

April 13, 2018

Project #: 22350.0

Gary Albrecht and Laurie Lebowsky
Clark County Community Planning
1300 Franklin Street, Third Floor
Vancouver, WA 98660

RE: UPDATED Traffic Study for Surface Mining Overlay Expansion for Yacolt Mountain Quarry – Clark County

Dear Mr. Albrecht and Ms. Lebowsky,

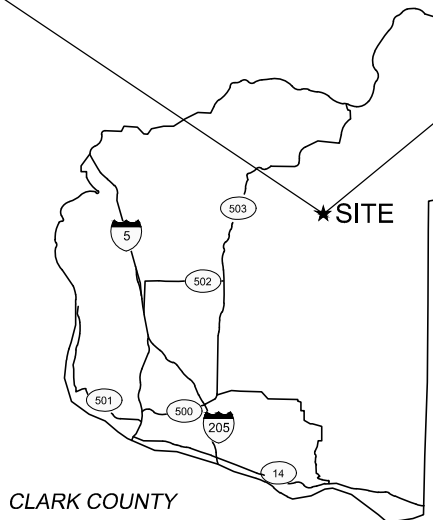
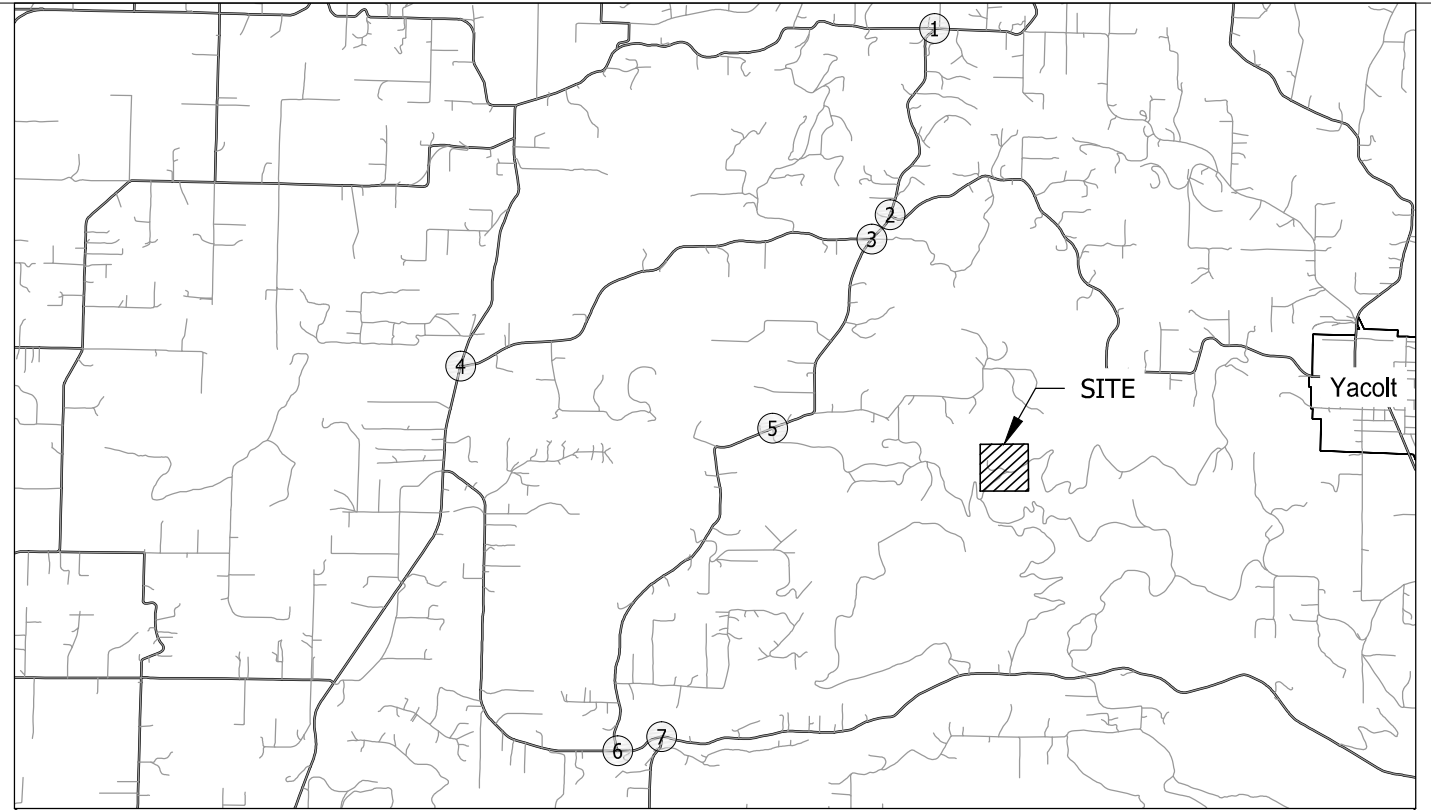
This letter presents the UPDATED results of a Traffic Impact Analysis (TIA) prepared to support Storedahl Properties, LLC's proposal to expand the *Surface Mining Overlay District* covering the Yacolt Mountain Quarry in Clark County, WA. The Yacolt Mountain Quarry is located just over two miles west of the City of Yacolt, and is accessed from a private road connection to NE Kelly Road, west of NE Yacolt Mountain Road. Figure 1 illustrates the site vicinity map.

As shown in exhibits provided in Attachment "A" of this study, the properties encompassed the quarry area have a Clark County Comprehensive Plan Designation of *FR-1* and a Zoning designation of *FR-80* (Forest Zone). In addition, there is a *Surface Mining Overlay District* boundary that defines where quarry operations can occur on specific properties. The current *Surface Mining Overlay District* boundary is approximately 135 acres in size, and the proposed land use amendment would expand this boundary further by approximately 107 acres. The location and properties contained in this new expansion area are shown in the exhibits provided in Attachment "A" (See southern Parcels 230301000 and 230061000 in attachment figures 1 through 4).

The results of this TIA indicate that the proposed *Surface Mining Overlay District* expansion can occur while maintaining acceptable traffic operations and safety at all study intersections. Additional details of the study methodology, findings, and recommendations are provided herein.

SCOPE OF THE REPORT

This analysis identifies the transportation-related impacts associated with the proposed *Surface Mining Overlay* expansion covering the Yacolt Mountain Quarry and was prepared in accordance with Clark County's transportation impact analysis requirements. The study scope and overall study area for this project were selected based on a review of the transportation planning comments contained in the November 3, 2017 pre-application conference report, our review of the original 2001 TIA prepared for the Yacolt Mountain Quarry conditional use permit (Reference 1), and detailed scoping discussions with Clark County Planning staff.



- STUDY INTERSECTION

Site Vicinity Map
Clark County, WA

Figure
1

As required under Clark County Code 40.350.020, Transportation Concurrency Management, this analysis was prepared to address the following transportation issues:

- Existing land use and transportation system operating and safety conditions within the site vicinity during the weekday AM and PM peak hours;
- Planned/funded developments and transportation improvements in the study area;
- A 19-year traffic forecast of year 2037 weekday AM and PM peak hour conditions at all study intersections, assuming no further expansion of the *Surface Mining Overlay*;
- Trip generation and distribution estimates of theoretical development scenarios on the subject properties, assuming development under the current *FR-80* zoning and development under the expanded *Surface Mining Overlay* boundary;
- Year 2037 total traffic operating conditions at all study intersections during the weekday AM and PM peak hours, assuming development under current *FR-80* zoning and under the proposed *Surface Mining Overlay* expansion;
- Volume-to-capacity ratios for all applicable Clark County concurrency roadway segments;
- Vehicle queuing needs at key study intersections and primary site access; and,
- Identification of potential deficiencies and mitigation measures.

Study Intersections

The following 7 study intersections were identified in the original TIA for the Yacolt Mountain Quarry conditional use permit and through collaboration with Clark County Planning staff:

1. SR-503/NE Gabriel Road
2. SR-503/NE Kelly Road
3. NE Kelly Road/NE Garner Road
4. NE Kelly Road/NE Gabriel Road
5. NE Kelly Road/NE Longview Fiber Road (site access)
6. NE Kelly Road/NE Lucia Falls Road
7. NE 172nd Avenue/NE Lucia Falls Road

ANALYSIS METHODOLOGY

Performance Measures

Per Clark County standards, the level-of-service (LOS) performance measure was used to evaluate traffic operations at the study intersections. The volume-to-capacity (v/c) ratio was also used to evaluate roadway segments for the concurrency analyses. A brief description of each performance measure is provided below:

- *Level-of-service* (LOS) ranks intersections from “A” to “F” based on the average control delay experienced by motorists. LOS “A” reflects relatively low vehicle delay times (10 seconds or less) while LOS “F” reflects relatively high vehicle delay times (over 50 seconds at unsignalized intersections and over 80 seconds at signalized intersections), which is considered unacceptable to most motorists. A more detailed description of level-of-service, and how it is measured is provided in *Attachment “B.”*
- *Volume-to-capacity* (v/c) is a ratio that compares the volume of traffic on a particular roadway segment to the theoretical capacity of that roadway segment to accommodate traffic. A v/c ratio of 1.0 indicates a roadway segment that is operating at capacity. A v/c ratio over 1.0 indicates that the capacity of the roadway segment has been (or would be) exceeded.

All LOS analyses described in this report were performed in accordance with the procedures stated in the *2010 Highway Capacity Manual* (HCM 2010 – Reference 2) for the unsignalized stop-controlled study intersections. All LOS analyses used the peak 15-minute flow rate that occurred during the individual weekday AM and PM peak hours of each study intersection. Using the peak 15-minute flow rate of each intersection’s individual peak hour ensures that the analyses are based on a worst-case scenario. For this reason, the analyses reflect conditions that are only likely to occur for 15 minutes out of each peak hour. The transportation system will likely operate under conditions better than those described in this report during all other time periods.

Facility Performance Standards

Clark County Operating Standards

Clark County Code (CCC) Section 40.350.020.G defines the County’s performance standards for roadway segments as well as signalized and unsignalized intersections.

Roadway Segments

Per CCC Section 40.350.020.G.1.a: *“The maximum volume to capacity ratio for each roadway segment shall not exceed nine-tenths (0.9), when measured independently for each direction of travel...the capacity [of the roadway] shall be based on the factors described in Table 40.350.020-1, Roadway Capacities.”*

Signalized Intersections

Per CCC Section 40.350.020.G.1.b: *“Individual movements at each signalized intersection of regional significance in the unincorporated county shall not exceed an average of two (2) cycle lengths or two hundred forty (240) seconds of delay (whichever is less).”*

Unsignalized Intersections

Per CCC Section 40.350.020.G.1.c: *“All unsignalized intersections of regional significance in the unincorporated county shall achieve LOS E standards or better (if warrants are not met). If warrants are*

met, unsignalized intersections of regional significance shall achieve LOS D standards or better. Intersection control or mitigation of unsignalized intersections shall be at the discretion of the Public Works Director and shall not obligate the county to meet this LOS standard. However, proposed developments shall not be required to mitigate their impacts in order to obtain a concurrency approval unless:

- (1) The proposed development adds at least five (5) peak hour trips to a failing intersection approach; and
- (2) The worst movement on the failing approach is worsened by the proposed development. In determining whether the movement is worsened, the Public Works Director shall consider trip volume, delay, and any other relevant factors.”

WSDOT Operating Standards

There are two study intersections along SR-503, which is operated and maintained by the Washington State Department of Transportation (WSDOT). WSDOT enforces LOS standards for highways of statewide significance (HSS) based on Revised Code of Washington (RCW) 47.06.140(2). However, regional transportation planning organizations (RTPOs) and WSDOT jointly develop and establish LOS standards for non-HSS regionally significant facilities based on RCW 47.80.030(1)(c). SR-503 is designated “rural” in this portion of Clark County and it is not a highway of statewide significance based on the WSDOT Highway System Plan (Reference 3). Therefore, as a regionally significant facility, Clark County Concurrency performance standards apply at both study intersections along SR-503. This was confirmed with Clark County traffic engineering staff.

EXISTING CONDITIONS

The existing conditions analysis identifies the site conditions and the current physical and operational characteristics of roadways within the study area. The purpose of this section is to provide a basis for comparison to future conditions.

The site and surrounding study area was visited and inventoried in March 2018. At that time, information was collected regarding site conditions, adjacent land uses, existing traffic operations, and transportation facilities in the study area.

Site Conditions

The current *Surface Mining Overlay District* boundary encompassing the Yacolt Mountain Quarry is approximately 135 acres in size. The proposed expansion, at approximately 107 acres, involves two vacant land parcels as shown in the exhibits in Attachment “A”. Both parcels have a Comprehensive Plan Designation of *FR-1* and a Zoning designation of *FR-80 (Forest Zone)*.

Adjacent Land Uses

Immediately north of the two subject parcels is the Yacolt Mountain Quarry, which is a commercial quarry and rock crushing operation approved by Clark County in 2002 through a Conditional Use Permit

process. For information purposes, a summary of current quarry operations, including employee count, current hauling routes, daily traffic volume demand, seasonal traffic patterns, and vehicle classifications is provided in Attachment “C”. Also, a 24-hour directional traffic count was performed at the quarry entrance on Longview Fiber Road (private road) on a mid-week day in March of 2018. The results of this count are provided in Attachment “D”.

As part of final CUP approval of the Yacolt Mountain Quarry (CPZ 2002- 0009), Clark County established additional stipulations for the quarry that limit site trip generation characteristics and related business hours of operation. These included the following:

- *Condition N10: No more than 30 truck trips (one-way) per hour shall be allowed in and out of the mine in accordance with the truck noise study.*
- *Condition Q1 It shall be noted on the final site plan that truck hauling from the quarry shall be limited to the following hours:*
 - *May to October hauling hours: (Monday-Friday, 7am-6pm)*
 - *November to April hauling hours: (Monday-Friday, 7am-5pm)*
 - *Year Round: (Saturdays, 7am-4pm)*
 - *Sundays and Legal Holidays: (No Hauling)*
 - *Extended hauling hours shall be limited to 18 working days per year between 6 and 8pm.*
- *Condition Q2: Hours of operation for equipment maintenance, onsite activities, and other internal operations shall fall between 6am and 8pm as allowed in CCC 18.329.030(F).*

Other land uses in the site vicinity besides the quarry consist of low density signal family homes on large land parcels, with some agricultural and forest-related uses all around the Yacolt mountain.

Transportation Facilities

Table 1 summarizes the characteristics of key transportation facilities within the site vicinity.

Table 1: Existing Roadway Facilities

Roadway	Classification ¹	Cross Section	Speed Limit (miles per hour)	Sidewalks?	Bicycle Lanes?	On-Street Parking?
SR-503	State Route Rural Arterial (W)	2 lane	50	No	No	No
NE Gabriel Road	Rural Minor Collector (Rm-2)	2 lane	Not Posted ⁴	No	No	No
NE Kelly Road	Rural Minor Collector (Rm-2)	2 lane	Not Posted ⁴	No	No	No
NE Garner Road	Rural Minor Collector (Rm-2)	2 lane	Not Posted ⁴	No	No	No
NE Longview Fiber Road	Private Road	2 lane	Not Posted	No	No	No
NE Lucia Falls Road	Primary Arterial (S) ² Rural Major Collector (R2) ³	2 lane	40	No	No	No
NE 172 nd Avenue	Primary Arterial (S)	2 lane	Not Posted ⁴	No	No	No

¹ Based on Clark County Arterial Atlas

² East of NE 172nd Avenue

³ West of NE 172nd Avenue

⁴ Rural roadways with no posted speed automatically have an assumed posted speed of 50 mph on County roadways, per RCW 46.61.400.

Roadway Facilities

SR-503 is the primary roadway servicing this region of Clark County. SR-503 extends northward from its intersection with SR-500 & NE 117th Avenue in Vancouver, carrying traffic between the Vancouver urban area and North County through Battle Ground. SR-503 further extends into Cowlitz County. Other roadways addressed in this study and utilized by traffic associated with the Yacolt Mountain Quarry include NE Gabriel Road, NE Kelly Road, NE Lucia Falls Road, and NE 172nd Avenue. These roadways are either Rural Minor Collectors or Primary Arterials. NE Longview Fiber Road is a private road providing direct access to the quarry site. It facilitates two-way travel and is paved.

Figure 2 illustrates the existing lane configurations and traffic control devices at the study intersections.

Transit Facilities

Local transit service is not provided in the immediate vicinity of the Yacolt Mountain Quarry. However C-TRAN does provide limited fixed route bus service to the City of Yacolt along Route 47 (Battle Ground/Yacolt). Route 47 proceeds south from Yacolt along Railroad Avenue, west on Lucia Falls Road, and eventually into Battle Ground. From there, the route proceeds west to I-5 and then south to connections with the 99th Street Transit Center, Clark College, and then downtown Vancouver. Service is provided on weekdays with one stop leaving at 6:22 AM and returning at 6:23 PM.

Traffic Volumes and Peak Hour Operations

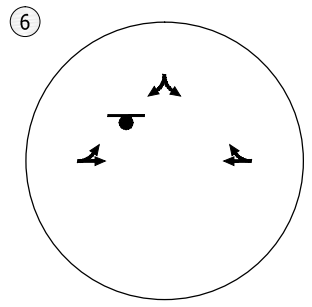
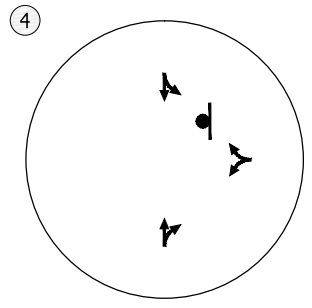
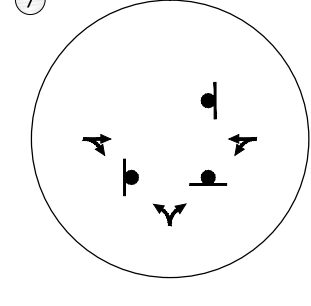
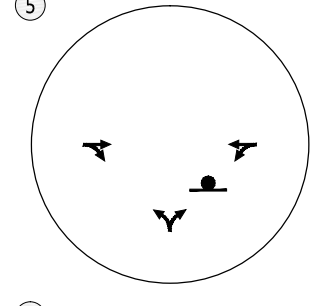
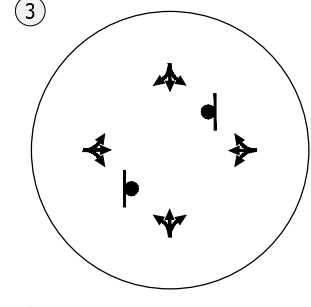
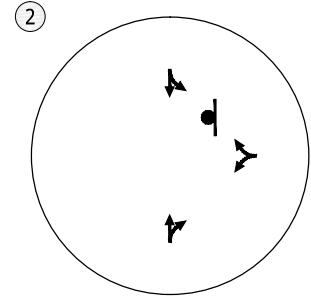
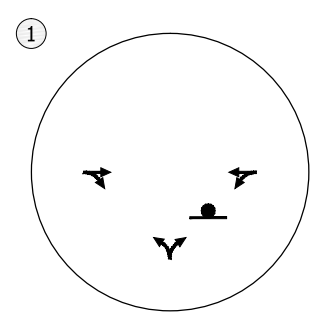
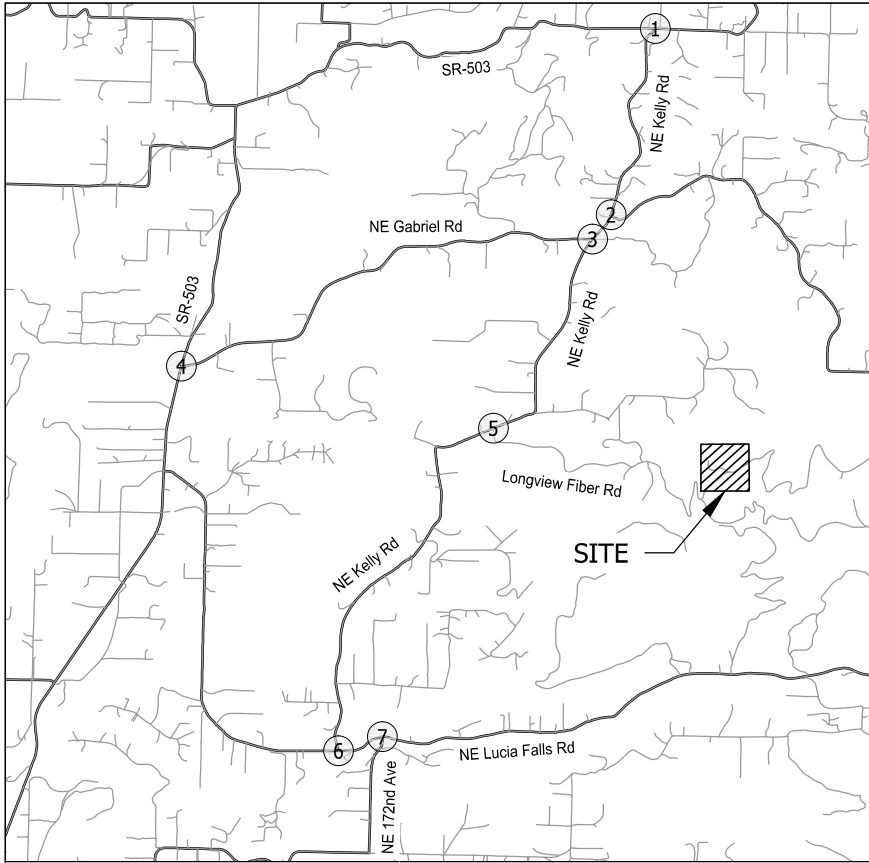
Manual turning movement counts were collected on Thursday, March 1, 2018 during the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. Counts were then adjusted upwards using a seasonal factor to reach existing traffic levels that represent the average day of the average month. This adjustment factor of 1.019 was developed using guidance provided by the Southwest Washington Regional Transportation Council (RTC). Also, the independent peak hours of each study intersection were utilized in this analysis, as opposed to a system peak hour. Figures 3 and 4 summarize the adjusted current year 2018 turning movement volumes for the weekday AM and PM peak hours at all study intersections. *Attachment "E" contains the traffic count worksheets.*

Existing Traffic Operations

Figures 3 and 4 also summarize analysis results for the study intersections under existing traffic conditions of the weekday AM and PM peak hours, respectively. As shown, all study intersections currently operate at acceptable levels of service during the weekday AM and PM peak hours per their applicable performance standards. *Attachment "F" includes the existing traffic conditions worksheets.*

Traffic Safety

The crash histories of all study intersections were reviewed in an effort to identify potential safety issues within the study area. Officer-reported crash records were obtained from WSDOT for the period from January 1, 2013 to December 31, 2017. The data includes the total number and severity of all reported crashes at the intersections over the five-year period. *Attachment "G" contains the crash data obtained from WSDOT.*

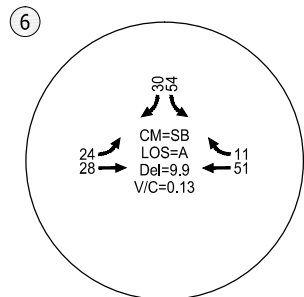
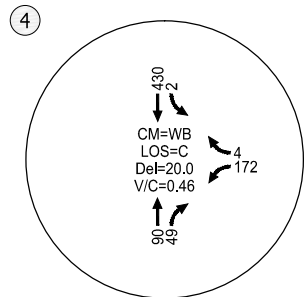
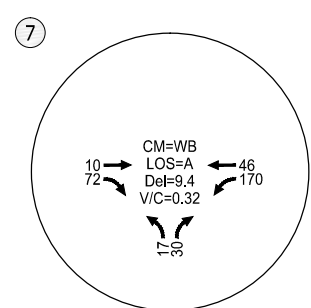
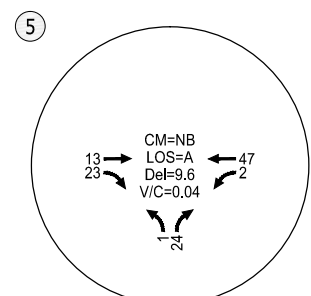
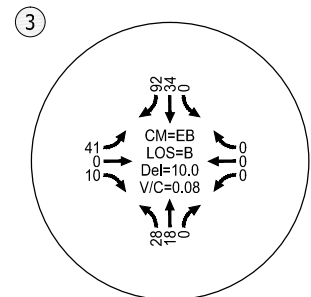
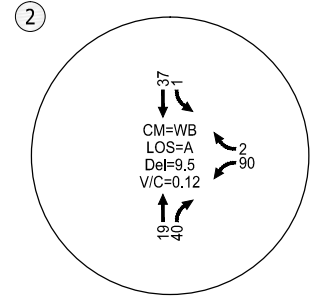
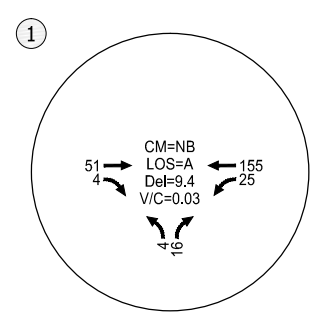
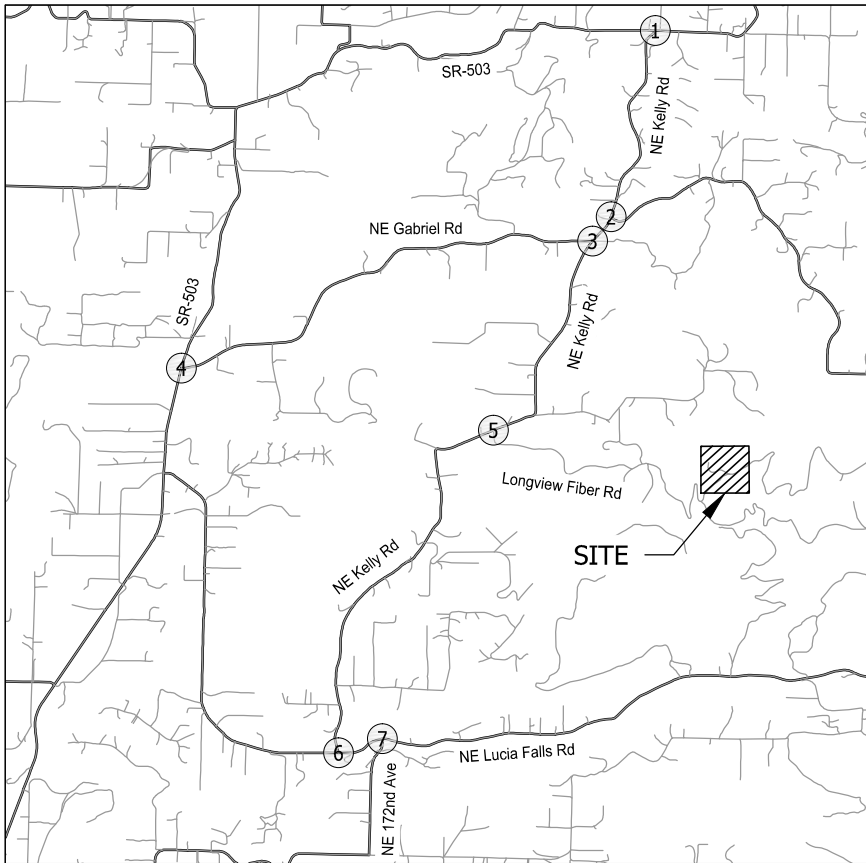


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Existing Lane Configurations
and Traffic Control Devices
Clark County, WA

Figure
2

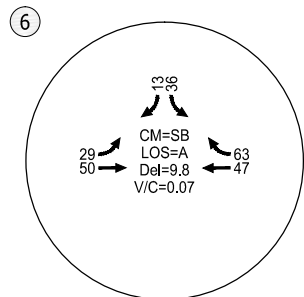
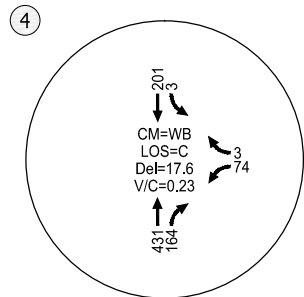
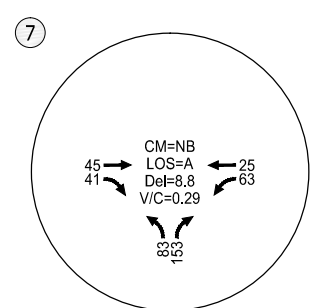
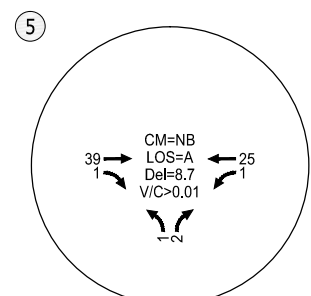
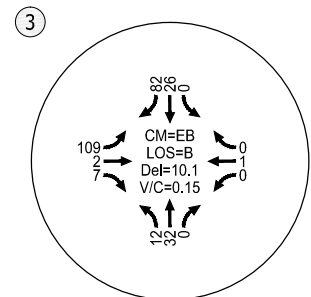
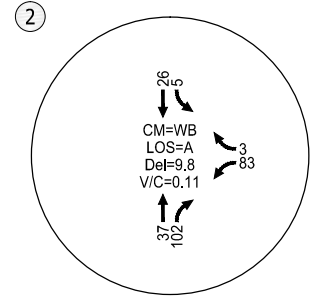
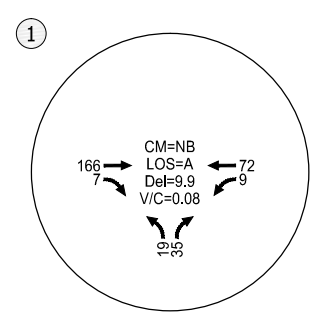
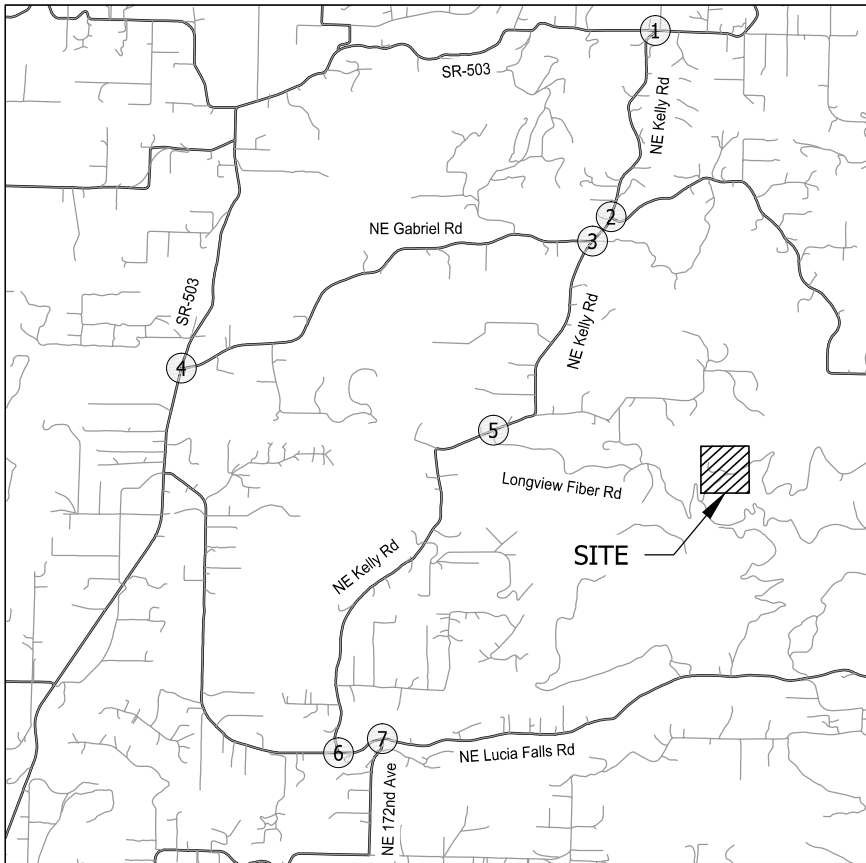
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CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION DELAY(SIGNALIZED)/
 CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Existing Traffic Conditions
 Weekday AM Peak Hour
 Clark County, WA

Figure
 3



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION DELAY(SIGNALIZED)/
 CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

Existing Traffic Conditions
 Weekday PM Peak Hour
 Clark County, WA

Figure
 4

Table 2 summarizes the crash data and the crash rate per million entering vehicles (MEV). Clark County generally considers a crash rate greater than 1.00 crashes/MEV to be an indicator that a potential geometric or operational issue may exist and that further evaluations should be considered.

Table 2: Study Intersection Crash History (January 2013 to December 2017)

Intersection	Crash Type					Crash Severity			Total Crashes	Crash Rate ¹ /MEV
	Angle	Turn	Ditch/ Embankment	Fixed Object	Head- on	PDO ²	Injury	Fatal		
SR-503/NE Kelly Rd	0	0	0	1	0	0	1	0	1	0.18
NE Kelly Rd/NE Garner Rd	0	0	2	0	0	2	0	0	2	0.43
NE Kelly Rd/NE Gabriel Rd	1	0	1	1	0	1	2	0	3	0.61
SR-503/NE Gabriel Rd	3	2	0	0	1	5	1	0	6	0.38
NE Kelly Rd/NE Lucia Falls Rd	0	0	4	0	0	3	1	0	4	0.92
NE Lucia Falls Rd/NE 172 nd	1	1	2	1	0	4	1	0	5	0.67

¹ (5-Year Total Crashes x 1,000,000) / (Weekday PM Peak Hour Volume x 10 x 365 days/year x 5 years)

² Property Damage Only

As shown in the table above, the four study intersections reviewed have a crash rate below 1.00 crashes/MEV over the 5-year reported history. Also no vehicle crashes were reported at the Longview Fiber Road access with NE Kelly Road.

Concurrency Corridor V/C Ratios

Existing traffic volumes were compared with adopted Clark County capacity thresholds for corridor segments to assess compliance with concurrency requirements. Table 3 summarizes the existing bi-direction traffic volumes along the SR-503, at the higher-volume legs of the two study intersections during the weekday AM or PM peak hour (whichever is greater) along with the single direction roadway capacity as specified under Clark County Code 40.350.020 Transportation Concurrency Management and Table 40.350.020-1. As shown in Table 3, all of the concurrency corridor segments currently operate below a V/C ratio of 0.90.

Table 3: Existing Traffic Volumes and Roadway Capacities (SR-503)

Count Location	Road Classification ¹	Single Direction Capacity/Hour ²	Maximum Volume (vph) ³	V/C Ratio
SR-503				
South of NE Gabriel Road (SB)	Rural Arterial (W)	800 ⁴	578	0.72
South of NE Gabriel Road (NB)			595	0.74
East of NE Kelly Road (EB)	Rural Arterial (W)	800 ⁴	201	0.25
East of NE Kelly Road (WB)			180	0.23

¹ Source: Clark County Arterial Atlas, 2013 (Reference 4)

² Per Clark County Code: For roadways not fully built-out to county standards, the capacity shall be determined based on the current roadway condition. For roadways with lane widths twelve (12) feet and greater, and with paved shoulder widths two (2) feet and greater, the lane capacity shall be eight hundred (800) vehicles per hour. For roadways with lane widths between eleven (11) and twelve (12) feet and with paved shoulder widths two (2) feet and greater, the lane capacity shall be seven hundred (700) vehicles per hour. For roadways with lane widths less than eleven (11) feet, the lane capacity shall be six hundred (600) vehicles per hour.

³ vph: vehicles per hour, based on turning movement counts collected at the study intersections.

⁴ Based on existing 2-lane cross-section

TRANSPORTATION IMPACT ANALYSIS

The transportation impact analysis identifies how the study area's transportation system would operate in the year 2037, which is two years past the planning horizon of the Clark County RTP. The impact of traffic generated by the proposed development was examined as follows:

- Planned/funded developments and transportation improvements in the site vicinity were identified and reviewed;
- A 19-year traffic forecast of year 2037 weekday AM and PM peak hour conditions was estimated for all study intersections, assuming no further expansion of the *Surface Mining Overlay*;
- Trip generation and distribution estimates were prepared of theoretical development scenarios on the subject properties, assuming development under the current *FR-80* zoning and development under the expanded *Surface Mining Overlay* boundary;
- Year 2037 total traffic operating conditions were estimated for all study intersections during the weekday AM and PM peak hours, assuming development under current *FR-80* zoning and under the proposed *Surface Mining Overlay* expansion;
- Future link volumes and volume-to-capacity ratios were reviewed on applicable Clark County concurrency roadway segments (SR-503).
- Vehicle queuing needs were assessed at key study intersections and the primary site access; and,
- Potential capacity and/or safety deficiencies were identified along with appropriate mitigation measures.

Planned Developments and Transportation Improvements

Kittelson & Associates reviewed Clark County's Transportation Improvement Program (TIP, Reference 5) and the 2014 Update of the Regional Transportation System Plan for Clark County (Reference 6) and found no transportation improvements expected to be funded or complete in the site vicinity prior to the planning horizon year selected for this study.

Forecast Year 2037 Traffic Volumes

The 2014 Update of the Regional Transportation Plan for Clark County establishes a planning horizon year of 2035 for assessing long-term traffic conditions. However, per scoping discussions with Clark County Planning staff, a planning horizon year of 2037 was selected for this study to achieve a more conservative estimate of future traffic levels.

For this study, future traffic conditions were estimated using travel demand model information provided by Southwestern Washington RTC for the weekday AM and PM peak hours. RTC data consisted of link volume plots for baseline year 2010 and planning horizon year 2035. From this data, annual traffic growth rates could be determined using the roadway link approach volumes at each

study intersection. These annual growth rates were then transformed into 19-year total traffic growth rates that were applied to existing 2018 traffic in order to achieve a 2037 forecast. *Calculations used to develop these future traffic growth rates are provided in Attachment "H" along with the RTC model data.* However, also included in this attachment are calculations showing how historic traffic growth rates along most of the study area roadways have been much lower than future RTC model projections. These calculations were made by comparing the year 2000 traffic counts from the former Yacolt Mountain Quarry TIS with current year 2018 counts taken for this study, and from an accounting of historical ADT volume data collected by Clark County for SR-503 over the past 15 years.

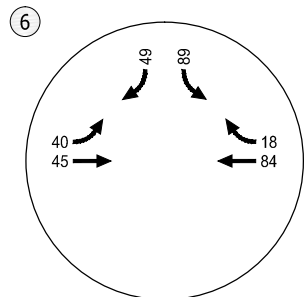
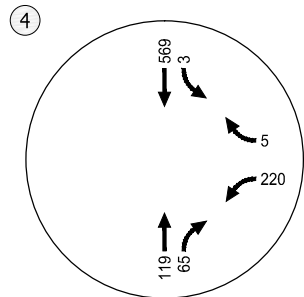
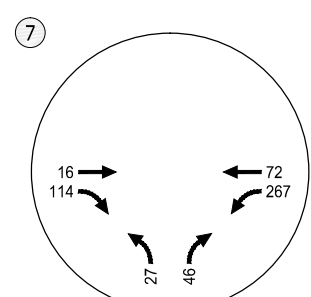
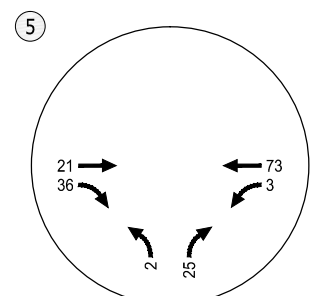
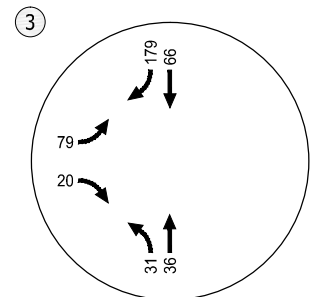
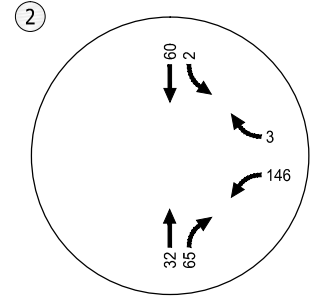
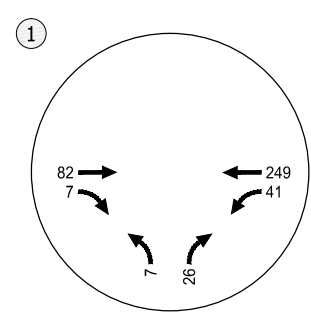
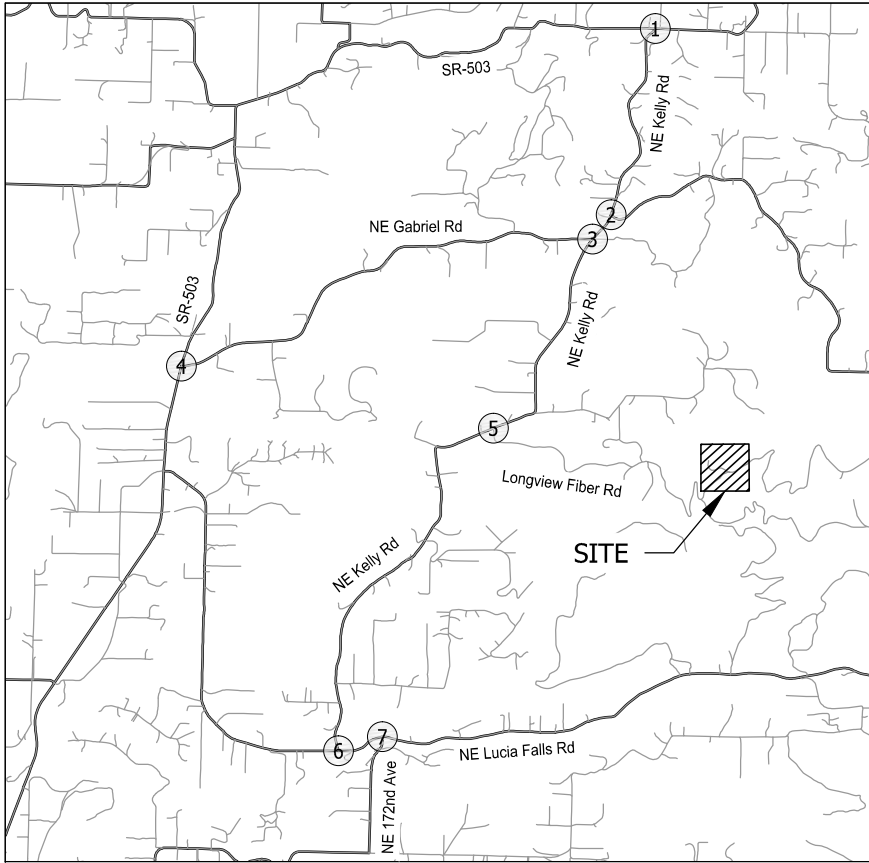
It should be emphasized here that prior to applying annual growth rates determined from the RTC model, an adjustment was made to remove trips associated with the Yacolt Mountain Quarry from the busiest study intersection at SR-503/Gabriel Road. Based on a review of 24-hour data collected at the site entry and the turn movement counts collected at the Longview Fiber Road/Kelly Road intersection, and from evidence provided by the quarry owner and operator about primary hauling routes, it was determined that 24 weekday AM peak hour vehicle trips should be removed from the westbound left-turn movement at the SR-503/Gabriel Road intersection. This was done so as not to double-count, or compound, the traffic on this approach that is due to existing quarry trips, which are fixed. Once the growth rates were applied, these existing 24 trips were added back into the long-range forecast. This change was not needed for the weekday PM peak hour because quarry trips were observed to be very low in the 4:00-6:00 PM period.

Figures 5 and 6 illustrate the resulting year 2037 traffic forecast volumes at the study intersections during the weekday AM and PM peak hours, respectively. Again, the traffic volumes shown do not reflect any specific development on the subject parcels adjacent to the Yacolt Mountain Quarry.

Proposed Land Use Amendment

The two subject parcels involved in the proposed expansion to the *Surface Mining Overlay District* are adjacent to and south of the Yacolt Mountain Quarry. They currently have a Comprehensive Plan Designation of *FR-1* and a Zoning designation of *FR-80 (Forest Zone)*. The proposed land use amendment would expand the *Surface Mining Overlay District* that now covers the quarry, enlarging the boundary from approximately 135 acres to 242 acres, for an increase of approximately 107 acres.

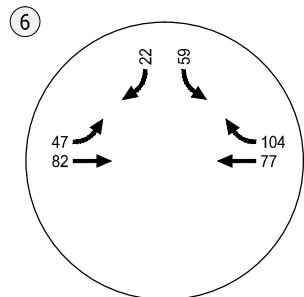
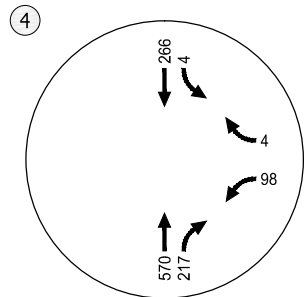
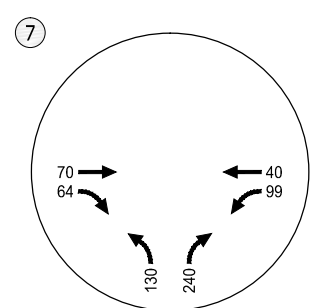
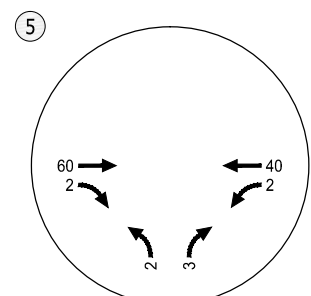
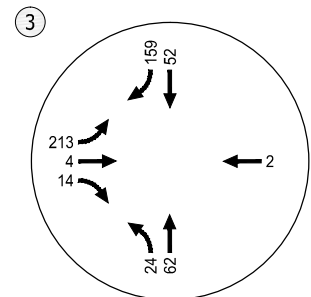
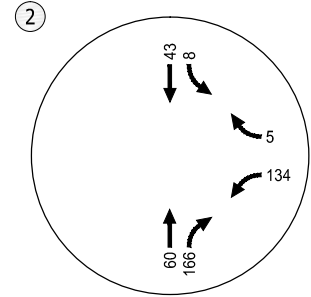
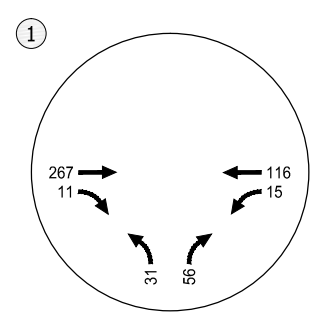
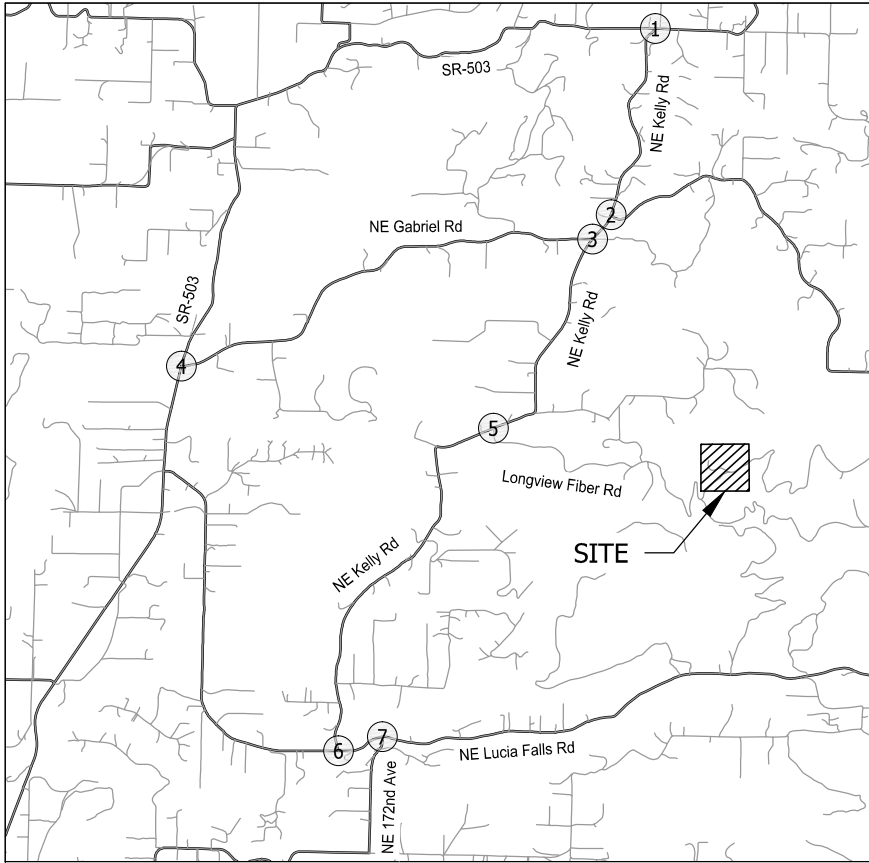
As communicated to Clark County staff through the land use application and subsequent meetings, the two properties within the mining overlay expansion area will be under the control of the Yacolt Mountain Quarry owner and operator, and will initially be used for stockpiling soil from the existing mine, that ultimately will be re-established in the process of reclaiming the quarry site. Therefore, the planned use of the new mining overlay area is not intended to result in any increased business activity or added vehicle trips relative to current operations at the quarry. However, County staff have been clear that the traffic impacts of any proposed land use amendment involving the subject parcels must be analyzed independently assuming reasonable development scenarios for the existing *FR-80* zoning and for the proposed *Surface Mining Overlay District*.



2037 Forecast Traffic Volumes
Weekday AM Peak Hour
Clark County, WA

Figure
5

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2037 Forecast Traffic Volumes
Weekday PM Peak Hour
Clark County, WA

Figure
6

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Reasonable Land Development Scenario (FR-80 Zoning)

Per County Code Section 40.210.010(A), the purpose of the *FR-80* zoning is to “maintain and enhance resource-based industries, encourage the conservation of productive forest lands and discourage incompatible uses consistent with the Forest I policies of the comprehensive plan.” Based on our review of Clark County Code Section 40.210.010(B), there is a wide variety of uses permitted outright in the *FR-80* zone. For context, some uses listed include single family homes, family day cares, adult family homes, commercial nurseries, agricultural markets, private kennels/animal boarding, public recreation, scenic and park use areas, public interpretive/educational uses, dispersed recreation areas (campsites/trailheads), public recreation accessways, equestrian facilities, agricultural resource activities, growing/harvesting of timber, wildlife management, wholesaling and retailing of vegetation from forest land (i.e. fuel wood, Christmas trees), mineral exploration, accessory buildings, forestry and natural resource research and facilities, utility facilities, and wireless communication facilities.

While there are many unique land uses permitted in the *FR-80* district, most uses are not compatible or associated with land use designations contained in the standard reference *ITE Trip Generation Manual, 9th Edition* (Reference 7), for the purposes of estimating vehicle trips. To explain further, the *Trip Generation Manual* has no specific land use category for a common *FR-80* land use such as a timber operation, a farm, or a nursery. There are no compatible ITE categories for industrial uses either. This is because the data backing most industrial land uses in ITE are collected in urban and suburban settings, not rural areas. There are two ITE land use categories in the Recreational arena that have potential applications. They include Campgrounds (ITE 416) and Public Parks (ITE 411). However, the likelihood of these types of facilities being located adjacent to the existing mine on Yacolt Mountain is very low and not reasonable.

Our research indicates that Single Family Home (ITE 210) is the most reasonable land use to apply to the *FR-80* zoning, given the prevailing pattern of rural residences all around the Yacolt Mountain area. However, it should be emphasized that Clark County Code Section 40.210.010(B) limits each legal lot to one single family residence. Because the proposed overlay district encompasses two tax lots (Parcels 230061000 and 23030100), only 2 single family homes can be built.

Reasonable Land Development Scenario (Surface Mining Overlay)

The *ITE Trip Generation Manual* does not contain any land use or trip generation data for a mining or rock quarry operation. Therefore, a customized trip generation profile was created using the current acreage of the *Surface Mining Overlay District* encompassing the Yacolt Mountain Quarry and the 24-hour traffic count collected at the quarry entrance, which also yields hourly traffic flows. This profile resulted in a trip generation rate of 3.93 trips per acre for an average weekday, 0.46 trips per acre for the weekday AM peak hour, 0.08 trips per acre for the weekday PM peak hour. It should be emphasized that the peak hour rates reflect the peak hours of adjacent street traffic occurring from 7:00-9:00 AM and 4:00-6:00 PM.

Site Trip Generation

Trip generation estimates were prepared for the two separate land development scenarios under current *FR-80* zoning and the proposed *Surface Mining Overlay District* expansion. As stated above, ITE trip generation rates were applied to the current zoning development scenario, under the assumption two single family homes would be built. Customized trip rates developed from the Yacolt Mountain Quarry were applied to the 107-acre expansion of the *Surface Mining Overlay District*.

Table 4 summarizes the anticipated number of trips that will be generated by each development scenario for typical weekday and for the weekday AM and PM peak hours.

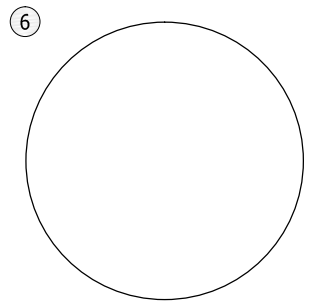
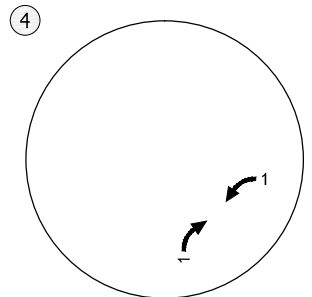
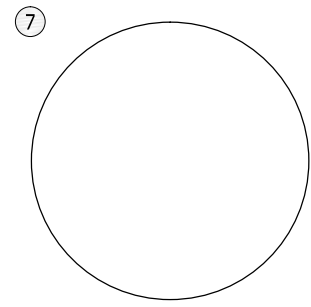
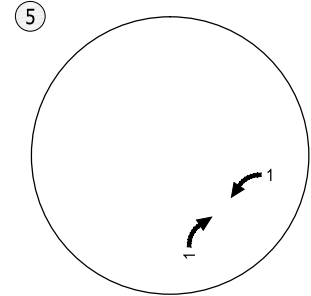
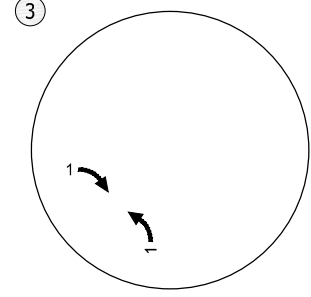
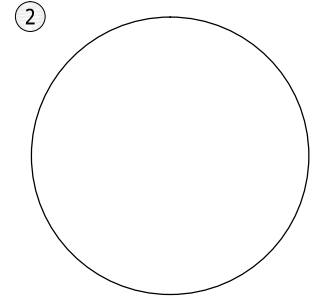
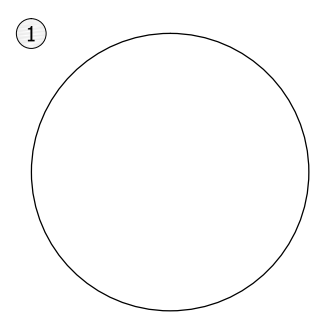
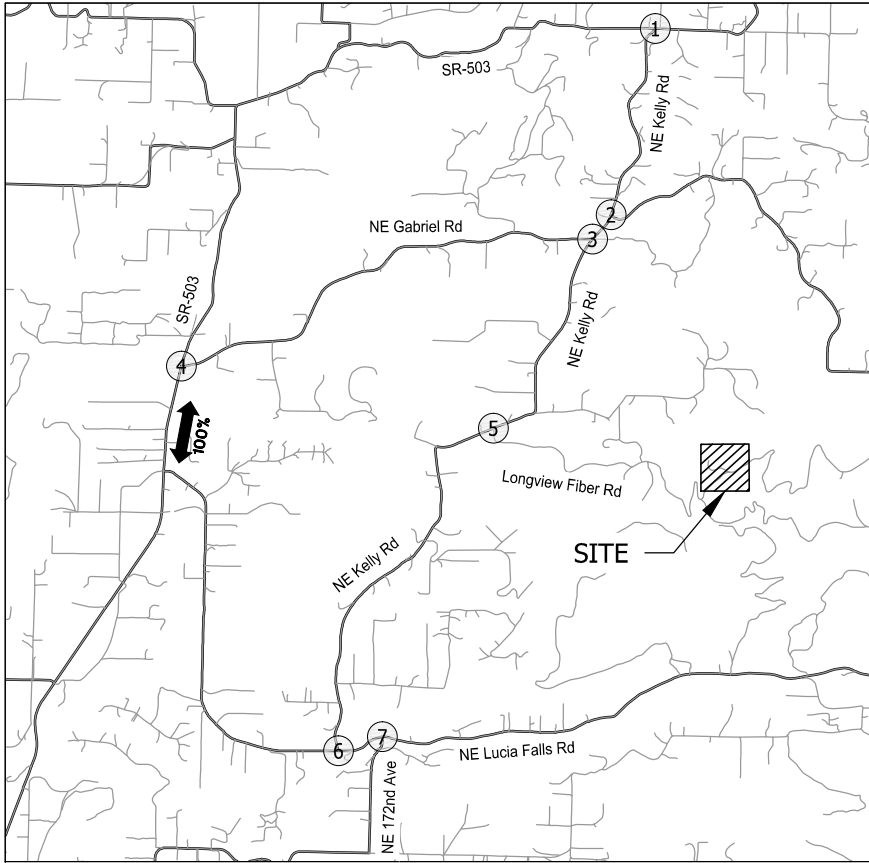
Table 4: Trip Generation Estimate

Land Use	ITE Code	Size	Average Daily Trips	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Total	In	Out	Total	In	Out
Single Family Home (FR-80 Zoning)	210	2 DU's	19	2	1	1	2	1	1
Mine/Quarry (Surface Mining Overlay)	N/A	107 acres	421	49	22	27	9	2	7

As shown in Table 4, the current zoning development scenario is expected to generate approximately 19 average daily trips, including 2 trips during the weekday AM and PM peak hours. The proposed overlay development scenario is estimated to generate approximately 421 average daily trips, including 49 trips during the weekday AM peak hour and 9 trips during the weekday PM peak hour.

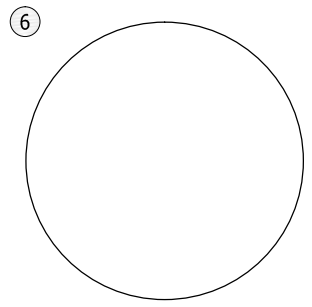
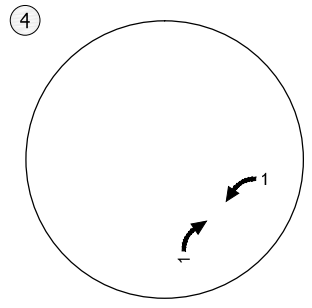
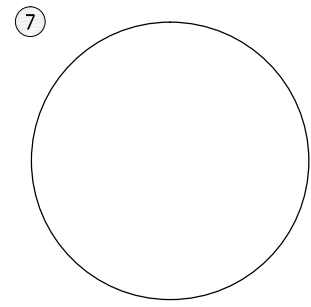
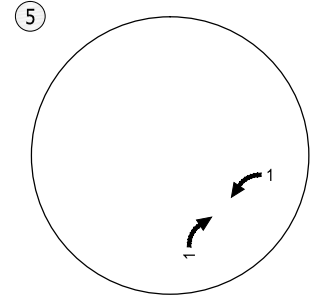
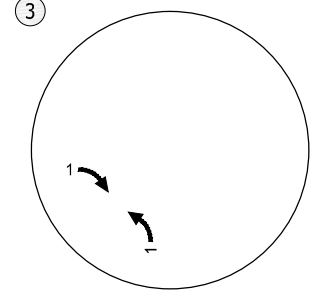
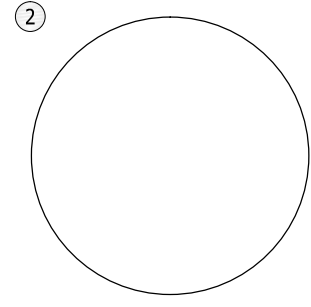
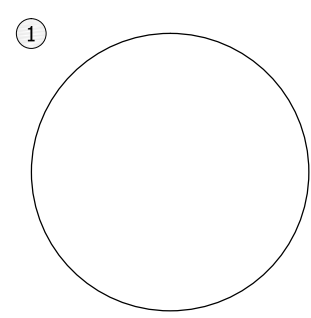
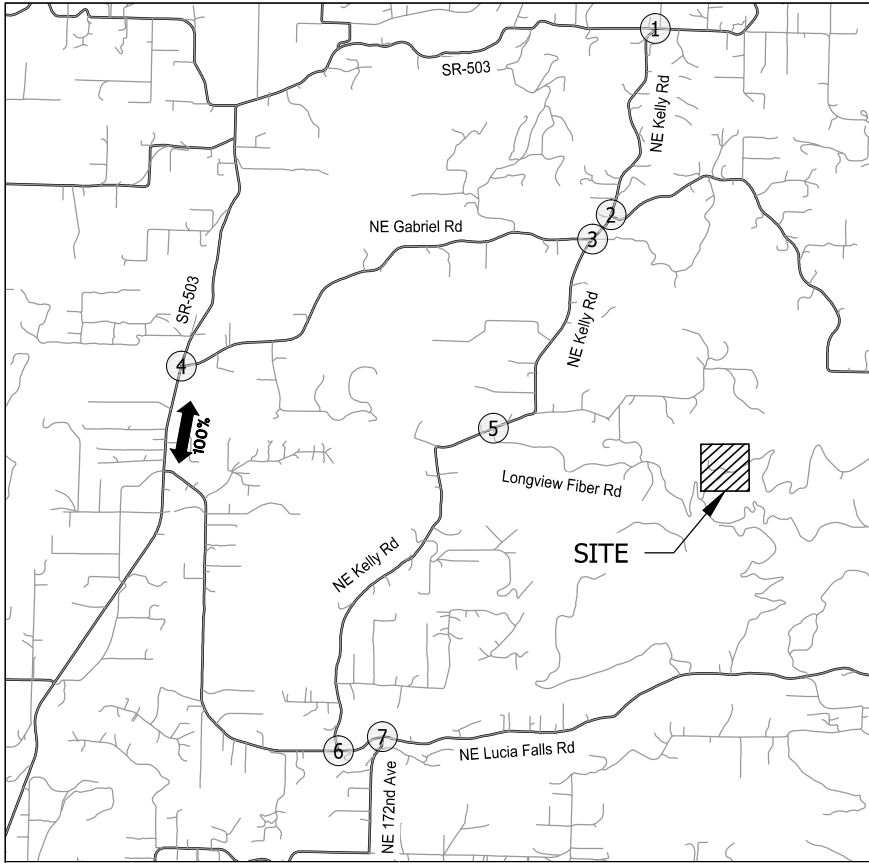
Trip Distribution/Assignment

The site-generated trips shown in Table 4 for the two development scenarios were distributed onto the study area roadways based on a review of current traffic count patterns. Figures 7 and 8 illustrate the estimated trip distribution pattern and assignment for the current *FR-80* zoning development scenario for the weekday AM and PM peak hours, respectively. Similarly, Figures 9 and 10 illustrate the site-generated trips that are expected to use the roadway system under the proposed *Surface Mining Overlay* development scenario during the weekday AM and PM peak hours, respectively.



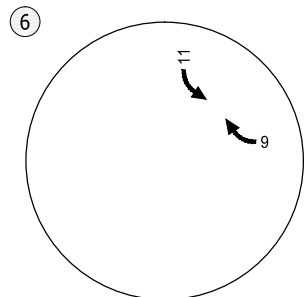
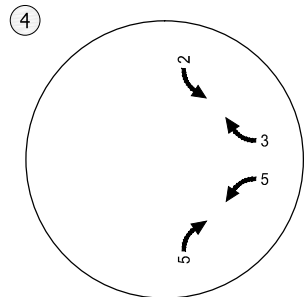
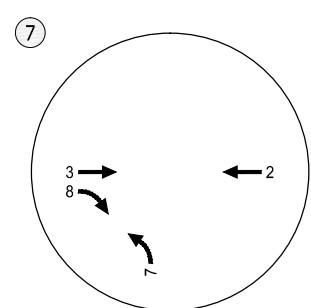
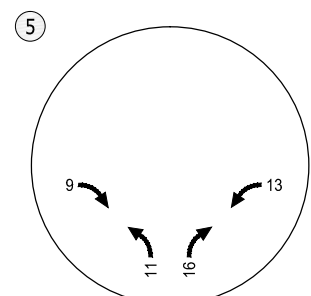
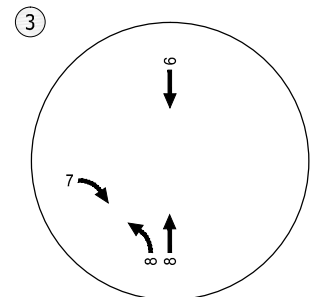
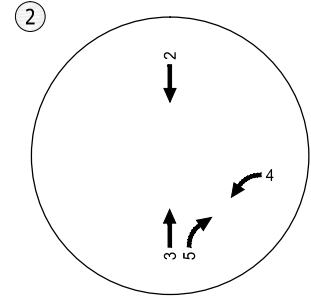
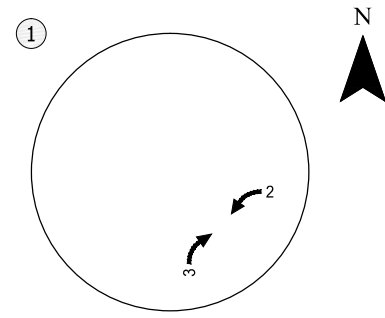
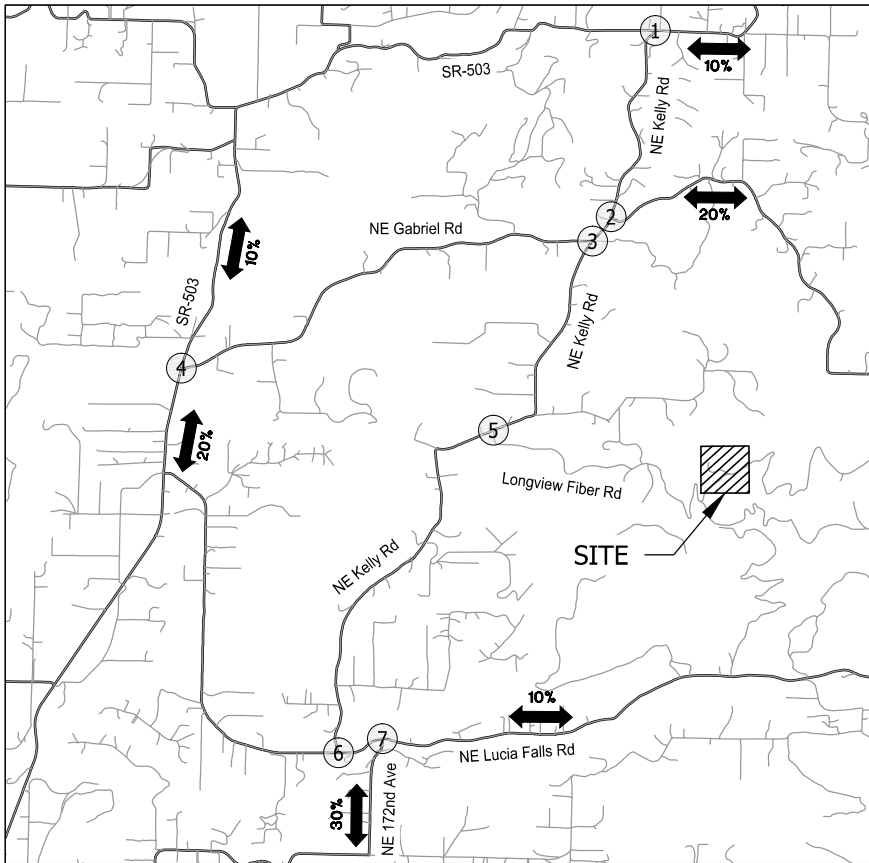
Estimated Trip Distribution and Assignment (FR-80 Zoning)
 Weekday AM Peak Hour
 Clark County, WA

Figure
 7



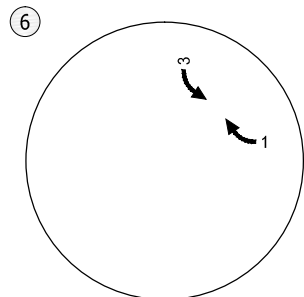
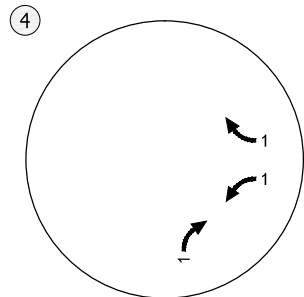
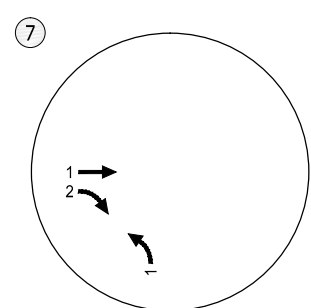
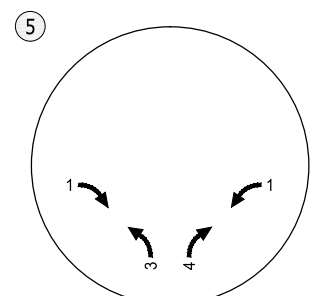
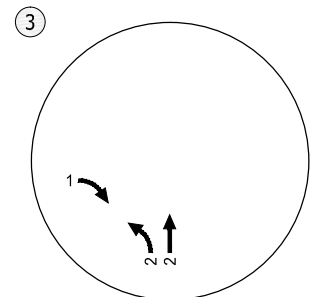
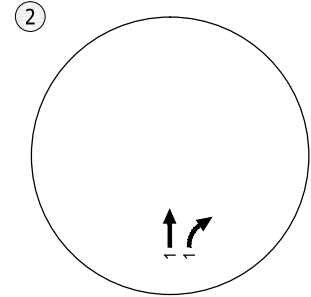
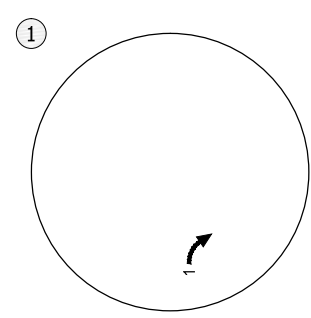
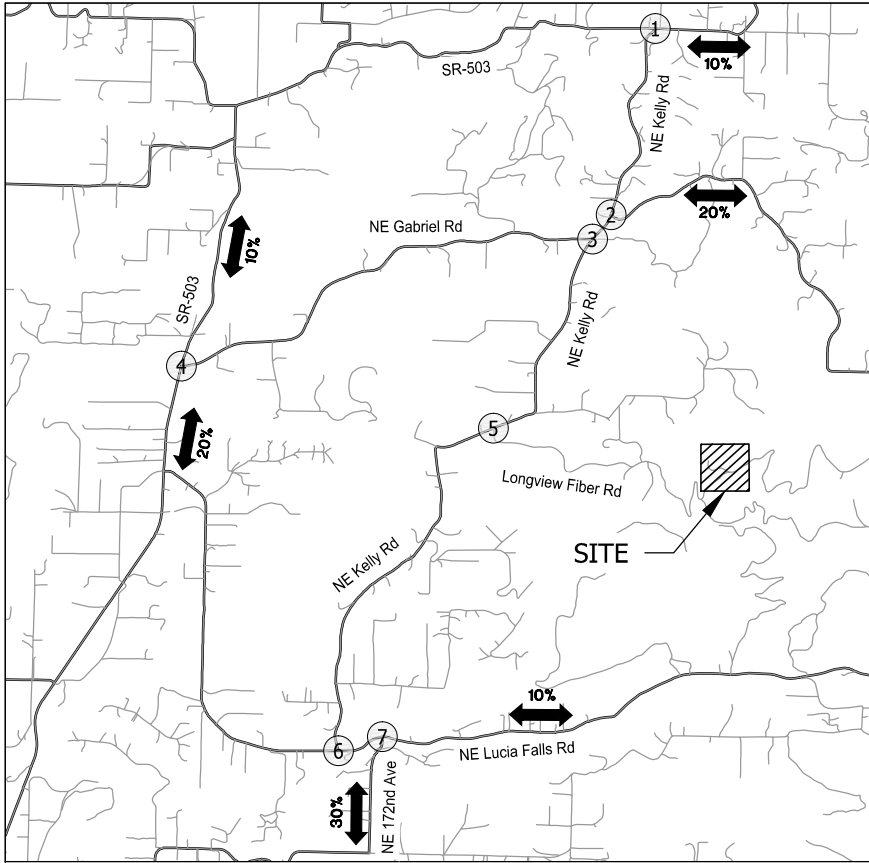
Estimated Trip Distribution and Assignment (FR-80 Zoning)
 Weekday PM Peak Hour
 Clark County, WA

Figure
 8



Estimated Trip Distribution and Assignment
(Surface Mining Overlay Zoning)
Weekday AM Peak Hour

Figure
9



Estimated Trip Distribution and Assignment
(Surface Mining Overlay Zoning)
Weekday PM Peak Hour

Figure
10

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Year 2037 Total Traffic Conditions

The year 2037 total traffic conditions analysis forecasts how the study area’s transportation system will operate with traffic generated by development on the subject site. The year 2037 forecast traffic volumes shown in Figures 5 and 6 were added to the site-generated traffic shown in Figures 7 and 8 to arrive at the year 2037 total traffic volumes for the current *FR-80* zoning scenario shown in Figures 11 and 12 for the weekday AM and PM peak hours, respectively. The same process was followed to develop the year 2037 total traffic volumes for the proposed *Surface Mining Overlay* expansion, as shown in Figures 13 and 14.

Intersection Adjustment Factors for Long-Range Operations Analysis

It should be emphasized that the existing Peak Hour Factors (PHF’s) observed at the two SR-503 study intersections at NE Gabriel Road and at NE Kelly Road were adjusted upwards to reflect the spreading effect of traffic demand over time, particularly for these two intersections which experience moderate traffic demand today and high traffic growth expectations over the 19-year forecast, per the County traffic model data. Table 5 below provides more background on how the intersection PHF’s were adjusted for year 2037 traffic conditions, with comparisons to existing year 2018 PHF’s and historical PHF’s from the year 2000, which were obtained from the original traffic study for the Yacolt Mountain Quarry (Reference 1).

Table 5: Peak Hour Factor Adjustments (SR-503 Study Intersections)

Intersection	Year 2000 PHF ¹		Existing 2018 PHF ²		Adjusted 2037 PHF ³	
	AM	PM	AM	PM	AM	PM
SR-503/NE Gabriel Road	0.78	0.90	0.88	0.91	0.95	0.95
SR-503/NE Kelly Road	0.76	0.92	0.79	0.91	0.90	0.95

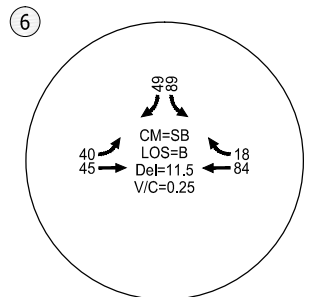
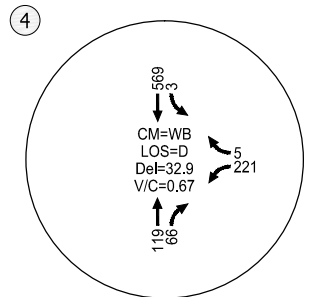
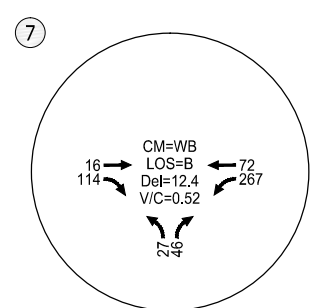
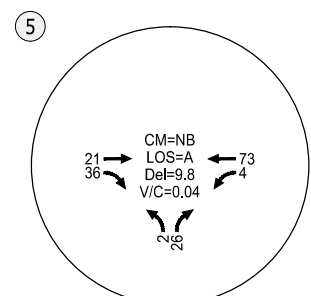
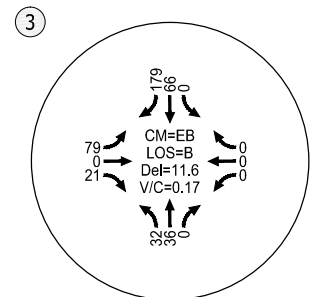
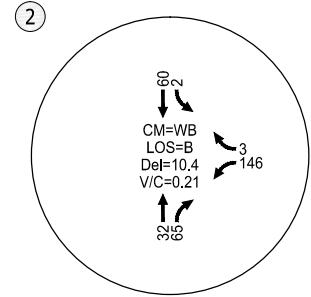
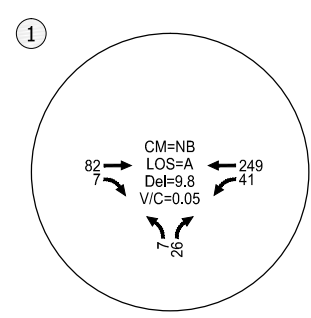
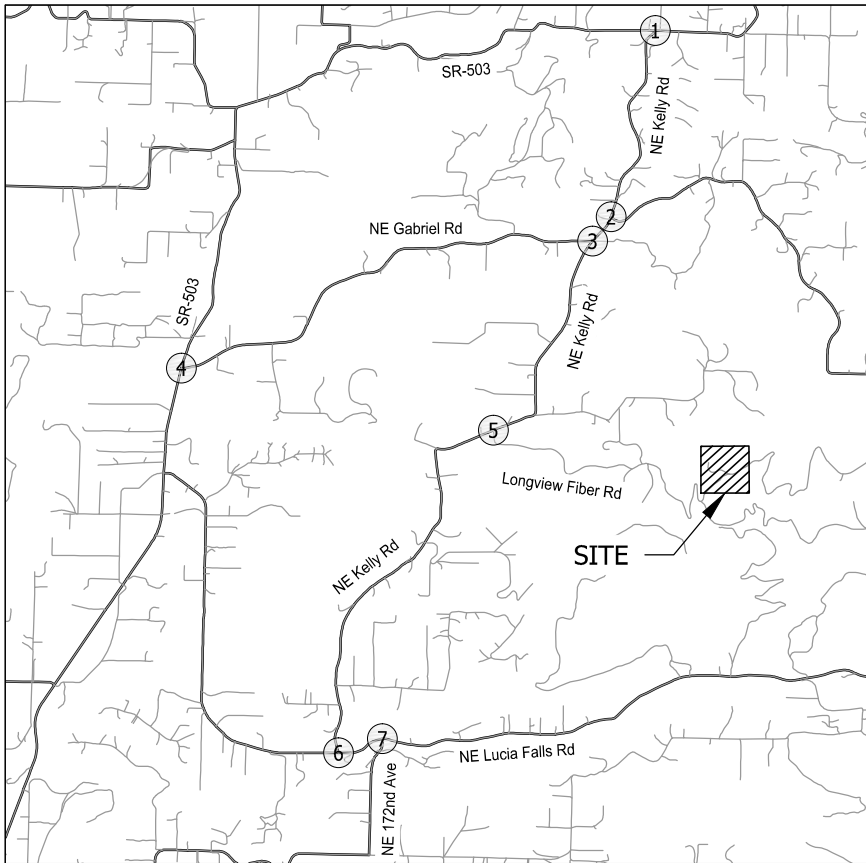
¹ Source: Traffic Impact Study for Yacolt Mountain Quarry prepared by CTS Engineers, November 2001.

² Source: Existing turn movement volume counts (see Attachment “E”).

³ PHF’s were adjusted upwards to 0.95 for most intersections and time periods, except for the AM condition at SR-503/Kelly Road. The adjustment to 0.90 for this intersection was due to the lower existing year 2018 PHF, at 0.79, which was too low to make such a large adjustment.

Intersection Operations (FR-80 Zoning Scenario)

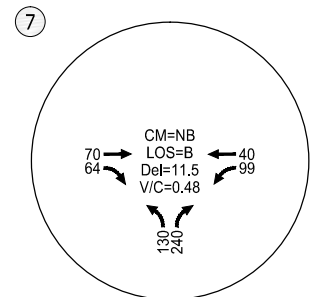
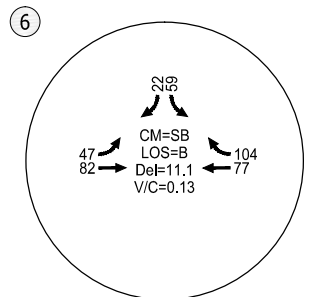
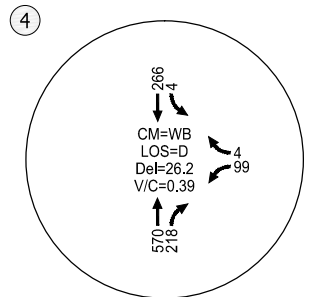
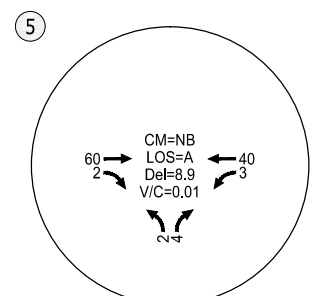
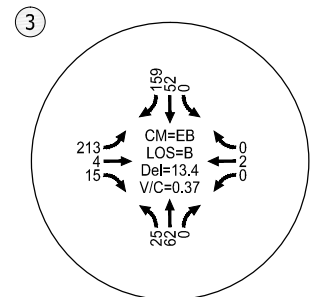
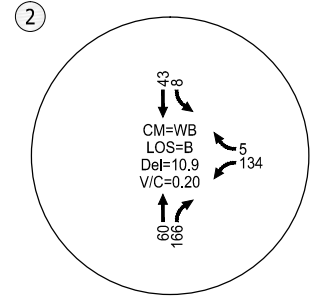
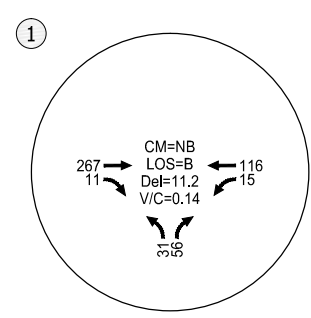
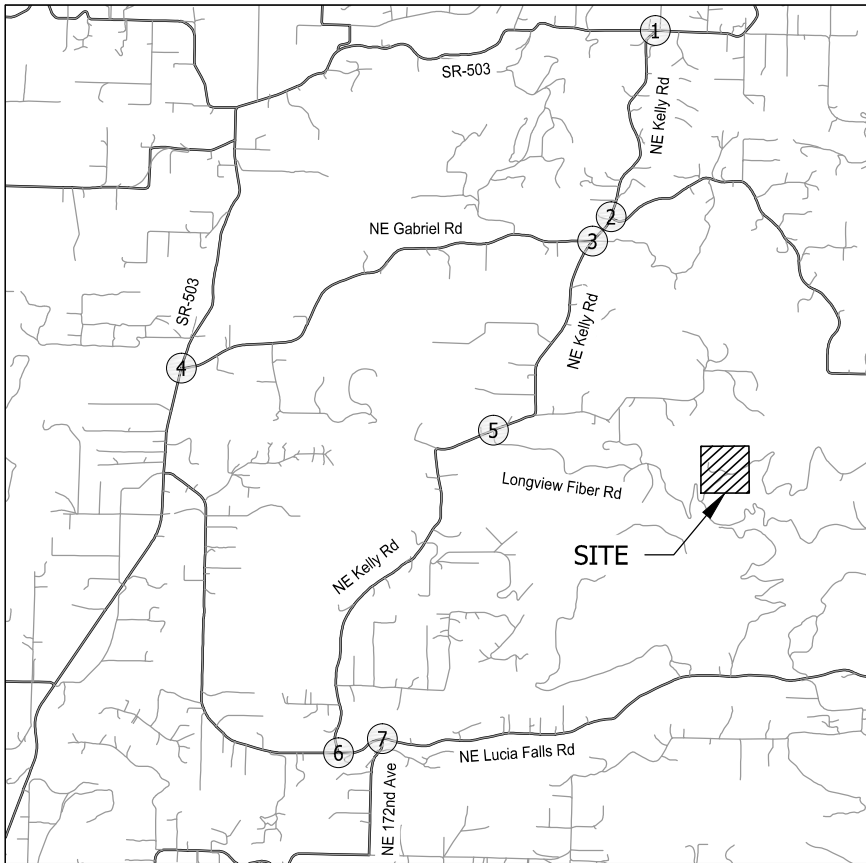
The operations analysis results for the current FR-80 zoning development scenario are shown in Figures 11 and 12 for the weekday AM and PM peak hours, respectively. As shown, all study intersections are forecast to operate acceptably during the weekday AM and PM peak hours per the applicable Clark County performance standards. The busiest intersection at SR-503/NE Gabriel Road is forecast to operate at LOS “D” during the weekday AM and PM peak hours, which meets the Clark County standard of LOS “D” or better. *Attachment “I” contains the year 2037 total traffic conditions worksheets for the current FR-80 zoning scenario.*



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION DELAY(SIGNALIZED)/
 CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2037 Total Traffic Conditions
 (FR-80 Zoning)
 Weekday AM Peak Hour

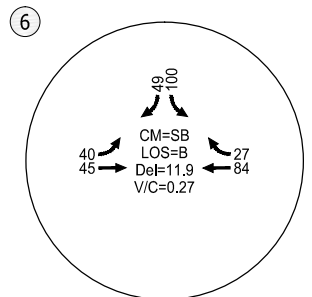
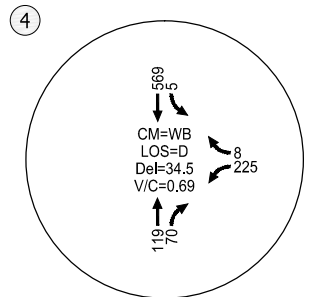
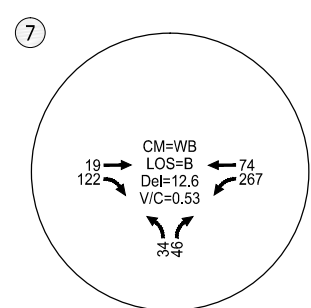
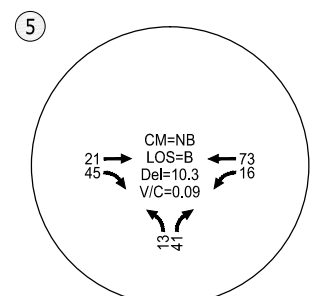
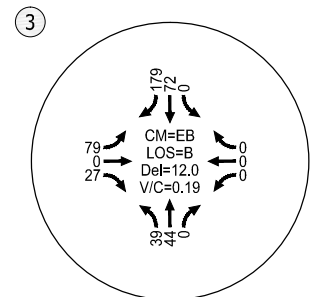
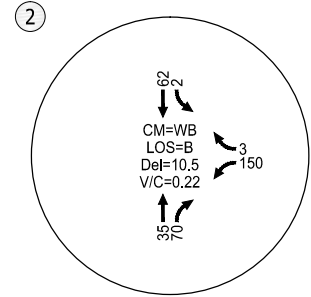
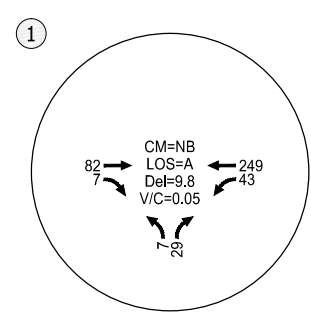
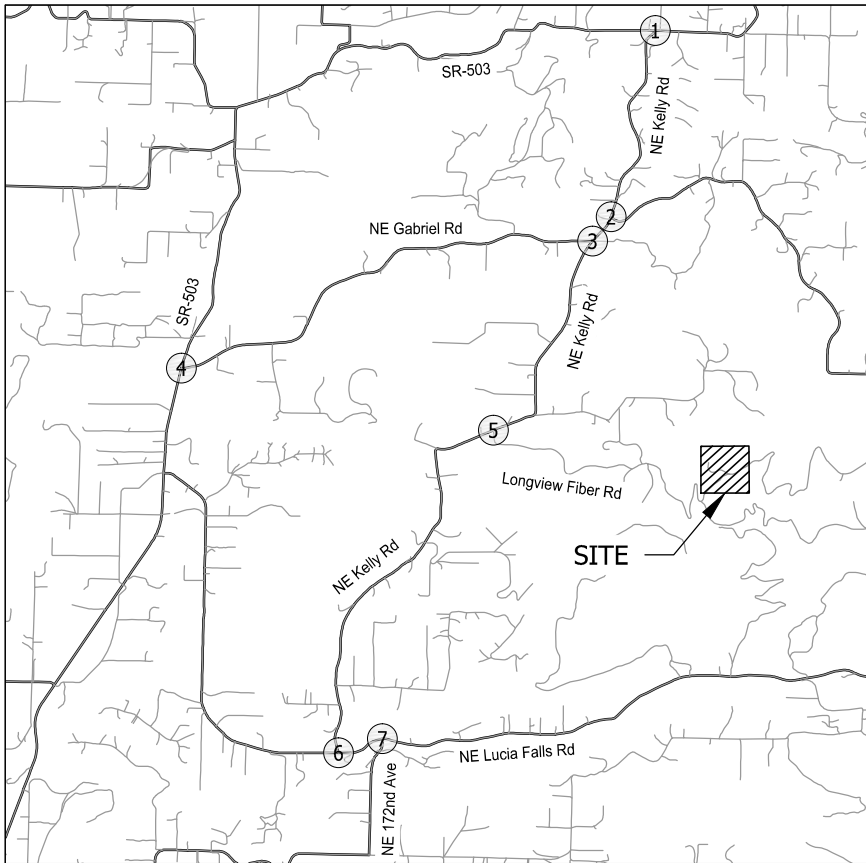
Figure
 11



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION DELAY(SIGNALIZED)/
 CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2037 Total Traffic Conditions
 (FR-80 Zoning)
 Weekday PM Peak Hour

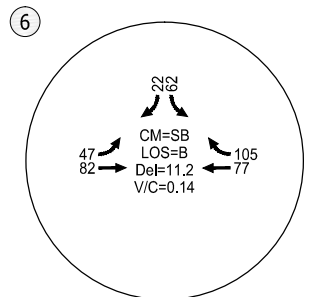
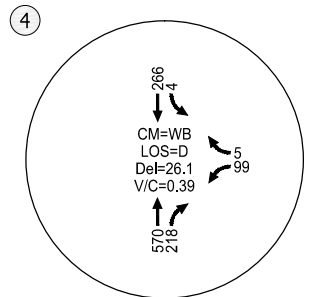
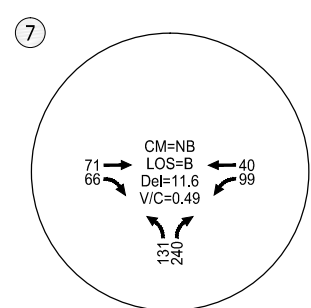
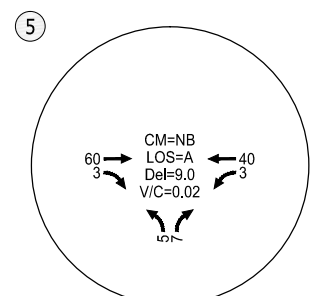
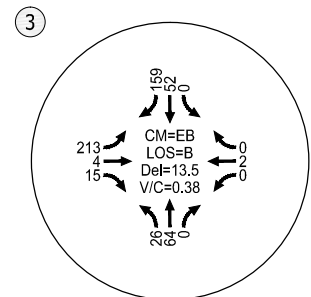
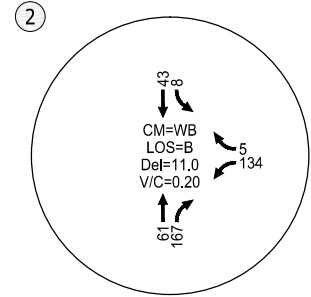
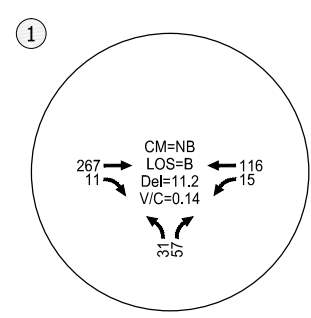
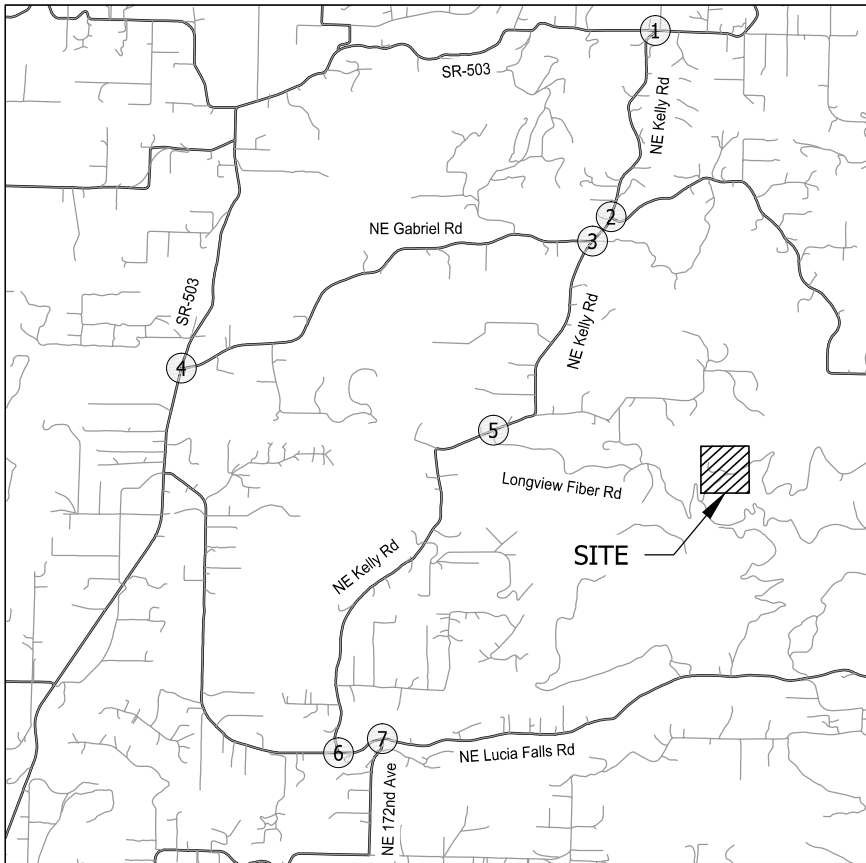
Figure
 12



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION DELAY(SIGNALIZED)/
 CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2037 Total Traffic Conditions
 (Surface Mining Overlay Zoning)
 Weekday AM Peak Hour

Figure
 13



CM = CRITICAL MOVEMENT (UNSIGNALIZED)
 LOS = INTERSECTION LEVEL OF SERVICE (SIGNALIZED)/
 CRITICAL MOVEMENT LEVEL OF SERVICE (UNSIGNALIZED)
 Del = INTERSECTION DELAY(SIGNALIZED)/
 CRITICAL MOVEMENT DELAY (UNSIGNALIZED)
 V/C = CRITICAL VOLUME-TO-CAPACITY RATIO

2037 Total Traffic Conditions
 (Surface Mining Overlay Zoning)
 Weekday PM Peak Hour

Figure
 14

H:\22\22350 - Yacolt Mountain Quarry\design\CD\22350-Figures.dwg Apr 11, 2018 - 2:44pm - ccox Layout Tab: Mine Tot PM



Intersection Operations (Surface Mining Overlay Scenario)

The operations analysis results for the proposed *Surface Mining Overlay* development scenario are shown in Figures 13 and 14 for the weekday AM and PM peak hours, respectively. Similar to the FR-80 zoning scenario results, all study intersections are forecast to operate acceptably during the weekday AM and PM peak hours per the applicable Clark County performance standards. Relative to the FR-80 zoning scenario, operations at the busier SR-503/NE Gabriel Road intersection are forecast to remain at LOS “D” during the weekday AM and PM peak hours. *Attachment “J” contains the year 2037 total traffic conditions worksheets for the proposed Surface Mining Overlay scenario.*

Concurrency Corridor V/C Ratios (FR-80 Zoning Scenario)

For the FR-80 zoning development scenario, year 2037 forecast traffic volumes along critical concurrency corridor segments were compared with adopted Clark County capacity thresholds to assess compliance with concurrency requirements. Table 6 shows forecast bi-direction traffic volumes and the single direction roadway capacity as specified under Clark County Code 40.350.020 Transportation Concurrency Management and Table 40.350.020-1. As shown in Table 6, one of the concurrency corridor segments is forecast to operate above a 0.90 V/C ratio, which exceeds the County standard of 0.90 or less.

Table 6: 2037 Concurrency Corridor V/C Ratios (FR-80 Zoning)

Count Location	Road Classification ¹	Single Direction Capacity/Hour ²	Maximum Volume (vph) ³	V/C Ratio
SR-503				
South of NE Gabriel Road (SB)	Rural Arterial (W)	800 ⁴	790 (AM)	0.99
South of NE Gabriel Road (NB)			788 (PM)	0.99
East of NE Kelly Road (EB)	Rural Arterial (W)	800 ⁴	323 (PM)	0.40
East of NE Kelly Road (WB)			290 (AM)	0.36

¹ Source: Clark County Arterial Atlas, 2013 (Reference 4)

² Per Clark County Code: For roadways not fully built-out to county standards, the capacity shall be determined based on the current roadway condition. For roadways with lane widths twelve (12) feet and greater, and with paved shoulder widths two (2) feet and greater, the lane capacity shall be eight hundred (800) vehicles per hour. For roadways with lane widths between eleven (11) and twelve (12) feet and with paved shoulder widths two (2) feet and greater, the lane capacity shall be seven hundred (700) vehicles per hour. For roadways with lane widths less than eleven (11) feet, the lane capacity shall be six hundred (600) vehicles per hour.

³ vph: vehicles per hour, based on turning movement counts collected at the study intersections.

⁴ Based on existing 2-lane cross-section

Concurrency Corridor V/C Ratios (Surface Mining Overlay Scenario)

For the Surface Mining Overlay development scenario, year 2037 forecast traffic volumes along critical concurrency corridor segments were again compared with adopted Clark County capacity thresholds to assess compliance with concurrency requirements. Table 7 contains the results of this comparison. As shown the same concurrency corridor segment along SR-503, south of SE Gabriel Road, is forecast to operate above a 0.90 V/C ratio, which exceeds the County standard of 0.90 or less.

Table 7: 2037 Concurrency Corridor V/C Ratios (Surface Mining Overlay)

Count Location	Road Classification ¹	Single Direction Capacity/Hour ²	Maximum Volume (vph) ³	V/C Ratio
SR-503				
South of NE Gabriel Road (SB)	Rural Arterial (W)	800 ⁴	794 (AM)	0.99
South of NE Gabriel Road (NB)			788 (PM)	0.99
East of NE Kelly Road (EB)	Rural Arterial (W)	800 ⁴	324 (PM)	0.41
East of NE Kelly Road (WB)			292 (AM)	0.37

¹ Source: Clark County Arterial Atlas, 2013 (Reference 4)

² Per Clark County Code: For roadways not fully built-out to county standards, the capacity shall be determined based on the current roadway condition. For roadways with lane widths twelve (12) feet and greater, and with paved shoulder widths two (2) feet and greater, the lane capacity shall be eight hundred (800) vehicles per hour. For roadways with lane widths between eleven (11) and twelve (12) feet and with paved shoulder widths two (2) feet and greater, the lane capacity shall be seven hundred (700) vehicles per hour. For roadways with lane widths less than eleven (11) feet, the lane capacity shall be six hundred (600) vehicles per hour.

³ vph: vehicles per hour, based on turning movement counts collected at the study intersections.

⁴ Based on existing 2-lane cross-section

A comparison of the results in Table 7 to those in Table 6 demonstrate that the proposed Surface Mining Overlay will not degrade the sub-standard v/c ratio performance of 0.99 forecast for the south leg of the SR-503/NE Gabriel Road intersection by any measureable amount. This is because the increase in site trips from the overlay expansion are small relative to development under the current FR-80 zoning. Nevertheless, if mitigation becomes necessary to achieve conformance with County standards or at least bring the v/c ratio back to conditions created under the FR-80 zoning scenario, there are two options. One would be to add additional capacity to the intersection by way of a northbound right-turn lane and/or a southbound left-turn lane. Or another alternative, which would be the preferred solution by the Applicant, would be to restrict vehicle trips generated by the parcels involved with the expanded *Surface Mining Overlay District*. This restriction, or trip cap, if enacted, should be limited to the amount of trips figured for the FR-80 zoning scenario.

VEHICLE QUEUING

Vehicle queuing conditions at all study intersections were reviewed to ensure vehicle queues can be accommodated by available lane storage under year 2037 traffic conditions involving the Surface Mining Overlay scenario. The review was conducted using the HCM output reports produced for the operations analyses. As demonstrated by the level of service worksheets provided in Attachment “J”, all but 3 study intersections will have vehicle queues of one vehicle or less on the stop-controlled approaches during the weekday AM and PM peak hours. At the intersection of SR-503/NE Gabriel Road, queues up to 5 vehicles will develop on the westbound approach in the AM condition, with 2 vehicles during the PM condition. At the intersection of NE Lucia Falls Road/NE 172nd Avenue, up to 3 vehicles will develop on the westbound approach in the AM condition, and 2 vehicles will develop on the northbound approach in the PM condition. Lastly, at the NE Gabriel Road/NE Kelly Road intersection, a vehicle queue of 2 vehicles will develop on the eastbound approach. In all cases, these queues lengths can be accommodated by available lane storage capacity.

FINDINGS AND RECOMMENDATIONS

The results of the analysis indicated that the proposed land use amendment can occur while maintaining acceptable levels of traffic operations and safety at the study intersections assuming provision of the recommended mitigation measures. The findings of this analysis and our recommendations are discussed below.

Findings

- All study intersections currently operate at levels which meet the performance measures established by Clark County Concurrency standards during the weekday AM and PM peak hours.
- Regionally significant highway corridor segments along SR-503 currently meet Clark County's v/c ratio standards under weekday AM and PM peak hours.
- No apparent safety-hazards or safety mitigation measures appear necessary at the study intersections, based on a review of reported crashes over the past 5 years.
- All study intersections are forecast to continue operating at acceptable levels under future year 2037 weekday AM and PM peak hour conditions, with the current FR-80 zoning and with the proposed Surface Mining Overlay District expansion
- One highway concurrency corridor segment along SR-503 is forecast to operate above the County's v/c ratio standard of 0.90 in the year 2037. The south leg of the SR-503/NE Gabriel Road intersection is forecast to reach a v/c ratio of 0.99 under both the current FR-80 zoning and Surface Mining Overlay development scenarios.
- Vehicle queues will be short and adequately accommodated by available lane storage at all study intersections under year 2037 traffic conditions during the weekday AM and PM peak hours.

Recommendations

- If mitigation measures are necessary to address a perceived adverse impact on the future highway concurrency corridor v/c ratio deficiency identified at the SR-503/NE Gabriel Road intersection, the Applicant requests the County establish a trip cap, limiting vehicle trips generated by the parcels involved with the expanded *Surface Mining Overlay District* to the amount of trips allowed by the current FR-80 zoning.

We trust this letter report adequately addresses the traffic impacts associated with the proposed land use amendment associated with the Yacolt Mountain Quarry. Please contact us if you have any questions or comments regarding the contents of this report or the analyses performed.

Sincerely,

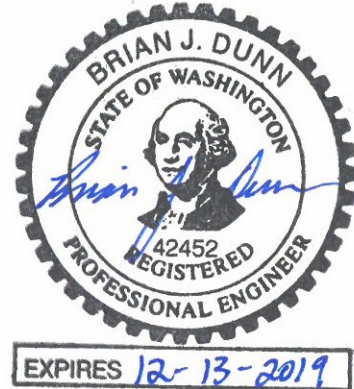
KITTELSON & ASSOCIATES, INC.



Brian J. Dunn, PE
Associate Engineer



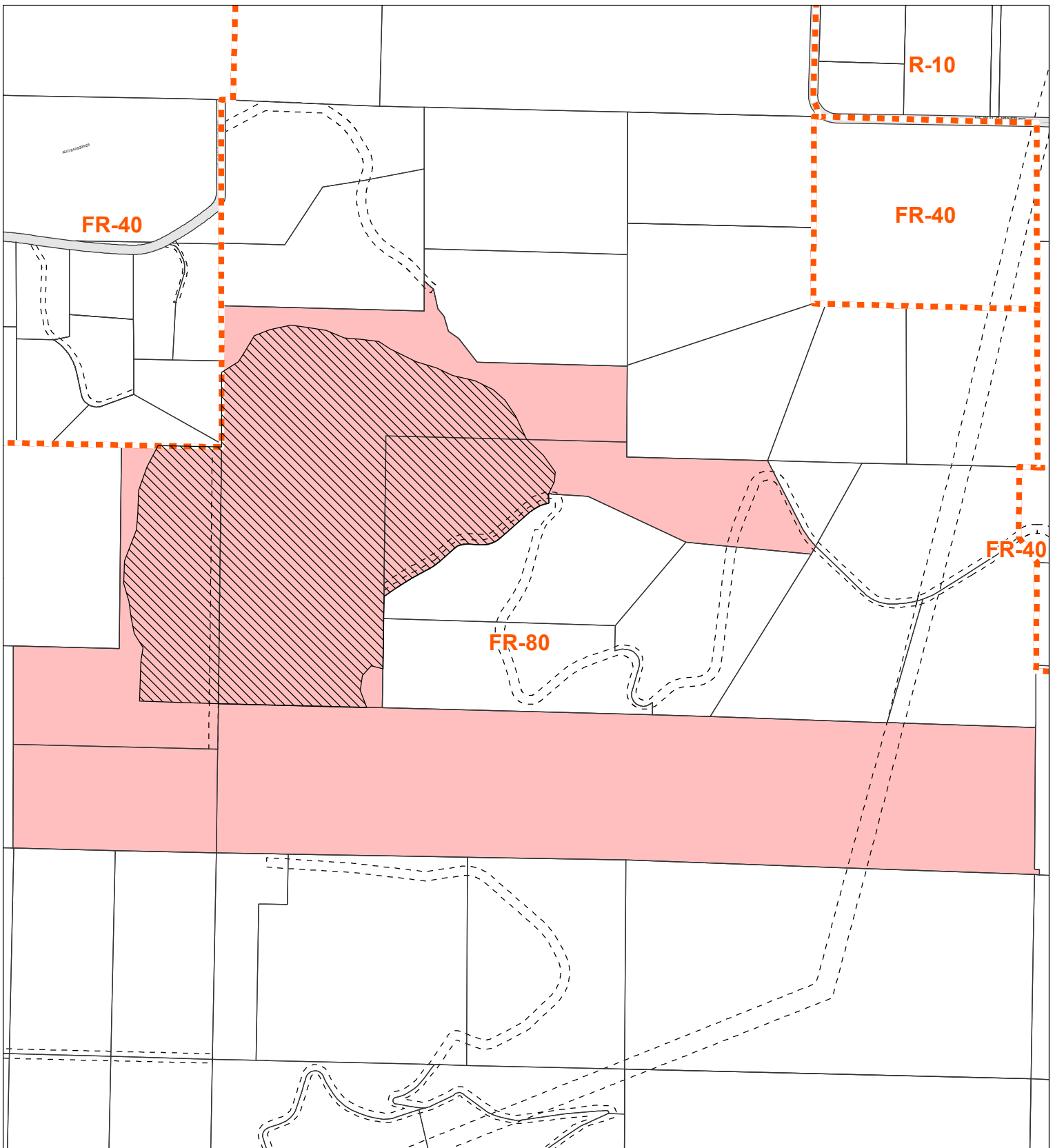
Caleb Cox
Transportation Analyst



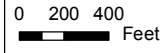
REFERENCES

1. CTS Engineers, Inc. Traffic Analysis for Proposed Yacolt Mountain Quarry. November 15, 2001.
2. Transportation Research Board. *2010 Highway Capacity Manual*. 2010.
3. Washington State Department of Transportation. *2007-2026 Highway System Plan*. December 2007.
4. Clark County, Washington. *Arterial Atlas*. 2013.
5. Clark County Public Works. *2018-2023 Clark County Transportation Improvement Plan*. October 2017.
6. Southwest Washington Regional Transportation Council. *Regional Transportation Plan for Clark County*. 2014 Update.
7. Institute of Transportation Engineers. *Trip Generation Manual, 9th Edition*. 2012.

Attachment A Site Exhibits



Geographic Information System



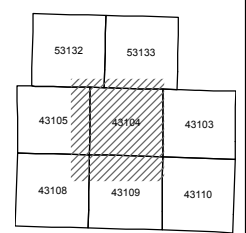
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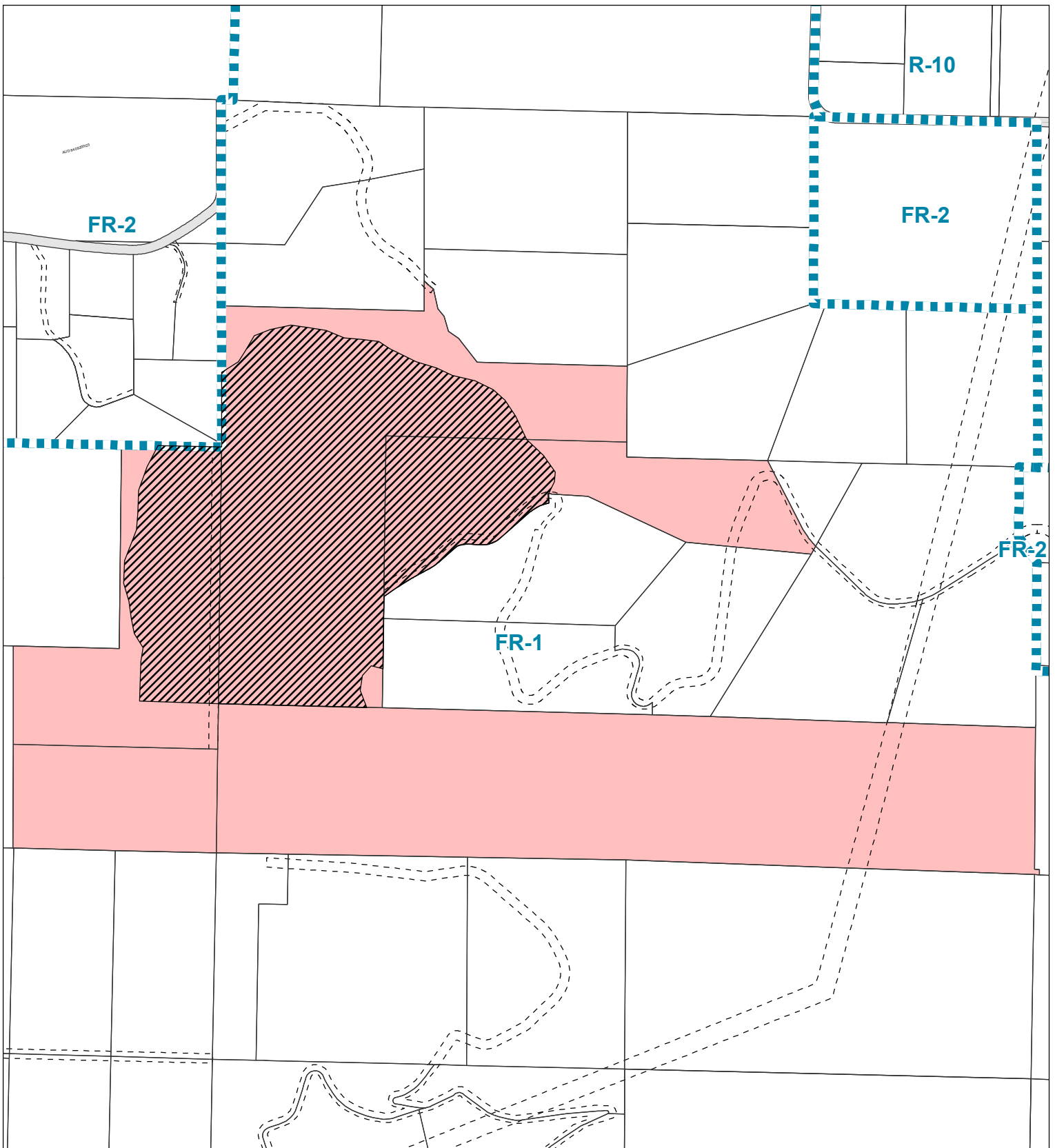
Zoning Designations

Account: 230076000, 230301000, 230270000, 230061000
 Owner: ROTSCY BRENT A & ROTSCY HEIDI K
 Address: PO BOX 464
 C/S/Z: YACOLT, WA 98675

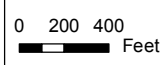
- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Zoning Boundary
- Urban Holding - 10 (UH-10)
- Urban Holding - 20 (UH-20)
- Urban Holding - 40 (UH-40)
- Surface Mining Overlay District

Printed on: December 20, 2017





Geographic Information System



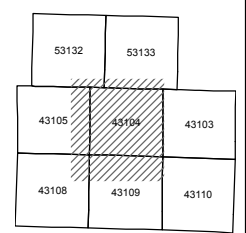
Information shown on this map was collected from several sources. Clark County accepts no responsibility for any inaccuracies that may be present.

Comprehensive Plan Designations

Account: 230076000, 230301000, 230270000, 230061000
 Owner: ROTSCY BRENT A & ROTSCY HEIDI K
 Address: PO BOX 464
 C/S/Z: YACOLT, WA 98675

Printed on: December 20, 2017

- Subject Property(s)
- Public Road
- Transportation or Major Utility Easement
- Comprehensive Plan Boundary
- Industrial Reserve
- Railroad Industrial Reserve
- Mining
- Urban Reserve
- Rural Center Mixed Use
- Columbia River Gorge Scenic Area



T 4 N

6				1
31				36

R 3 E

SITE COORDINATES:

LATITUDE: 45° 51' 23 " N

LONGITUDE: 122° 27' 14" W

LEGAL DESCRIPTION

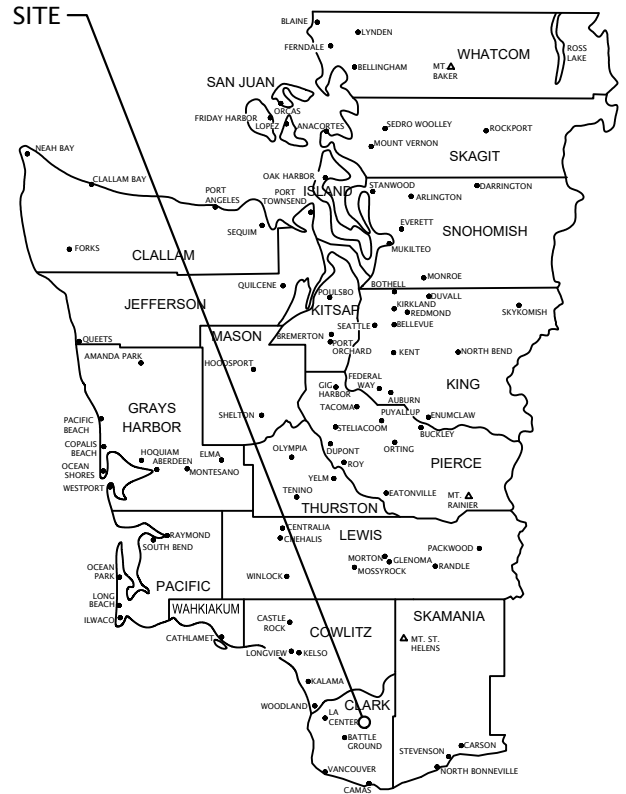
PARCEL 1 (230061000)

A TRACT OF LAND 30 FEET SQUARE IN THE SOUTHWEST CORNER OF THE SOUTHWEST QUARTER OF SECTION 3, TOWNSHIP 4 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN IN CLARK COUNTY, WASHINGTON. AND THE SOUTH 120 ACRES SOUTH HALF OF SECTION 4, TOWNSHIP 4 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN IN CLARK COUNTY, WASHINGTON.

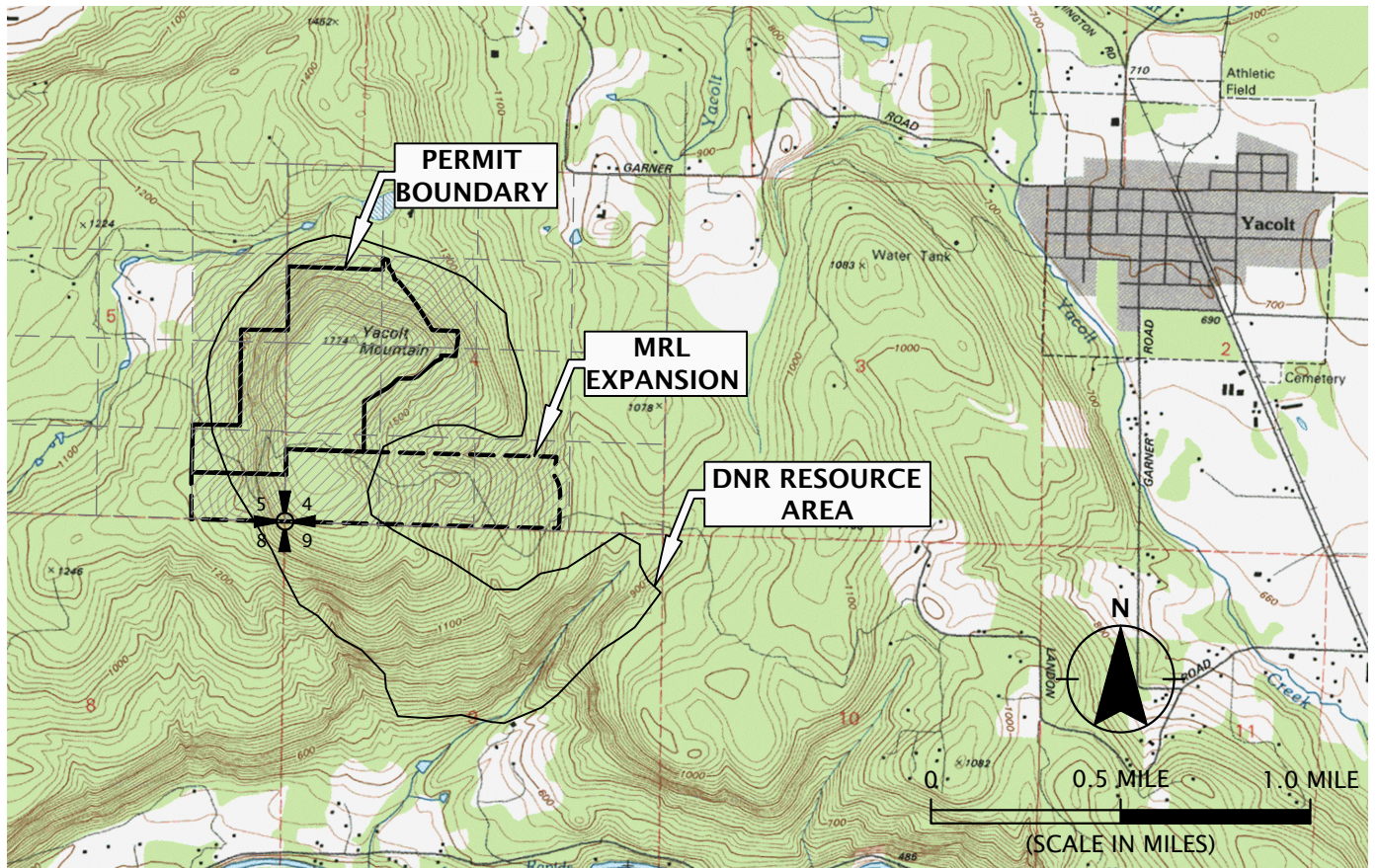
PARCEL 2 (230301000)

THE SOUTH HALF OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 5, TOWNSHIP 4 NORTH, RANGE 3 EAST OF THE WILLAMETTE MERIDIAN IN CLARK COUNTY, WASHINGTON.

WESTERN WASHINGTON



NOTE: USGS TOPOGRAPHIC QUADRANGLE MAP (YACOLT 1990) REPRODUCED USING MAPTECH TERRAIN NAVIGATOR PRO®.



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File Name: J:\S-Z\Store Dahl\Store Dahl-15-01\Figures\CAD\Store Dahl-15-01-VM02.dwg | Layout: FIGURE 1

GEODESIGN INC.
 1157 3rd Avenue - Suite 220B
 Longview WA 98632
 360.200.4803 www.geodesigninc.com

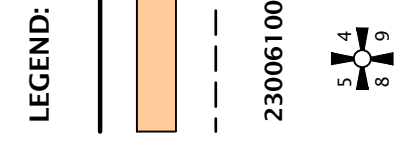
J.L. STOREDAHL & SONS

STOREDAHL-15-01
JANUARY 2018

VICINITY MAP
YACOLT MOUNTAIN TEMPORARY STOCKPILE AREA

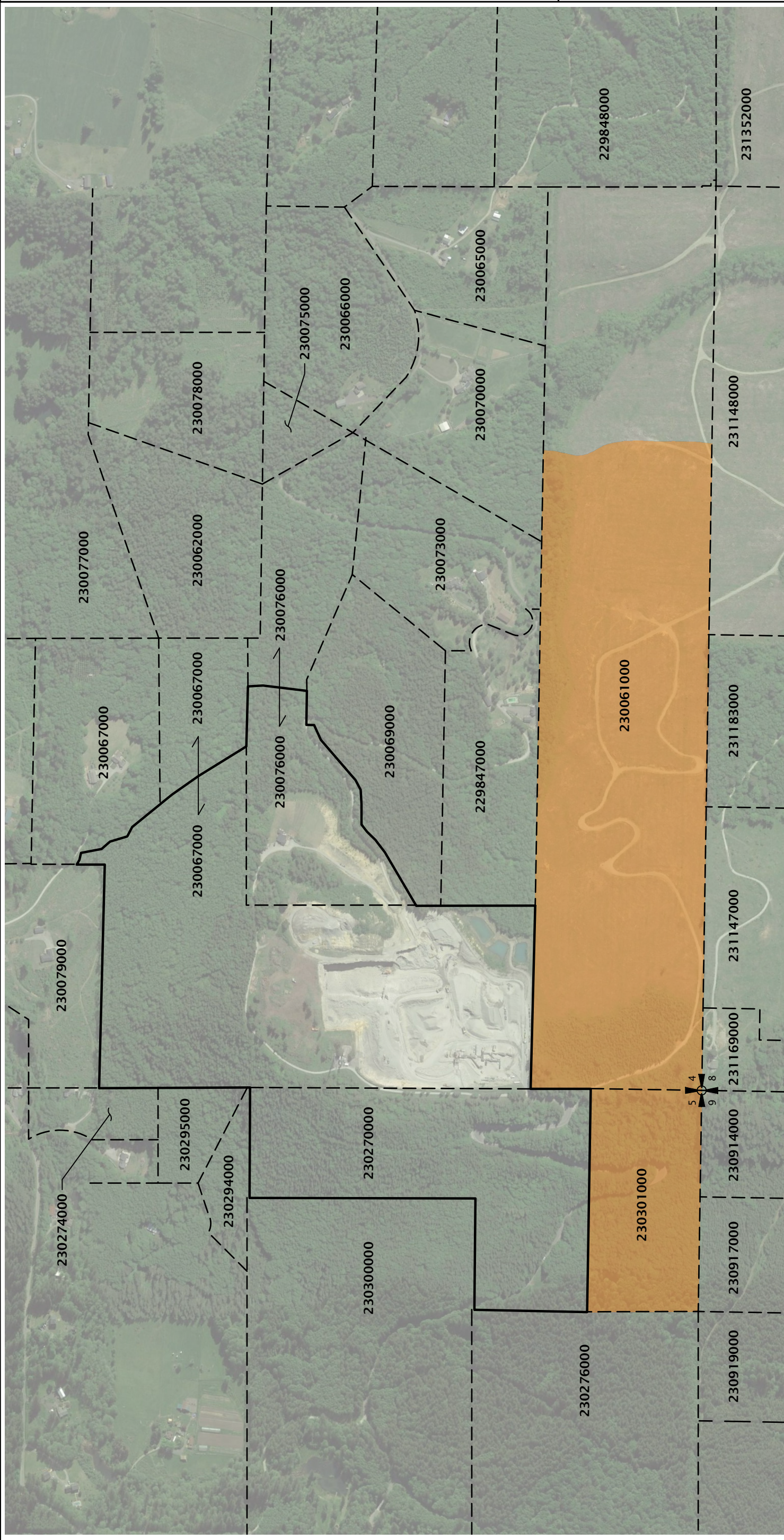
CLARK COUNTY, WA
SECTIONS 3, 4, AND 5, TOWNSHIP 4N, RANGE 3E, W.M.

FIGURE 1



NOTES:
 1. AERIAL PHOTOGRAPH (MAY 22, 2017)
 OBTAINED FROM GOOGLE EARTH PRO.
 2. PROPERTY INFORMATION OBTAINED
 FROM CLARK COUNTY ASSESSOR.

- LEGEND:**
- APPROXIMATE EXISTING PERMIT BOUNDARY
 - PROPOSED MINERAL OVERLAY EXPANSION AREA (~107 ACRES)
 - - - PROPERTY PARCEL BOUNDARY
 - 230061000
 PROPERTY IDENTIFICATION NUMBER
 (SEE FIGURE 3 FOR PROPERTY OWNERSHIP INFORMATION)
 - SECTION CORNER



ADJACENT PROPERTY OWNERSHIP INFORMATION TABLE		
PARCEL NUMBER	OWNER NAME	OWNER ADDRESS
230919000 230917000 230914000	POMEROY-PLOWMAN RANCH LIMITED	20902 NE LUCIA FALLS RD YACOLT WA , 98675
231169000	BRUCE AND HEATHER BEARD	31808 NE 215TH AVE YACOLT WA , 98675
231147000	SCOTT JOHNS	PO BOX 65486 VANCOUVER WA , 98665
231183000	DAVID R & MARION L SWENDSEN	32214 NE RAILROAD AVE YACOLT WA , 98675
231148000 231352000	STOREDAHL PROPERTIES LLC	2233 TALLEY WAY KELSO WA , 98626
229848000	LEVI ANDJENNIFER STENERSEN	PO BOX 429 YACOLT WA , 98675
230065000	MICHAEL AND JEAN WEST	PO BOX 452 YACOLT WA , 98675
230070000	JONATHAN LOVEGROVE AND NATTAMON CHANGKWEN	31821 NE MYSTIC DR YACOLT WA , 98675
230066000	JUDITH TODD	31714 NE MYSTIC DR YACOLT WA , 98675
230073000	GARY SOUTH	31110 NE MYSTIC DR YACOLT WA , 9867
229847000	GRANT AND SHANNON NELSON	PO BOX 415 YACOLT WA , 98675
230069000	DAVID AND SUSAN STIMES	2024 NE 90TH AVE VANCOUVER WA , 98664
230075000 230078000	GAYLORD AND CAROL STEPHENSON	39904 NE ROTSCHY RD YACOLT WA , 98675
230062000	PAULA G STEEPHENSON TRUSTEE	39904 NE ROTSCHY RD YACOLT WA , 98675
230077000	DENNIS AND KATHY STEPHENSON	39904 NE ROTSCHY RD YACOLT WA , 98675
230067000	YACOLT MOUNTAIN QUARRY LLC	PO BOX 464 YACOLT WA , 98675
230079000	DAN AND SONJA MASSIE	21115 NE YACOLT MOUNTAIN RD YACOLT WA , 98675
230274000	JAMES AND EILEEN KASKI	22011 NE 212TH AVE BATTLE GROUND WA , 98604
230295000 230294000	SAM AND CAROL SMITH	39513 NE 21ST AVE WOODLAND WA , 98674
230300000	JAMES AND LEAH MATILLA	PO BOX 447 BATTLE GROUND WA , 98604
230276000	CECIL AND MARIE ROTSCHY	34522 NE 225TH CT YACOLT WA , 98675

SUBJECT PROPERTY INFORMATION TABLE		
PARCEL NUMBER	OWNER NAME	OWNER ADDRESS
230301000 230061000	STOREDAHL PROPERTIES LLC	2233 TALLEY WAY KELSO WA , 98626
230067000	YACOLT MOUNTAIN QUARRY LLC	PO BOX 464 YACOLT WA , 98675
230270000	CECIL AND MARIE ROTSCHY	34522 NE 225TH CT YACOLT WA , 98675
230076000	BRENT AND HEIDI ROTSCHY	PO BOX 464 YACOLT WA , 98675

PROPERTY OWNERSHIP INFORMATION

J.L. STOREDAHL & SONS

STOREDAHL-15-01
JANUARY 2018

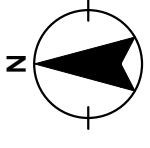
CLARK COUNTY, WA
SECTIONS 3, 4, AND 5, TOWNSHIP 4N, RANGE 3E, W.M.

FIGURE 3

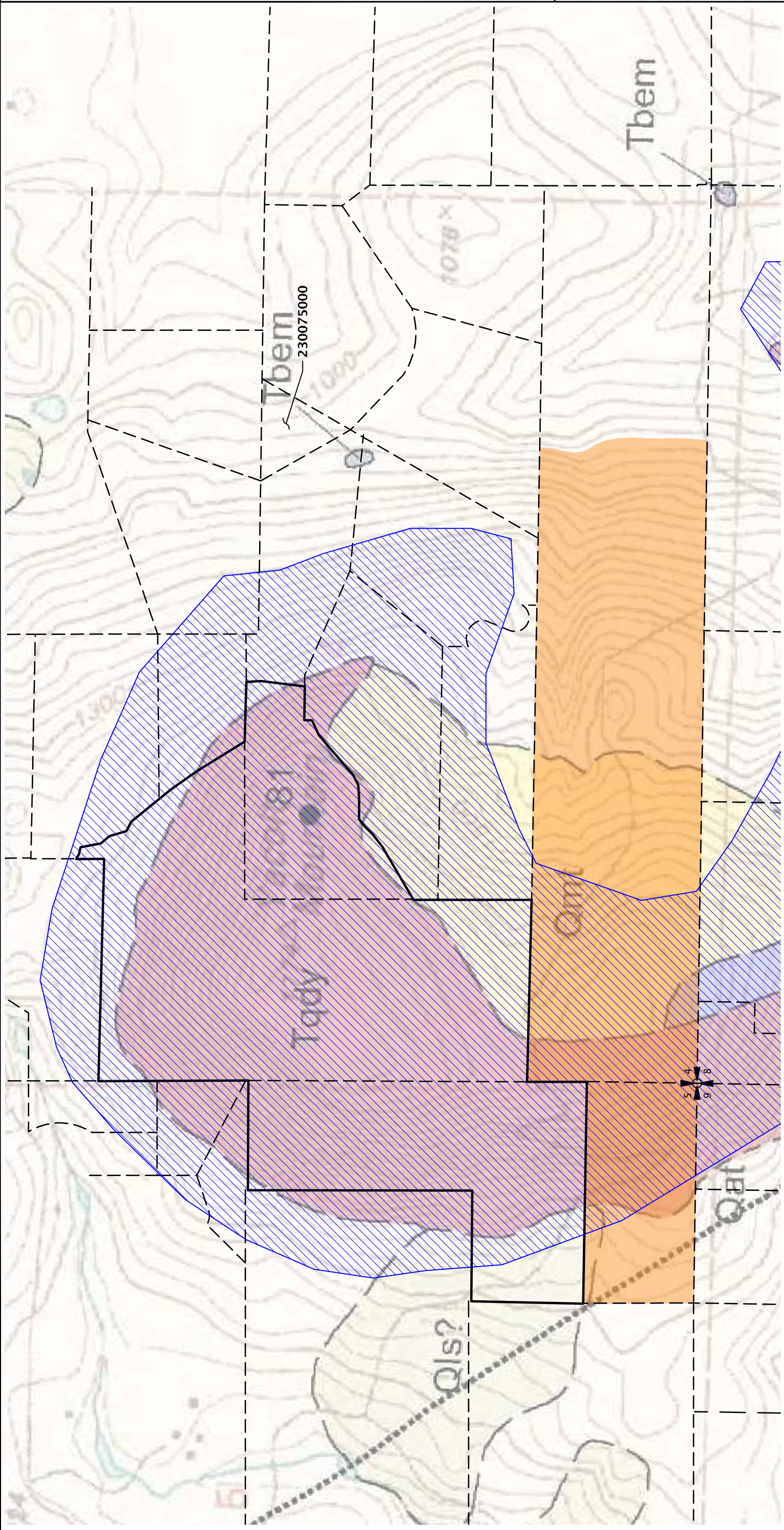


NOTES:
1. PROPERTY OWNERSHIP INFORMATION OBTAINED FROM CLARK COUNTY ASSESSOR.
2. FOR PROPERTY LOCATIONS, SEE FIGURE 2.

- LEGEND:**
- APPROXIMATE EXISTING PERMIT BOUNDARY
 - PROPOSED MINERAL OVERLAY EXPANSION AREA (~107 ACRES)
 - - - PROPERTY PARCEL BOUNDARY
 - ▨ DNR RESOURCE AREA (~489 ACRES)
 - ⊕ SECTION CORNER



NOTE:
1. GEOLOGY MAP: USGS - EVARTS, 2006



Attachment B Description of Level-of-
Service

DESCRIPTION OF LEVEL OF SERVICE

Level of service (LOS) is a concept developed to quantify the degree of comfort (including such elements as travel time, number of stops, total amount of stopped delay, and impediments caused by other vehicles) afforded to drivers as they travel through an intersection or roadway segment. Six grades are used to denote the various level of service from “A” to “F”.¹

Signalized Intersections

The six level-of-service grades are described qualitatively for signalized intersections in Table B1. Additionally, Table B2 identifies the relationship between level of service and average control delay per vehicle. Control delay is defined to include initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Using this definition, Level of Service “D” is generally considered to represent the minimum acceptable design standard.

Figure 1 Table B1: Level-of-Service Definitions (Signalized Intersections)

Level of Service	Average Delay per Vehicle
A	Very low average control delay, less than 10 seconds per vehicle. This occurs when progression is extremely favorable, and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.
B	Average control delay is greater than 10 seconds per vehicle and less than or equal to 20 seconds per vehicle. This generally occurs with good progression and/or short cycle lengths. More vehicles stop than for a level of service A, causing higher levels of average delay.
C	Average control delay is greater than 20 seconds per vehicle and less than or equal to 35 seconds per vehicle. These higher delays may result from fair progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
D	Average control delay is greater than 35 seconds per vehicle and less than or equal to 55 seconds per vehicle. The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle length, or high volume/capacity ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.
E	Average control delay is greater than 55 seconds per vehicle and less than or equal to 80 seconds per vehicle. This is usually considered to be the limit of acceptable delay. These high delay values generally (but not always) indicate poor progression, long cycle lengths, and high volume/capacity ratios. Individual cycle failures are frequent occurrences.
F	Average control delay is in excess of 80 seconds per vehicle. This is considered to be unacceptable to most drivers. This condition often occurs with oversaturation. It may also occur at high volume/capacity ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also contribute to such high delay values.

¹ Most of the material in this appendix is adapted from the Transportation Research Board, Highway Capacity Manual, (2000).

Figure 2 Table B2: Level-of-Service Criteria for Signalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10 and ≤20
C	>20 and ≤35
D	>35 and ≤55
E	>55 and ≤80
F	>80

Unsignalized Intersections

Unsignalized intersections include two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections. The 2000 Highway Capacity Manual (HCM) provides models for estimating control delay at both TWSC and AWSC intersections. A qualitative description of the various service levels associated with an unsignalized intersection is presented in Table B3. A quantitative definition of level of service for unsignalized intersections is presented in Table B4. Using this definition, Level of Service “E” is generally considered to represent the minimum acceptable design standard.

Figure 3 Table B3: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Delay per Vehicle to Minor Street
A	<ul style="list-style-type: none"> Nearly all drivers find freedom of operation. Very seldom is there more than one vehicle in queue.
B	<ul style="list-style-type: none"> Some drivers begin to consider the delay an inconvenience. Occasionally there is more than one vehicle in queue.
C	<ul style="list-style-type: none"> Many times there is more than one vehicle in queue. Most drivers feel restricted, but not objectionably so.
D	<ul style="list-style-type: none"> Often there is more than one vehicle in queue. Drivers feel quite restricted.
E	<ul style="list-style-type: none"> Represents a condition in which the demand is near or equal to the probable maximum number of vehicles that can be accommodated by the movement. There is almost always more than one vehicle in queue. Drivers find the delays approaching intolerable levels.
F	<ul style="list-style-type: none"> Forced flow. Represents an intersection failure condition that is caused by geometric and/or operational constraints external to the intersection.

Figure 4 Table B4: Level-of-Service Criteria for Unsignalized Intersections

Level of Service	Average Control Delay per Vehicle (Seconds)
A	<10.0
B	>10.0 and ≤ 15.0
C	>15.0 and ≤ 25.0
D	>25.0 and ≤ 35.0
E	>35.0 and ≤ 50.0
F	>50.0

It should be noted that the level-of-service criteria for unsignalized intersections are somewhat different than the criteria used for signalized intersections. The primary reason for this difference is that drivers expect different levels of performance from different kinds of transportation facilities. The expectation is that a signalized intersection is designed to carry higher traffic volumes than an unsignalized intersection. Additionally, there are a number of driver behavior considerations that combine to make delays at signalized intersections less galling than at unsignalized intersections. For example, drivers at signalized intersections are able to relax during the red interval, while drivers on the minor street approaches to TWSC intersections must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at unsignalized intersections than signalized intersections. For these

reasons, it is considered that the control delay threshold for any given level of service is less for an unsignalized intersection than for a signalized intersection. While overall intersection level of service is calculated for AWSC intersections, level of service is only calculated for the minor approaches and the major street left turn movements at TWSC intersections. No delay is assumed to the major street through movements. For TWSC intersections, the overall intersection level of service remains undefined: level of service is only calculated for each minor street lane.

In the performance evaluation of TWSC intersections, it is important to consider other measures of effectiveness (MOEs) in addition to delay, such as v/c ratios for individual movements, average queue lengths, and 95th-percentile queue lengths. By focusing on a single MOE for the worst movement only, such as delay for the minor-street left turn, users may make inappropriate traffic control decisions. The potential for making such inappropriate decisions is likely to be particularly pronounced when the HCM level-of-service thresholds are adopted as legal standards, as is the case in many public agencies.

Attachment C Quarry Operations Summary



Brian Dunn (Kittelson & Associates),

Yacolt Quarry Traffic Study Data

-Employee count at the quarry- 8-10 employees

-Truck Type (Combination) Truck & Pup Trailer or Belly Dump (Tractor-Trailer-Trailer). These consist of 8-9 Axles combinations rated at carrying 105,500 lbs.

-Haul Routes:

(Loaded leaving the quarry)

100 percent of the time- Trucks leave the quarry on the privately owned, paved haul road that reaches NE Kelly Rd.

95 percent of that traffic leaving the quarry, turns right (north) onto Kelly Rd, turns left (west) onto NE Gabriel Rd, Turns left (south) onto SR503 and heads to market all over southern Clark County.

Less than 5 percent of that traffic travels south on Kelly Rd, then turns left (headed east) onto Lucia Falls Rd, then turning right (south) onto NE 172nd Ave towards the Heisson market.

The remaining percentage typically are travelling north on NE Kelly Rd and continuing beyond NE Gabriel Rd until they reach SR 503, where they turn right (east) towards the NE Cedar Creek market.

(Empty returning to the quarry)

All trucks northbound on SR503 turn right (east) onto NE Rock Creek Rd (becomes NE Lucia Falls Rd). then a left (north) onto NE Kelly Rd until they reach the entrance to the quarry.

The exception being the small percentage whom would return from the Heisson or Cedar Creek market.

- Daily/Monthly/Annual Trip Data:

2017 Load Count (Mountain Top Quarry)

Month	January	February	March	April	May	June
Daily Average per day worked	126 loads/day	127 loads/day	128 loads/day	133 loads/day	131 loads/day	180 loads/day
Monthly Total	1,510 loads	2,161 loads	2,812 loads	2,659 loads	2,878 loads	3,952 loads
Month	July	August	September	October	November	December
Daily Average per day worked	187 loads/day	212 loads/day	220 loads/day	233 loads/day	245 loads/day	216 loads/day
Monthly Total	4,103 loads	5,737 loads	5,281 loads	6,054 loads	4,904 loads	3,894 loads
Annual Total	45,945 Loads					

The Daily Average “per day worked” is just that. If we were closed due to weather, holidays, or weekend, I didn’t include those when determining my average. Saturdays worked were factored into the average.

If you need anything else or need me to clarify anything, feel free to let me know.

Thanks Brian!

Sincerely,

Bo J. Storedahl

(360)957-3542

Bo@Storedahl.com

Attachment D 24-Hour Traffic Count Data at
Site Access

LOCATION: Yacolt Mountain Quarry Access
SPECIFIC LOCATION: Yacolt Mountain Quarry Access
CITY/STATE: Yacolt, WA

QC JOB #: 14641615
DIRECTION: EB
DATE: Mar 01 2018 - Mar 01 2018

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				0		0			0	
1:00 AM				0		0			0	
2:00 AM				0		0			0	
3:00 AM				0		0			0	
4:00 AM				8		8			8	
5:00 AM				2		2			2	
6:00 AM				4		4			4	
7:00 AM				28		28			28	
8:00 AM				19		19			19	
9:00 AM				31		31			31	
10:00 AM				25		25			25	
11:00 AM				32		32			32	
12:00 PM				25		25			25	
1:00 PM				29		29			29	
2:00 PM				29		29			29	
3:00 PM				16		16			16	
4:00 PM				2		2			2	
5:00 PM				3		3			3	
6:00 PM				0		0			0	
7:00 PM				1		1			1	
8:00 PM				0		0			0	
9:00 PM				0		0			0	
10:00 PM				0		0			0	
11:00 PM				0		0			0	
Day Total				254		254			254	
% Weekday Average				100.0%		100.0%				
% Week Average				100.0%		100.0%				
AM Peak Volume				11:00 AM 32		11:00 AM 32			11:00 AM 32	
PM Peak Volume				1:00 PM 29		1:00 PM 29			1:00 PM 29	
<i>Comments:</i>										

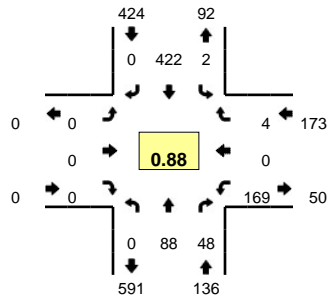
		QC JOB #: 14641615 DIRECTION: EB/WB DATE: Mar 01 2018 - Mar 01 2018								
		LOCATION: Yacolt Mountain Quarry Access SPECIFIC LOCATION: Yacolt Mountain Quarry Access CITY/STATE: Yacolt, WA								
Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM						0			0	
1:00 AM						0			0	
2:00 AM						0			0	
3:00 AM						0			0	
4:00 AM						8			8	
5:00 AM						2			2	
6:00 AM						4			4	
7:00 AM						62			62	
8:00 AM						41			41	
9:00 AM						67			67	
10:00 AM						52			52	
11:00 AM						60			60	
12:00 PM						58			58	
1:00 PM						59			59	
2:00 PM						58			58	
3:00 PM						40			40	
4:00 PM						11			11	
5:00 PM						5			5	
6:00 PM						1			1	
7:00 PM						1			1	
8:00 PM						0			0	
9:00 PM						1			1	
10:00 PM						1			1	
11:00 PM						0			0	
Day Total						531			531	
% Weekday Average						100.0%				
% Week Average						100.0%				
AM Peak						9:00 AM				9:00 AM
Volume						67				67
PM Peak						1:00 PM				1:00 PM
Volume						59				59
<i>Comments:</i>										

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				0		0			0	
1:00 AM				0		0			0	
2:00 AM				0		0			0	
3:00 AM				0		0			0	
4:00 AM				0		0			0	
5:00 AM				0		0			0	
6:00 AM				0		0			0	
7:00 AM				34		34			34	
8:00 AM				22		22			22	
9:00 AM				36		36			36	
10:00 AM				27		27			27	
11:00 AM				28		28			28	
12:00 PM				33		33			33	
1:00 PM				30		30			30	
2:00 PM				29		29			29	
3:00 PM				24		24			24	
4:00 PM				9		9			9	
5:00 PM				2		2			2	
6:00 PM				1		1			1	
7:00 PM				0		0			0	
8:00 PM				0		0			0	
9:00 PM				1		1			1	
10:00 PM				1		1			1	
11:00 PM				0		0			0	
Day Total				277		277			277	
% Weekday Average				100.0%		100.0%				
% Week Average				100.0%		100.0%				
AM Peak Volume				36		36			36	9:00 AM
PM Peak Volume				33		33			33	12:00 PM
<i>Comments:</i>										

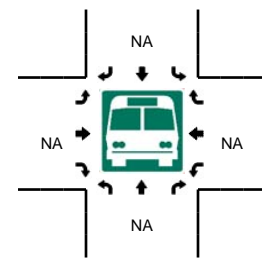
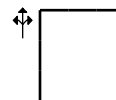
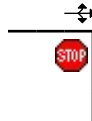
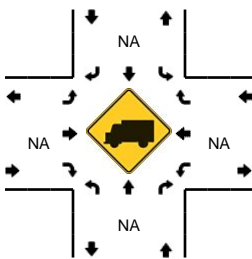
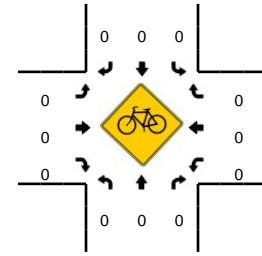
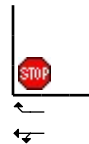
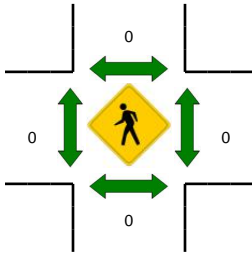
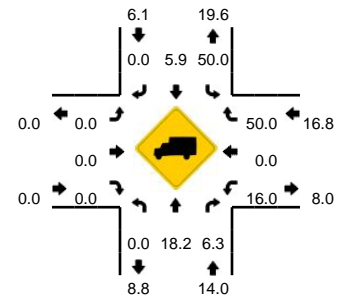
Attachment E Traffic Count Data

LOCATION: SR-503 -- NE Gabriel Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641601
DATE: Thu, Mar 01 2018



Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

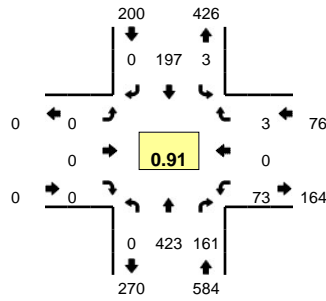


5-Min Count Period Beginning At	SR-503 (Northbound)				SR-503 (Southbound)				NE Gabriel Rd (Eastbound)				NE Gabriel Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	11	5	0	0	31	0	0	0	0	0	0	10	0	0	0	57	
7:05 AM	0	9	1	0	0	34	0	0	0	0	0	0	5	0	0	0	49	
7:10 AM	0	4	5	0	0	33	0	0	0	0	0	0	4	0	2	0	48	
7:15 AM	0	8	2	0	0	33	0	0	0	0	0	0	11	0	1	0	55	
7:20 AM	0	9	0	0	1	34	0	0	0	0	0	0	22	0	0	0	66	
7:25 AM	0	6	3	0	0	40	0	0	0	0	0	0	16	0	0	0	65	
7:30 AM	0	6	3	0	0	50	0	0	0	0	0	0	13	0	0	0	72	
7:35 AM	0	9	2	0	0	44	0	0	0	0	0	0	14	0	0	0	69	
7:40 AM	0	10	1	0	0	40	0	0	0	0	0	0	15	0	1	0	67	
7:45 AM	0	6	2	0	0	33	0	0	0	0	0	0	18	0	0	0	59	
7:50 AM	0	5	5	0	0	24	0	0	0	0	0	0	14	0	0	0	48	
7:55 AM	0	6	4	0	1	38	0	0	0	0	0	0	6	0	0	0	55	710
8:00 AM	0	9	7	0	0	24	0	0	0	0	0	0	11	0	1	0	52	705
8:05 AM	0	10	6	0	0	37	0	0	0	0	0	0	16	0	1	0	70	726
8:10 AM	0	4	13	0	0	25	0	0	0	0	0	0	13	0	0	0	55	733
8:15 AM	0	3	3	0	0	34	0	0	0	0	0	0	11	0	0	0	51	729
8:20 AM	0	7	3	0	0	24	0	0	0	0	0	0	7	0	0	0	41	704
8:25 AM	0	5	3	0	1	29	0	0	0	0	0	0	15	0	1	0	54	693
8:30 AM	0	6	1	0	1	15	0	0	0	0	0	0	9	0	0	0	32	653
8:35 AM	0	5	2	0	0	24	0	0	0	0	0	0	8	0	0	0	39	623
8:40 AM	0	9	4	0	0	19	0	0	0	0	0	0	11	0	0	0	43	599
8:45 AM	0	11	6	0	0	24	0	0	0	0	0	0	11	0	0	0	52	592
8:50 AM	0	11	5	0	0	23	0	0	0	0	0	0	13	0	0	0	52	596
8:55 AM	0	7	5	0	0	17	0	0	0	0	0	0	6	0	0	0	35	576
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	100	24	0	0	536	0	0	0	0	0	0	168	0	4	0	832	
Heavy Trucks	0	12	4	0	0	16	0	0	0	0	0	0	8	0	0	0	40	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

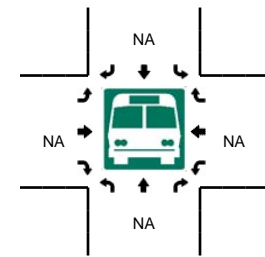
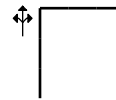
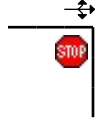
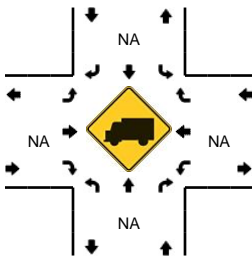
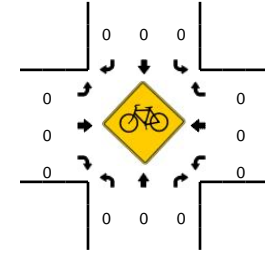
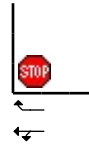
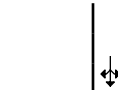
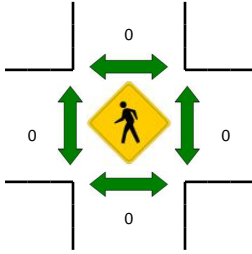
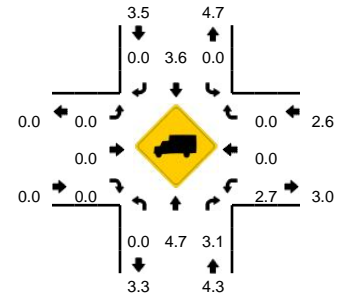
Comments:

LOCATION: SR-503 -- NE Gabriel Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641602
DATE: Thu, Mar 01 2018



Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:20 PM -- 5:35 PM

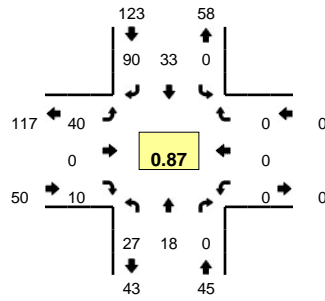


5-Min Count Period Beginning At	SR-503 (Northbound)				SR-503 (Southbound)				NE Gabriel Rd (Eastbound)				NE Gabriel Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	34	9	0	0	14	0	0	0	0	0	0	5	0	0	0	62	
4:05 PM	0	26	14	0	1	14	0	0	0	0	0	0	8	0	0	0	63	
4:10 PM	0	28	11	0	1	18	0	0	0	0	0	0	2	0	0	0	60	
4:15 PM	0	26	13	0	0	17	0	0	1	0	0	0	21	0	2	0	80	
4:20 PM	0	32	14	0	0	10	0	0	0	0	0	0	13	0	2	0	71	
4:25 PM	0	26	12	0	0	24	0	0	0	0	0	0	5	0	1	0	68	
4:30 PM	0	32	12	0	1	16	0	0	0	0	0	0	12	0	0	0	73	
4:35 PM	0	30	12	0	0	17	0	0	0	0	0	0	3	0	0	0	62	
4:40 PM	0	33	7	0	0	23	0	0	0	0	0	0	7	0	0	0	70	
4:45 PM	0	31	10	0	0	18	0	0	0	0	0	0	10	0	0	0	69	
4:50 PM	0	35	15	0	0	22	0	0	0	0	0	0	8	0	2	0	82	
4:55 PM	0	27	15	0	0	20	0	0	0	0	0	0	7	0	0	0	69	829
5:00 PM	0	39	9	0	0	14	0	0	0	0	0	0	6	0	1	0	69	836
5:05 PM	0	36	14	0	0	11	0	0	0	0	0	0	6	0	0	0	67	840
5:10 PM	0	26	8	0	1	21	0	0	0	0	0	0	7	0	0	0	63	843
5:15 PM	0	35	14	0	0	13	0	0	0	0	0	0	4	0	0	0	66	829
5:20 PM	0	43	17	0	0	19	0	0	0	0	0	0	2	0	0	0	81	839
5:25 PM	0	39	18	0	1	18	0	0	0	0	0	0	2	0	0	0	78	849
5:30 PM	0	45	12	0	0	13	0	0	0	0	0	0	8	0	0	0	78	854
5:35 PM	0	33	14	0	0	13	0	0	0	0	0	0	5	0	0	0	65	857
5:40 PM	0	34	15	0	1	15	0	0	0	0	0	0	8	0	0	0	73	860
5:45 PM	0	38	14	0	0	11	0	0	0	0	0	0	3	0	0	0	66	857
5:50 PM	0	47	24	0	0	8	0	0	0	0	0	0	4	0	0	0	83	858
5:55 PM	0	32	17	0	0	10	0	0	0	0	0	0	5	0	0	0	64	853
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	508	188	0	4	200	0	0	0	0	0	0	48	0	0	0	948	
Heavy Trucks	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

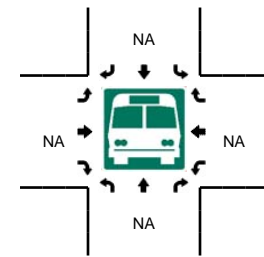
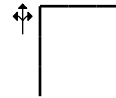
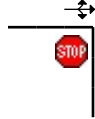
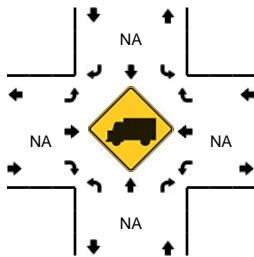
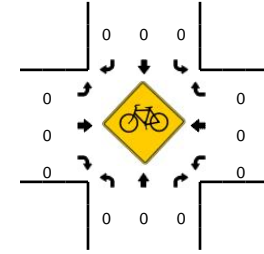
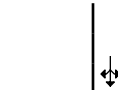
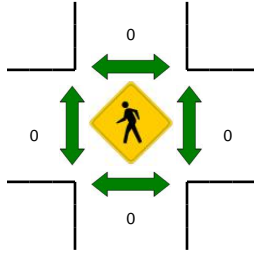
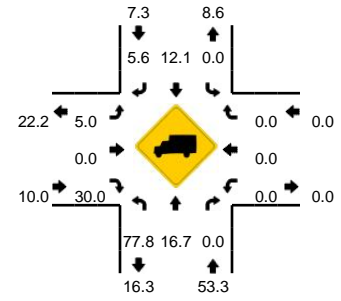
Comments:

LOCATION: NE Kelly Rd -- NE Gabriel Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641603
DATE: Thu, Mar 01 2018



Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

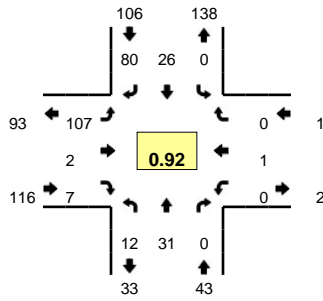


5-Min Count Period Beginning At	NE Kelly Rd (Northbound)				NE Kelly Rd (Southbound)				NE Gabriel Rd (Eastbound)				NE Gabriel Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	3	0	0	0	0	3	0	1	0	1	0	0	0	0	0	8	
7:05 AM	1	0	0	0	0	4	5	0	5	0	1	0	0	0	0	0	16	
7:10 AM	1	0	0	0	0	2	9	0	1	0	0	0	0	0	0	0	13	
7:15 AM	2	0	0	0	0	0	13	0	0	0	0	0	0	0	0	0	15	
7:20 AM	3	2	0	0	0	1	8	0	3	0	2	0	0	0	0	0	19	
7:25 AM	1	2	0	0	0	4	4	0	1	0	2	0	0	0	0	0	14	
7:30 AM	1	4	0	0	0	0	11	0	2	0	0	0	0	0	0	0	18	
7:35 AM	2	1	0	0	0	5	11	0	4	0	0	0	0	0	0	0	23	
7:40 AM	5	5	0	0	0	2	9	0	1	0	0	0	0	0	0	0	22	
7:45 AM	1	2	0	0	0	2	11	0	0	0	1	0	0	0	0	0	17	
7:50 AM	1	0	0	0	0	5	2	0	4	0	0	0	0	0	0	0	12	
7:55 AM	4	1	0	0	0	4	9	0	1	0	0	0	0	0	0	0	19	196
8:00 AM	6	0	0	0	0	3	6	0	4	0	2	0	0	0	0	0	21	209
8:05 AM	0	0	0	0	0	4	6	0	4	0	1	0	0	0	0	0	15	208
8:10 AM	3	0	0	0	0	1	6	0	5	0	1	0	0	0	0	0	16	211
8:15 AM	0	1	0	0	0	2	7	0	11	0	1	0	0	0	0	0	22	218
8:20 AM	3	2	0	0	0	2	5	0	4	0	0	0	0	0	0	0	16	215
8:25 AM	0	0	0	0	0	2	7	0	3	0	0	0	0	0	0	0	12	213
8:30 AM	1	2	0	0	0	0	1	0	2	0	0	1	0	0	0	0	7	202
8:35 AM	2	0	0	0	0	3	8	0	1	0	0	0	0	0	0	0	14	193
8:40 AM	2	3	0	0	0	1	8	0	5	0	0	0	0	0	0	0	19	190
8:45 AM	1	1	0	0	0	2	6	0	4	0	0	0	0	0	0	0	14	187
8:50 AM	2	4	0	0	0	1	6	0	5	0	1	0	0	0	0	0	19	194
8:55 AM	5	1	0	0	0	3	5	0	2	1	0	0	0	0	0	0	17	192
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	32	40	0	0	0	28	124	0	28	0	0	0	0	0	0	0	252	
Heavy Trucks	20	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	28	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

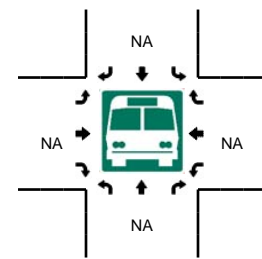
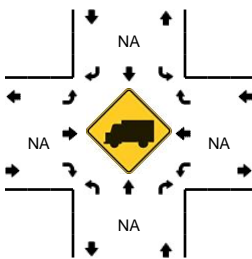
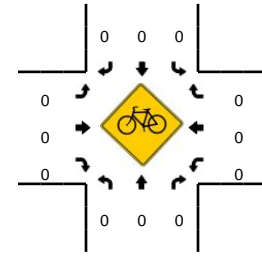
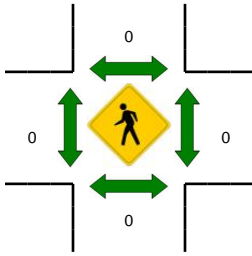
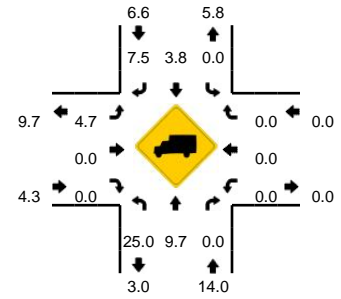
Comments:

LOCATION: NE Kelly Rd -- NE Gabriel Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641604
DATE: Thu, Mar 01 2018



Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:05 PM -- 4:20 PM

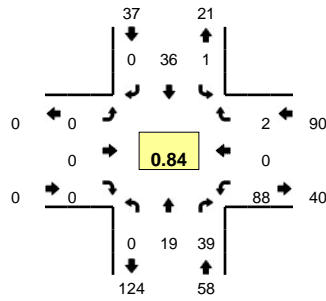


5-Min Count Period Beginning At	NE Kelly Rd (Northbound)				NE Kelly Rd (Southbound)				NE Gabriel Rd (Eastbound)				NE Gabriel Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	2	0	0	0	0	1	5	0	5	0	2	0	0	0	0	0	15	
4:05 PM	2	3	0	0	0	4	13	0	1	0	1	0	0	0	0	0	24	
4:10 PM	2	1	0	0	0	3	9	0	14	1	0	0	0	0	0	0	30	
4:15 PM	1	2	0	0	0	0	7	0	7	0	1	0	0	0	0	0	18	
4:20 PM	0	1	0	0	0	4	4	0	11	0	0	0	0	0	0	0	20	
4:25 PM	1	3	0	0	0	2	6	0	10	1	0	0	0	0	0	0	23	
4:30 PM	0	9	0	0	0	2	8	0	9	0	0	0	0	0	0	0	28	
4:35 PM	2	4	0	0	0	1	2	0	8	0	1	0	0	1	0	0	19	
4:40 PM	0	1	0	0	0	4	5	0	9	0	1	0	0	0	0	0	20	
4:45 PM	1	2	0	0	0	2	7	0	7	0	0	0	0	0	0	0	19	
4:50 PM	2	5	0	0	0	2	8	0	9	0	1	0	0	0	0	0	27	
4:55 PM	1	0	0	0	0	1	8	0	10	0	2	0	0	0	0	0	22	265
5:00 PM	0	0	0	0	0	1	3	0	12	0	0	0	0	0	0	0	16	266
5:05 PM	1	2	0	0	0	1	8	0	6	0	1	0	0	0	0	0	19	261
5:10 PM	0	5	0	0	0	0	5	0	10	0	1	0	0	0	0	0	21	252
5:15 PM	0	3	0	0	0	4	2	0	7	0	1	0	0	0	0	0	17	251
5:20 PM	0	5	0	0	0	0	3	0	13	0	2	0	0	0	0	0	23	254
5:25 PM	1	2	0	0	0	2	6	0	11	0	1	0	0	0	0	0	23	254
5:30 PM	1	2	0	0	0	0	3	0	12	0	2	0	0	0	0	0	20	246
5:35 PM	0	4	0	0	0	4	7	0	8	0	1	0	0	0	0	0	24	251
5:40 PM	2	3	0	0	0	2	2	0	9	0	1	0	0	0	0	0	19	250
5:45 PM	0	1	0	0	0	2	2	0	13	0	2	0	0	0	0	0	20	251
5:50 PM	0	4	0	0	0	2	1	0	10	0	2	0	0	0	0	0	19	243
5:55 PM	0	1	0	0	0	1	4	0	17	0	0	0	0	0	0	0	23	244
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	20	24	0	0	0	28	116	0	88	4	8	0	0	0	0	0	288	
Heavy Trucks	12	8	0	0	0	0	16	0	4	0	0	0	0	0	0	0	40	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

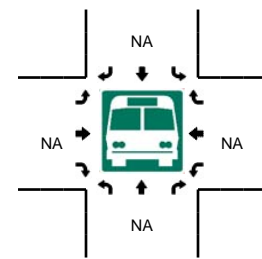
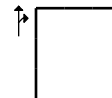
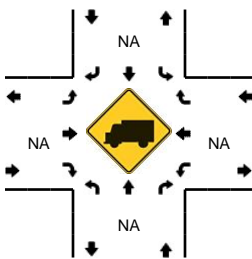
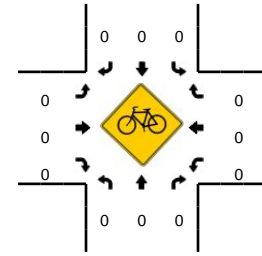
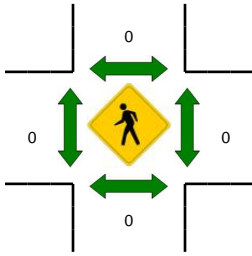
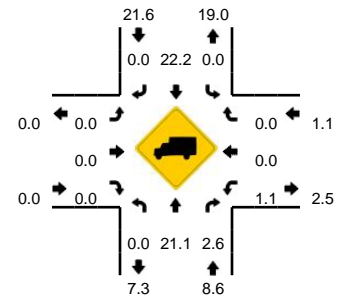
Comments:

LOCATION: NE Kelly Rd -- NE Garner Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641605
DATE: Thu, Mar 01 2018



Peak-Hour: 7:20 AM -- 8:20 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

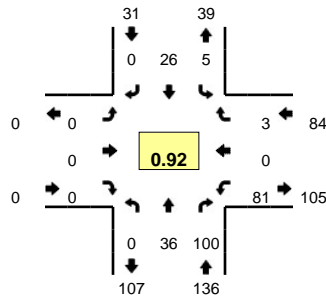


5-Min Count Period Beginning At	NE Kelly Rd (Northbound)				NE Kelly Rd (Southbound)				NE Garner Rd (Eastbound)				NE Garner Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	3	0	0	0	1	0	0	0	0	0	0	2	0	0	0	6	
7:05 AM	0	2	4	0	1	5	0	0	0	0	0	0	4	0	0	0	16	
7:10 AM	0	1	1	0	0	2	0	0	0	0	0	0	9	0	0	0	13	
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	12	0	1	0	14	
7:20 AM	0	3	2	0	0	3	0	0	0	0	0	0	6	0	0	0	14	
7:25 AM	0	0	3	0	0	2	0	0	0	0	0	0	6	0	1	0	12	
7:30 AM	0	5	1	0	0	0	0	0	0	0	0	0	11	0	0	0	17	
7:35 AM	0	2	2	0	0	2	0	0	0	0	0	0	14	0	0	0	20	
7:40 AM	0	3	3	0	0	1	0	0	0	0	0	0	10	0	1	0	18	
7:45 AM	0	1	2	0	0	3	0	0	0	0	0	0	10	0	0	0	16	
7:50 AM	0	1	3	0	0	3	0	0	0	0	0	0	4	0	0	0	11	
7:55 AM	0	1	1	0	0	7	0	0	0	0	0	0	6	0	0	0	15	172
8:00 AM	0	1	3	0	0	3	0	0	0	0	0	0	6	0	0	0	13	179
8:05 AM	0	0	4	0	0	6	0	0	0	0	0	0	5	0	0	0	15	178
8:10 AM	0	1	4	0	1	2	0	0	0	0	0	0	5	0	0	0	13	178
8:15 AM	0	1	11	0	0	4	0	0	0	0	0	0	5	0	0	0	21	185
8:20 AM	0	1	4	0	1	1	0	0	0	0	0	0	6	0	0	0	13	184
8:25 AM	0	1	3	0	0	5	0	0	0	0	0	0	4	0	0	0	13	185
8:30 AM	0	2	2	0	1	0	0	0	0	0	0	0	1	0	0	0	6	174
8:35 AM	0	0	1	0	0	1	0	0	0	0	0	0	11	0	0	0	13	167
8:40 AM	0	3	6	0	0	1	0	0	0	0	0	0	7	0	0	0	17	166
8:45 AM	0	0	5	0	0	2	0	0	0	0	0	0	6	0	0	0	13	163
8:50 AM	0	1	6	1	0	3	0	0	0	0	0	0	3	0	1	0	15	167
8:55 AM	0	1	2	0	2	2	0	0	0	0	0	0	6	0	0	0	13	165
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	40	24	0	0	12	0	0	0	0	0	0	140	0	4	0	220	
Heavy Trucks	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	4	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

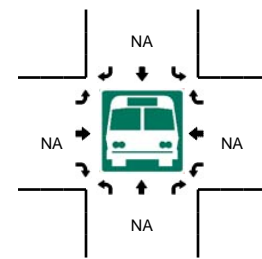
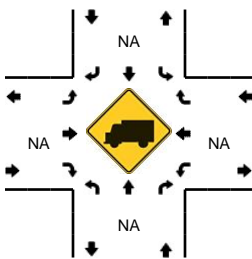
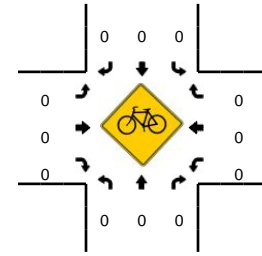
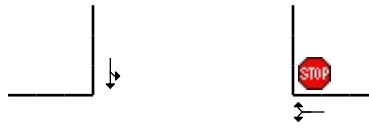
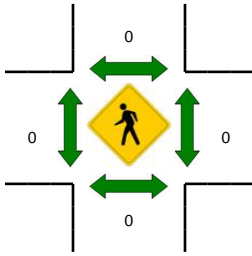
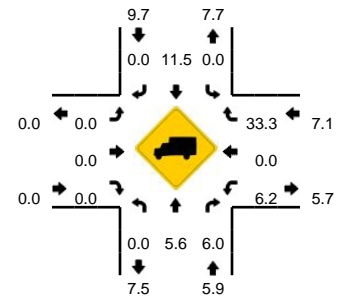
Comments:

LOCATION: NE Kelly Rd -- NE Garner Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641606
DATE: Thu, Mar 01 2018



Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:20 PM -- 4:35 PM

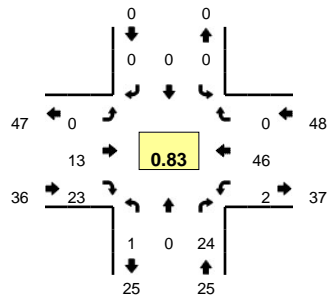


5-Min Count Period Beginning At	NE Kelly Rd (Northbound)				NE Kelly Rd (Southbound)				NE Garner Rd (Eastbound)				NE Garner Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	1	4	0	0	2	0	0	0	0	0	0	4	0	1	0	12	
4:05 PM	0	3	1	0	0	1	0	0	0	0	0	0	16	0	3	0	24	
4:10 PM	0	3	12	0	0	3	0	0	0	0	0	0	9	0	0	0	27	
4:15 PM	0	2	7	0	0	2	0	0	0	0	0	0	5	0	0	0	16	
4:20 PM	0	4	8	0	0	4	0	0	0	0	0	0	3	0	0	0	19	
4:25 PM	0	3	10	0	1	2	0	0	0	0	0	0	6	0	0	0	22	
4:30 PM	0	6	11	0	0	2	0	0	0	0	0	0	8	0	0	0	27	
4:35 PM	0	3	9	0	0	1	0	0	0	0	0	0	3	0	0	0	16	
4:40 PM	0	3	7	0	0	3	0	0	0	0	0	0	6	0	0	0	19	
4:45 PM	0	4	4	0	0	2	0	0	0	0	0	0	7	0	0	0	17	
4:50 PM	0	2	11	0	0	1	0	0	0	0	0	0	9	0	0	0	23	
4:55 PM	0	1	10	0	3	5	0	0	0	0	0	0	3	0	0	0	22	244
5:00 PM	0	2	10	0	1	0	0	0	0	0	0	0	6	0	0	0	19	251
5:05 PM	0	2	3	0	0	0	0	0	0	0	0	0	8	0	0	0	13	240
5:10 PM	0	5	12	0	0	1	0	0	0	0	0	0	3	0	5	0	26	239
5:15 PM	0	5	6	0	0	4	0	0	0	0	0	0	2	0	1	0	18	241
5:20 PM	0	7	6	0	0	1	0	0	0	0	0	0	2	0	0	0	16	238
5:25 PM	0	7	11	0	0	2	0	0	0	0	0	0	5	0	0	0	25	241
5:30 PM	0	4	9	0	0	0	0	0	0	0	0	0	3	0	0	0	16	230
5:35 PM	0	4	8	0	0	3	0	0	0	0	0	0	7	0	0	0	22	236
5:40 PM	0	5	5	0	1	2	0	0	0	0	0	0	2	0	1	0	16	233
5:45 PM	0	4	12	0	0	1	0	0	0	0	0	0	3	0	0	0	20	236
5:50 PM	0	4	11	0	0	2	0	0	0	0	0	0	1	0	1	0	19	232
5:55 PM	0	5	13	0	1	2	0	0	0	0	0	0	3	0	0	0	24	234
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	52	116	0	4	32	0	0	0	0	0	0	68	0	0	0	272	
Heavy Trucks	0	0	8	0	0	4	0	0	0	0	0	0	4	0	0	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

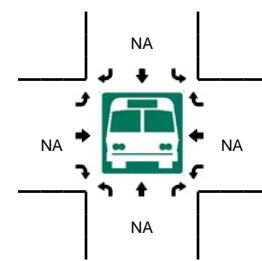
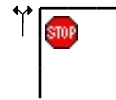
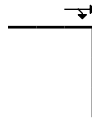
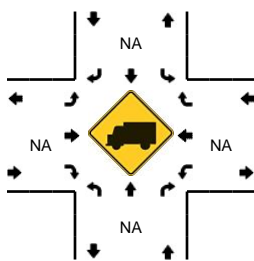
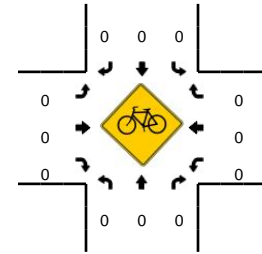
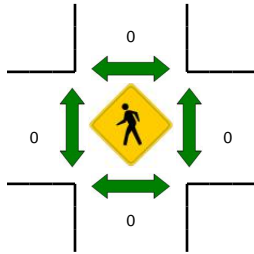
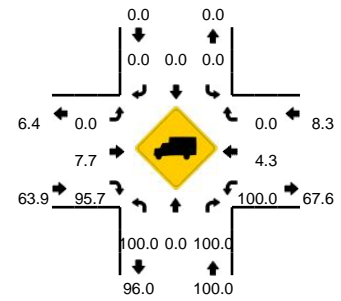
Comments:

LOCATION: Longview Fiber Rd -- NE Kelly Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641607
DATE: Thu, Mar 01 2018



Peak-Hour: 7:10 AM -- 8:10 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

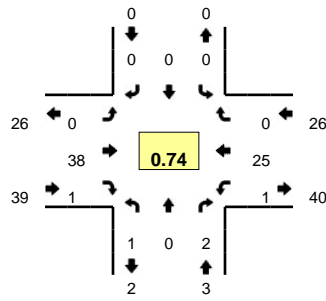


5-Min Count Period Beginning At	Longview Fiber Rd (Northbound)				Longview Fiber Rd (Southbound)				NE Kelly Rd (Eastbound)				NE Kelly Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	0	1	1	0	1	3	0	0	6	
7:05 AM	0	0	1	0	0	0	0	0	0	0	1	0	0	4	0	0	6	
7:10 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0	0	5	
7:15 AM	0	0	2	0	0	0	0	0	0	0	3	0	0	2	0	0	7	
7:20 AM	0	0	3	0	0	0	0	0	0	1	3	0	0	5	0	0	12	
7:25 AM	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0	0	6	
7:30 AM	0	0	1	0	0	0	0	0	0	2	3	0	1	4	0	0	11	
7:35 AM	0	0	2	0	0	0	0	0	0	4	3	0	0	5	0	0	14	
7:40 AM	0	0	3	0	0	0	0	0	0	1	3	0	0	1	0	0	8	
7:45 AM	0	0	1	0	0	0	0	0	0	1	3	0	0	4	0	0	9	
7:50 AM	0	0	2	0	0	0	0	0	0	1	1	0	0	8	0	0	12	
7:55 AM	0	0	6	0	0	0	0	0	0	0	2	0	0	3	0	0	11	107
8:00 AM	0	0	2	0	0	0	0	0	0	0	2	0	0	1	0	0	5	106
8:05 AM	1	0	2	0	0	0	0	0	0	0	0	0	0	6	0	0	9	109
8:10 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	4	108
8:15 AM	0	0	3	0	0	0	0	0	0	2	2	0	0	1	0	0	8	109
8:20 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	5	0	0	6	103
8:25 AM	0	0	1	0	0	0	0	0	0	2	3	0	0	2	0	0	8	105
8:30 AM	0	0	2	0	0	0	0	0	0	0	3	0	1	1	0	0	7	101
8:35 AM	0	0	1	0	0	0	0	0	0	0	2	0	0	1	0	0	4	91
8:40 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	0	5	88
8:45 AM	1	0	2	0	0	0	0	0	0	3	1	0	0	2	0	0	9	88
8:50 AM	0	0	2	0	0	0	0	0	0	0	2	0	0	1	0	0	5	81
8:55 AM	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	4	74
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	24	0	0	0	0	0	0	28	36	0	4	40	0	0	132	
Heavy Trucks	0	0	24	0	0	0	0	0	0	0	32	0	4	0	0	0	60	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

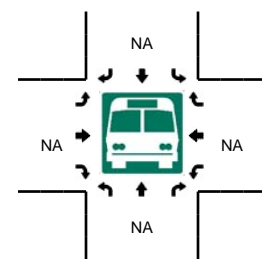
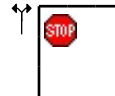
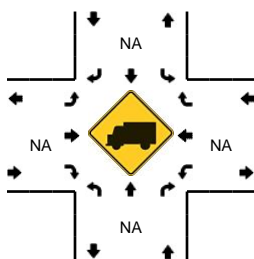
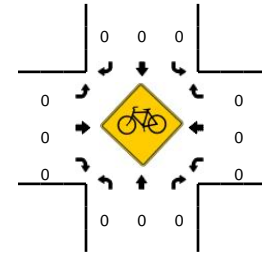
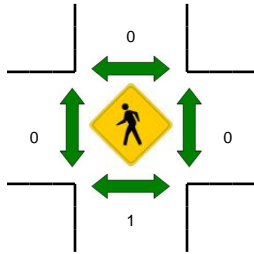
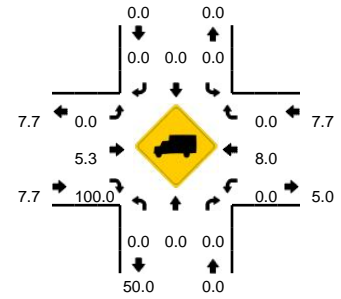
Comments:

LOCATION: Longview Fiber Rd -- NE Kelly Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641608
DATE: Thu, Mar 01 2018



Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

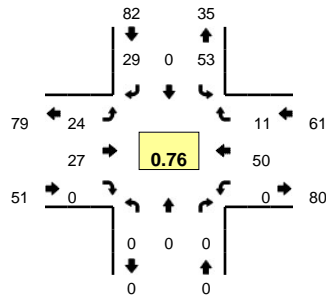


5-Min Count Period Beginning At	Longview Fiber Rd (Northbound)				Longview Fiber Rd (Southbound)				NE Kelly Rd (Eastbound)				NE Kelly Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM	0	0	3	0	0	0	0	0	0	3	0	0	0	1	0	0	0	7	
4:05 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	
4:10 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	
4:15 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	3	
4:20 PM	1	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	3	
4:25 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	6	
4:30 PM	0	0	0	0	0	0	0	0	0	5	1	0	0	1	0	0	0	7	
4:35 PM	0	0	2	0	0	0	0	0	0	2	0	0	0	1	0	0	0	5	
4:40 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	6	
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	9	0	0	0	10	
4:50 PM	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7	
4:55 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	4	65
5:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	60
5:05 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	58
5:10 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	6	60
5:15 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0	0	0	7	64
5:20 PM	1	0	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	7	68
5:25 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	5	67
5:30 PM	1	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	5	65
5:35 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2	62
5:40 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0	0	0	7	63
5:45 PM	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	3	56
5:50 PM	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	6	55
5:55 PM	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	4	55
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
All Vehicles	0	0	0	0	0	0	0	0	0	48	0	0	0	44	0	0	0	92	
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																			
Stopped Buses																			

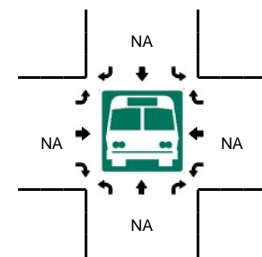
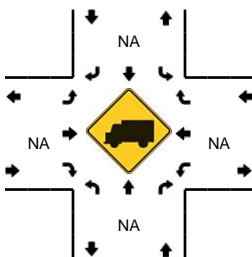
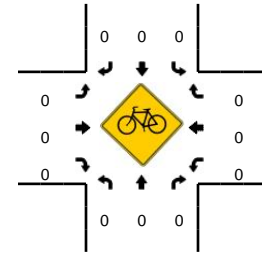
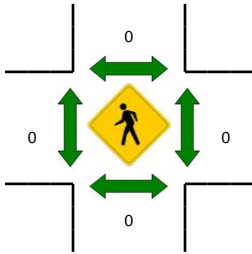
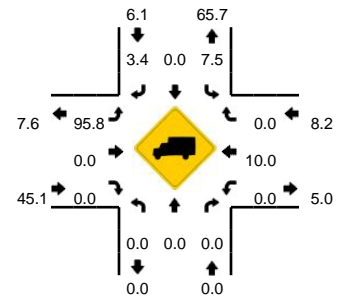
Comments:

LOCATION: NE Kelly Rd -- NE Lucia Falls Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641609
DATE: Thu, Mar 01 2018



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

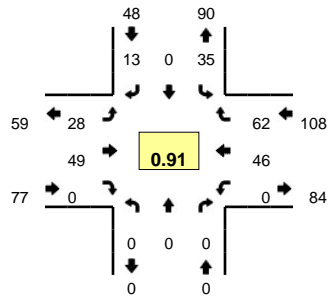


5-Min Count Period Beginning At	NE Kelly Rd (Northbound)				NE Kelly Rd (Southbound)				NE Lucia Falls Rd (Eastbound)				NE Lucia Falls Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
7:00 AM	0	0	0	0	2	0	3	0	1	2	0	0	0	2	0	0	0	10	
7:05 AM	0	0	0	0	2	0	4	0	0	2	0	0	0	0	7	0	0	15	
7:10 AM	0	0	0	0	8	0	6	0	2	0	0	0	0	0	5	0	0	21	
7:15 AM	0	0	0	0	3	0	1	0	4	3	0	0	0	0	5	0	0	16	
7:20 AM	0	0	0	0	4	0	4	0	0	1	0	0	0	0	2	0	0	11	
7:25 AM	0	0	0	0	3	0	1	0	3	2	0	0	0	0	3	4	0	16	
7:30 AM	0	0	0	0	6	0	1	0	1	5	0	0	0	0	4	2	0	19	
7:35 AM	0	0	0	0	7	0	4	0	5	3	0	0	0	0	6	2	0	27	
7:40 AM	0	0	0	0	5	0	1	0	3	2	0	0	0	0	5	2	0	18	
7:45 AM	0	0	0	0	4	0	1	0	1	3	0	0	0	0	3	0	0	12	
7:50 AM	0	0	0	0	3	0	1	0	2	2	0	0	0	0	3	1	0	12	
7:55 AM	0	0	0	0	6	0	2	0	2	2	0	0	0	0	5	0	0	17	194
8:00 AM	0	0	0	0	4	0	2	0	0	0	0	0	0	0	3	0	0	9	193
8:05 AM	0	0	0	0	5	0	2	0	1	1	0	0	0	0	6	0	0	15	193
8:10 AM	0	0	0	0	5	0	0	0	2	4	0	0	0	0	6	2	0	19	191
8:15 AM	0	0	0	0	2	0	2	0	0	1	0	0	0	0	1	0	0	6	181
8:20 AM	0	0	0	0	6	0	1	0	2	1	0	0	0	0	5	2	0	17	187
8:25 AM	0	0	0	0	3	0	3	0	3	5	0	0	0	0	0	2	0	16	187
8:30 AM	0	0	0	0	3	0	0	0	3	3	0	0	0	0	1	2	0	12	180
8:35 AM	0	0	0	0	0	0	1	0	0	3	0	0	0	0	1	1	0	6	159
8:40 AM	0	0	0	0	3	0	2	0	2	1	0	0	0	0	1	1	0	10	151
8:45 AM	0	0	0	0	3	0	1	0	1	0	0	0	0	0	4	1	0	10	149
8:50 AM	0	0	0	0	5	0	1	0	2	1	0	0	0	0	4	0	0	13	150
8:55 AM	0	0	0	0	1	0	2	0	0	3	0	0	0	0	2	1	0	9	142
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
All Vehicles	0	0	0	0	72	0	24	0	36	40	0	0	0	60	24	0	0	256	
Heavy Trucks	0	0	0	0	4	0	0	0	36	0	0	0	0	4	0	0	0	44	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																			
Stopped Buses																			

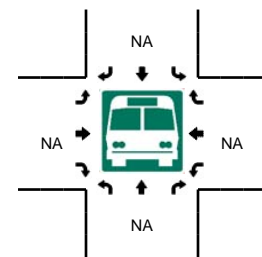
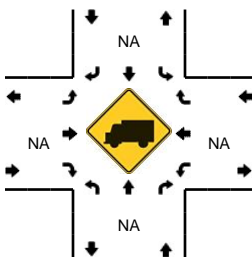
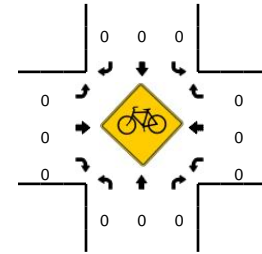
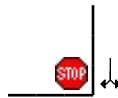
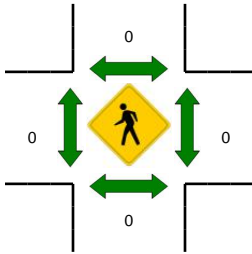
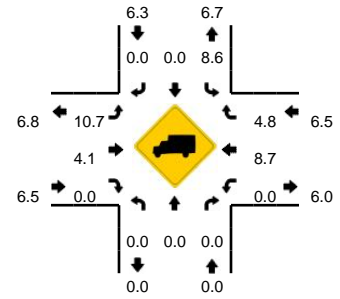
Comments:

LOCATION: NE Kelly Rd -- NE Lucia Falls Rd
CITY/STATE: Yacolt, WA

QC JOB #: 14641610
DATE: Thu, Mar 01 2018



Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 5:05 PM -- 5:20 PM

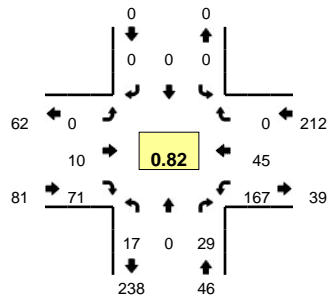


5-Min Count Period Beginning At	NE Kelly Rd (Northbound)				NE Kelly Rd (Southbound)				NE Lucia Falls Rd (Eastbound)				NE Lucia Falls Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	0	0	0	2	0	0	0	1	3	0	0	0	3	4	0	13	
4:05 PM	0	0	0	0	2	0	1	0	1	4	0	0	0	1	0	0	9	
4:10 PM	0	0	0	0	2	0	3	0	3	6	0	0	0	4	3	0	21	
4:15 PM	0	0	0	0	2	0	2	0	3	7	0	0	0	2	1	0	17	
4:20 PM	0	0	0	0	0	0	1	0	0	6	0	0	0	1	3	0	11	
4:25 PM	0	0	0	0	4	0	4	0	4	4	0	0	0	5	6	0	27	
4:30 PM	0	0	0	0	2	0	0	0	0	7	0	0	0	5	8	0	22	
4:35 PM	0	0	0	0	2	0	1	0	1	3	0	0	0	1	6	0	14	
4:40 PM	0	0	0	0	1	0	0	0	2	4	0	0	0	4	5	0	16	
4:45 PM	0	0	0	0	4	0	1	0	3	4	0	0	0	1	5	0	18	
4:50 PM	0	0	0	0	4	0	2	0	0	5	0	0	0	5	6	0	22	
4:55 PM	0	0	0	0	3	0	1	0	3	4	0	0	0	4	0	0	15	205
5:00 PM	0	0	0	0	2	0	1	0	3	2	0	0	0	2	2	0	12	204
5:05 PM	0	0	0	0	2	0	1	0	3	6	0	0	0	5	6	0	23	218
5:10 PM	0	0	0	0	4	0	0	0	4	2	0	0	0	4	6	0	20	217
5:15 PM	0	0	0	0	1	0	0	0	3	5	0	0	0	4	8	0	21	221
5:20 PM	0	0	0	0	6	0	2	0	2	3	0	0	0	6	4	0	23	233
5:25 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	7	6	0	16	222
5:30 PM	0	0	0	0	2	0	1	0	2	7	0	0	0	4	6	0	22	222
5:35 PM	0	0	0	0	2	0	0	0	2	2	0	0	0	2	3	0	11	219
5:40 PM	0	0	0	0	2	0	1	0	4	0	0	0	0	2	3	0	12	215
5:45 PM	0	0	0	0	3	0	0	0	0	8	0	0	0	3	6	0	20	217
5:50 PM	0	0	0	0	7	0	0	0	1	4	0	0	0	3	4	0	19	214
5:55 PM	0	0	0	0	3	0	0	0	1	4	0	0	0	6	2	0	16	215
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	0	0	0	0	28	0	4	0	40	52	0	0	0	52	80	0	256	
Heavy Trucks	0	0	0	0	4	0	0	0	0	8	0	0	0	8	0	0	20	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

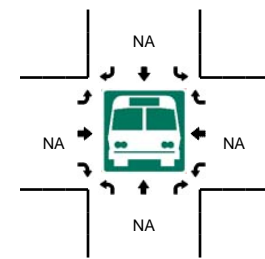
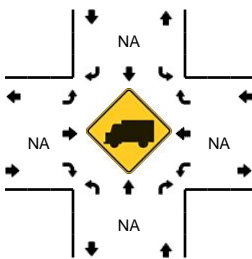
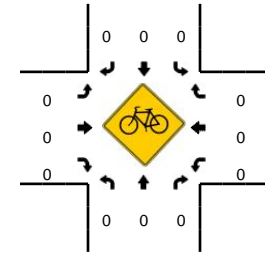
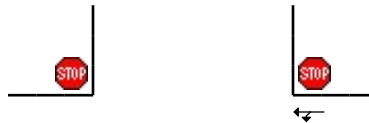
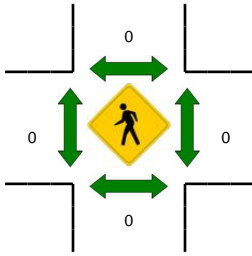
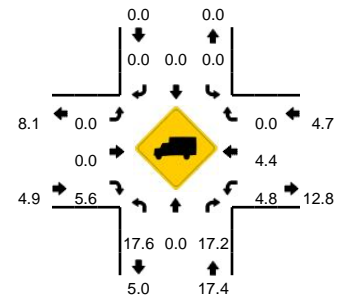
Comments:

LOCATION: NE 172nd Ave -- NE Lucia Falls Rd
CITY/STATE: Battle Ground, WA

QC JOB #: 14641611
DATE: Thu, Mar 01 2018



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

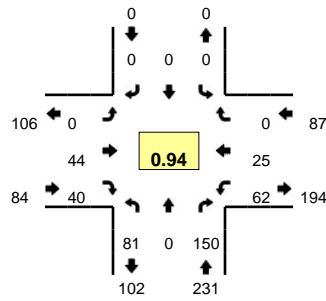


5-Min Count Period Beginning At	NE 172nd Ave (Northbound)				NE 172nd Ave (Southbound)				NE Lucia Falls Rd (Eastbound)				NE Lucia Falls Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	2	0	0	0	0	0	0	0	5	0	10	2	0	0	19	
7:05 AM	0	0	3	0	0	0	0	0	0	0	3	0	12	7	0	0	25	
7:10 AM	0	0	1	0	0	0	0	0	0	0	9	0	19	6	0	0	35	
7:15 AM	0	0	3	0	0	0	0	0	0	1	5	0	18	4	0	0	31	
7:20 AM	1	0	2	0	0	0	0	0	0	1	2	0	8	2	0	0	16	
7:25 AM	3	0	1	0	0	0	0	0	0	1	6	0	16	3	0	0	30	
7:30 AM	4	0	0	0	0	0	0	0	0	2	9	0	19	4	0	0	38	
7:35 AM	2	0	0	0	0	0	0	0	0	1	8	0	11	4	0	0	26	
7:40 AM	4	0	5	0	0	0	0	0	0	0	8	0	19	3	0	0	39	
7:45 AM	1	0	4	0	0	0	0	0	0	1	5	0	13	3	0	0	27	
7:50 AM	2	0	2	0	0	0	0	0	0	1	5	0	10	3	0	0	23	
7:55 AM	0	0	6	0	0	0	0	0	0	2	6	0	12	4	0	0	30	339
8:00 AM	1	0	1	0	0	0	0	0	0	0	4	0	3	3	0	0	12	332
8:05 AM	1	0	2	0	0	0	0	0	0	0	5	0	12	3	0	0	23	330
8:10 AM	6	0	2	0	0	0	0	0	0	3	7	0	6	2	0	0	26	321
8:15 AM	0	0	3	0	0	0	0	0	0	1	2	0	6	2	0	0	14	304
8:20 AM	5	0	2	0	0	0	0	0	0	1	3	0	7	2	0	0	20	308
8:25 AM	0	0	4	0	0	0	0	0	0	3	8	0	7	1	0	0	23	301
8:30 AM	1	0	4	0	0	0	0	0	0	2	4	0	9	2	0	0	22	285
8:35 AM	2	0	3	0	0	0	0	0	0	1	2	0	5	0	0	0	13	272
8:40 AM	2	0	3	0	0	0	0	0	0	0	4	0	6	2	0	0	17	250
8:45 AM	1	0	2	0	0	0	0	0	0	0	3	0	11	3	0	0	20	243
8:50 AM	3	0	3	0	0	0	0	0	0	1	4	0	7	2	0	0	20	240
8:55 AM	1	0	2	0	0	0	0	0	0	1	4	0	7	1	0	0	16	226
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	40	0	20	0	0	0	0	0	0	12	100	0	196	44	0	0	412	
Heavy Trucks	8	0	8	0	0	0	0	0	0	0	4	0	4	0	0	0	24	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

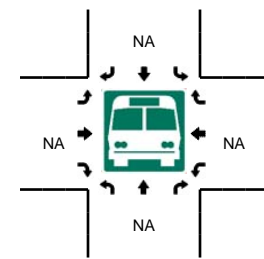
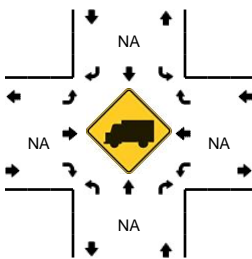
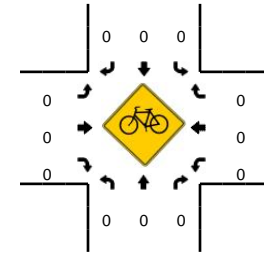
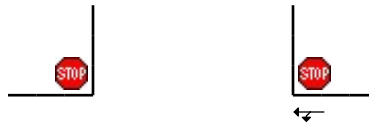
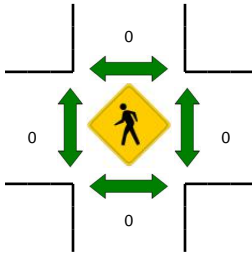
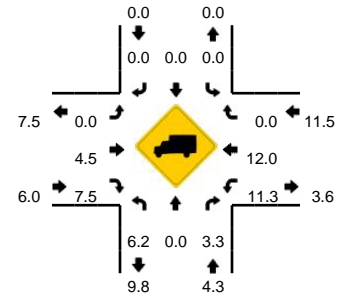
Comments:

LOCATION: NE 172nd Ave -- NE Lucia Falls Rd
CITY/STATE: Battle Ground, WA

QC JOB #: 14641612
DATE: Thu, Mar 01 2018



Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

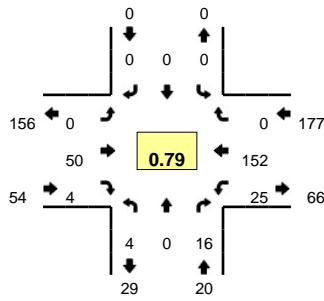


5-Min Count Period Beginning At	NE 172nd Ave (Northbound)				NE 172nd Ave (Southbound)				NE Lucia Falls Rd (Eastbound)				NE Lucia Falls Rd (Westbound)				Total	Hourly Totals	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
4:00 PM	4	0	23	0	0	0	0	0	0	0	5	2	0	8	2	0	0	44	
4:05 PM	0	0	15	0	0	0	0	0	0	0	3	2	0	1	1	0	0	22	
4:10 PM	5	0	10	0	0	0	0	0	0	0	4	3	0	7	2	0	0	31	
4:15 PM	1	0	17	0	0	0	0	0	0	0	7	3	0	1	2	0	0	31	
4:20 PM	4	0	13	0	0	0	0	0	0	0	3	2	0	4	3	0	0	29	
4:25 PM	7	0	16	0	0	0	0	0	0	0	2	6	0	6	2	0	0	39	
4:30 PM	10	0	16	0	0	0	0	0	0	0	6	3	0	6	3	0	0	44	
4:35 PM	6	0	7	0	0	0	0	0	0	0	3	2	0	1	0	0	0	19	
4:40 PM	6	0	12	0	0	0	0	0	0	0	3	2	0	7	3	0	0	33	
4:45 PM	6	0	10	0	0	0	0	0	0	0	3	4	0	5	1	0	0	29	
4:50 PM	7	0	14	0	0	0	0	0	0	0	5	6	0	10	3	0	0	45	
4:55 PM	4	0	13	0	0	0	0	0	0	0	3	2	0	5	0	0	0	27	393
5:00 PM	5	0	6	0	0	0	0	0	0	0	3	3	0	4	0	0	0	21	370
5:05 PM	7	0	16	0	0	0	0	0	0	0	6	1	0	6	5	0	0	41	389
5:10 PM	8	0	12	0	0	0	0	0	0	0	2	5	0	2	2	0	0	31	389
5:15 PM	9	0	10	0	0	0	0	0	0	0	2	3	0	5	3	0	0	32	390
5:20 PM	6	0	18	0	0	0	0	0	0	0	6	3	0	5	3	0	0	41	402
5:25 PM	8	0	13	0	0	0	0	0	0	0	1	2	0	6	5	0	0	35	398
5:30 PM	9	0	15	0	0	0	0	0	0	0	5	2	0	4	0	0	0	35	389
5:35 PM	5	0	12	0	0	0	0	0	0	0	3	3	0	3	1	0	0	27	397
5:40 PM	4	0	13	0	0	0	0	0	0	0	0	2	0	2	0	0	0	21	385
5:45 PM	8	0	12	0	0	0	0	0	0	0	5	3	0	3	1	0	0	32	388
5:50 PM	6	0	13	0	0	0	0	0	0	0	5	8	0	8	2	0	0	42	385
5:55 PM	3	0	18	0	0	0	0	0	0	0	4	4	0	8	3	0	0	40	398
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total		
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U			
All Vehicles	76	0	144	0	0	0	0	0	0	44	48	0	88	28	0	0	428		
Heavy Trucks	8	0	4	0	0	0	0	0	0	0	0	0	12	0	0	0	24		
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Railroad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		

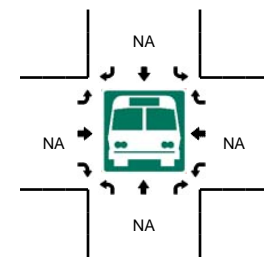
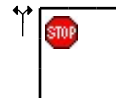
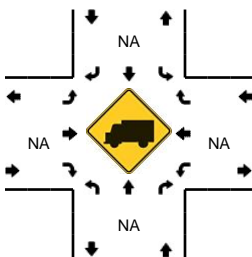
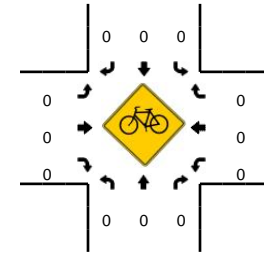
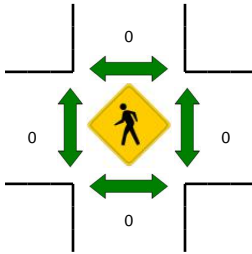
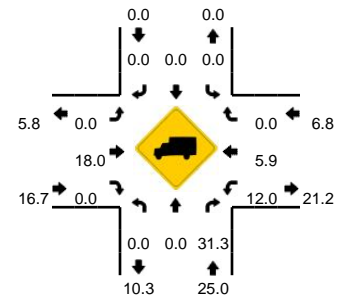
Comments:

LOCATION: NE Kelly Rd -- SR-503
CITY/STATE: Clark, WA

QC JOB #: 14641613
DATE: Thu, Mar 01 2018



Peak-Hour: 7:00 AM -- 8:00 AM
Peak 15-Min: 7:25 AM -- 7:40 AM

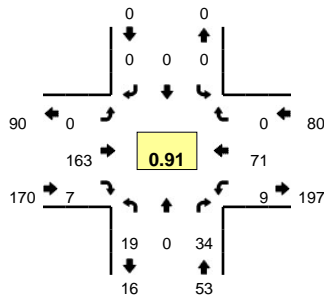


5-Min Count Period Beginning At	NE Kelly Rd (Northbound)				NE Kelly Rd (Southbound)				SR-503 (Eastbound)				SR-503 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	2	0	0	0	0	0	0	2	1	0	1	11	0	0	17	
7:05 AM	0	0	2	0	0	0	0	0	0	5	1	0	3	11	0	0	22	
7:10 AM	0	0	1	0	0	0	0	0	0	8	0	0	2	14	0	0	25	
7:15 AM	0	0	1	0	0	0	0	0	0	5	0	0	2	10	0	0	18	
7:20 AM	0	0	0	0	0	0	0	0	0	1	0	0	2	17	0	0	20	
7:25 AM	1	0	3	0	0	0	0	0	0	8	0	0	3	16	0	0	31	
7:30 AM	2	0	3	0	0	0	0	0	0	2	0	0	1	18	0	0	26	
7:35 AM	0	0	2	0	0	0	0	0	0	4	0	0	0	16	0	0	22	
7:40 AM	0	0	1	0	0	0	0	0	0	5	0	0	2	13	0	0	21	
7:45 AM	1	0	0	0	0	0	0	0	0	4	0	0	2	5	0	0	12	
7:50 AM	0	0	0	0	0	0	0	0	0	6	2	0	5	11	0	0	24	
7:55 AM	0	0	1	0	0	0	0	0	0	0	0	0	2	10	0	0	13	251
8:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	4	8	0	0	14	248
8:05 AM	0	0	0	0	0	0	0	0	0	1	1	0	4	10	0	0	16	242
8:10 AM	0	0	1	0	0	0	0	0	0	5	2	0	2	8	0	0	18	235
8:15 AM	0	0	2	0	0	0	0	0	0	2	2	0	2	6	0	0	14	231
8:20 AM	0	0	0	0	0	0	0	0	0	1	0	0	2	8	0	0	11	222
8:25 AM	1	0	0	0	0	0	0	0	0	3	0	0	3	10	0	0	17	208
8:30 AM	0	0	1	0	0	0	0	0	0	3	0	0	0	4	0	0	8	190
8:35 AM	0	0	1	0	0	0	0	0	0	1	0	0	1	9	0	0	12	180
8:40 AM	0	0	0	0	0	0	0	0	0	7	0	0	1	7	0	0	15	174
8:45 AM	1	0	2	0	0	0	0	0	0	6	0	0	1	8	0	0	18	180
8:50 AM	0	0	2	0	0	0	0	0	0	2	3	0	2	6	0	0	15	171
8:55 AM	0	0	1	0	0	0	0	0	0	7	0	0	1	7	0	0	16	174
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	12	0	32	0	0	0	0	0	0	56	0	0	16	200	0	0	316	
Heavy Trucks	0	0	12		0	0	0		0	20	0		0	4	0		36	
Pedestrians			0				0			0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Railroad																		
Stopped Buses																		

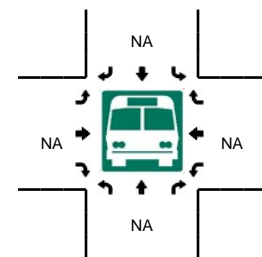
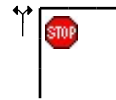
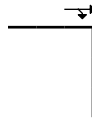
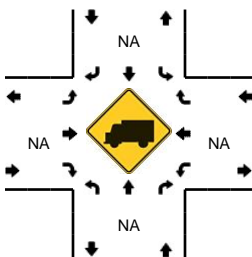
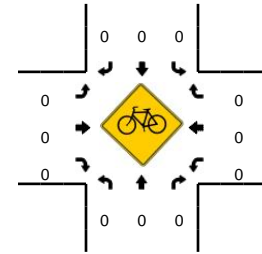
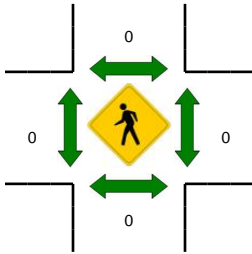
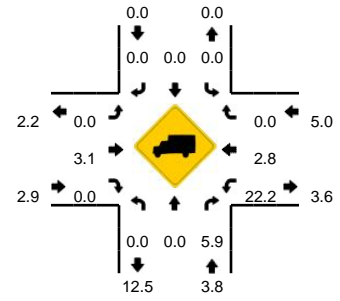
Comments:

LOCATION: NE Kelly Rd -- SR-503
CITY/STATE: Clark, WA

QC JOB #: 14641614
DATE: Thu, Mar 01 2018



Peak-Hour: 5:00 PM -- 6:00 PM
Peak 15-Min: 5:20 PM -- 5:35 PM



5-Min Count Period Beginning At	NE Kelly Rd (Northbound)				NE Kelly Rd (Southbound)				SR-503 (Eastbound)				SR-503 (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	1	0	0	0	0	0	0	10	0	0	1	10	0	0	23	
4:05 PM	1	0	2	0	0	0	0	0	0	4	1	0	0	9	0	0	17	
4:10 PM	2	0	5	0	0	0	0	0	0	9	1	0	1	4	0	0	22	
4:15 PM	0	0	2	0	0	0	0	0	0	11	0	0	3	3	0	0	19	
4:20 PM	0	0	4	0	0	0	0	0	0	9	1	0	5	12	0	0	31	
4:25 PM	0	0	3	0	0	0	0	0	0	9	1	0	2	4	0	0	19	
4:30 PM	0	0	3	0	0	0	0	0	0	14	1	0	2	8	0	0	28	
4:35 PM	0	0	6	0	0	0	0	0	0	10	0	0	2	5	0	0	23	
4:40 PM	1	0	2	0	0	0	0	0	0	7	0	0	4	7	0	0	21	
4:45 PM	0	0	4	0	0	0	0	0	0	11	0	0	0	3	0	0	18	
4:50 PM	0	0	1	0	0	0	0	0	0	7	1	0	2	5	0	0	16	
4:55 PM	0	0	1	0	0	0	0	0	0	15	3	0	3	5	0	0	27	264
5:00 PM	2	0	0	0	0	0	0	0	0	7	0	0	1	8	0	0	18	259
5:05 PM	0	0	2	0	0	0	0	0	0	20	0	0	0	6	0	0	28	270
5:10 PM	6	0	2	0	0	0	0	0	0	13	1	0	3	3	0	0	28	276
5:15 PM	1	0	5	0	0	0	0	0	0	7	0	0	0	11	0	0	24	281
5:20 PM	1	0	3	0	0	0	0	0	0	9	0	0	1	7	0	0	21	271
5:25 PM	2	0	4	0	0	0	0	0	0	19	0	0	0	6	0	0	31	283
5:30 PM	2	0	5	0	0	0	0	0	0	19	0	0	0	5	0	0	31	286
5:35 PM	0	0	2	0	0	0	0	0	0	13	2	0	0	3	0	0	20	283
5:40 PM	1	0	2	0	0	0	0	0	0	17	2	0	1	7	0	0	30	292
5:45 PM	0	0	5	0	0	0	0	0	0	10	1	0	1	5	0	0	22	296
5:50 PM	1	0	2	0	0	0	0	0	0	15	0	0	0	4	0	0	22	302
5:55 PM	3	0	2	0	0	0	0	0	0	14	1	0	2	6	0	0	28	303
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	20	0	48	0	0	0	0	0	0	188	0	0	4	72	0	0	332	
Heavy Trucks	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	16	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Railroad																		
Stopped Buses																		

Comments:

Attachment F Existing Traffic Conditions
Worksheets

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	51	4	25	155	4	16
Future Vol, veh/h	51	4	25	155	4	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	18	0	12	6	0	31
Mvmt Flow	65	5	32	196	5	20

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	70	0	326 67
Stage 1	-	-	-	-	67 -
Stage 2	-	-	-	-	259 -
Critical Hdwy	-	-	4.22	-	6.4 6.51
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.308	-	3.5 3.579
Pot Cap-1 Maneuver	-	-	1469	-	672 921
Stage 1	-	-	-	-	961 -
Stage 2	-	-	-	-	789 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1469	-	656 921
Mov Cap-2 Maneuver	-	-	-	-	656 -
Stage 1	-	-	-	-	961 -
Stage 2	-	-	-	-	770 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	852	-	-	1469	-
HCM Lane V/C Ratio	0.03	-	-	0.022	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	4.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	90	2	19	40	1	37
Future Vol, veh/h	90	2	19	40	1	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	1	0	21	3	0	22
Mvmt Flow	107	2	23	48	1	44

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	92	46	0	0	70	0
Stage 1	46	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	911	1029	-	-	1544	-
Stage 1	979	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	910	1029	-	-	1544	-
Mov Cap-2 Maneuver	910	-	-	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	978	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	912	1544
HCM Lane V/C Ratio	-	-	0.12	0.001
HCM Control Delay (s)	-	-	9.5	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0

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	41	0	10	0	0	0	28	18	0	0	34	92
Future Vol, veh/h	41	0	10	0	0	0	28	18	0	0	34	92
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	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	5	0	30	0	0	0	78	17	0	0	12	6
Mvmt Flow	47	0	11	0	0	0	32	21	0	0	39	106

Major/Minor	Minor2		Minor1			Major1		Major2				
Conflicting Flow All	177	177	92	183	230	21	145	0	0	21	0	0
Stage 1	92	92	-	85	85	-	-	-	-	-	-	-
Stage 2	85	85	-	98	145	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.5	7.1	6.5	6.2	4.88	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.57	3.5	4	3.3	2.902	-	-	2.2	-	-
Pot Cap-1 Maneuver	779	720	894	783	673	1062	1080	-	-	1608	-	-
Stage 1	908	823	-	928	828	-	-	-	-	-	-	-
Stage 2	916	828	-	913	781	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	761	698	894	755	653	1062	1080	-	-	1608	-	-
Mov Cap-2 Maneuver	761	698	-	755	653	-	-	-	-	-	-	-
Stage 1	881	823	-	900	803	-	-	-	-	-	-	-
Stage 2	889	803	-	901	781	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	10		0		5.1		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1080	-	-	784	-	1608	-
HCM Lane V/C Ratio	0.03	-	-	0.075	-	-	-
HCM Control Delay (s)	8.4	0	-	10	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	-	0	-

Intersection						
Int Delay, s/veh	4.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Traffic Vol, veh/h	172	4	90	49	2	430
Future Vol, veh/h	172	4	90	49	2	430
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	16	50	18	6	50	6
Mvmt Flow	195	5	102	56	2	489

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	623	130	0	0	158
Stage 1	130	-	-	-	-
Stage 2	493	-	-	-	-
Critical Hdwy	6.56	6.7	-	-	4.6
Critical Hdwy Stg 1	5.56	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-
Follow-up Hdwy	3.644	3.75	-	-	2.65
Pot Cap-1 Maneuver	428	806	-	-	1176
Stage 1	863	-	-	-	-
Stage 2	586	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	427	806	-	-	1176
Mov Cap-2 Maneuver	427	-	-	-	-
Stage 1	863	-	-	-	-
Stage 2	585	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	437	1176
HCM Lane V/C Ratio	-	-	0.458	0.002
HCM Control Delay (s)	-	-	20	8.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.3	0

Intersection						
Int Delay, s/veh	2.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	13	23	2	47	1	24
Future Vol, veh/h	13	23	2	47	1	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	8	96	100	5	100	100
Mvmt Flow	16	28	2	57	1	29

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	43	0	91
Stage 1	-	-	-	-	30
Stage 2	-	-	-	-	61
Critical Hdwy	-	-	5.1	-	7.4
Critical Hdwy Stg 1	-	-	-	-	6.4
Critical Hdwy Stg 2	-	-	-	-	6.4
Follow-up Hdwy	-	-	3.1	-	4.4
Pot Cap-1 Maneuver	-	-	1113	-	717
Stage 1	-	-	-	-	790
Stage 2	-	-	-	-	762
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1113	-	716
Mov Cap-2 Maneuver	-	-	-	-	716
Stage 1	-	-	-	-	790
Stage 2	-	-	-	-	760

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	816	-	-	1113	-
HCM Lane V/C Ratio	0.037	-	-	0.002	-
HCM Control Delay (s)	9.6	-	-	8.2	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	24	28	51	11	54	30
Future Vol, veh/h	24	28	51	11	54	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	96	0	10	0	8	3
Mvmt Flow	32	37	67	14	71	39

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	82	0	-	0	174 74
Stage 1	-	-	-	-	74 -
Stage 2	-	-	-	-	100 -
Critical Hdwy	5.06	-	-	-	6.48 6.23
Critical Hdwy Stg 1	-	-	-	-	5.48 -
Critical Hdwy Stg 2	-	-	-	-	5.48 -
Follow-up Hdwy	3.064	-	-	-	3.572 3.327
Pot Cap-1 Maneuver	1084	-	-	-	802 985
Stage 1	-	-	-	-	934 -
Stage 2	-	-	-	-	909 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1084	-	-	-	778 985
Mov Cap-2 Maneuver	-	-	-	-	778 -
Stage 1	-	-	-	-	934 -
Stage 2	-	-	-	-	882 -

Approach	EB	WB	SB
HCM Control Delay, s	3.9	0	9.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1084	-	-	-	841
HCM Lane V/C Ratio	0.029	-	-	-	0.131
HCM Control Delay (s)	8.4	0	-	-	9.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Intersection Delay, s/veh	8.7
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↻			↻	↻	
Traffic Vol, veh/h	10	72	170	46	17	30
Future Vol, veh/h	10	72	170	46	17	30
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	0	6	5	4	18	17
Mvmt Flow	12	88	207	56	21	37
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.2	9.4	8.1
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	36%	0%	79%
Vol Thru, %	0%	12%	21%
Vol Right, %	64%	88%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	47	82	216
LT Vol	17	0	170
Through Vol	0	10	46
RT Vol	30	72	0
Lane Flow Rate	57	100	263
Geometry Grp	1	1	1
Degree of Util (X)	0.075	0.105	0.316
Departure Headway (Hd)	4.69	3.786	4.319
Convergence, Y/N	Yes	Yes	Yes
Cap	767	951	824
Service Time	2.695	1.792	2.382
HCM Lane V/C Ratio	0.074	0.105	0.319
HCM Control Delay	8.1	7.2	9.4
HCM Lane LOS	A	A	A
HCM 95th-tile Q	0.2	0.4	1.4

Intersection




Int Delay, s/veh 2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	166	7	9	72	19	35
Future Vol, veh/h	166	7	9	72	19	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	0	22	3	0	6
Mvmt Flow	182	8	10	79	21	38

Major/Minor	Major1	Major2	Minor1	Minor2		
Conflicting Flow All	0	0	190	0	285	186
Stage 1	-	-	-	-	186	-
Stage 2	-	-	-	-	99	-
Critical Hdwy	-	-	4.32	-	6.4	6.26
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.398	-	3.5	3.354
Pot Cap-1 Maneuver	-	-	1272	-	710	846
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	930	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1272	-	704	846
Mov Cap-2 Maneuver	-	-	-	-	704	-
Stage 1	-	-	-	-	851	-
Stage 2	-	-	-	-	923	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	790	-	-	1272	-
HCM Lane V/C Ratio	0.075	-	-	0.008	-
HCM Control Delay (s)	9.9	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	83	3	37	102	5	26
Future Vol, veh/h	83	3	37	102	5	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	33	6	6	0	12
Mvmt Flow	90	3	40	111	5	28

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	135	96	0	0	151
Stage 1	96	-	-	-	-
Stage 2	39	-	-	-	-
Critical Hdwy	6.46	6.53	-	-	4.1
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.597	-	-	2.2
Pot Cap-1 Maneuver	849	882	-	-	1442
Stage 1	918	-	-	-	-
Stage 2	973	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	846	882	-	-	1442
Mov Cap-2 Maneuver	846	-	-	-	-
Stage 1	918	-	-	-	-
Stage 2	969	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	847	1442
HCM Lane V/C Ratio	-	-	0.11	0.004
HCM Control Delay (s)	-	-	9.8	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	109	2	7	0	1	0	12	32	0	0	26	82
Future Vol, veh/h	109	2	7	0	1	0	12	32	0	0	26	82
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	0	0	0	0	0	25	10	0	0	4	8
Mvmt Flow	118	2	8	0	1	0	13	35	0	0	28	89

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	134	134	73	139	178	35	117	0	0	35	0	0
Stage 1	73	73	-	61	61	-	-	-	-	-	-	-
Stage 2	61	61	-	78	117	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.2	7.1	6.5	6.2	4.35	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.3	3.5	4	3.3	2.425	-	-	2.2	-	-
Pot Cap-1 Maneuver	831	760	995	836	719	1044	1340	-	-	1589	-	-
Stage 1	929	838	-	955	848	-	-	-	-	-	-	-
Stage 2	943	848	-	936	803	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	824	752	995	821	712	1044	1340	-	-	1589	-	-
Mov Cap-2 Maneuver	824	752	-	821	712	-	-	-	-	-	-	-
Stage 1	920	838	-	945	840	-	-	-	-	-	-	-
Stage 2	932	840	-	926	803	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB			
HCM Control Delay, s	10.1		10.1		2.1		0			
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR	
Capacity (veh/h)	1340	-	-	831	712	1589	-	-
HCM Lane V/C Ratio	0.01	-	-	0.154	0.002	-	-	-
HCM Control Delay (s)	7.7	0	-	10.1	10.1	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.5	0	0	-	-

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	TT		TT			TT
Traffic Vol, veh/h	74	3	431	164	3	201
Future Vol, veh/h	74	3	431	164	3	201
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	3	0	5	3	0	4
Mvmt Flow	81	3	474	180	3	221

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	791	564	0	0	654
Stage 1	564	-	-	-	-
Stage 2	227	-	-	-	-
Critical Hdwy	6.43	6.2	-	-	4.1
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.2
Pot Cap-1 Maneuver	357	529	-	-	943
Stage 1	567	-	-	-	-
Stage 2	808	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	356	529	-	-	943
Mov Cap-2 Maneuver	356	-	-	-	-
Stage 1	567	-	-	-	-
Stage 2	805	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	17.6	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	370	943
HCM Lane V/C Ratio	-	-	0.229	0.003
HCM Control Delay (s)	-	-	17.6	8.8
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.9	0

Intersection						
Int Delay, s/veh	0.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	39	1	1	25	1	2
Future Vol, veh/h	39	1	1	25	1	2
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	5	100	0	8	0	0
Mvmt Flow	53	1	1	34	1	3

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	55	0	90
Stage 1	-	-	-	-	54
Stage 2	-	-	-	-	36
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1563	-	915
Stage 1	-	-	-	-	974
Stage 2	-	-	-	-	992
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1563	-	913
Mov Cap-2 Maneuver	-	-	-	-	913
Stage 1	-	-	-	-	973
Stage 2	-	-	-	-	991

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	8.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	980	-	-	1563	-
HCM Lane V/C Ratio	0.004	-	-	0.001	-
HCM Control Delay (s)	8.7	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	2.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	29	50	47	63	36	13
Future Vol, veh/h	29	50	47	63	36	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	11	4	9	5	9	0
Mvmt Flow	32	55	52	69	40	14

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	121	0	-	0	205 86
Stage 1	-	-	-	-	86 -
Stage 2	-	-	-	-	119 -
Critical Hdwy	4.21	-	-	-	6.49 6.2
Critical Hdwy Stg 1	-	-	-	-	5.49 -
Critical Hdwy Stg 2	-	-	-	-	5.49 -
Follow-up Hdwy	2.299	-	-	-	3.581 3.3
Pot Cap-1 Maneuver	1412	-	-	-	768 978
Stage 1	-	-	-	-	920 -
Stage 2	-	-	-	-	889 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1412	-	-	-	750 978
Mov Cap-2 Maneuver	-	-	-	-	750 -
Stage 1	-	-	-	-	920 -
Stage 2	-	-	-	-	869 -

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	9.8
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1412	-	-	-	799
HCM Lane V/C Ratio	0.023	-	-	-	0.067
HCM Control Delay (s)	7.6	0	-	-	9.8
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0.1	-	-	-	0.2

Intersection	
Intersection Delay, s/veh	8.6
Intersection LOS	A

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	45	41	63	25	83	153
Future Vol, veh/h	45	41	63	25	83	153
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	5	8	11	12	6	3
Mvmt Flow	48	44	67	27	88	163
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	7.9	8.6	8.8
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	35%	0%	72%
Vol Thru, %	0%	52%	28%
Vol Right, %	65%	48%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	236	86	88
LT Vol	83	0	63
Through Vol	0	45	25
RT Vol	153	41	0
Lane Flow Rate	251	91	94
Geometry Grp	1	1	1
Degree of Util (X)	0.288	0.111	0.127
Departure Headway (Hd)	4.123	4.365	4.884
Convergence, Y/N	Yes	Yes	Yes
Cap	874	822	735
Service Time	2.138	2.387	2.906
HCM Lane V/C Ratio	0.287	0.111	0.128
HCM Control Delay	8.8	7.9	8.6
HCM Lane LOS	A	A	A
HCM 95th-tile Q	1.2	0.4	0.4

Attachment G Crash Data

OFFICER REPORTED CRASHES THAT OCCURRED AT MULTIPLE INTERSECTIONS IN CLARK COUNTY
01/01/2013 - 12/31/2017 (2017 data is preliminary) See 2nd tab below for road information

Under 23 U.S. Code § 409 and 23 U.S. Code § 148, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.

JURISDICTION	COUNTY	CITY	CO ONLY COUNTY ROAD NAME	PRIMARY TRAFFICWAY	A / B MILEPOST	BLOCK NUMBER	INTERSECTING TRAFFICWAY	CO ONLY INTERSECTING COUNTY ROAD MILEPOST	DIST FROM REF POINT MI or FT	COMP DIR FROM REF POINT	REFERENCE POINT NAME	SR ONLY HISTORY / SUSPENSE IND	REPORT NUMBER
County Road	Clark		NE KELLY RD	63390	1.230							No	E641875
County Road	Clark		NE W H GARNER RD	63520	3.890							No	E559364
County Road	Clark		NE KELLY RD	63390	1.430							No	E744431
County Road	Clark		NE GABRIEL RD	63450	0.000	63390		1.410				No	E456454
County Road	Clark		NE GABRIEL RD	63540	0.000	63390		1.410				No	E696883
County Road	Clark		NE KELLY RD	63390	5.210	95100		6.770				No	E236289
County Road	Clark		NE KELLY RD	63390	5.210	95100		6.770				No	E643546
County Road	Clark		NE LUCIA FALLS ROAD	95100	6.770	63390		5.210				No	E479605
County Road	Clark		NE LUCIA FALLS ROAD	95100	6.770	63390		5.210				No	E574879
County Road	Clark		NE LUCIA FALLS RD	95100	6.460	95100		6.450				No	E584752
County Road	Clark		NE LUCIA FALLS RD	95100	6.460	96200		0.000				No	E509542
County Road	Clark		NE LUCIA FALLS RD	95100	6.480							No	E221691
County Road	Clark		NE LUCIA FALLS RD	96200	0.000	95100		6.460				No	E546251
County Road	Clark		NE LUCIA FALLS RD	96200	0.000							No	E313150
State Route	Clark		Gabriel	503	14.35							No	2746828
State Route	Clark		Gabriel	503	14.35							No	E491256
State Route	Clark		Gabriel	503	14.35							No	E521848
State Route	Clark		Gabriel	503	14.35							No	E540539
State Route	Clark		Gabriel	503	14.35							No	E751118
State Route	Clark		Gabriel	503	14.37							No	E436274
State Route	Clark		Kelly	503	18.70							No	E221180

DATE	TIME	MOST SEVERE INJURY TYPE	# I N J U R Y	# F I R E	# T H I S	# B I K E	# P E D E S	VEHICLE 1 TYPE	VEHICLE 2 TYPE
02/10/2017	22:55	No Apparent injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
07/01/2016	07:36	No Apparent injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
12/06/2017	09:45	No Apparent injury	0	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
08/19/2015	16:58	Suspected Serious Injury	1	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Motorcycle
07/25/2017	21:30	Suspected Minor Injury	2	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	
03/28/2013	09:19	No Apparent injury	0	0	1	0	0	Truck (Flatbad, Van,etc)	
02/09/2017	10:40	No Apparent injury	0	0	1	0	0	Truck & Trailer	
11/01/2015	02:38	Possible Injury	1	0	1	0	0	Passenger Car	
08/16/2016	10:45	No Apparent injury	0	0	1	0	0	Truck (Flatbad, Van,etc)	
09/13/2016	17:54	No Apparent injury	0	0	1	0	0	Passenger Car	
01/25/2016	08:25	Suspected Minor Injury	1	0	2	0	0	Truck (Flatbad, Van,etc)	Truck Tractor & Semi-Trailer
01/05/2013	15:24	Unknown	0	0	1	0	0	Passenger Car	
05/12/2016	17:15	No Apparent injury	0	0	2	0	0	Passenger Car	
03/08/2014	00:50	No Apparent injury	0	0	1	0	0	Passenger Car	
12/15/2013	17:08	Possible Injury	1	0	2	0	0	Passenger Car	
12/02/2015	17:28	No Apparent injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb
02/29/2016	17:55	No Apparent injury	0	0	2	0	0	Passenger Car	Pickup,Panel Truck or Vanette under 10,000 lb
05/02/2016	09:19	No Apparent injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Passenger Car
12/16/2017	12:05	No Apparent injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb
06/17/2015	15:35	No Apparent injury	0	0	2	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	Pickup,Panel Truck or Vanette under 10,000 lb
01/11/2013	06:30	Suspected Minor Injury	1	0	1	0	0	Pickup,Panel Truck or Vanette under 10,000 lb	

JUNCTION RELATIONSHIP	WEATHER	ROADWAY SURFACE CONDITION	LIGHTING CONDITION	FIRST COLLISION TYPE / OBJECT STRUCK	VEHICLE 1 ACTION
Not at Intersection and Not Related	Raining	Wet	Dark-No Street Lights	Over Embankment - No Guardrail Present	Going Straight Ahead
Not at Intersection and Not Related	Overcast	Dry	Daylight	Roadway Ditch	Going Straight Ahead
At Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	Mailbox	Going Straight Ahead
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	Entering at angle	Making Left Turn
At Intersection and Related	Clear or Partly Cloudy	Dry	Dark-No Street Lights	Earth Bank or Ledge	Going Straight Ahead
At Intersection and Related	Overcast	Dry	Daylight	Over Embankment - No Guardrail Present	Slowing
At Intersection and Related	Raining	Wet	Daylight	Over Embankment - No Guardrail Present	Going Straight Ahead
At Intersection and Related	Raining	Wet	Dark-No Street Lights	Over Embankment - No Guardrail Present	Going Straight Ahead
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	Earth Bank or Ledge	Going Straight Ahead
At Intersection and Related	Clear or Partly Cloudy	Dry	Dusk	Over Embankment - No Guardrail Present	Going Straight Ahead
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	Bridge Rail - Face	Making Right Turn
Not at Intersection and Not Related	Overcast	Wet	Daylight	Entering at angle	Making Right Turn
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	Earth Bank or Ledge	Going Straight Ahead
Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	From opposite direction - one left turn - one straight	Going Straight Ahead
At Intersection and Related	Fog or Smog or Smoke	Wet	Dark-No Street Lights	Earth Bank or Ledge	Going Straight Ahead
At Intersection and Related	Overcast	Wet	Dark-No Street Lights	From same direction - one left turn - one straight	Making Left Turn
At Intersection and Related	Raining	Wet	Dark-Street Lights On	From same direction - one right turn - one straight	Going Straight Ahead
At Intersection and Related	Clear or Partly Cloudy	Dry	Daylight	Entering at angle	Making Left Turn
At Intersection and Related	Overcast	Wet	Daylight	Entering at angle	Making Left Turn
Not at Intersection and Not Related	Clear or Partly Cloudy	Dry	Daylight	From opposite direction - both moving - head-on	Going Straight Ahead
At Intersection and Not Related	Clear or Partly Cloudy	Ice	Dark-No Street Lights	Tree or Stump (stationary)	Going Straight Ahead

VEHICLE 2 ACTION	VEHICLE 1 COMPASS DIRECTION FROM	VEHICLE 1 COMPASS DIRECTION TO	VEHICLE 2 COMPASS DIRECTION FROM	VEHICLE 2 COMPASS DIRECTION TO	MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 1)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 1)
	South	North			Driver Distractions Outside Vehicle		
	East	West			Exceeding Reas. Safe Speed		
	North	South			Inattention		
Going Straight Ahead	West	North	North	South	Inattention	Did Not Grant RW to Vehicle	
	West	East			Apparently Asleep		
	North	South			Operating Defective Equipment		
	North	South			Disregard Stop Sign - Flashing Red	Operating Defective Equipment	
	North	South			Disregard Stop Sign - Flashing Red		
	North	South			Operating Defective Equipment		
	West	South			Inattention		
Making Left Turn	West	East	South	Vehicle Stopped	Disregard Stop Sign - Flashing Red		
	West	East			Over Center Line		
Making Left Turn	West	East	East	South	Disregard Stop Sign - Flashing Red		
	West	East			Inattention		
Overtaking and Passing	North	East	North	South	Failing to Signal	Operating Defective Equipment	
Making Right Turn	North	South	North	East	Follow Too Closely		
Going Straight Ahead	East	South	South	North	Did Not Grant RW to Vehicle		
Going Straight Ahead	East	South	North	South	Other	Inattention	
Going Straight Ahead	East	West	South	North	Did Not Grant RW to Vehicle		
Going Straight Ahead	North	South	South	North	Exceeding Reas. Safe Speed		
	East	West			Exceeding Reas. Safe Speed		

MV DRIVER CONTRIBUTING CIRCUMSTANCE 1 (UNIT 2)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 2 (UNIT 2)	MV DRIVER CONTRIBUTING CIRCUMSTANCE 3 (UNIT 2)	FIRST IMPACT LOCATION (City, County & Misc Trafficways - 2010 forward)	WA STATE PLANE SOUTH - X 2010 - FORWARD	WA STATE PLANE SOUTH - Y 2010 - FORWARD
			Past the Outside Shoulder of Primary Trafficway	1139243.06	205437.36
			Past the Outside Shoulder of Primary Trafficway	1139457.79	205393.68
			Past the Outside Shoulder of Primary Trafficway	1138650.52	204739.63
None			Lane of Primary Trafficway	1138650.53	204739.64
			Past the Outside Shoulder of Primary Trafficway	1138650.52	204739.63
			Past the Outside Shoulder of Primary Trafficway	1130746.04	188758.036
			Past the Outside Shoulder of Primary Trafficway	1130760.95	188764.9
			Past the Outside Shoulder of Primary Trafficway	1130760.95	188764.91
			Past the Outside Shoulder of Primary Trafficway	1130760.95	188764.91
			Intersecting Trafficway	1132122.83	189227.97
None			Intersecting Trafficway	1132122.83	189227.97
			Past the Outside Shoulder of Primary Trafficway	1132020.854	189183.848
Disregard Stop Sign - Flashing Red			Lane of Primary Trafficway	1132122.83	189227.97
			Past the Outside Shoulder of Primary Trafficway	1132122.208	189201.959
Improper Passing			Intersecting Road Increasing Milepost	1125842.42	200781.61
None			Right Shoulder Increasing Milepost	1125842.42	200781.61
None			Lane 1 Increasing Milepost	1125842.42	200781.61
None			Lane 1 Decreasing Milepost	1125842.42	200781.61
None			Lane 1 Increasing Milepost	1125848.21	200799.89
None			Lane 1 Increasing Milepost	1125876.41	200875.19
			Past Right Shoulder Decreasing Milepost	1140638.75	211328.69

COUNTY ROADS

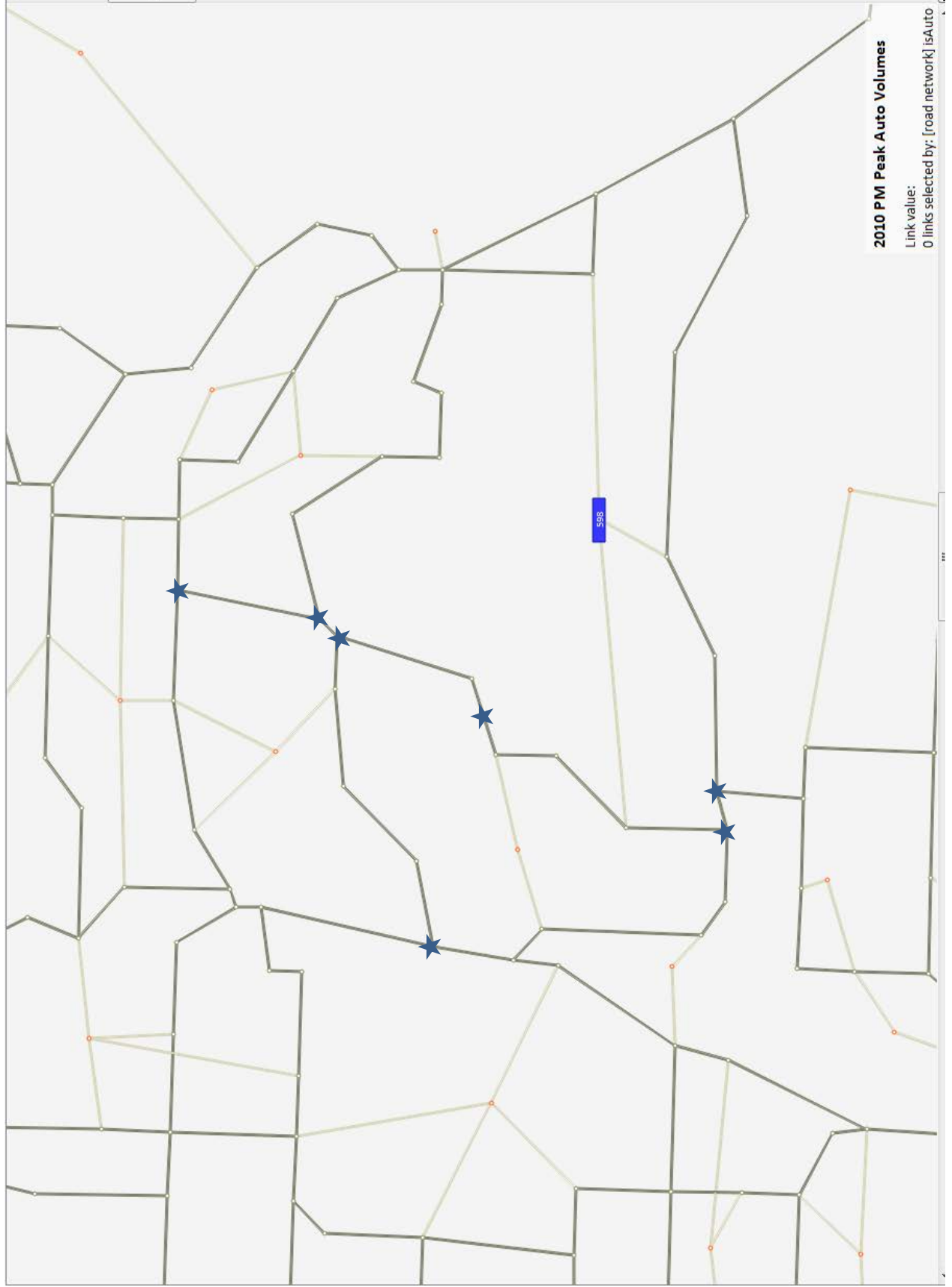
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KELLY RD (CO RD #63390, MP 1.390 - 1.430) @ GABRIEL RD (CO RD #63540, MP 0.000 - 0.020)
KELLY RD (CO RD #63390, MP 2.740 - 2.780) @ MYSTIC DR / LONGVIEW FIBER RD (PVT RD) - *No Reported Crashes*
KELLY RD (CO RD #63390, MP 5.190 - 5.210) @ LUCIA FALLS FALLS RD (CO RD #95100, MP 6.750 - 6.790)
LUCIA FALLS RD (CO RD #96200, MP 0.000 - 0.020) @ 172nd AVE / LUCIA FALLS RD (CO RD #95100, MP 6.440 - 6.480)

STATE ROUTES

SR 503 (MP 14.33 - 14.37) @ GABRIEL RD
SR 503 (MP 18.68 - 18.72) @ KELLY RD

Attachment H Traffic Forecast Calculations

Study Intersection Locations



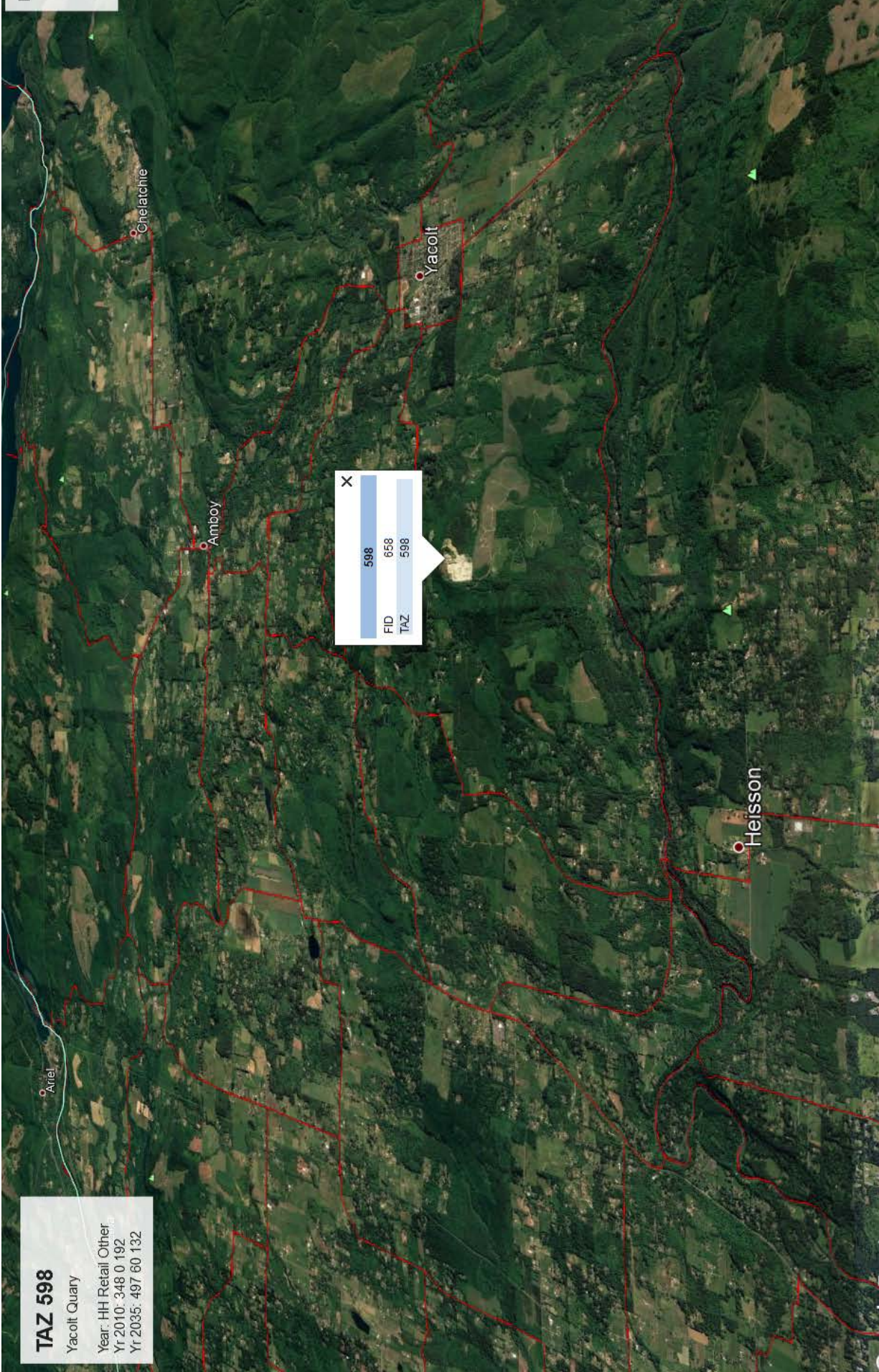
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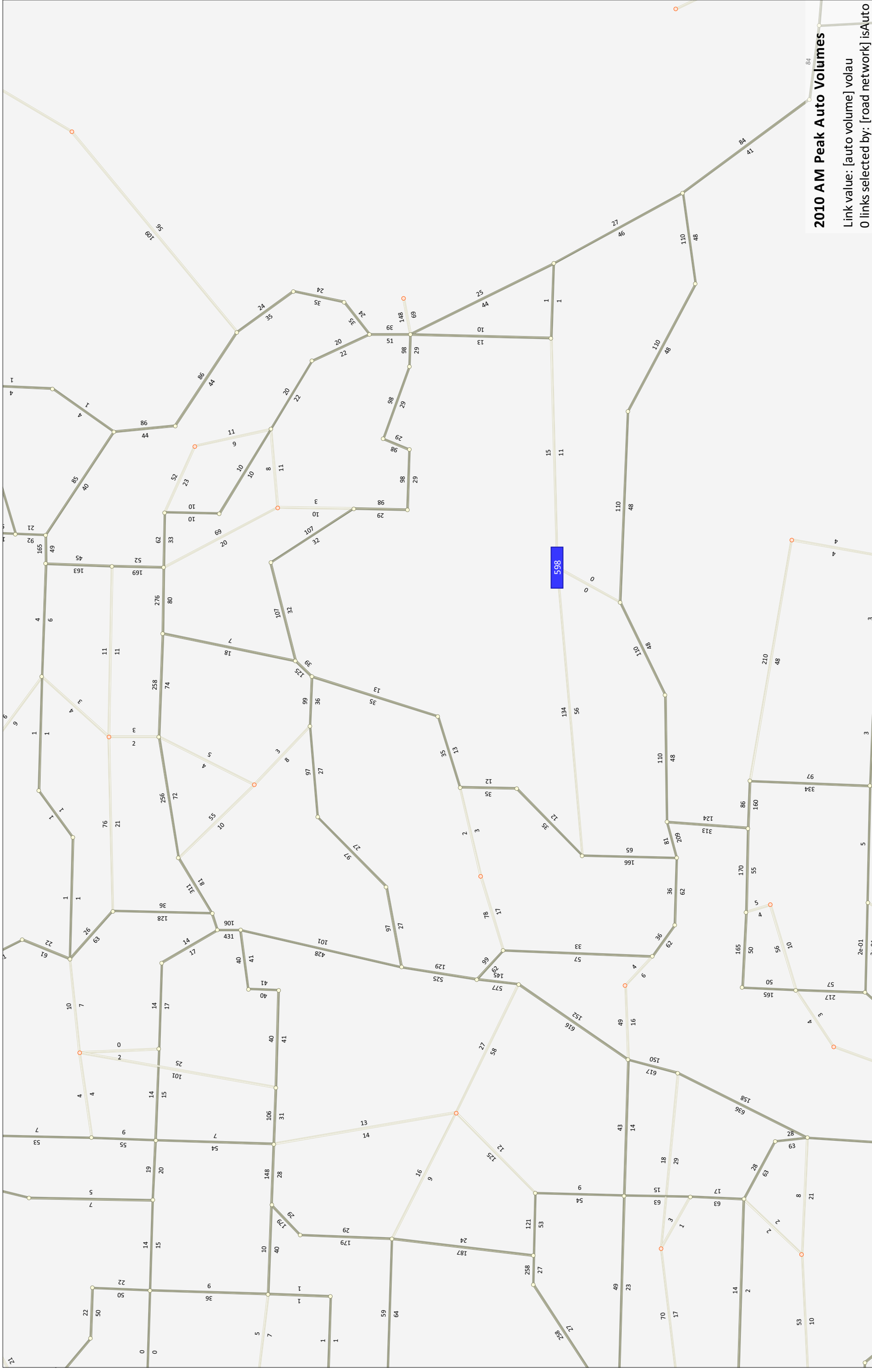
Yacolt Quarry

Year: HH Retail Other
Yr 2010: 348 0 192
Yr 2035: 497 60 132

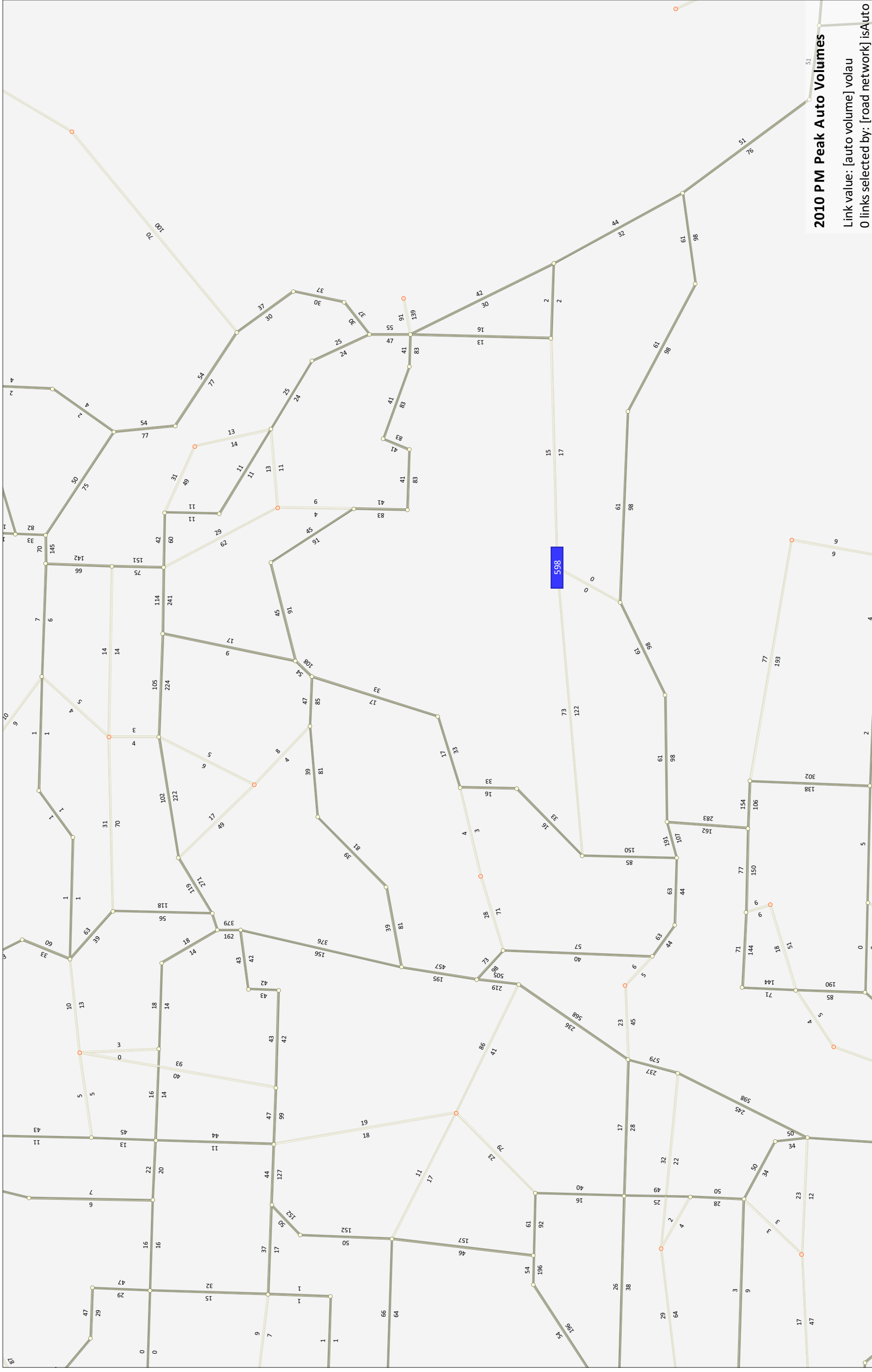
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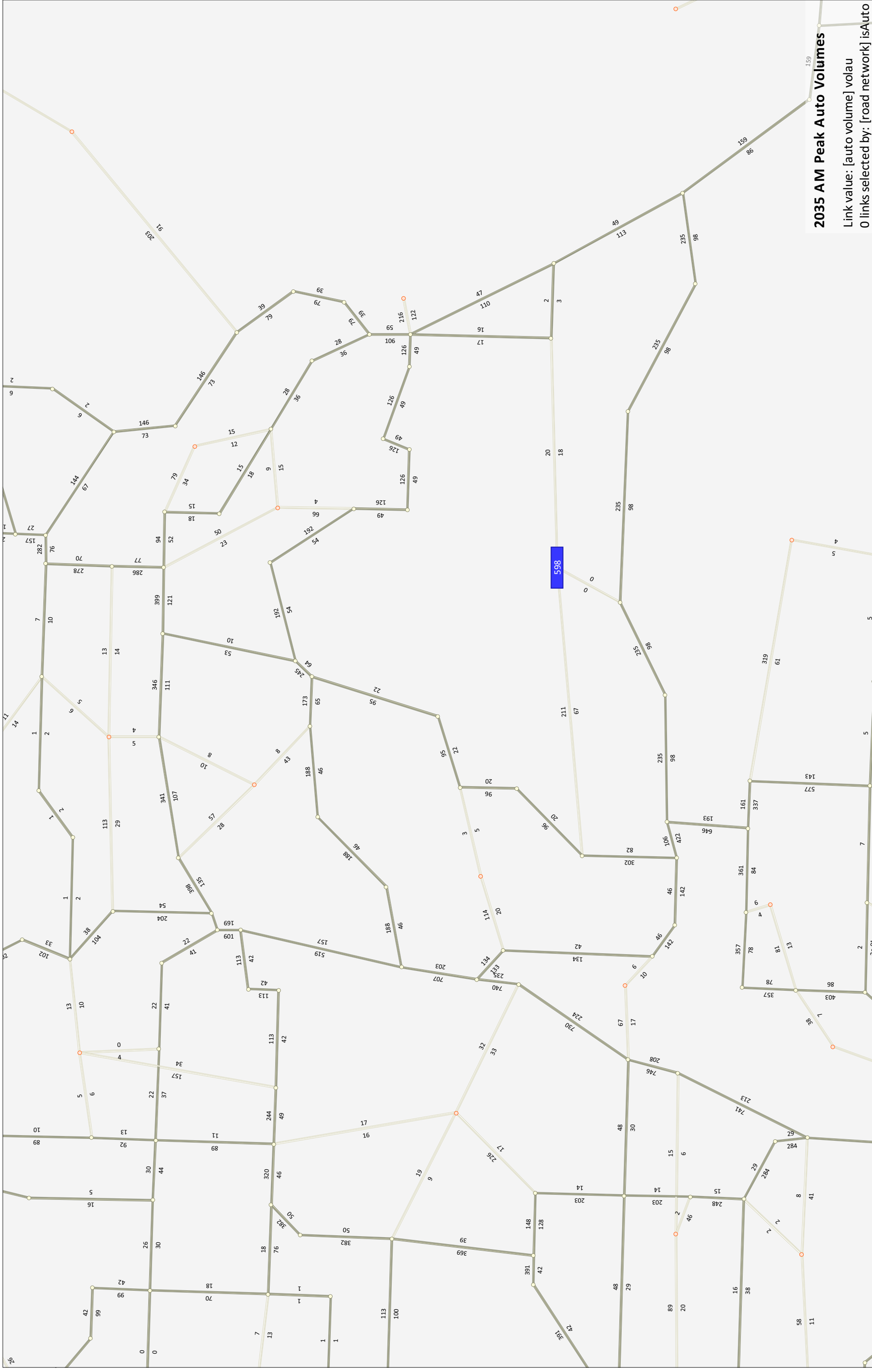
2010 AM Peak Auto Volumes
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0 links selected by: [road network] isAuto

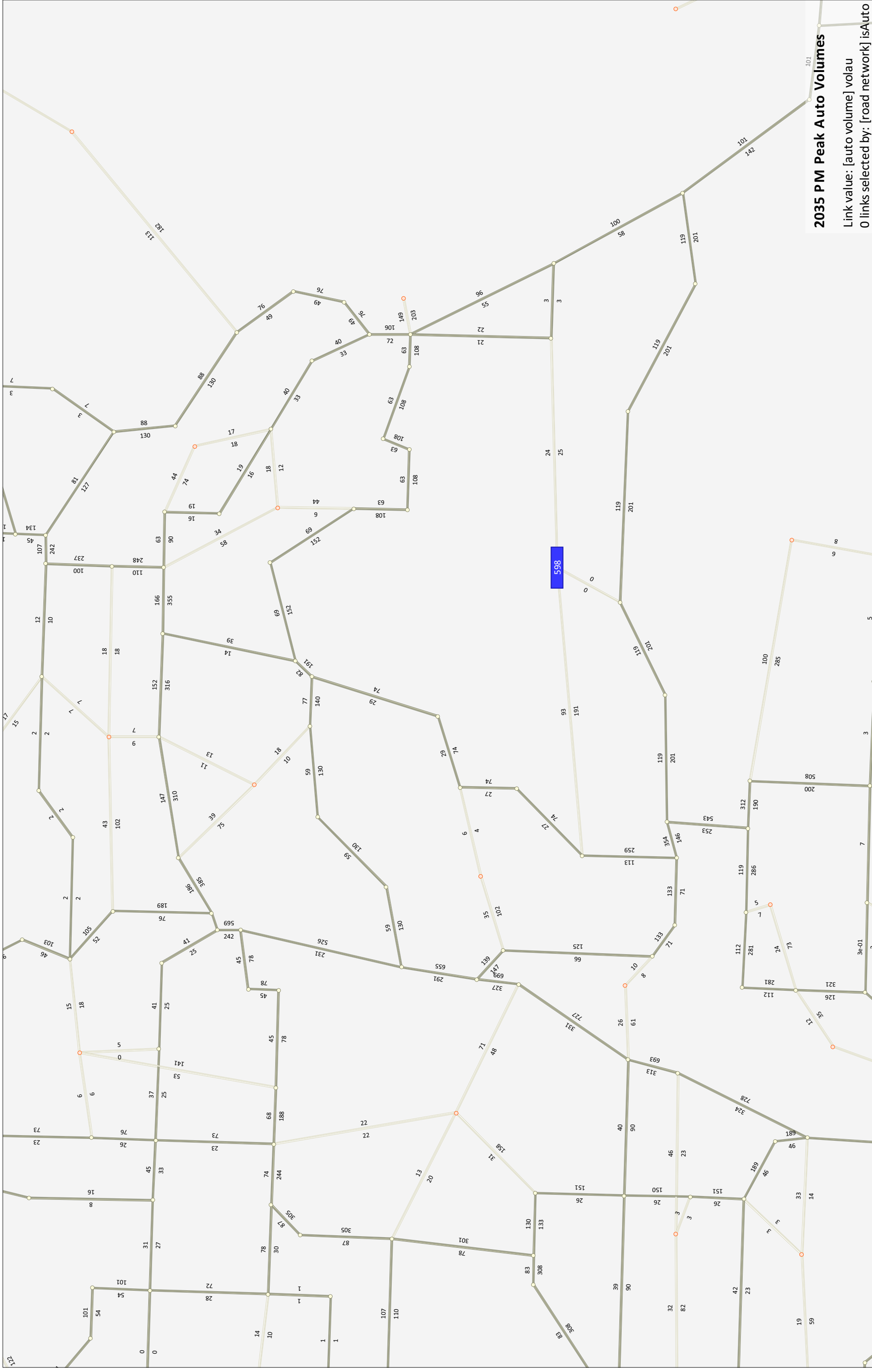


2010 PM Peak Auto Volumes

Link value: [auto volume] volau

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2035 PM Peak Auto Volumes
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Estimation of Future Annual Traffic Growth Rates (Using RTC Model Data)

Intersection	AM TEV*				PM TEV*				
	2010 AM	2035 AM	Growth %	Annual %	2010 PM	2035 PM	Growth %	Annual %	
SR 503/Gabriel Rd.	654	910	39%	1.6%	652	945	45%	1.8%	
SR 503/kelly Rd.	357	520	46%	1.8%	355	521	47%	1.9%	
Kelly Rd./Garner Rd.	164	309	88%	3.5%	162	274	69%	2.8%	
Kelly Rd./Gabriel Rd.	174	332	91%	3.6%	172	296	72%	2.9%	
Kelly Rd./Longview Fiber Rd.	48	117	144%	5.8%	50	103	106%	4.2%	
Kelly Rd./Lucia Falls Rd.	309	550	78%	3.1%	320	538	68%	2.7%	
Lucia Falls Rd/172nd Ave.	443	850	92%	3.7%	451	808	79%	3.2%	
AVG				3.3%	AVG				2.8%

* Data from Clark County RTC traffic model.

** Historical data from Clark County's traffic count program indicates lower historical growth rates for subject roadways.

Comparison of 2000 and 2018 Traffic Counts (AM Peak Hour)

Intersection	2000 AM Peak TEV	2018 AM Peak TEV	% AM Growth (18 years)	Annual Growth Rate
SR 503/Gabriel Rd.	524	733	39.9%	2.2%
SR 503/Kelly Rd.	170	251	47.6%	2.6%
Kelly Rd./Garner Rd.	189	185	-2.1%	-0.1%
Kelly Rd./Gabriel Rd.	214	218	1.9%	0.1%
Kelly Rd./Longview Fiber Rd.	80	109	36.3%	2.0%
Kelly Rd./Lucia Falls Rd.	116	194	67.2%	3.7%
Lucia Falls Rd/172nd Ave.	215	339	57.7%	3.2%

Comparison of 2000 and 2018 Traffic Counts (PM Peak Hour)

Intersection	2000 PM Peak TEV	2018 PM Peak TEV	% PM Growth (18 years)	Annual Growth Rate
SR 503/Gabriel Rd.	846	860	1.7%	0.1%
SR 503/Kelly Rd.	283	303	7.1%	0.4%
Kelly Rd./Garner Rd.	280	251	-10.4%	-0.6%
Kelly Rd./Gabriel Rd.	301	266	-11.6%	-0.6%
Kelly Rd./Longview Fiber Rd.	125	68	-45.6%	-2.5%
Kelly Rd./Lucia Falls Rd.	173	233	34.7%	1.9%
Lucia Falls Rd/172nd Ave.	326	402	23.3%	1.3%

SR 503 (South of Gabriel Road)*

Year	NB ADT	SB ADT	Total ADT
2015	4852	4868	9720
2008	4476	4499	8975
2007	4488	4481	8969
2005	4781	4731	9513
2002	4264	4021	8286

* Historical data from SW Washington Reginal Transportation Council

2002--2015 ADT Growth (Linear) 17.3%

Annual ADT Growth Rate (Linear) 1.3%

Attachment I Year 2037 Total Traffic
Conditions Worksheets
(FR-80 Zoning)

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	82	7	41	249	7	26
Future Vol, veh/h	82	7	41	249	7	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	18	0	12	6	0	31
Mvmt Flow	91	8	46	277	8	29

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	99	0	463 95
Stage 1	-	-	-	-	95 -
Stage 2	-	-	-	-	368 -
Critical Hdwy	-	-	4.22	-	6.4 6.51
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.308	-	3.5 3.579
Pot Cap-1 Maneuver	-	-	1433	-	561 888
Stage 1	-	-	-	-	934 -
Stage 2	-	-	-	-	704 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1433	-	540 888
Mov Cap-2 Maneuver	-	-	-	-	540 -
Stage 1	-	-	-	-	934 -
Stage 2	-	-	-	-	677 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	781	-	-	1433	-
HCM Lane V/C Ratio	0.047	-	-	0.032	-
HCM Control Delay (s)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Intersection						
Int Delay, s/veh	5.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	146	3	32	65	2	60
Future Vol, veh/h	146	3	32	65	2	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	1	0	21	3	0	22
Mvmt Flow	174	4	38	77	2	71

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	153	77	0	0	115	0
Stage 1	77	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	841	990	-	-	1487	-
Stage 1	949	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %						
Mov Cap-1 Maneuver	840	990	-	-	1487	-
Mov Cap-2 Maneuver	840	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	949	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	843	1487
HCM Lane V/C Ratio	-	-	0.21	0.002
HCM Control Delay (s)	-	-	10.4	7.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.8	0

Intersection												
Int Delay, s/veh	3.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	79	0	21	0	0	0	32	36	0	0	66	179
Future Vol, veh/h	79	0	21	0	0	0	32	36	0	0	66	179
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	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	5	0	30	0	0	0	78	17	0	0	12	6
Mvmt Flow	91	0	24	0	0	0	37	41	0	0	76	206

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	294	294	179	306	397	41	282	0	0	41	0	0
Stage 1	179	179	-	115	115	-	-	-	-	-	-	-
Stage 2	115	115	-	191	282	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.5	7.1	6.5	6.2	4.88	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.57	3.5	4	3.3	2.902	-	-	2.2	-	-
Pot Cap-1 Maneuver	652	620	797	650	544	1036	946	-	-	1581	-	-
Stage 1	816	755	-	895	804	-	-	-	-	-	-	-
Stage 2	883	804	-	815	681	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	632	595	797	611	522	1036	946	-	-	1581	-	-
Mov Cap-2 Maneuver	632	595	-	611	522	-	-	-	-	-	-	-
Stage 1	783	755	-	859	772	-	-	-	-	-	-	-
Stage 2	848	772	-	790	681	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	11.6		0		4.2		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	946	-	-	661	-	1581	-
HCM Lane V/C Ratio	0.039	-	-	0.174	-	-	-
HCM Control Delay (s)	9	0	-	11.6	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.6	-	0	-

Intersection						
Int Delay, s/veh	7.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	221	5	119	66	3	569
Future Vol, veh/h	221	5	119	66	3	569
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	16	50	18	6	50	6
Mvmt Flow	233	5	125	69	3	599

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	765	160	0	0	195
Stage 1	160	-	-	-	-
Stage 2	605	-	-	-	-
Critical Hdwy	6.56	6.7	-	-	4.6
Critical Hdwy Stg 1	5.56	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-
Follow-up Hdwy	3.644	3.75	-	-	2.65
Pot Cap-1 Maneuver	352	774	-	-	1137
Stage 1	836	-	-	-	-
Stage 2	519	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	351	774	-	-	1137
Mov Cap-2 Maneuver	351	-	-	-	-
Stage 1	836	-	-	-	-
Stage 2	517	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	32.9	0	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	358	1137
HCM Lane V/C Ratio	-	-	0.665	0.003
HCM Control Delay (s)	-	-	32.9	8.2
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	4.6	0

Intersection						
Int Delay, s/veh	1.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	21	36	4	73	2	26
Future Vol, veh/h	21	36	4	73	2	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	8	96	100	5	100	100
Mvmt Flow	25	43	5	88	2	31

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	69	0	145
Stage 1	-	-	-	-	47
Stage 2	-	-	-	-	98
Critical Hdwy	-	-	5.1	-	7.4
Critical Hdwy Stg 1	-	-	-	-	6.4
Critical Hdwy Stg 2	-	-	-	-	6.4
Follow-up Hdwy	-	-	3.1	-	4.4
Pot Cap-1 Maneuver	-	-	1085	-	663
Stage 1	-	-	-	-	774
Stage 2	-	-	-	-	729
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1085	-	660
Mov Cap-2 Maneuver	-	-	-	-	660
Stage 1	-	-	-	-	774
Stage 2	-	-	-	-	725

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	790	-	-	1085	-
HCM Lane V/C Ratio	0.043	-	-	0.004	-
HCM Control Delay (s)	9.8	-	-	8.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	40	45	84	18	89	49
Future Vol, veh/h	40	45	84	18	89	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	96	0	10	0	8	3
Mvmt Flow	53	59	111	24	117	64

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	134	0	-	0	286
Stage 1	-	-	-	-	122
Stage 2	-	-	-	-	164
Critical Hdwy	5.06	-	-	-	6.48
Critical Hdwy Stg 1	-	-	-	-	5.48
Critical Hdwy Stg 2	-	-	-	-	5.48
Follow-up Hdwy	3.064	-	-	-	3.572
Pot Cap-1 Maneuver	1030	-	-	-	692
Stage 1	-	-	-	-	889
Stage 2	-	-	-	-	851
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1030	-	-	-	655
Mov Cap-2 Maneuver	-	-	-	-	655
Stage 1	-	-	-	-	889
Stage 2	-	-	-	-	806

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	11.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1030	-	-	-	731
HCM Lane V/C Ratio	0.051	-	-	-	0.248
HCM Control Delay (s)	8.7	0	-	-	11.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	
Traffic Vol, veh/h	16	114	267	72	27	46
Future Vol, veh/h	16	114	267	72	27	46
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	0	6	5	4	18	17
Mvmt Flow	20	139	326	88	33	56
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8	12.4	9
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	37%	0%	79%
Vol Thru, %	0%	12%	21%
Vol Right, %	63%	88%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	73	130	339
LT Vol	27	0	267
Through Vol	0	16	72
RT Vol	46	114	0
Lane Flow Rate	89	159	413
Geometry Grp	1	1	1
Degree of Util (X)	0.128	0.179	0.52
Departure Headway (Hd)	5.165	4.056	4.529
Convergence, Y/N	Yes	Yes	Yes
Cap	694	885	798
Service Time	3.204	2.084	2.555
HCM Lane V/C Ratio	0.128	0.18	0.518
HCM Control Delay	9	8	12.4
HCM Lane LOS	A	A	B
HCM 95th-tile Q	0.4	0.6	3.1

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	267	11	15	116	31	56
Future Vol, veh/h	267	11	15	116	31	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	22	3	0	6
Mvmt Flow	281	12	16	122	33	59

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	293	0	441 287
Stage 1	-	-	-	-	287 -
Stage 2	-	-	-	-	154 -
Critical Hdwy	-	-	4.32	-	6.4 6.26
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.398	-	3.5 3.354
Pot Cap-1 Maneuver	-	-	1163	-	577 743
Stage 1	-	-	-	-	766 -
Stage 2	-	-	-	-	879 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1163	-	568 743
Mov Cap-2 Maneuver	-	-	-	-	568 -
Stage 1	-	-	-	-	766 -
Stage 2	-	-	-	-	866 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	670	-	-	1163	-
HCM Lane V/C Ratio	0.137	-	-	0.014	-
HCM Control Delay (s)	11.2	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	134	5	60	166	8	43
Future Vol, veh/h	134	5	60	166	8	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	33	6	6	0	12
Mvmt Flow	146	5	65	180	9	47

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	219	155	0	0	246
Stage 1	155	-	-	-	-
Stage 2	64	-	-	-	-
Critical Hdwy	6.46	6.53	-	-	4.1
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.597	-	-	2.2
Pot Cap-1 Maneuver	760	816	-	-	1332
Stage 1	864	-	-	-	-
Stage 2	949	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	755	816	-	-	1332
Mov Cap-2 Maneuver	755	-	-	-	-
Stage 1	864	-	-	-	-
Stage 2	942	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	757	1332
HCM Lane V/C Ratio	-	-	0.2	0.007
HCM Control Delay (s)	-	-	10.9	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	213	4	15	0	2	0	25	62	0	0	52	159
Future Vol, veh/h	213	4	15	0	2	0	25	62	0	0	52	159
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	0	0	0	0	0	25	10	0	0	4	8
Mvmt Flow	232	4	16	0	2	0	27	67	0	0	57	173

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	266	265	143	275	351	67	229	0	0	67	0	0
Stage 1	143	143	-	122	122	-	-	-	-	-	-	-
Stage 2	123	122	-	153	229	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.2	7.1	6.5	6.2	4.35	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.3	3.5	4	3.3	2.425	-	-	2.2	-	-
Pot Cap-1 Maneuver	681	644	910	681	577	1002	1215	-	-	1547	-	-
Stage 1	853	782	-	887	799	-	-	-	-	-	-	-
Stage 2	874	799	-	854	718	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	667	629	910	654	564	1002	1215	-	-	1547	-	-
Mov Cap-2 Maneuver	667	629	-	654	564	-	-	-	-	-	-	-
Stage 1	833	782	-	867	781	-	-	-	-	-	-	-
Stage 2	852	781	-	834	718	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	13.4		11.4			2.3			0		
HCM LOS	B		B								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1215	-	-	678	564	1547	-	-
HCM Lane V/C Ratio	0.022	-	-	0.372	0.004	-	-	-
HCM Control Delay (s)	8	0	-	13.4	11.4	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.7	0	0	-	-

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	99	4	570	218	4	266
Future Vol, veh/h	99	4	570	218	4	266
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	5	3	0	4
Mvmt Flow	104	4	600	229	4	280

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1003	715	0	0	829
Stage 1	715	-	-	-	-
Stage 2	288	-	-	-	-
Critical Hdwy	6.43	6.2	-	-	4.1
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.2
Pot Cap-1 Maneuver	267	434	-	-	811
Stage 1	483	-	-	-	-
Stage 2	759	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	265	434	-	-	811
Mov Cap-2 Maneuver	265	-	-	-	-
Stage 1	483	-	-	-	-
Stage 2	754	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.2	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	276	811
HCM Lane V/C Ratio	-	-	0.393	0.005
HCM Control Delay (s)	-	-	26.2	9.5
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.8	0

Intersection						
Int Delay, s/veh	0.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	60	2	3	40	2	4
Future Vol, veh/h	60	2	3	40	2	4
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	5	100	0	8	0	0
Mvmt Flow	81	3	4	54	3	5

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	85	0	145
Stage 1	-	-	-	-	83
Stage 2	-	-	-	-	62
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1524	-	852
Stage 1	-	-	-	-	945
Stage 2	-	-	-	-	966
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1524	-	849
Mov Cap-2 Maneuver	-	-	-	-	849
Stage 1	-	-	-	-	944
Stage 2	-	-	-	-	963

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	8.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	933	-	-	1524	-
HCM Lane V/C Ratio	0.009	-	-	0.003	-
HCM Control Delay (s)	8.9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	47	82	77	104	59	22
Future Vol, veh/h	47	82	77	104	59	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	11	4	9	5	9	0
Mvmt Flow	52	90	85	114	65	24

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	199	0	-	0	335
Stage 1	-	-	-	-	142
Stage 2	-	-	-	-	193
Critical Hdwy	4.21	-	-	-	6.49
Critical Hdwy Stg 1	-	-	-	-	5.49
Critical Hdwy Stg 2	-	-	-	-	5.49
Follow-up Hdwy	2.299	-	-	-	3.581
Pot Cap-1 Maneuver	1321	-	-	-	646
Stage 1	-	-	-	-	868
Stage 2	-	-	-	-	823
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1321	-	-	-	620
Mov Cap-2 Maneuver	-	-	-	-	620
Stage 1	-	-	-	-	868
Stage 2	-	-	-	-	789

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	11.1
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1321	-	-	-	679
HCM Lane V/C Ratio	0.039	-	-	-	0.131
HCM Control Delay (s)	7.8	0	-	-	11.1
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Intersection Delay, s/veh	10.6
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↘	↙
Traffic Vol, veh/h	70	64	99	40	130	240
Future Vol, veh/h	70	64	99	40	130	240
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	5	8	11	12	6	3
Mvmt Flow	74	68	105	43	138	255
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9	9.9	11.5
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	35%	0%	71%
Vol Thru, %	0%	52%	29%
Vol Right, %	65%	48%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	370	134	139
LT Vol	130	0	99
Through Vol	0	70	40
RT Vol	240	64	0
Lane Flow Rate	394	143	148
Geometry Grp	1	1	1
Degree of Util (X)	0.482	0.19	0.218
Departure Headway (Hd)	4.41	4.808	5.316
Convergence, Y/N	Yes	Yes	Yes
Cap	815	741	671
Service Time	2.45	2.873	3.381
HCM Lane V/C Ratio	0.483	0.193	0.221
HCM Control Delay	11.5	9	9.9
HCM Lane LOS	B	A	A
HCM 95th-tile Q	2.7	0.7	0.8

Attachment J Year 2037 Total Traffic
Conditions Worksheets
(Surface Mining Overlay)

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	82	7	43	249	7	29
Future Vol, veh/h	82	7	43	249	7	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	18	0	12	6	0	31
Mvmt Flow	91	8	48	277	8	32

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	99	0	467 95
Stage 1	-	-	-	-	95 -
Stage 2	-	-	-	-	372 -
Critical Hdwy	-	-	4.22	-	6.4 6.51
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.308	-	3.5 3.579
Pot Cap-1 Maneuver	-	-	1433	-	558 888
Stage 1	-	-	-	-	934 -
Stage 2	-	-	-	-	702 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1433	-	536 888
Mov Cap-2 Maneuver	-	-	-	-	536 -
Stage 1	-	-	-	-	934 -
Stage 2	-	-	-	-	674 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.1	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	787	-	-	1433	-
HCM Lane V/C Ratio	0.051	-	-	0.033	-
HCM Control Delay (s)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0.1	-

Intersection						
Int Delay, s/veh	5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	150	3	35	70	2	62
Future Vol, veh/h	150	3	35	70	2	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	1	0	21	3	0	22
Mvmt Flow	179	4	42	83	2	74

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	162	83	0	0	125	0
Stage 1	83	-	-	-	-	-
Stage 2	79	-	-	-	-	-
Critical Hdwy	6.41	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	831	982	-	-	1474	-
Stage 1	943	-	-	-	-	-
Stage 2	947	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	830	982	-	-	1474	-
Mov Cap-2 Maneuver	830	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	946	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	833	1474
HCM Lane V/C Ratio	-	-	0.219	0.002
HCM Control Delay (s)	-	-	10.5	7.4
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.8	0

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	79	0	27	0	0	0	39	44	0	0	72	179
Future Vol, veh/h	79	0	27	0	0	0	39	44	0	0	72	179
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	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	5	0	30	0	0	0	78	17	0	0	12	6
Mvmt Flow	91	0	31	0	0	0	45	51	0	0	83	206

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	326	326	186	341	429	51	289	0	0	51	0	0
Stage 1	186	186	-	140	140	-	-	-	-	-	-	-
Stage 2	140	140	-	201	289	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.5	7.1	6.5	6.2	4.88	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.57	3.5	4	3.3	2.902	-	-	2.2	-	-
Pot Cap-1 Maneuver	621	596	789	617	521	1023	940	-	-	1568	-	-
Stage 1	809	750	-	868	785	-	-	-	-	-	-	-
Stage 2	856	785	-	805	677	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	598	567	789	571	495	1023	940	-	-	1568	-	-
Mov Cap-2 Maneuver	598	567	-	571	495	-	-	-	-	-	-	-
Stage 1	769	750	-	825	747	-	-	-	-	-	-	-
Stage 2	814	747	-	773	677	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	12		0		4.2		0	
HCM LOS	B		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	940	-	-	637	-	1568	-
HCM Lane V/C Ratio	0.048	-	-	0.191	-	-	-
HCM Control Delay (s)	9	0	-	12	0	0	-
HCM Lane LOS	A	A	-	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.7	-	0	-

Intersection						
Int Delay, s/veh	8.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	225	8	119	70	5	569
Future Vol, veh/h	225	8	119	70	5	569
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	16	50	18	6	50	6
Mvmt Flow	237	8	125	74	5	599

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	771	162	0	0	199	0
Stage 1	162	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Critical Hdwy	6.56	6.7	-	-	4.6	-
Critical Hdwy Stg 1	5.56	-	-	-	-	-
Critical Hdwy Stg 2	5.56	-	-	-	-	-
Follow-up Hdwy	3.644	3.75	-	-	2.65	-
Pot Cap-1 Maneuver	349	772	-	-	1133	-
Stage 1	834	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	347	772	-	-	1133	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	513	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	34.5	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	357	1133
HCM Lane V/C Ratio	-	-	0.687	0.005
HCM Control Delay (s)	-	-	34.5	8.2
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	4.9	0

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	21	45	16	73	13	41
Future Vol, veh/h	21	45	16	73	13	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	8	96	100	5	100	100
Mvmt Flow	25	54	19	88	16	49

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	80	0	179
Stage 1	-	-	-	-	52
Stage 2	-	-	-	-	127
Critical Hdwy	-	-	5.1	-	7.4
Critical Hdwy Stg 1	-	-	-	-	6.4
Critical Hdwy Stg 2	-	-	-	-	6.4
Follow-up Hdwy	-	-	3.1	-	4.4
Pot Cap-1 Maneuver	-	-	1073	-	631
Stage 1	-	-	-	-	770
Stage 2	-	-	-	-	705
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1073	-	619
Mov Cap-2 Maneuver	-	-	-	-	619
Stage 1	-	-	-	-	770
Stage 2	-	-	-	-	692

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	10.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	745	-	-	1073	-
HCM Lane V/C Ratio	0.087	-	-	0.018	-
HCM Control Delay (s)	10.3	-	-	8.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Intersection						
Int Delay, s/veh	6.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	40	45	84	27	100	49
Future Vol, veh/h	40	45	84	27	100	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	76	76	76	76	76	76
Heavy Vehicles, %	96	0	10	0	8	3
Mvmt Flow	53	59	111	36	132	64

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	146	0	-	0	292
Stage 1	-	-	-	-	128
Stage 2	-	-	-	-	164
Critical Hdwy	5.06	-	-	-	6.48
Critical Hdwy Stg 1	-	-	-	-	5.48
Critical Hdwy Stg 2	-	-	-	-	5.48
Follow-up Hdwy	3.064	-	-	-	3.572
Pot Cap-1 Maneuver	1018	-	-	-	686
Stage 1	-	-	-	-	883
Stage 2	-	-	-	-	851
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1018	-	-	-	649
Mov Cap-2 Maneuver	-	-	-	-	649
Stage 1	-	-	-	-	883
Stage 2	-	-	-	-	805

Approach	EB	WB	SB
HCM Control Delay, s	4.1	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1018	-	-	-	718
HCM Lane V/C Ratio	0.052	-	-	-	0.273
HCM Control Delay (s)	8.7	0	-	-	11.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.2	-	-	-	1.1

Intersection	
Intersection Delay, s/veh	11
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	122	267	74	34	46
Future Vol, veh/h	19	122	267	74	34	46
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Heavy Vehicles, %	0	6	5	4	18	17
Mvmt Flow	23	149	326	90	41	56
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	8.1	12.6	9.2
HCM LOS	A	B	A

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	42%	0%	78%
Vol Thru, %	0%	13%	22%
Vol Right, %	57%	87%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	80	141	341
LT Vol	34	0	267
Through Vol	0	19	74
RT Vol	46	122	0
Lane Flow Rate	98	172	416
Geometry Grp	1	1	1
Degree of Util (X)	0.142	0.196	0.528
Departure Headway (Hd)	5.247	4.099	4.571
Convergence, Y/N	Yes	Yes	Yes
Cap	682	875	790
Service Time	3.29	2.128	2.598
HCM Lane V/C Ratio	0.144	0.197	0.527
HCM Control Delay	9.2	8.1	12.6
HCM Lane LOS	A	A	B
HCM 95th-tile Q	0.5	0.7	3.1

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	267	11	15	116	31	57
Future Vol, veh/h	267	11	15	116	31	57
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	22	3	0	6
Mvmt Flow	281	12	16	122	33	60

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	293	0	441 287
Stage 1	-	-	-	-	287 -
Stage 2	-	-	-	-	154 -
Critical Hdwy	-	-	4.32	-	6.4 6.26
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.4 -
Follow-up Hdwy	-	-	2.398	-	3.5 3.354
Pot Cap-1 Maneuver	-	-	1163	-	577 743
Stage 1	-	-	-	-	766 -
Stage 2	-	-	-	-	879 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1163	-	568 743
Mov Cap-2 Maneuver	-	-	-	-	568 -
Stage 1	-	-	-	-	766 -
Stage 2	-	-	-	-	866 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	670	-	-	1163	-
HCM Lane V/C Ratio	0.138	-	-	0.014	-
HCM Control Delay (s)	11.2	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0	-

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	134	5	61	167	8	43
Future Vol, veh/h	134	5	61	167	8	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	33	6	6	0	12
Mvmt Flow	146	5	66	182	9	47

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	221	157	0	0	248
Stage 1	157	-	-	-	-
Stage 2	64	-	-	-	-
Critical Hdwy	6.46	6.53	-	-	4.1
Critical Hdwy Stg 1	5.46	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-
Follow-up Hdwy	3.554	3.597	-	-	2.2
Pot Cap-1 Maneuver	758	813	-	-	1330
Stage 1	862	-	-	-	-
Stage 2	949	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	753	813	-	-	1330
Mov Cap-2 Maneuver	753	-	-	-	-
Stage 1	862	-	-	-	-
Stage 2	942	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11	0	1.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	755	1330
HCM Lane V/C Ratio	-	-	0.2	0.007
HCM Control Delay (s)	-	-	11	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	213	4	15	0	2	0	26	64	0	0	52	159
Future Vol, veh/h	213	4	15	0	2	0	26	64	0	0	52	159
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	0	0	0	0	0	25	10	0	0	4	8
Mvmt Flow	232	4	16	0	2	0	28	70	0	0	57	173

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	270	269	143	279	355	70	229	0	0	70	0	0
Stage 1	143	143	-	126	126	-	-	-	-	-	-	-
Stage 2	127	126	-	153	229	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.5	6.2	7.1	6.5	6.2	4.35	-	-	4.1	-	-
Critical Hdwy Stg 1	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4	3.3	3.5	4	3.3	2.425	-	-	2.2	-	-
Pot Cap-1 Maneuver	676	641	910	677	574	998	1215	-	-	1544	-	-
Stage 1	853	782	-	883	796	-	-	-	-	-	-	-
Stage 2	870	796	-	854	718	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	662	626	910	649	560	998	1215	-	-	1544	-	-
Mov Cap-2 Maneuver	662	626	-	649	560	-	-	-	-	-	-	-
Stage 1	833	782	-	862	777	-	-	-	-	-	-	-
Stage 2	847	777	-	834	718	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	13.5		11.5		2.3			0		
HCM LOS	B		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1215	-	-	673	560	1544	-	-
HCM Lane V/C Ratio	0.023	-	-	0.375	0.004	-	-	-
HCM Control Delay (s)	8	0	-	13.5	11.5	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	1.7	0	0	-	-

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		B			4
Traffic Vol, veh/h	99	5	570	218	4	266
Future Vol, veh/h	99	5	570	218	4	266
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	3	0	5	3	0	4
Mvmt Flow	104	5	600	229	4	280

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1003	715	0	0	829
Stage 1	715	-	-	-	-
Stage 2	288	-	-	-	-
Critical Hdwy	6.43	6.2	-	-	4.1
Critical Hdwy Stg 1	5.43	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-
Follow-up Hdwy	3.527	3.3	-	-	2.2
Pot Cap-1 Maneuver	267	434	-	-	811
Stage 1	483	-	-	-	-
Stage 2	759	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	265	434	-	-	811
Mov Cap-2 Maneuver	265	-	-	-	-
Stage 1	483	-	-	-	-
Stage 2	754	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.1	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	278	811
HCM Lane V/C Ratio	-	-	0.394	0.005
HCM Control Delay (s)	-	-	26.1	9.5
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1.8	0

Intersection						
Int Delay, s/veh	1.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	60	3	3	40	5	7
Future Vol, veh/h	60	3	3	40	5	7
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	74	74
Heavy Vehicles, %	5	100	0	8	0	0
Mvmt Flow	81	4	4	54	7	9

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	86	0	146
Stage 1	-	-	-	-	84
Stage 2	-	-	-	-	62
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1523	-	851
Stage 1	-	-	-	-	944
Stage 2	-	-	-	-	966
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1523	-	848
Mov Cap-2 Maneuver	-	-	-	-	848
Stage 1	-	-	-	-	943
Stage 2	-	-	-	-	963

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	920	-	-	1523	-
HCM Lane V/C Ratio	0.018	-	-	0.003	-
HCM Control Delay (s)	9	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	47	82	77	105	62	22
Future Vol, veh/h	47	82	77	105	62	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	11	4	9	5	9	0
Mvmt Flow	52	90	85	115	68	24

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	200	0	-	0	335
Stage 1	-	-	-	-	142
Stage 2	-	-	-	-	193
Critical Hdwy	4.21	-	-	-	6.49
Critical Hdwy Stg 1	-	-	-	-	5.49
Critical Hdwy Stg 2	-	-	-	-	5.49
Follow-up Hdwy	2.299	-	-	-	3.581
Pot Cap-1 Maneuver	1320	-	-	-	646
Stage 1	-	-	-	-	868
Stage 2	-	-	-	-	823
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1320	-	-	-	620
Mov Cap-2 Maneuver	-	-	-	-	620
Stage 1	-	-	-	-	868
Stage 2	-	-	-	-	789

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1320	-	-	-	677
HCM Lane V/C Ratio	0.039	-	-	-	0.136
HCM Control Delay (s)	7.8	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Intersection Delay, s/veh	10.7
Intersection LOS	B

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	71	66	99	40	131	240
Future Vol, veh/h	71	66	99	40	131	240
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Heavy Vehicles, %	5	8	11	12	6	3
Mvmt Flow	76	70	105	43	139	255
Number of Lanes	1	0	0	1	1	0

Approach	EB	WB	NB
Opposing Approach	WB	EB	
Opposing Lanes	1	1	0
Conflicting Approach Left		NB	EB
Conflicting Lanes Left	0	1	1
Conflicting Approach Right	NB		WB
Conflicting Lanes Right	1	0	1
HCM Control Delay	9.1	9.9	11.6
HCM LOS	A	A	B

Lane	NBLn1	EBLn1	WBLn1
Vol Left, %	35%	0%	71%
Vol Thru, %	0%	52%	29%
Vol Right, %	65%	48%	0%
Sign Control	Stop	Stop	Stop
Traffic Vol by Lane	371	137	139
LT Vol	131	0	99
Through Vol	0	71	40
RT Vol	240	66	0
Lane Flow Rate	395	146	148
Geometry Grp	1	1	1
Degree of Util (X)	0.485	0.195	0.219
Departure Headway (Hd)	4.421	4.811	5.324
Convergence, Y/N	Yes	Yes	Yes
Cap	813	740	670
Service Time	2.462	2.878	3.392
HCM Lane V/C Ratio	0.486	0.197	0.221
HCM Control Delay	11.6	9.1	9.9
HCM Lane LOS	B	A	A
HCM 95th-tile Q	2.7	0.7	0.8