1	86	3	1	10	14	19	70	5	94	10	1	0	11	205
01:30 PM	**2**	83	**2**	87	3	**6**	9	18	20	68	2	90	7	5	0	12	207
01:45 PM	2	**101**	2	**105**	4	2	5	11	**21**	66	**8**	95	**11**	4	0	**15**	**226**
Total Volume	6	353	6	365	14	11	37	62	79	276	21	376	33	19	0	52	855
% App. Total	1.6	96.7	1.6		22.6	17.7	59.7		21	73.4	5.6		63.5	36.5	0		
PHF	.750	.874	.750	.869	.875	.458	.712	.816	.940	.958	.656	.969	.750	.528	.000	.867	.946
Passenger +	5	346	6	357	14	11	37	62	79	271	21	371	33	19	0	52	842
% Passenger +	83.3	98.0	100	97.8	100	100	100	100	100	98.2	100	98.7	100	100	0	100	98.5
Heavy	1	7	0	8	0	0	0	0	0	5	0	5	0	0	0	0	13
% Heavy	16.7	2.0	0	2.2	0	0	0	0	0	1.8	0	1.3	0	0	0	0	1.5



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PO Box 397 Puyallup, WA 98371

File Name : 5262f
Site Code : 00005262
Start Date : 12/5/2023
Page No : 1

Groups Printed- Passenger + - Heavy

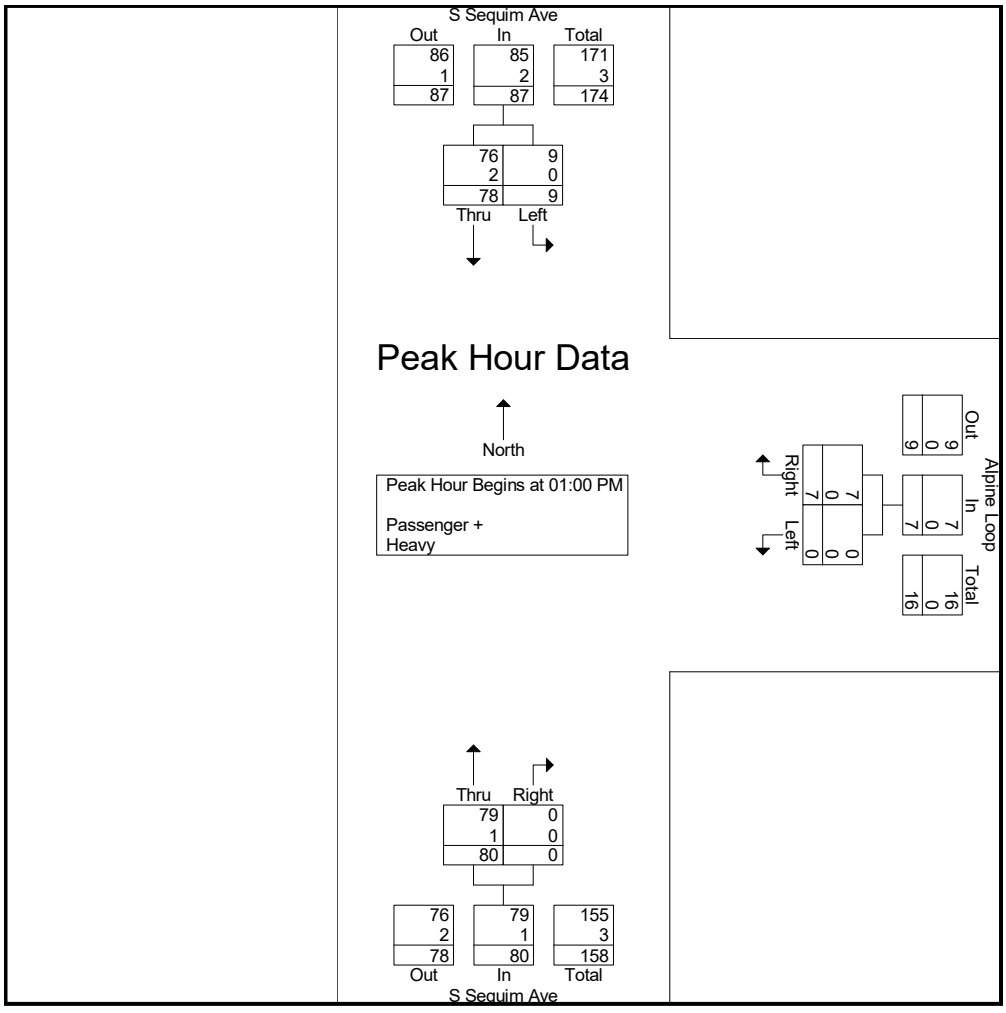
	S Sequim Ave Southbound			Alpine Loop Westbound			S Sequim Ave Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
11:00 AM	12	0	12	0	0	0	0	14	14	26
11:15 AM	16	0	16	1	0	1	0	16	16	33
11:30 AM	18	0	18	0	0	0	0	19	19	37
11:45 AM	21	0	21	1	0	1	0	25	25	47
Total	67	0	67	2	0	2	0	74	74	143
12:00 PM	16	0	16	1	0	1	0	22	22	39
12:15 PM	20	0	20	0	0	0	0	17	17	37
12:30 PM	14	0	14	2	0	2	0	14	14	30
12:45 PM	13	2	15	1	0	1	0	22	22	38
Total	63	2	65	4	0	4	0	75	75	144
01:00 PM	21	2	23	3	0	3	0	19	19	45
01:15 PM	21	1	22	2	0	2	0	18	18	42
01:30 PM	14	3	17	0	0	0	0	19	19	36
01:45 PM	22	3	25	2	0	2	0	24	24	51
Total	78	9	87	7	0	7	0	80	80	174
Grand Total	208	11	219	13	0	13	0	229	229	461
Apprch %	95	5		100	0		0	100		
Total %	45.1	2.4	47.5	2.8	0	2.8	0	49.7	49.7	
Passenger +	203	11	214	13	0	13	0	223	223	450
% Passenger +	97.6	100	97.7	100	0	100	0	97.4	97.4	97.6
Heavy	5	0	5	0	0	0	0	6	6	11
% Heavy	2.4	0	2.3	0	0	0	0	2.6	2.6	2.4

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File Name : 5262f
Site Code : 00005262
Start Date : 12/5/2023
Page No : 2

	S Sequim Ave Southbound			Alpine Loop Westbound			S Sequim Ave Northbound			
Start Time	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 01:00 PM										
01:00 PM	21	2	23	**3**	0	**3**	0	19	19	45
01:15 PM	21	1	22	2	0	2	0	18	18	42
01:30 PM	14	**3**	17	0	0	0	0	19	19	36
01:45 PM	**22**	3	**25**	2	0	2	0	**24**	**24**	**51**
Total Volume	78	9	87	7	0	7	0	80	80	174
% App. Total	89.7	10.3		100	0		0	100		
PHF	.886	.750	.870	.583	.000	.583	.000	.833	.833	.853
Passenger +	76	9	85	7	0	7	0	79	79	171
% Passenger +	97.4	100	97.7	100	0	100	0	98.8	98.8	98.3
Heavy	2	0	2	0	0	0	0	1	1	3
% Heavy	2.6	0	2.3	0	0	0	0	1.3	1.3	1.7



Single-Family Detached Housing
(210)

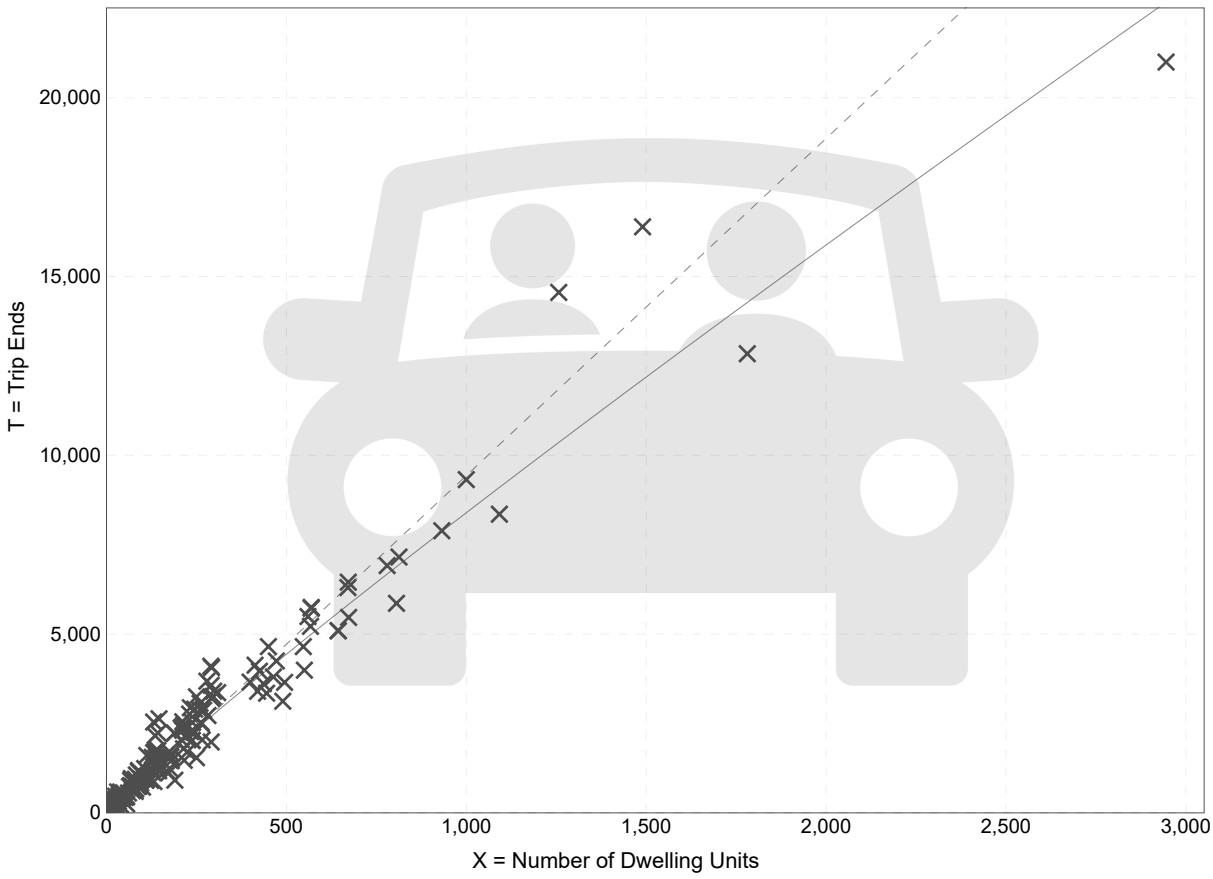
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

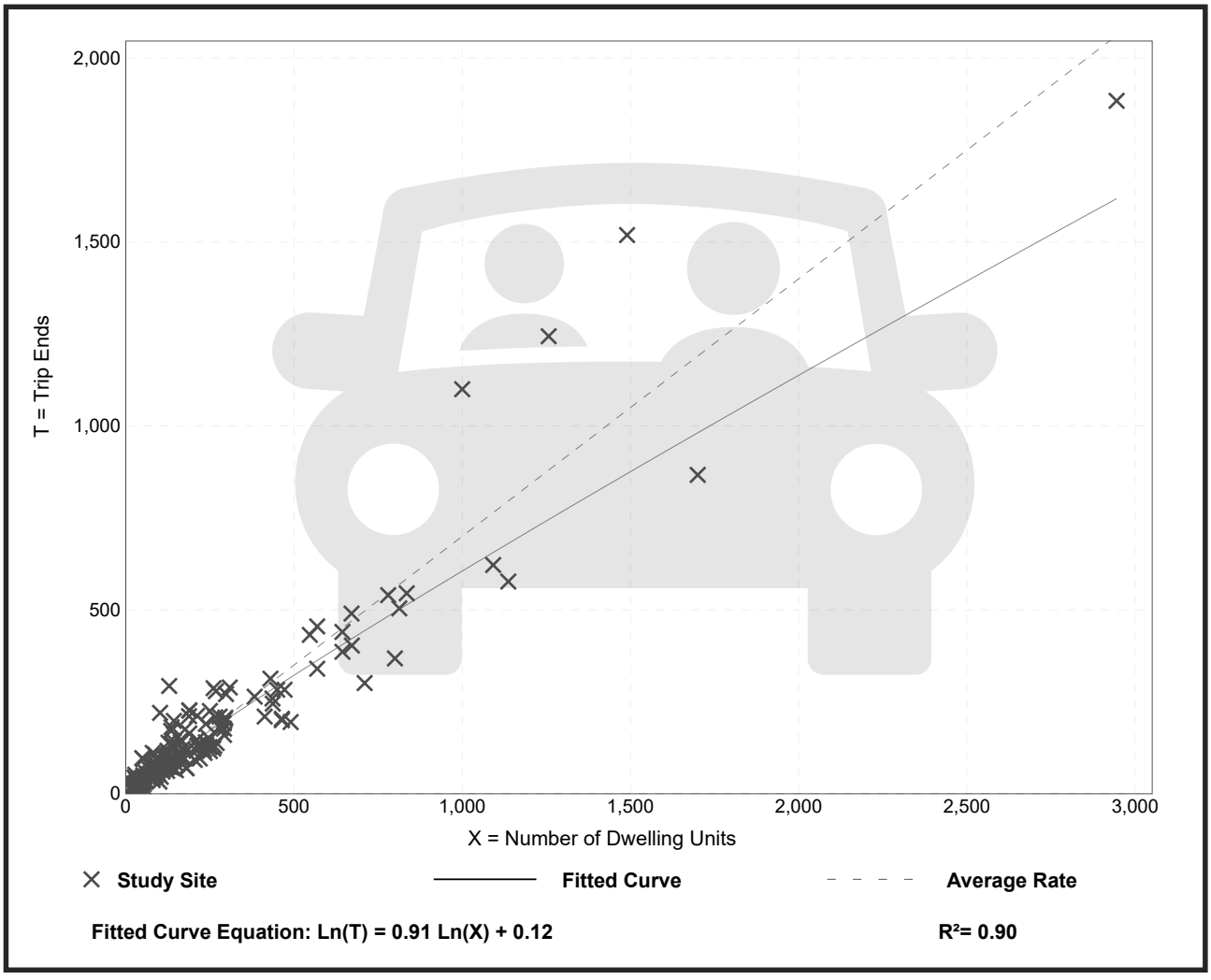
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 192
Avg. Num. of Dwelling Units: 226
Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

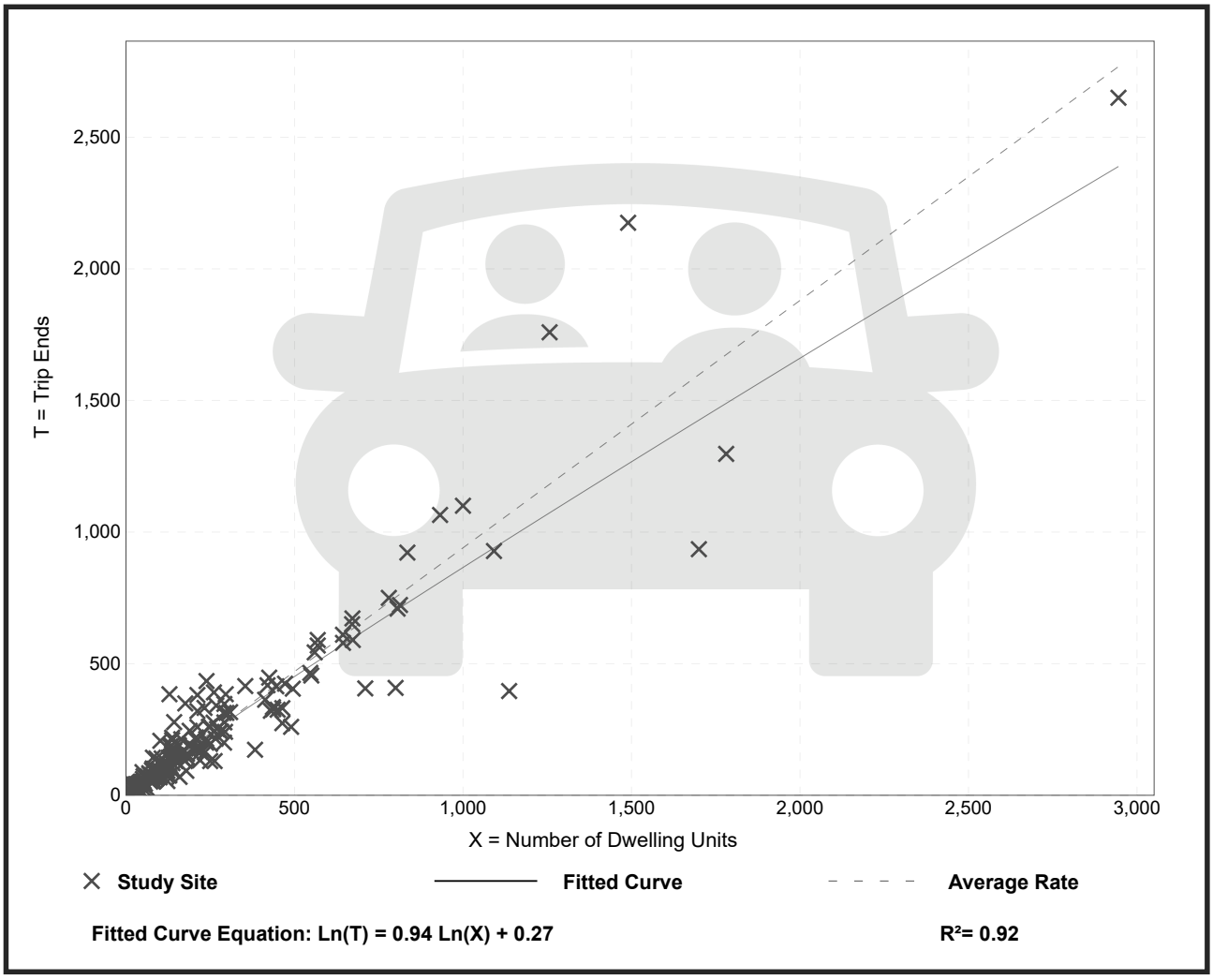
Single-Family Detached Housing
(210)

Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



Trip Gen Manual, 11th Edition ● Institute of Transportation Engineers

Heath & Associates, Inc.
Pipeline Volumes - Bell Creek - January 2024

1. S 3rd Ave & W Washington St

PM Peak Hour
Pipeline Volume Summations

1. Effie Estates					1						1	
2. Legacy Ridge		2				6	3	2	1	3		
3. Home A & B	2				7						4	1
4. Rolling Hills Plat		13				3	2	8				
5. Rainshadow Loop Plat	3				4						3	1
6. Habitat for Humanity - Clallam					2						3	
Totals	5	15	0	0	14	9	5	10	1	3	11	2

2. S 3rd Ave & W Prairie St

PM Peak Hour
Pipeline Volume Summations

1. Effie Estates						4	2					
2. Legacy Ridge		11						6				
3. Home A & B	4											3
4. Rolling Hills Plat		23						14				
5. Rainshadow Loop Plat					5						3	
6. Habitat for Humanity - Clallam	0	0	0	0	0	0	0	0	0	0	0	0
Totals	4	34	0	0	5	4	2	20	0	0	3	3

3. S 3rd Ave & Brownfield Rd

PM Peak Hour
Pipeline Volume Summations

1. Effie Estates	0	0	0	0	0	0	0	0	0	0	0	0
2. Legacy Ridge		11						6				
3. Home A & B	0	0	0	0	0	0	0	0	0	0	0	0
4. Rolling Hills Plat		23				47	27	14				
5. Rainshadow Loop Plat	0	0	0	0	0	0	0	0	0	0	0	0
6. Habitat for Humanity - Clallam	0	0	0	0	0	0	0	0	0	0	0	0
Totals	0	34	0	0	0	47	27	20	0	0	0	0

4. S Sequim Ave & Brownfield Rd

PM Peak Hour
Pipeline Volume Summations

1. Effie Estates	0	0	0	0	0	0	0	0	0	0	0	0
2. Legacy Ridge	2											1
3. Home A & B	0	0	0	0	0	0	0	0	0	0	0	0
4. Rolling Hills	47											27
5. Rainshadow Loop Plat	0	0	0	0	0	0	0	0	0	0	0	0
6. Habitat for Humanity - Clallam		13	4	2				10				
Totals	49	13	4	2	0	0	0	10	0	0	0	28

5. S Sequim Ave & SR-101 EB Ramps

PM Peak Hour
Pipeline Volume Summations

1. Effie Estates			1									2
2. Legacy Ridge		2						1				
3. Home A & B	0	0	0	0	0	0	0	0	0	0	0	0
4. Rolling Hills		47					23	4				
5. Rainshadow Loop Plat			4									
6. Habitat for Humanity - Clallam		11					4	8		6		
Totals	0	60	5	0	0	0	27	13	0	6	0	2

6. S Sequim Ave & SR-101 WB Ramps

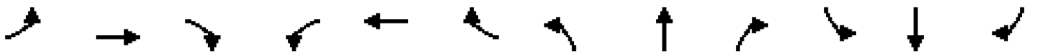
PM Peak Hour
Pipeline Volume Summations

1. Effie Estates	1	1		2				2				
2. Legacy Ridge		2						1				
3. Home A & B	0	0	0	0	0	0	0	0	0	0	0	0
4. Rolling Hills		7				40		4				
5. Rainshadow Loop Plat		4		7								
6. Habitat for Humanity - Clallam		5				6		3	5			
Totals	1	19	0	9	0	46	0	10	5	0	0	0

7. S Sequim Ave & W Prairie St

PM Peak Hour
Pipeline Volume Summations

1. Effie Estates									4	2		
2. Legacy Ridge		2						1				
3. Home A & B	0	0	0	0	0	0	0	0	0	0	0	0
4. Rolling Hills		7						4				
5. Rainshadow Loop Plat									5	3		
6. Habitat for Humanity - Clallam		5						3				
Totals	0	14	0	0	0	0	0	8	9	5	0	0



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	472	62	28	463	6	88	25	14	3	29	10
Future Volume (veh/h)	10	472	62	28	463	6	88	25	14	3	29	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1885	1841	1870	1885	1885	1841	1885	1885	1885	1885
Adj Flow Rate, veh/h	11	508	67	30	498	6	95	27	15	3	31	11
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	2	1	4	2	1	1	4	1	1	1	1
Cap, veh/h	149	745	98	51	749	9	331	42	23	128	179	61
Arrive On Green	0.08	0.46	0.46	0.03	0.41	0.41	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1795	1618	213	1753	1844	22	1026	306	164	64	1296	440
Grp Volume(v), veh/h	11	0	575	30	0	504	137	0	0	45	0	0
Grp Sat Flow(s),veh/h/ln	1795	0	1832	1753	0	1866	1496	0	0	1801	0	0
Q Serve(g_s), s	0.2	0.0	7.9	0.5	0.0	7.1	2.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	7.9	0.5	0.0	7.1	2.7	0.0	0.0	0.7	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.01	0.69		0.11	0.07		0.24
Lane Grp Cap(c), veh/h	149	0	843	51	0	758	395	0	0	367	0	0
V/C Ratio(X)	0.07	0.00	0.68	0.59	0.00	0.66	0.35	0.00	0.00	0.12	0.00	0.00
Avail Cap(c_a), veh/h	335	0	3928	436	0	4118	1586	0	0	1824	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	13.6	0.0	6.8	15.4	0.0	7.8	13.1	0.0	0.0	12.3	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.0	10.2	0.0	1.0	0.5	0.0	0.0	0.1	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.0	0.3	0.0	2.0	0.8	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	13.8	0.0	7.8	25.6	0.0	8.8	13.6	0.0	0.0	12.4	0.0	0.0
LnGrp LOS	B		A	C		A	B			B		
Approach Vol, veh/h		586			534			137			45	
Approach Delay, s/veh		7.9			9.7			13.6			12.4	
Approach LOS		A			A			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	8.4	4.9	18.8	8.4	6.7	17.1
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	31.0	8.0	69.0	31.0	6.0	71.0
Max Q Clear Time (g_c+I1), s	4.7	2.5	9.9	2.7	2.2	9.1
Green Ext Time (p_c), s	0.8	0.0	4.9	0.2	0.0	4.0

Intersection Summary	
HCM 7th Control Delay, s/veh	9.4
HCM 7th LOS	A

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	0	53	12	5	34	6	6	79	7	8	83	6
Future Vol, veh/h	0	53	12	5	34	6	6	79	7	8	83	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	0	58	13	5	37	7	7	87	8	9	91	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	231	220	95	242	219	91	98	0	0	95	0	0
Stage 1	112	112	-	104	104	-	-	-	-	-	-	-
Stage 2	119	108	-	138	115	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	726	680	965	714	681	970	1502	-	-	1506	-	-
Stage 1	895	805	-	904	811	-	-	-	-	-	-	-
Stage 2	888	808	-	868	802	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	674	673	965	637	673	970	1502	-	-	1506	-	-
Mov Cap-2 Maneuver	674	673	-	637	673	-	-	-	-	-	-	-
Stage 1	890	800	-	900	807	-	-	-	-	-	-	-
Stage 2	837	804	-	789	797	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.61	10.55	0.48	0.61
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	116	-	-	713	697	146	-	-
HCM Lane V/C Ratio	0.004	-	-	0.1	0.071	0.006	-	-
HCM Control Delay (s/veh)	7.4	0	-	10.6	10.6	7.4	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	35	35	88	53	2	35
Future Vol, veh/h	35	35	88	53	2	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	9	14	1	4	100	3
Mvmt Flow	43	43	109	65	2	43

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	190	141	0	0	174	0
Stage 1	141	-	-	-	-	-
Stage 2	48	-	-	-	-	-
Critical Hdwy	6.49	6.34	-	-	5.1	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.426	-	-	3.1	-
Pot Cap-1 Maneuver	784	876	-	-	977	-
Stage 1	869	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	782	876	-	-	977	-
Mov Cap-2 Maneuver	782	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	954	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.87	0	0.47
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	826	97	-
HCM Lane V/C Ratio	-	-	0.105	0.003	-
HCM Control Delay (s/veh)	-	-	9.9	8.7	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	64	10	17	3	9	19	13	65	3	18	57	47
Future Vol, veh/h	64	10	17	3	9	19	13	65	3	18	57	47
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	10	6	1	11	5	8	1	1	11	2	13
Mvmt Flow	71	11	19	3	10	21	14	72	3	20	63	52

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	236	234	89	212	258	74	116	0	0	76	0	0
Stage 1	129	129	-	103	103	-	-	-	-	-	-	-
Stage 2	106	104	-	109	156	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.6	6.26	7.11	6.61	6.25	4.18	-	-	4.21	-	-
Critical Hdwy Stg 1	6.13	5.6	-	6.11	5.61	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.6	-	6.11	5.61	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.09	3.354	3.509	4.099	3.345	2.272	-	-	2.299	-	-
Pot Cap-1 Maneuver	717	653	958	747	631	980	1437	-	-	1468	-	-
Stage 1	872	774	-	906	793	-	-	-	-	-	-	-
Stage 2	897	793	-	899	752	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	673	636	958	702	615	980	1437	-	-	1468	-	-
Mov Cap-2 Maneuver	673	636	-	702	615	-	-	-	-	-	-	-
Stage 1	859	763	-	896	785	-	-	-	-	-	-	-
Stage 2	857	785	-	856	741	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	10.93	9.61	1.21	1.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	286	-	-	708	702	823	244	-	-
HCM Lane V/C Ratio	0.01	-	-	0.143	0.005	0.038	0.014	-	-
HCM Control Delay (s/veh)	7.5	0	-	10.9	10.2	9.5	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0.1	0	-	-

Intersection	
Int Delay, s/veh	12.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	204	1	45	0	0	0	0	187	13	138	69	0
Future Vol, veh/h	204	1	45	0	0	0	0	187	13	138	69	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	275	-	-	-	-	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	1	1	9	1	1	1	1	3	1	3	1	1
Mvmt Flow	255	1	56	0	0	0	0	234	16	173	86	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	665	681	86	-	0	0	250	0	0
Stage 1	431	431	-	-	-	-	-	-	-
Stage 2	234	250	-	-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.29	-	-	-	4.13	-	-
Critical Hdwy Stg 1	5.41	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.381	-	-	-	2.227	-	-
Pot Cap-1 Maneuver	427	374	953	0	-	-	1310	-	0
Stage 1	657	584	-	0	-	-	-	-	0
Stage 2	807	702	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	370	0	953	-	-	-	1310	-	-
Mov Cap-2 Maneuver	370	0	-	-	-	-	-	-	-
Stage 1	657	0	-	-	-	-	-	-	-
Stage 2	701	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	29.4	0	5.44
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	370	953	1310	-
HCM Lane V/C Ratio	-	-	0.692	0.059	0.132	-
HCM Control Delay (s/veh)	-	-	33.9	9	8.2	-
HCM Lane LOS	-	-	D	A	A	-
HCM 95th %tile Q(veh)	-	-	5	0.2	0.5	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	15	2	116	55	268	0	0	212	225
Future Vol, veh/h	0	0	0	15	2	116	55	268	0	0	212	225
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	300	-	-	-	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	2	2
Mvmt Flow	0	0	0	16	2	125	59	288	0	0	228	242

Major/Minor	Minor1			Major1			Major2		
Conflicting Flow All	634	876	288	470	0	-	-	-	0
Stage 1	406	406	-	-	-	-	-	-	-
Stage 2	228	470	-	-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.21	4.11	-	-	-	-	-
Critical Hdwy Stg 1	5.41	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	2.209	-	-	-	-	-
Pot Cap-1 Maneuver	445	288	753	1097	-	0	0	-	-
Stage 1	675	599	-	-	-	0	0	-	-
Stage 2	812	562	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	421	0	753	1097	-	-	-	-	-
Mov Cap-2 Maneuver	421	0	-	-	-	-	-	-	-
Stage 1	638	0	-	-	-	-	-	-	-
Stage 2	812	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.57	1.44	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1097	-	691	-	-
HCM Lane V/C Ratio	0.054	-	0.207	-	-
HCM Control Delay (s/veh)	8.5	-	11.6	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.8	-	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	19	33	37	11	14	21	276	79	6	353	6
Future Vol, veh/h	0	19	33	37	11	14	21	276	79	6	353	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	30	-	-
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, %	1	1	1	1	1	1	1	2	1	1	2	17
Mvmt Flow	0	20	35	39	12	15	22	291	83	6	372	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	728	805	375	771	767	332	378	0	0	374	0	0
Stage 1	387	387	-	376	376	-	-	-	-	-	-	-
Stage 2	341	418	-	394	391	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	340	317	674	319	334	712	1186	-	-	1190	-	-
Stage 1	638	611	-	647	618	-	-	-	-	-	-	-
Stage 2	676	592	-	633	609	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	314	309	674	276	326	712	1186	-	-	1190	-	-
Mov Cap-2 Maneuver	314	309	-	276	326	-	-	-	-	-	-	-
Stage 1	635	608	-	635	606	-	-	-	-	-	-	-
Stage 2	638	581	-	577	606	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	13.64	18.53	0.45	0.13
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1186	-	-	471	331	1190	-	-
HCM Lane V/C Ratio	0.019	-	-	0.116	0.197	0.005	-	-
HCM Control Delay (s/veh)	8.1	-	-	13.6	18.5	8	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	0.7	0	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	532	71	40	525	7	98	38	20	3	47	16
Future Volume (veh/h)	13	532	71	40	525	7	98	38	20	3	47	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1885	1841	1870	1885	1885	1841	1885	1885	1885	1885
Adj Flow Rate, veh/h	14	572	76	43	565	8	105	41	22	3	51	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	2	1	4	2	1	1	4	1	1	1	1
Cap, veh/h	168	784	104	67	790	11	293	76	33	103	220	71
Arrive On Green	0.09	0.48	0.48	0.04	0.43	0.43	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1795	1617	215	1753	1840	26	856	461	198	31	1336	430
Grp Volume(v), veh/h	14	0	648	43	0	573	168	0	0	71	0	0
Grp Sat Flow(s),veh/h/ln	1795	0	1832	1753	0	1866	1515	0	0	1798	0	0
Q Serve(g_s), s	0.3	0.0	10.8	0.9	0.0	9.7	2.6	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	10.8	0.9	0.0	9.7	3.9	0.0	0.0	1.3	0.0	0.0
Prop In Lane	1.00		0.12	1.00		0.01	0.62		0.13	0.04		0.24
Lane Grp Cap(c), veh/h	168	0	888	67	0	801	402	0	0	394	0	0
V/C Ratio(X)	0.08	0.00	0.73	0.64	0.00	0.72	0.42	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	187	0	3290	411	0	3594	1291	0	0	1490	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.9	0.0	7.9	18.2	0.0	9.0	14.9	0.0	0.0	14.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.2	9.7	0.0	1.2	0.7	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.1	0.5	0.0	3.1	1.2	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.1	0.0	9.1	27.9	0.0	10.2	15.6	0.0	0.0	14.2	0.0	0.0
LnGrp LOS	B		A	C		B	B			B		
Approach Vol, veh/h		662			616			168			71	
Approach Delay, s/veh		9.2			11.5			15.6			14.2	
Approach LOS		A			B			B			B	

Timer - Assigned Phs	2	3	4	6	7	8
Phs Duration (G+Y+Rc), s	10.3	5.5	22.6	10.3	7.6	20.5
Change Period (Y+Rc), s	4.0	4.0	4.0	4.0	4.0	4.0
Max Green Setting (Gmax), s	30.0	9.0	69.0	30.0	4.0	74.0
Max Q Clear Time (g_c+I1), s	5.9	2.9	12.8	3.3	2.3	11.7
Green Ext Time (p_c), s	1.0	0.0	5.8	0.3	0.0	4.8

Intersection Summary	
HCM 7th Control Delay, s/veh	11.1
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	3	62	13	10	43	7	7	107	10	9	126	11
Future Vol, veh/h	3	62	13	10	43	7	7	107	10	9	126	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	3	68	14	11	47	8	8	118	11	10	138	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	321	308	145	331	309	123	151	0	0	129	0	0
Stage 1	164	164	-	138	138	-	-	-	-	-	-	-
Stage 2	157	144	-	192	170	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	634	608	905	625	607	931	1437	-	-	1463	-	-
Stage 1	840	764	-	867	784	-	-	-	-	-	-	-
Stage 2	848	780	-	812	760	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	572	600	905	538	599	931	1437	-	-	1463	-	-
Mov Cap-2 Maneuver	572	600	-	538	599	-	-	-	-	-	-	-
Stage 1	834	759	-	862	779	-	-	-	-	-	-	-
Stage 2	785	775	-	722	754	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.56	11.58	0.42	0.46
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	100	-	-	634	613	109	-	-
HCM Lane V/C Ratio	0.005	-	-	0.135	0.108	0.007	-	-
HCM Control Delay (s/veh)	7.5	0	-	11.6	11.6	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.4	0	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	39	117	86	2	73
Future Vol, veh/h	86	39	117	86	2	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	9	14	1	4	100	3
Mvmt Flow	106	48	144	106	2	90

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	293	198	0	0	251	0
Stage 1	198	-	-	-	-	-
Stage 2	95	-	-	-	-	-
Critical Hdwy	6.49	6.34	-	-	5.1	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.426	-	-	3.1	-
Pot Cap-1 Maneuver	684	814	-	-	905	-
Stage 1	819	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	682	814	-	-	905	-
Mov Cap-2 Maneuver	682	-	-	-	-	-
Stage 1	819	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	11.38	0	0.24
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	718	48	-
HCM Lane V/C Ratio	-	-	0.215	0.003	-
HCM Control Delay (s/veh)	-	-	11.4	9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.8	0	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕		↰	↱			↕			↕	
Traffic Vol, veh/h	99	11	19	3	10	23	14	82	3	24	76	101
Future Vol, veh/h	99	11	19	3	10	23	14	82	3	24	76	101
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	10	6	1	11	5	8	1	1	11	2	13
Mvmt Flow	110	12	21	3	11	26	16	91	3	27	84	112

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	322	319	141	268	374	93	197	0	0	94	0	0
Stage 1	194	194	-	124	124	-	-	-	-	-	-	-
Stage 2	128	126	-	144	250	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.6	6.26	7.11	6.61	6.25	4.18	-	-	4.21	-	-
Critical Hdwy Stg 1	6.13	5.6	-	6.11	5.61	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.6	-	6.11	5.61	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.09	3.354	3.509	4.099	3.345	2.272	-	-	2.299	-	-
Pot Cap-1 Maneuver	629	584	897	687	543	956	1341	-	-	1445	-	-
Stage 1	806	725	-	883	776	-	-	-	-	-	-	-
Stage 2	874	777	-	861	684	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	580	565	897	635	525	956	1341	-	-	1445	-	-
Mov Cap-2 Maneuver	580	565	-	635	525	-	-	-	-	-	-	-
Stage 1	789	710	-	872	767	-	-	-	-	-	-	-
Stage 2	828	767	-	809	669	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	12.7	10	1.09	0.9
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	253	-	-	610	635	766	193	-	-
HCM Lane V/C Ratio	0.012	-	-	0.235	0.005	0.048	0.018	-	-
HCM Control Delay (s/veh)	7.7	0	-	12.7	10.7	9.9	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.9	0	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	10

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	227	1	56	0	0	0	0	219	41	157	136	0
Future Vol, veh/h	227	1	56	0	0	0	0	219	41	157	136	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	275	-	-	-	-	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	9	1	1	1	1	3	1	3	1	1
Mvmt Flow	227	1	56	0	0	0	0	219	41	157	136	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	669	710	136	-	0	0	260	0	0
Stage 1	450	450	-	-	-	-	-	-	-
Stage 2	219	260	-	-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.29	-	-	-	4.13	-	-
Critical Hdwy Stg 1	5.41	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.381	-	-	-	2.227	-	-
Pot Cap-1 Maneuver	424	360	894	0	-	-	1299	-	0
Stage 1	644	573	-	0	-	-	-	-	0
Stage 2	820	695	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	373	0	894	-	-	-	1299	-	-
Mov Cap-2 Maneuver	373	0	-	-	-	-	-	-	-
Stage 1	644	0	-	-	-	-	-	-	-
Stage 2	721	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	24.87	0	4.37
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	373	894	1299	-
HCM Lane V/C Ratio	-	-	0.611	0.063	0.121	-
HCM Control Delay (s/veh)	-	-	28.7	9.3	8.2	-
HCM Lane LOS	-	-	D	A	A	-
HCM 95th %tile Q(veh)	-	-	3.9	0.2	0.4	-

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	63	2	137	66	306	0	0	253	249
Future Vol, veh/h	0	0	0	63	2	137	66	306	0	0	253	249
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	300	-	-	-	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	2	2
Mvmt Flow	0	0	0	63	2	137	66	306	0	0	253	249

Major/Minor	Minor1		Major1		Major2				
Conflicting Flow All	691	940	306	502	0	-	-	-	0
Stage 1	438	438	-	-	-	-	-	-	-
Stage 2	253	502	-	-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.21	4.11	-	-	-	-	-
Critical Hdwy Stg 1	5.41	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	2.209	-	-	-	-	-
Pot Cap-1 Maneuver	412	265	736	1068	-	0	0	-	-
Stage 1	653	580	-	-	-	0	0	-	-
Stage 2	791	544	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	386	0	736	1068	-	-	-	-	-
Mov Cap-2 Maneuver	386	0	-	-	-	-	-	-	-
Stage 1	612	0	-	-	-	-	-	-	-
Stage 2	791	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	14.67	1.52	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1068	-	573	-	-
HCM Lane V/C Ratio	0.062	-	0.353	-	-
HCM Control Delay (s/veh)	8.6	-	14.7	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0.2	-	1.6	-	-

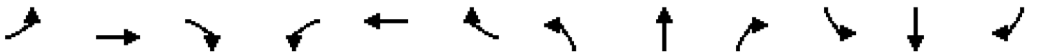
Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	21	41	41	12	15	32	313	87	7	404	7
Future Vol, veh/h	0	21	41	41	12	15	32	313	87	7	404	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	30	-	-
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, %	1	1	1	1	1	1	1	2	1	1	2	17
Mvmt Flow	0	22	43	43	13	16	34	329	92	7	425	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	847	932	429	894	890	375	433	0	0	421	0	0
Stage 1	444	444	-	443	443	-	-	-	-	-	-	-
Stage 2	403	488	-	451	447	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	283	267	628	263	283	673	1132	-	-	1143	-	-
Stage 1	595	577	-	596	578	-	-	-	-	-	-	-
Stage 2	626	551	-	590	575	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	254	258	628	217	273	673	1132	-	-	1143	-	-
Mov Cap-2 Maneuver	254	258	-	217	273	-	-	-	-	-	-	-
Stage 1	591	573	-	578	561	-	-	-	-	-	-	-
Stage 2	580	535	-	525	571	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	15.07	23.43	0.61	0.14
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1132	-	-	423	266	1143	-	-
HCM Lane V/C Ratio	0.03	-	-	0.154	0.269	0.006	-	-
HCM Control Delay (s/veh)	8.3	-	-	15.1	23.4	8.2	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	1.1	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	532	77	44	525	7	102	39	22	3	49	16
Future Volume (veh/h)	13	532	77	44	525	7	102	39	22	3	49	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1870	1885	1841	1870	1885	1885	1841	1885	1885	1885	1885
Adj Flow Rate, veh/h	14	572	83	47	565	8	110	42	24	3	53	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	2	1	4	2	1	1	4	1	1	1	1
Cap, veh/h	182	776	113	71	783	11	293	78	35	99	231	72
Arrive On Green	0.10	0.49	0.49	0.04	0.43	0.43	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1795	1597	232	1753	1840	26	851	455	206	29	1352	419
Grp Volume(v), veh/h	14	0	655	47	0	573	176	0	0	73	0	0
Grp Sat Flow(s),veh/h/ln	1795	0	1829	1753	0	1866	1512	0	0	1799	0	0
Q Serve(g_s), s	0.3	0.0	11.4	1.0	0.0	10.1	2.8	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	0.0	11.4	1.0	0.0	10.1	4.2	0.0	0.0	1.4	0.0	0.0
Prop In Lane	1.00		0.13	1.00		0.01	0.62		0.14	0.04		0.23
Lane Grp Cap(c), veh/h	182	0	888	71	0	794	406	0	0	402	0	0
V/C Ratio(X)	0.08	0.00	0.74	0.66	0.00	0.72	0.43	0.00	0.00	0.18	0.00	0.00
Avail Cap(c_a), veh/h	182	0	3182	398	0	3482	1249	0	0	1445	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.1	0.0	8.2	18.7	0.0	9.4	15.3	0.0	0.0	14.2	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	1.2	9.8	0.0	1.3	0.7	0.0	0.0	0.2	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.4	0.6	0.0	3.3	1.4	0.0	0.0	0.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.3	0.0	9.4	28.6	0.0	10.7	16.0	0.0	0.0	14.4	0.0	0.0
LnGrp LOS	B		A	C		B	B			B		
Approach Vol, veh/h		669			620			176			73	
Approach Delay, s/veh		9.5			12.1			16.0			14.4	
Approach LOS		A			B			B			B	

Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		10.8	5.6	23.3		10.8	8.0	20.9				
Change Period (Y+Rc), s		4.0	4.0	4.0		4.0	4.0	4.0				
Max Green Setting (Gmax), s		30.0	9.0	69.0		30.0	4.0	74.0				
Max Q Clear Time (g_c+I1), s		6.2	3.0	13.4		3.4	2.3	12.1				
Green Ext Time (p_c), s		1.0	0.0	5.9		0.4	0.0	4.8				

Intersection Summary	
HCM 7th Control Delay, s/veh	11.5
HCM 7th LOS	B

Intersection	
Int Delay, s/veh	4.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	62	13	10	43	7	7	115	10	9	140	11
Future Vol, veh/h	3	62	13	10	43	7	7	115	10	9	140	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	3	68	14	11	47	8	8	126	11	10	154	12

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	345	332	160	355	333	132	166	0	0	137	0	0
Stage 1	180	180	-	147	147	-	-	-	-	-	-	-
Stage 2	165	153	-	208	186	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	611	589	888	602	589	920	1418	-	-	1453	-	-
Stage 1	824	753	-	858	777	-	-	-	-	-	-	-
Stage 2	839	773	-	797	748	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	550	581	888	517	581	920	1418	-	-	1453	-	-
Mov Cap-2 Maneuver	550	581	-	517	581	-	-	-	-	-	-	-
Stage 1	818	747	-	853	773	-	-	-	-	-	-	-
Stage 2	776	768	-	707	742	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	11.8	11.82	0.4	0.42
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	94	-	-	615	594	100	-	-
HCM Lane V/C Ratio	0.005	-	-	0.139	0.111	0.007	-	-
HCM Control Delay (s/veh)	7.6	0	-	11.8	11.8	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0.4	0	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	121	42	122	108	7	82
Future Vol, veh/h	121	42	122	108	7	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	81	81	81	81
Heavy Vehicles, %	9	14	1	4	100	3
Mvmt Flow	149	52	151	133	9	101

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	336	217	0	0	284	0
Stage 1	217	-	-	-	-	-
Stage 2	119	-	-	-	-	-
Critical Hdwy	6.49	6.34	-	-	5.1	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.426	-	-	3.1	-
Pot Cap-1 Maneuver	646	793	-	-	875	-
Stage 1	803	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	639	793	-	-	875	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	12.62	0	0.72
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	673	142	-
HCM Lane V/C Ratio	-	-	0.299	0.01	-
HCM Control Delay (s/veh)	-	-	12.6	9.2	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	1.3	0	-

Intersection	
Int Delay, s/veh	5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	120	12	24	4	12	23	17	92	4	24	94	134
Future Vol, veh/h	120	12	24	4	12	23	17	92	4	24	94	134
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	40	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	3	10	6	1	11	5	8	1	1	11	2	13
Mvmt Flow	133	13	27	4	13	26	19	102	4	27	104	149

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	379	377	179	307	449	104	253	0	0	107	0	0
Stage 1	232	232	-	142	142	-	-	-	-	-	-	-
Stage 2	147	144	-	164	307	-	-	-	-	-	-	-
Critical Hdwy	7.13	6.6	6.26	7.11	6.61	6.25	4.18	-	-	4.21	-	-
Critical Hdwy Stg 1	6.13	5.6	-	6.11	5.61	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.13	5.6	-	6.11	5.61	-	-	-	-	-	-	-
Follow-up Hdwy	3.527	4.09	3.354	3.509	4.099	3.345	2.272	-	-	2.299	-	-
Pot Cap-1 Maneuver	577	542	854	648	492	942	1278	-	-	1430	-	-
Stage 1	768	698	-	863	762	-	-	-	-	-	-	-
Stage 2	854	762	-	840	645	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	526	522	854	589	474	942	1278	-	-	1430	-	-
Mov Cap-2 Maneuver	526	522	-	589	474	-	-	-	-	-	-	-
Stage 1	751	682	-	849	750	-	-	-	-	-	-	-
Stage 2	803	750	-	780	631	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	14.33	10.49	1.18	0.72
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	269	-	-	558	589	703	153	-	-
HCM Lane V/C Ratio	0.015	-	-	0.31	0.008	0.055	0.019	-	-
HCM Control Delay (s/veh)	7.9	0	-	14.3	11.2	10.4	7.6	0	-
HCM Lane LOS	A	A	-	B	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	1.3	0	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	10.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	227	1	80	0	0	0	0	238	53	157	163	0
Future Vol, veh/h	227	1	80	0	0	0	0	238	53	157	163	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	275	-	-	-	-	-	-	275	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	80	100	100	100	100	100	100
Heavy Vehicles, %	1	1	9	1	1	1	1	3	1	3	1	1
Mvmt Flow	227	1	80	0	0	0	0	238	53	157	163	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	715	768	163	-	0	0	291	0	0
Stage 1	477	477	-	-	-	-	-	-	-
Stage 2	238	291	-	-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.29	-	-	-	4.13	-	-
Critical Hdwy Stg 1	5.41	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.381	-	-	-	2.227	-	-
Pot Cap-1 Maneuver	399	333	864	0	-	-	1265	-	0
Stage 1	626	558	-	0	-	-	-	-	0
Stage 2	804	673	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	349	0	864	-	-	-	1265	-	-
Mov Cap-2 Maneuver	349	0	-	-	-	-	-	-	-
Stage 1	626	0	-	-	-	-	-	-	-
Stage 2	704	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	26.72	0	4.05
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	EBLn2	SBL	SBT
Capacity (veh/h)	-	-	349	864	1265	-
HCM Lane V/C Ratio	-	-	0.653	0.093	0.124	-
HCM Control Delay (s/veh)	-	-	32.7	9.6	8.2	-
HCM Lane LOS	-	-	D	A	A	-
HCM 95th %tile Q(veh)	-	-	4.4	0.3	0.4	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	0	83	2	137	81	310	0	0	260	249
Future Vol, veh/h	0	0	0	83	2	137	81	310	0	0	260	249
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	300	-	-	-	-	125
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	100	100	100	100	100	100	100	100	100	100	100	100
Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	2	2
Mvmt Flow	0	0	0	83	2	137	81	310	0	0	260	249

Major/Minor	Minor1		Major1			Major2			
Conflicting Flow All	732	981	310	509	0	-	-	-	0
Stage 1	472	472	-	-	-	-	-	-	-
Stage 2	260	509	-	-	-	-	-	-	-
Critical Hdwy	6.41	6.51	6.21	4.11	-	-	-	-	-
Critical Hdwy Stg 1	5.41	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.41	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	2.209	-	-	-	-	-
Pot Cap-1 Maneuver	390	250	732	1061	-	0	0	-	-
Stage 1	630	561	-	-	-	0	0	-	-
Stage 2	786	540	-	-	-	0	0	-	-
Platoon blocked, %					-			-	-
Mov Cap-1 Maneuver	360	0	732	1061	-	-	-	-	-
Mov Cap-2 Maneuver	360	0	-	-	-	-	-	-	-
Stage 1	582	0	-	-	-	-	-	-	-
Stage 2	786	0	-	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	16.72	1.8	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	WBLn1	SBT	SBR
Capacity (veh/h)	1061	-	527	-	-
HCM Lane V/C Ratio	0.076	-	0.421	-	-
HCM Control Delay (s/veh)	8.7	-	16.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.2	-	2.1	-	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	21	41	41	12	15	32	317	87	7	411	7
Future Vol, veh/h	0	21	41	41	12	15	32	317	87	7	411	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	30	-	-	30	-	-
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, %	1	1	1	1	1	1	1	2	1	1	2	17
Mvmt Flow	0	22	43	43	13	16	34	334	92	7	433	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	858	944	436	905	902	379	440	0	0	425	0	0
Stage 1	451	451	-	447	447	-	-	-	-	-	-	-
Stage 2	407	493	-	458	455	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	278	263	622	258	279	670	1125	-	-	1139	-	-
Stage 1	590	573	-	593	575	-	-	-	-	-	-	-
Stage 2	623	549	-	584	571	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	250	254	622	212	269	670	1125	-	-	1139	-	-
Mov Cap-2 Maneuver	250	254	-	212	269	-	-	-	-	-	-	-
Stage 1	586	569	-	575	558	-	-	-	-	-	-	-
Stage 2	576	532	-	519	567	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s/v	15.22	23.9	0.61	0.13
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1125	-	-	417	261	1139	-	-
HCM Lane V/C Ratio	0.03	-	-	0.156	0.274	0.006	-	-
HCM Control Delay (s/veh)	8.3	-	-	15.2	23.9	8.2	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.5	1.1	0	-	-

Intersection	
Int Delay, s/veh	1.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	27	203	0	44	159
Future Vol, veh/h	0	27	203	0	44	159
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	3	1	1	3
Mvmt Flow	0	29	221	0	48	173

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	489	221	0	0	221	0
Stage 1	221	-	-	-	-	-
Stage 2	268	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	540	821	-	-	1354	-
Stage 1	818	-	-	-	-	-
Stage 2	779	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	519	821	-	-	1354	-
Mov Cap-2 Maneuver	519	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	748	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s/v	9.54	0	1.68
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	821	390	-
HCM Lane V/C Ratio	-	-	0.036	0.035	-
HCM Control Delay (s/veh)	-	-	9.5	7.8	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	0	0	89	85	24
Future Vol, veh/h	14	0	0	89	85	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	2	2	1
Mvmt Flow	15	0	0	97	92	26

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	202	105	118	0	-	0
Stage 1	105	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	789	952	1476	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	930	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	789	952	1476	-	-	-
Mov Cap-2 Maneuver	789	-	-	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s/v	9.65	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1476	-	789	-	-
HCM Lane V/C Ratio	-	-	0.019	-	-
HCM Control Delay (s/veh)	0	-	9.7	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Exhibit 1310-7a Left-Turn Storage Guidelines: Two-Lane, Unsignalized

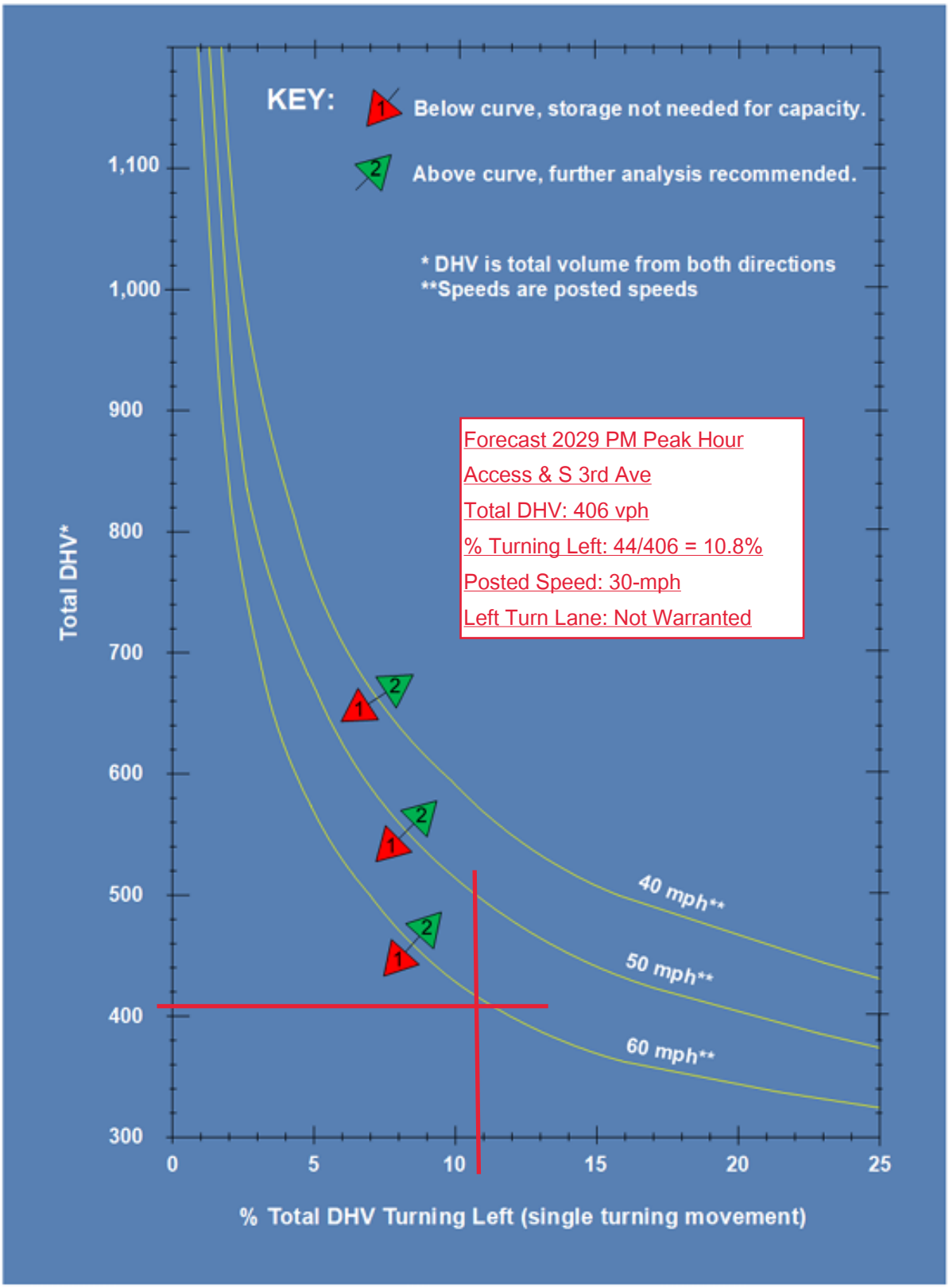


Exhibit 1310-24 Right-Turn Lane Guidelines

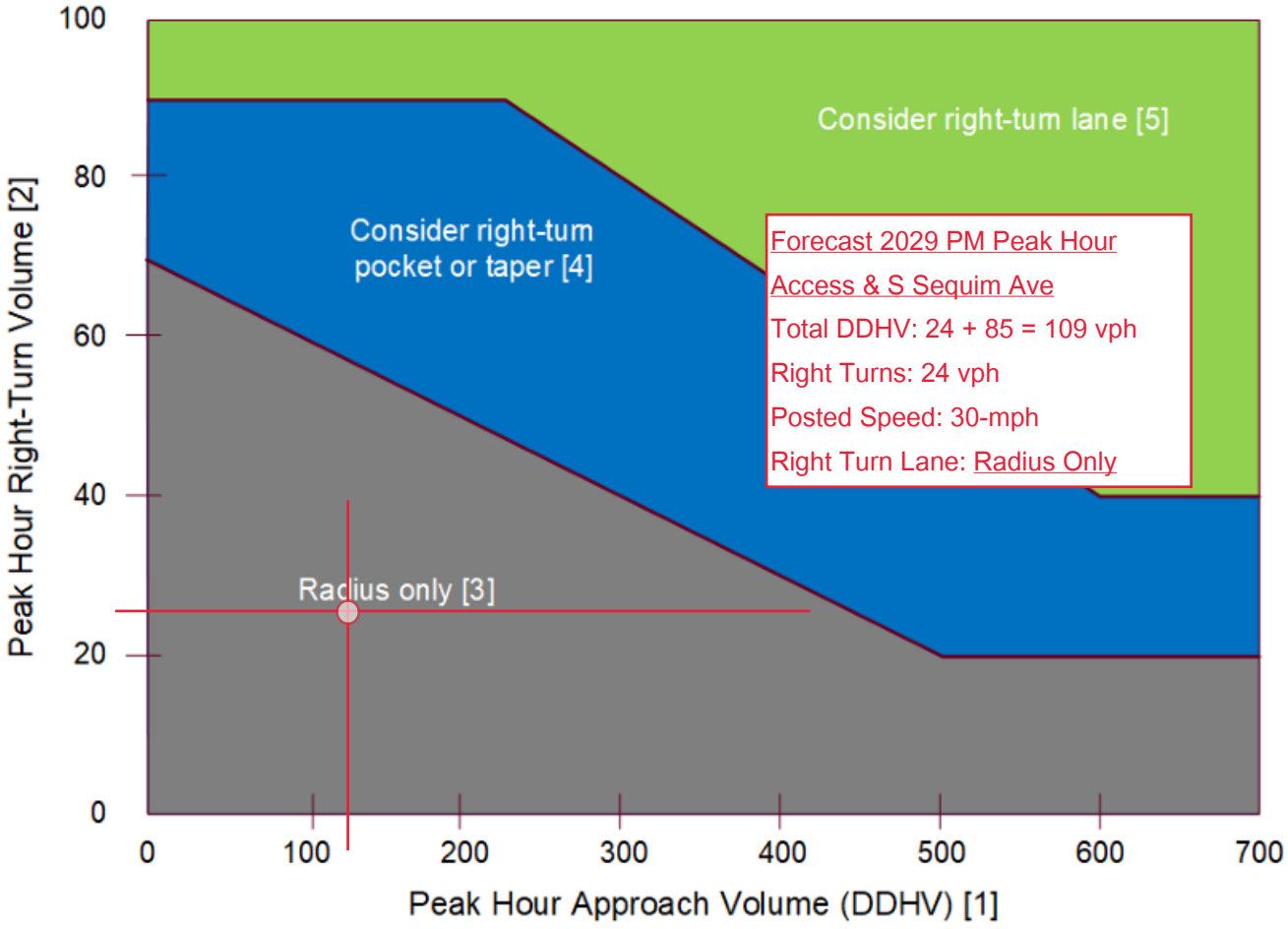


Exhibit 1310-7a Left-Turn Storage Guidelines: Two-Lane, Unsignalized

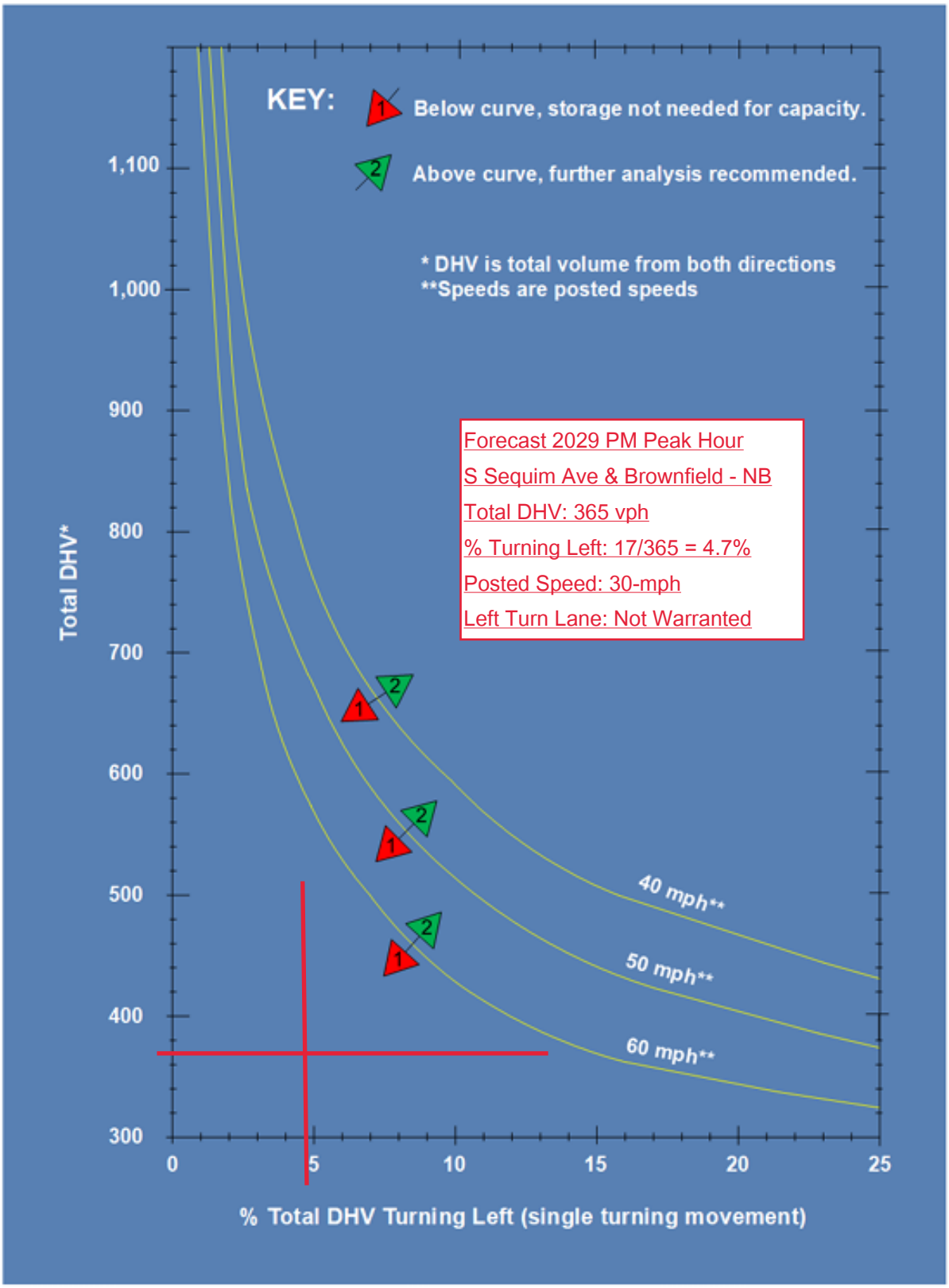
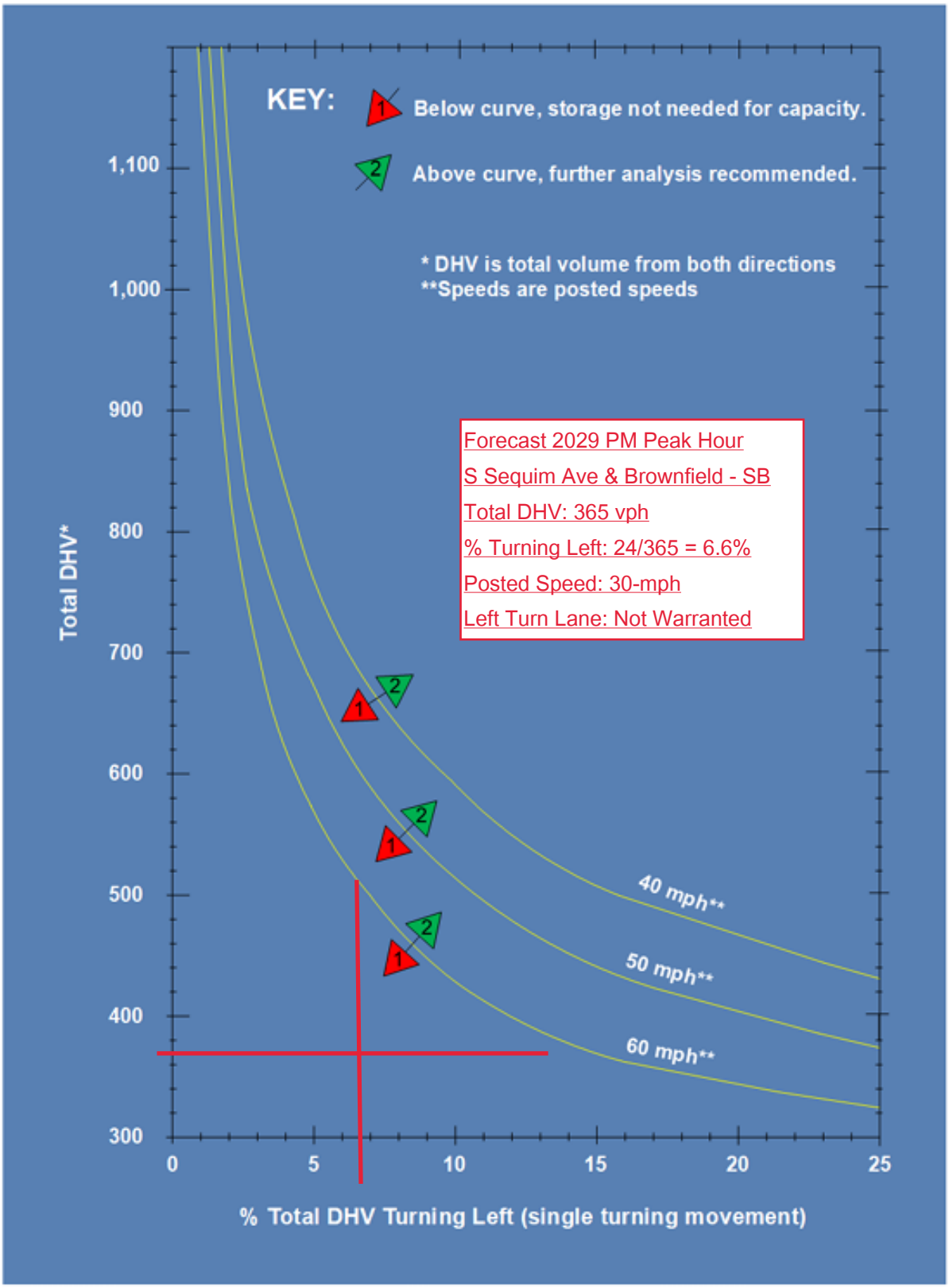
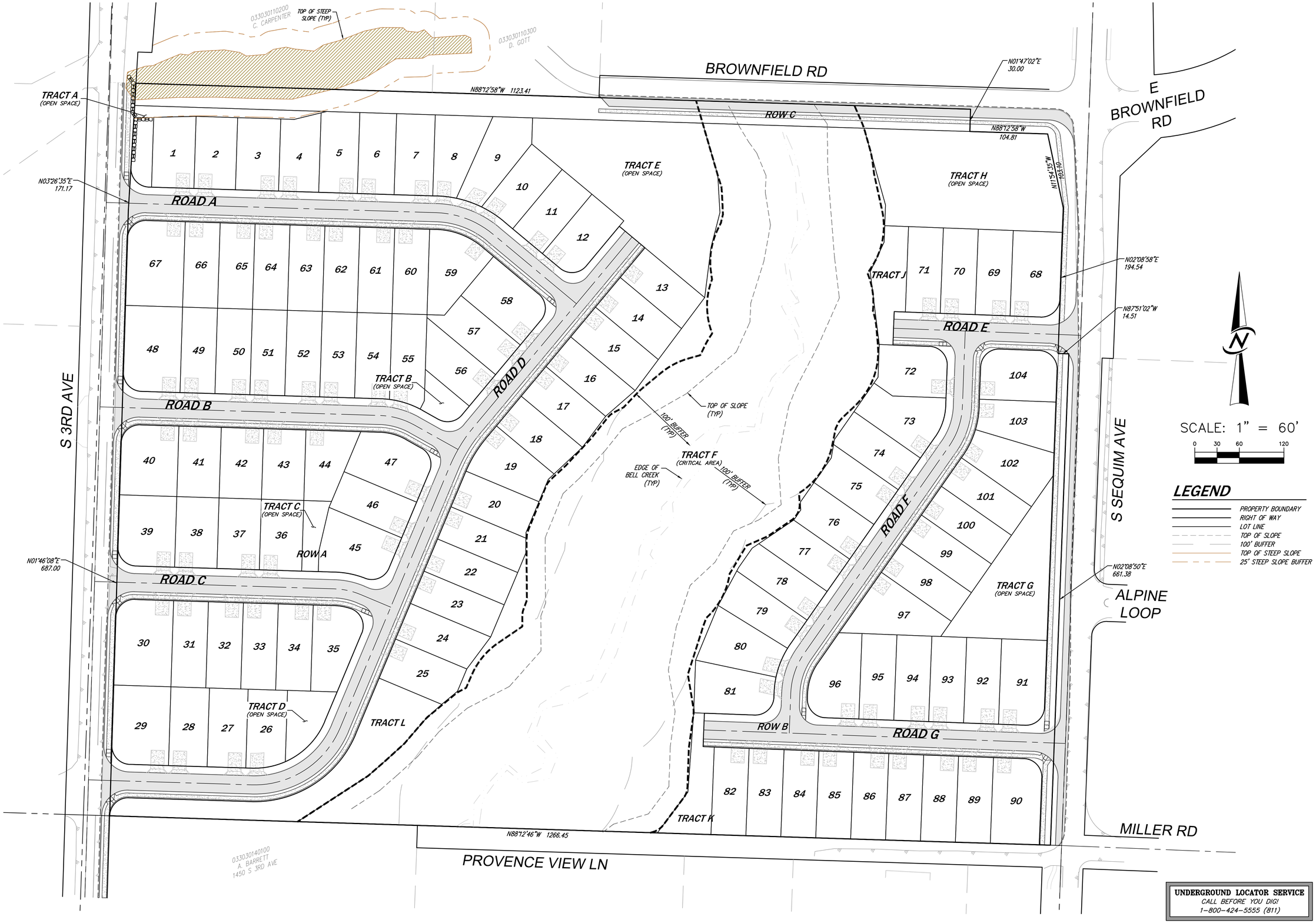


Exhibit 1310-7a Left-Turn Storage Guidelines: Two-Lane, Unsignalized



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BELL CREEK

BLUEFERN DEVELOPMENT
18300 REDMOND WAY, SUITE 120
REDMOND, WA 98052

DATE	SEE STAMP
DESIGNED	KATIE E. LANE, EIT
DRAWN	MARY E. MOORE
APPROVED	HOLLI H. HEAVRIN, P.E.
	HOLLI H. HEAVRIN, P.E. PROJECT MANAGER

SHEET C1.02 OF 14

PROJECT NUMBER 23255

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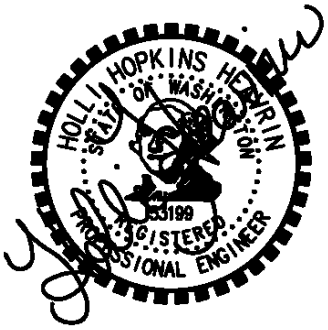
TECHNICAL MEMORANDUM

To: Nicholas A Dostie, P.E.
City Engineer/Deputy Director of Public Works
City of Sequim

From: Holli Heavrin, P.E.
Core Design, Inc.

Date: March 1, 2024

Re: Bell Creek – Miller Road Deviation Request



Pursuant to City of Sequim Municipal Code section 13.04.050 deviations from engineering standards may be approved by the city engineer or public works director. With this in mind, we submit the following for consideration.

Deviation Requested:
This request is for Miller Road to **not** be extended as a collector roadway in any capacity along the southern property line due to the existing conditions and future City infrastructure needs. Per the City of Sequim Transportation Master Plan, Miller Road (signed as Provence View Lane currently) is shown as a potential future extension to create future east/west connectivity between South Sequim Avenue and South 3rd Avenue. This is shown in Figure 7 of the TMP. While connectivity is the ultimate goal of the TMP, the location chosen does not appear to account for topographic and critical area realities, and future road usage considerations.

Site Information:
The Bell Creek Subdivision project site consists of one parcel in Sequim, WA with parcel ID number 033030110000. The site is addressed as 1212 South 3rd Avenue in the northeast quarter of the northeast quarter of Section 30, Township 30 N, Range 3 W, W.M. The project proposes to construct 104 single-family homes with associated roadways, open space, and utilities. Proposed access to the project site is via two connections to South Sequim Avenue on the east side of the site, and four connections to South 3rd Avenue on the west side of the site.

Arguments Against Miller Road Extension:
<u>Critical Area Impacts:</u>
The site, located between South 3rd Avenue and South Sequim Avenue is split by Bell Creek, classified as a Type II stream with an associated 100-foot buffer on either side. In addition, Bell Creek is situated at the bottom of a ravine with depths ranging from 20 to 35 feet and side slopes ranging between 5:1 to 2:1. The ravine width, and its associated top of slope setback, are often wider than the Bell Creek buffer. As shown in the attached exhibit, at the location of the

crossing the ravine is over 33 feet deep and nearly 370 feet wide. Given this, the location of the proposed Miller Road extension at this location is inappropriate for the developer and City as it would have to cross the creek and ravine with extensive critical area impacts, significant infrastructure costs (i.e. bridge), and future maintenance costs burdening local taxpayers.

Neighborhood Impacts:
Miller Road, south of the site, is currently an unimproved roadway only partially dedicated. This roadway serves as access to 3 parcels, one of which is Nourish Sequim, a Farm to Table restaurant that values its quiet access and farm-like setting. Installing roadway improvements, even limited half-street improvements, along the south side of the east half of the site would result in added traffic through this area. To protect these neighboring properties, the site plan has been laid out to provide a new neighborhood access road connection to South Sequim Avenue further north, creating lots that back up to the neighboring parcels rather than face them. The location of the new intersection and roadway that connects to South Sequim Avenue has been placed to meet the intersection separation requirement of city code from both Miller Road to the south and Alpine Loop to the North.

Usefulness:
While connectivity within the City is important, the through connection proposed at Miller Road will not serve a significant role in the future road network as seen on the Proposed Future Roadway Network plan (Figure 7 of the TMP). This connection is not referenced within the TMP except on this conceptual plan and this connection is largely redundant due to the presence of West Brownfield Road roughly 1,000 ft to the north (to be realigned in the future), placement of existing bridges over SR 101, and existing on/off ramps to SR 101. Traffic utilizing this bridge will likely be limited to residents south of this subdivision attempting to access downtown or SR 101, but the existing road network of South Sequim Avenue, South 3rd Avenue, and West Brownfield Road already provides more direct access. This is reinforced by the fact that this connection is not included within the City's 20 Year Plan. Additionally, the TMP does not call for Miller Road to be extended farther west than South 3rd Avenue in the future. It is extremely unlikely for the properties west of South 3rd Avenue at this location to be redeveloped in the future as a condo community and 2006 single family subdivision already are efficient uses of this R4-8 land. If the intent is to provide a more cohesive east-west connection south of SR 101 this may be better accomplished slightly further south, perhaps at West Norman Street or Reservoir Road, where longer direct routes can be established and the length of a bridge could be shorter due to the narrower width of the ravine.

Future Considerations:
In its existing condition, Miller Road runs east-west and intersects with South Sequim Avenue. At the intersection of South Sequim Avenue, traffic navigates a ninety-degree turn from Miller Road westbound, to South Sequim Avenue northbound. During a site reconnaissance, it was found that this turn doesn't have proper signage to alert approaching vehicles of the upcoming movement and would benefit from additional signage, educating approaching vehicles about the turn ahead and advised speed. This mitigation is appropriate for the existing condition of Miller Road and the project is happy to provide additional signage for vehicle safety.

Furthermore, the applicant is willing to grant a condition of approval allowing future ROW dedication between the current Road G stub, across Bell Creek in Tract F and open space Tract L, to connect to Road D. This dedication could be requested in the future by the City should the need for another crossing of Bell Creek be required, and a possible alignment is depicted below.

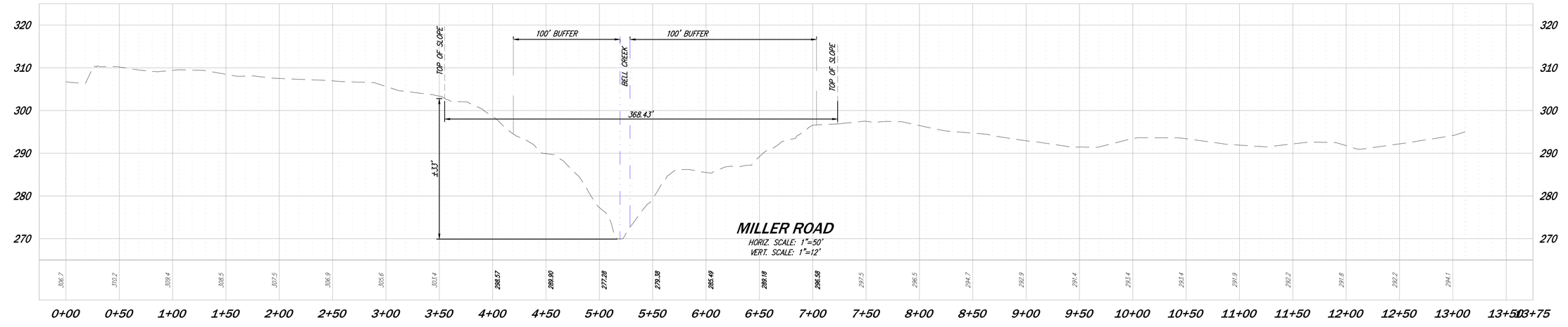
Summary:
Given the aforementioned critical area, access, and neighboring properties concerns, we respectfully request deviation approval to eliminate the Miller Road connection between South Sequim Avenue and South 3rd Avenue. This requested deviation reflects sound engineering practices and protects the safety of all future residents and neighbors. In addition, the project is willing to include additional signage, which will be designed by the project traffic engineer and approved by the city prior to installation, to benefit the Miller Road and South Sequim Avenue intersection and provisions for a future right-or-way dedication through Tract F if requested.

Please contact me with any comments and questions at (425) 885-7877 or via email at hheavrin@coredesigninc.com.

Thank you,
Holli Heavrin, P.E.
Core Design, Inc.

NE1/4 OF THE NE1/4, SEC. 30, TWP. 30 N., RGE. 3 W., W.M.





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DATE
NO. REVISIONS

CORE DESIGN
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING
12100 NE 195th St, Suite 300 Bothell, Washington 98011 | 425.885.7877

MILLER ROAD EXHIBIT
BELL CREEK

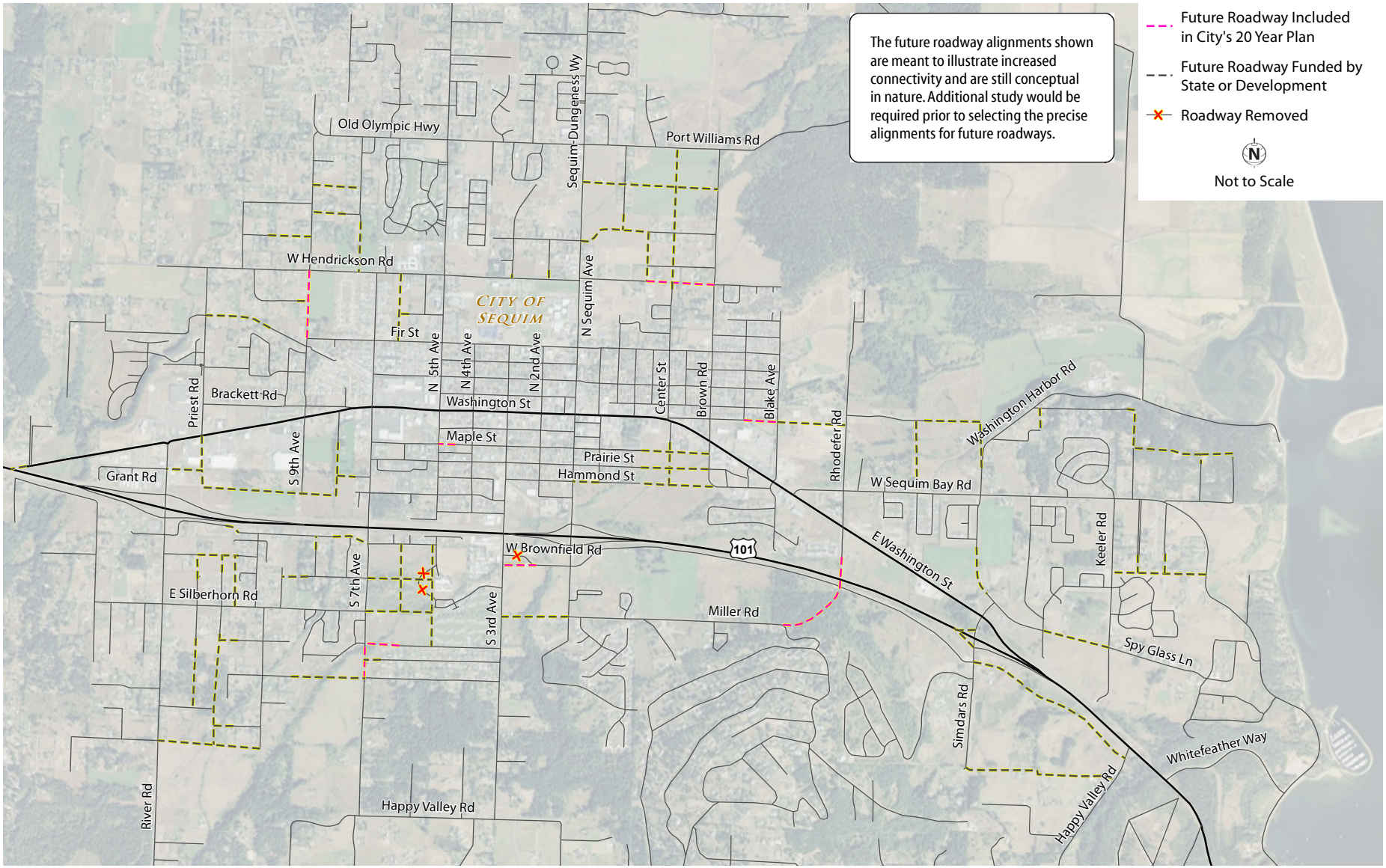
BLUEFERN DEVELOPMENT
18300 REDMOND WAY, SUITE 120
REDMOND, WA 98052

DATE SEE STAMP
DESIGNED
DRAWN
APPROVED
HOLLI H. HEAVRIN, P.E.
PROJECT MANAGER

SHEET OF

PROJECT NUMBER
23255

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Proposed Future Roadway Network

FIGURE 7

NE1/4 OF THE NE1/4, SEC. 30, TWP. 30 N., RGE. 3 W., W.M.

BROWNFIELD RD

E BROWNFIELD RD

S 3RD AVE

S SEQUIM AVE

PROVENCE VIEW LN

MILLER RD

ALPINE LOOP

ROAD A

ROAD B

ROAD C

ROAD D

ROAD E

ROAD F

ROAD G

ROW A

ROW B

ROW C

TRACT A (OPEN SPACE)

TRACT B (OPEN SPACE)

TRACT C (OPEN SPACE)

TRACT D (OPEN SPACE)

TRACT E (OPEN SPACE)

TRACT F (CRITICAL AREA)

TRACT G (OPEN SPACE)

TRACT H (OPEN SPACE)

TRACT J (OPEN SPACE)

TRACT K (OPEN SPACE)

TRACT L (OPEN SPACE)

TRACT M (OPEN SPACE)

SEE SITE SECTION A-A SHEET C1.12

SEE SITE SECTION B-B SHEET C1.12

033030110200 C. CARPENTER

033030110300 D. GOTT

033030140100 A. BARRETT 1450 S 3RD AVE

TOP OF STEEP SLOPE (TYP)

25' STEEP SLOPE BUFFER (TYP)

TOP OF SLOPE (TYP)

OHW OF BELL CREEK (TYP)

100' BUFFER (TYP)

25' TOP OF SLOPE SETBACK (TYP)

45.00 ft

Future 45 ft ROW Dedication (as needed)

N88°12'58"W 1123.41

N01°47'02"E 30.00

N88°12'58"W 104.81

N11°54'35"W 101.01

N02°08'58"E 194.54

N87°51'02"W 14.51

N02°08'50"E 661.38

N88°12'46"W 1266.45

N03°26'35"E 171.17

N01°46'08"E 687.00

SCALE: 1" = 60'

0 30 60 120

LEGEND

- PROPERTY BOUNDARY
- RIGHT OF WAY
- LOT LINE
- TOP OF SLOPE
- TOP OF SLOPE SETBACK
- 100' BUFFER
- TOP OF STEEP SLOPE
- 25' STEEP SLOPE BUFFER

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DATE | NO. | REVISIONS

2/26/24

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CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
PLANNING
SURVEYING
12100 NE 195th St, Suite 300 Bothell, Washington 98011 | 425.885.7877

OVERALL SITE PLAN
BELL CREEK

BELL CREEK INVESTMENTS, LLC
9307 BAY SHORE DRIVE NW, SUITE 307
SILVERDALE, WA 98383

DATE	SEE STAMP
DESIGNED	KATIE E. LANE, EIT
DRAWN	MARY E. MOORE
APPROVED	HOLLI H. HEAVRIN, P.E.
	HOLLI H. HEAVRIN, P.E.
	PROJECT MANAGER

SHEET	OF
C1.02	28

PROJECT NUMBER
23255

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