

METHODOLOGY & ASSSUMPTIONS MEMORANDUM (TM#1, APPENDIX A)

Date:April 17, 2023To:Project Management TeamFrom:Kittelson & Associates, Inc.Subject:OR138E Design Concept Plan

Project #: 23021.032

Purpose

This memorandum documents the methodology and key assumptions to be used in generating the existing conditions, future conditions, and concept analysis for the OR138E Design Concept Plan. The methodologies and assumptions used in this memorandum are based on guidance provided in the Oregon Department of Transportation (ODOT) Analysis Procedures Manual (APM – Reference 1), and direction provided by City and ODOT staff. The analyses described in this memorandum will help identify potential deficiencies in the OR138E corridor, including:

- Traffic operations at the study intersection under existing and future traffic conditions,
- Traffic safety at the study intersections and along study area roadways,
- Gaps and deficiencies in the bicycle and pedestrian network,
- Gaps and deficiencies in the transit service (service frequency, hours, coverage, etc.), and
- Gaps and deficiencies in other travel modes.

This information will serve as a baseline for identifying a comprehensive list of needs and deficiencies to be addressed as part of the OR138E Design Concept Plan. It will also serve as a baseline for identifying and evaluating potential solutions and developing a prioritized list of improvements for the OR138E Design Concept Plan.

Study Intersections

The study intersections for the OR138E Design Concept Plan were determined by the City and ODOT prior to the development of the scope of work. There are a total of 13 study intersections located along City and ODOT facilities, including four signalized and nine unsignalized intersections. Figure 1 and Table 1 summarize the location of the study intersections. The following provides information related to the traffic counts conducted at the study intersections and how they will be used to develop existing and future traffic volumes.

Figure 1: Study Intersections



Table 1: Study Area Intersections

Map ID	Intersection	Count Dates	Count Type
1	NE Stephens St. @ NE Winchester St.	04/06/2022	16 hour
2	NE Diamond Lake Blvd. @ SE Stephens St.	03/28/2022	16 hour
3	NE Diamond Lake Blvd. @ NE Jackson St./NE Winchester St.	03/28/2022	16 hour
4	NE Diamond Lake Blvd./NE Fowler St.	03/28/2022	4 hour
5	NE Diamond Lake Blvd. @ NE Fulton St.	03/28/2022	16 hour
6	NE Diamond Lake Blvd. @ NE Rifle Range St.	03/28/2022	16 hour
7	NE Diamond Lake Blvd @ NE Douglas Ave.	03/28/2022	4 hour
8	SE Stephens St. @ SE Douglas Ave.	03/30/2022	16 hour
9	SE Douglas Ave. @ NE Jackson St.	03/30/2022	4 hour
10	SE Douglas Ave. @ SE Kane St.	03/30/2022	4 hour
11	SE Douglas Ave. @ NE Fowler St.	03/30/2022	4 hour
12	SE Douglas Ave. @ SE Ramp Rd.	03/30/2022	4 hour
13	NE Douglas Ave. @ NE Rifle Range St.	03/30/2022	4 hour

Traffic Counts

Manual turning movement counts were conducted at the study intersections between March 28th and April 6th, 2022. The counts were conducted by the ODOT on a typical mid-weekday and consists of 16-hour and 4-hour counts as described in Table 1. The counts include the total number of pedestrians, bicyclists, and motor vehicles that entered the study intersections in 15-minute intervals. The traffic count worksheets are provided in Attachment A.

Peak Hour Development

The traffic counts were reviewed to determine individual and system-wide peak hours for the operational analyses. A system-wide peak hour approach was determined to be most appropriate based on the data. Two system-wide peak hours were identified for the study intersections. A 4:00 to 5:00 PM peak hour was identified along Diamond Lake Boulevard and SE Stephens Street and a 2:00 to 3:00 PM peak hour was identified along SE Douglas Avenue between SE Jackson Street and NE Rifle Range Road.

Seasonal Factors

30th Hour Volumes (30 HV) for the OR138E Design Concept Plan will be developed based on the traffic counts collected at the study intersections and the application of seasonal adjustment factors consistent with the methodology identified in ODOT's Analysis Procedures Memo (APM). The APM identifies three methods for identifying seasonal adjustment factors for highway traffic volumes. All three methods utilize information provided by Automatic Traffic Recorders (ATRs) located in select locations throughout the State Highway System that collect traffic data 24-hours a day, 365 days a year.

Each method was evaluated to determine the most appropriate method for the study intersections. Based on the evaluations, the Seasonal Trend Table will be used for study intersections along OR138E to develop 30 HV volumes. The results of the evaluation are summarized below.

On-Site ATR Method

The On-Site ATR Method is used when an Automatic Traffic Recorder (ATR) is within or near the project area. ATR #10-004 is the closest ATR station to the study area, located approximately 25 miles east of the NE Diamond Lake Blvd/NE Douglas Ave intersection along Diamond Lake Blvd. While the average annual daily traffic at this site is within ten percent of segments of the OR 138E study corridor volumes, the ATR is a significant distance away and located in a predominately rural area. Nonetheless, a seasonal factor was calculated using this ATR for comparison purposes to the other methodologies described herein. As shown in Table 2, the seasonal adjustment factor calculation for the intersection counts averaging March and April using this method would be a factor of 2.68 which is well above an appropriate factor level.

	2021	2019	2018	2017	2016	Avg.
		A	rr #10-004			
Peak Month (July)	104	163	159	167	158	160
Count Month (March)	79	55	57	55	54	55.67
Count Month (April)	91	63	66	57	62	63.67

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- The average peak month (July) is: (163% + 159% + 158%) / 3 = 160%
- The average count month (March and April) is:
 - March: (55% + 57% + 55%) / 3 = 55.67%
 - April: (63% + 66% + 62%) / 3 = 63.67%
 - Average: (55.67% + 63.67%) / 2 = 59.67%

• The seasonal adjustment factor is 160%/59.67% = 2.68

ATR Characteristics Table

The ATR Characteristic Table provides general characteristics for each ATR in Oregon and is typically used when there is not a nearby ATR within the immediate study area. A review of the Characteristic Table found ATR #18-018 that closely matches the conditions within the site vicinity for a weekday traffic trend in an urban setting (small urban or small urban fringe) with average annual daily traffic within ten percent of typical traffic volumes within the study area. As shown in Table 3, the seasonal adjustment factor calculation for the intersection counts averaging March and April using this method would be a factor of 1.04. The ATR Seasonal Trend Method was also evaluated as described in the following section.

	2021	2019	2018	2017	2016	Avg.
		ATR	#18-018			
Peak Month (July)	118	119	117	119	117	118
Count Month (March)	++++	109	108	108	110	109
Count Month (April)	119	119	117	117	116	117.67

Table 3 – Seasonal Adjustment C	Calculations for ATR #18-018
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- The average peak month (July) is: (118% + 119% + 117%) / 3 = 118%
- The average count month (March and April) is:
 - March: (109% + 108% + 110%) / 3 = 109%
 - April: (119% + 117% + 117%) / 3 = 117.67%
 - Average: (109% + 117.67%) / 2 = 113.33%
- The seasonal adjustment factor is 118%/113.33% = 1.04

ATR Seasonal Trend Method

The seasonal trend table is used when there is not an ATR nearby or in a representative area. This method averages seasonal trend groupings from the ATR Characteristics Table. For the study area, an average of the "commuter" and "summer" trends was deemed appropriate. As shown in Table 4, the average of the seasonal adjustment factor calculations for the "Commuter" and "Summer" trends would be a factor of 1.13.

Table 4 – ATR Seasonal Trend Method for Commuter and Summer Trends (Year 2
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	Count Month (April 1 ^{st)}	Seasonal Trend Peak Period Factor
Commuter	0.9836	0.9336
Summer	1.0061	0.8279

- The peak period seasonal factor is 0.9336 for the Commuter trend and 0.8279 for the Summer Trend.
- The count date seasonal factor (April 1st) is 0.9836 for the Commuter trend and 1.0061 for the Summer trend.

- The Commuter seasonal adjustment is 1.05 (0.9836/0.9336 = 1.05) and the Summer seasonal adjustment is 1.22 (1.0061/0.8279 = 1.22).
- An average of the Commuter and Summer season adjustments is 1.13.

Based on a comparison of the three methods, we propose to use an average of the Commuter and Summary trends (resulting in a season factor of 1.13) from the ATR Season Trend Table as it generates a reasonably conservative seasonal factor that is also consistent with the daily commuter traffic volumes and higher summer travel characteristics along the OR 138E corridor.

Historical Trends

The historical trends method uses traffic volumes from previous years to project future volumes. This method assumes that the future growth trend will be similar to the historical trend. Current and future year traffic volumes have been made available in the Future Volumes Table webpage.

2040 Traffic Volume Forecast

Oregon's Transportation Planning Rule (TPR) requires communities to develop a 20-year plan to support the transportation system needs. The City of Roseburg anticipates completing and adopting the OR138E Design Concept Plan into the City Transportation System Plan (TSP) in 2024, thus the year 2044 is an appropriate forecast horizon year.

The year 2044 traffic volumes were developed according to the Historical Trends methodology described in the APM. A summary of the traffic volume projection process is presented below.

Roseburg Travel Demand Model

The Roseburg Travel Demand Model will be the primary tool used to determine future traffic volumes in Roseburg and the surrounding region. Travel demand models are tools used to help predict the patterns of future commuters, school traffic, and recreational traffic. The model relies on socioeconomic data (e.g., households and employment) to determine the travel demand and system attributes (e.g., roadway capacity, speeds, and distances) to represent the transportation supply. The long-range regional growth forecasts are consistent with current land use zoning and State-approved population forecasts for the Roseburg urban area.

Intersection Operational Standards

ODOT uses volume-to-capacity (V/C) ratios to assess intersection operations. Table 6 of the Oregon Highway Plan (OHP – Reference 2) and Table 1200-1 of the Oregon Highway Design Manual (HDM – Reference 3) provide maximum volume-to-capacity ratios for all signalized and unsignalized intersections located outside the Portland metropolitan area.

The OHP ratios are used to evaluate existing and future no-build conditions, while the HDM ratios are used in the creation of Design Concept Plan alternatives including projects along state highways. ODOT controls all intersections along NE Diamond Lake Boulevard and Stephens Street within the project area with the exception of NE Stephens St. @ NE Winchester St. which is controlled by the City of Roseburg. Table 5 summarizes the v/c ratios that will be used to identify the existing and potential future operational issues at the ODOT study intersections.

Table 5: ODOT Mobility Targets/Standards

Map ID	Intersection	Traffic Control	OHP Mobility Target	HDM Standard
2	NE Diamond Lake Blvd/ SE Stephens St.	Signal	0.90	0.75

3	NE Diamond Lake Blvd/ NE Jackson St./NE Winchester St.	Signal	0.90	0.75
4	NE Diamond Lake Blvd./ NE Fowler St.	TWSC1	0.90 major approach/ 0.95 minor approach	0.75
5	NE Diamond Lake Blvd./ NE Fulton St.	TWSC ¹	0.90 major approach/ 0.95 minor approach	0.75
6	NE Diamond Lake Blvd./ NE Rifle Range St.	Signal	0.90	0.75
7	NE Diamond Lake Blvd./ NE Douglas Ave.	TWSC1	0.85 major approach/ 0.90 minor approach	0.75
8	SE Stephens St./ SE Douglas Ave.	Signal	0.90	0.75

¹Two-Way Stop-Controlled (TWSC)

Note: OR 138E is a Regional Highway. The posted speed on the eastern half of the study corridor is 55 mph, 45 mph from roughly the Phoenix Charter School of Roseburg to just east of Rifle Range Road, and 35 mph from Rifle Range Road to the western boundary of the study corridor.

City Facilities

As part of the 2020 TSP Update, City of Roseburg updated its mobility targets to be consistent across the City. A dual standard based on volume-to-capacity (v/c) and level of service (LOS) has been adopted. V/C and LOS are the measures to determine what is acceptable or unacceptable traffic flow on Roseburg streets, LOS is based on average seconds of delay and v/c is a measure of the traffic volume against the capacity.

The City's current TSP sets a maximum LOS Standard of "E" for all signalized and unsignalized intersections. Table 6 summarizes the LOS standards that will be used to identify existing and potential future operational issues at the City study intersections. City streets shall maintain a LOS of "E" and v/c no worse than 0.95 during the peak hour of the day. Table 6 summarizes the City mobility standards for the one City owned intersection in the study area.

Table 6: City Mobility Standards

Map ID	Intersection	Traffic Control	V/C ¹	LOS ²
1	NE Stephens St./NE Winchester St.	TWSC ³	0.95	E
9	SE Douglas Ave./NE Jackson St.	AWSC ⁴	0.95	E
10	SE Douglas Ave./SE Kane St.	TWSC ³	0.95	E
11	SE Douglas Ave./NE Fowler St.	TWSC ³	0.95	E
12	SE Douglas Ave./SE Ramp Rd.	TWSC ³	0.95	E
13	NE Douglas Ave./NE Rifle Range St.	TWSC ³	0.95	Е

1. City intersections shall be analyzed at a peak hour factor of 1.0.

2. For roadways within the city of Roseburg that are under ODOT or Douglas County jurisdiction, the mobility standards/targets of those agencies will apply.

3. Two-Way Stop-Controlled (TWSC). Note the Stephens St/Winchester St intersection is a Right-in, Right-out, Left-in intersection with a yield controlled right-out, and stop-controlled right-in but for simplicity is referred to as a TWSC intersection. 4. All-Way Stop-Controlled (AWSC).

Traffic operations at the study intersections will be evaluated based on the mobility targets and standards shown in Table 5 and Table 6. Potential solutions will be identified and evaluated for the study intersections that are found to exceed the mobility targets and standards under existing and/or future traffic conditions.

Analysis Model Parameters

The bullets below identify the specific sources of data and methodologies proposed to conduct the operational analyses. Analyses of all state facilities will be conducted according to the APM, unless otherwise agreed upon by the City and ODOT.

- Intersection/Roadway Geometry (lane numbers and arrangements, cross section elements, signal phasing, etc.) will be collected through aerial photography and confirmed through a site visit. Available as-built data may also be used to verify existing roadway geometry. The analysis model will be built on scaled roadway linework from GIS or aerial photography.
- Operational Data (such as posted speeds, intersection control, parking, transit stops, rail crossings, right-turn on red, etc.) will be collected through a site visit. Data will be reviewed and supplemented by available GIS data, traffic counts, aerials, and photographs.
- *Peak Hour Factors* (PHF) will be calculated for each intersection and applied to the existing conditions analyses. Per the APM, PHFs of 0.95 will be used for the year 2044 analysis for high-order facilities (arterials). With 0.90 applied to medium-order facilities (collectors) and 0.85 applied to local roads. If the existing PHF is greater than these default future values, the existing PHF will be applied.
- Traffic Volume development is described above.
- Signal Timing Data will be requested from ODOT for use in the existing conditions analysis. Signal parameters such as Flash Don't Walk, Walk, and Minimum Times will be retained in the forecast analysis with the signal splits optimized to better serve the future traffic volume patterns. Optimized signal cycle lengths may range between 60 and 120 seconds.
- Traffic Operations
 - The HCM 2017 methodology will be used to analyze traffic operations at the unsignalized and signalized study intersections.
 - Queuing analysis methodology will be based on Synchro 95th percentile queue lengths. Microsimulation is not scoped as part of this long-range planning effort.

Traffic Analysis Software and Input assumptions

The latest version of Syncho software will be used for the intersection analysis. The reported results will be the level of service, intersection delay, and v/c ratios generated by the HCM report. Analysis assumptions are listed in Table 7.

Table 7: Synchro Operatior	ns Parameters/Assumptions
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Arterial Intersection Parameters	Existing Conditions
Peak Hour Factor	From traffic counts
Conflicting Bike and Pedestrian per Hour	From traffic counts, as available
Area Type	Other
Ideal Saturation Flow Rate (for all movements)	1,750 passenger cars per hour green per lane
Lane Width	12 feet unless field observations suggest otherwise
Percent Heavy Vehicles	From traffic counts by movement, as available
Percent Grade	Estimated based on field observations
Parking Maneuvers per Hour	Estimated based on field observations
Bus Blockages	Estimated based on frequency of service
Intersection Signal Phasing and Coordination	From ODOT/County/City
Intersection Signal Timing Optimization Limits	Maximum cycle length = 120 seconds
Minimum Green Time	From timing plans
Yellow and All-Red Time	From timing plans
95 th Percentile Vehicle Queues	Synchro 9 summary output

Multimodal Analysis

The multimodal analysis will be performed in accordance with the methodologies identified in Chapter 14 of the APM and identify the needs associated with the pedestrian, bicycle, and public transportation systems. Pedestrian, bicycle, and transit operations will be evaluated using the Qualitative Multimodal Assessment. The pedestrian and bicycle analyses will also include a Pedestrian Level of Traffic Stress (PLTS) and a Bicycle Level of Traffic Stress (BLTS) analysis, consistent with the methodologies identified in the APM. All analysis results will be presented in a tabular format and as part of a GIS map. Both PLTS and BLTS methods group facilities into four different stress levels for segments, intersection approaches, and intersection crossings. Facilities with an LTS 1 rating have little to no traffic stress, require less attention, and are suitable for all users. Facilities with an LTS 2 rating have little traffic stress, but require more attention and therefore, may or may not be suitable for small children. Facilities with an LTS 3 rating have moderate traffic stress and are suitable for adults. Facilities with an LTS 4 rating have high traffic stress and are only suitable for able-bodied adults with limited options.

Crash Analysis

The five most recent years of crash data will be reviewed at the study intersections and along the roadway segments between each study intersection consistent with the methodologies outlined in the APM. The data will be analyzed for number, type, severity, and location to identify potential crash patterns and million entering vehicle (MEV) crash rates (critical crash rates will also be developed and evaluated as applicable). Intersection crash rates will be compared to the published 90th percentile crash rates in Exhibit 4.1 of the APM and segment crash rates will be compared to Table II in the current ODOT Crash Rate Tables. In addition, ODOT's top 10% ODOT Safety Priority System sites will be reviewed, as appropriate. Any identified potential countermeasures (and any resulting crash percentage reduction) will be taken from the All Roads Transportation Safety (ARTS) Crash Reduction Factors (CRF) listing or the CRF Appendix.

References

- 1. Oregon Department of Transportation. Analysis Procedures Manual, 2022.
- 2. Oregon Department of Transportation. Oregon Highway Plan, 2015.
- 3. Oregon Department of Transportation. Highway Design Manual, 2023.

Attachments

A. Traffic Counts

QC JOB #: 15952701

DATE: Wed, Mar 30 2022

LOCATION: 10012011 - SE Stephens St -- SE Douglas Ave CITY/STATE: Roseburg, OR

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Comments:

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4:00 PM	0	135	82	0	54	139	0	0	0	0	0	0	92	0	26	0	528	2183	1
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5:00 PM	0	138	89	0	69	141	0	0	0	0	0	0	114	0	31	0	582	2208	1
5:15 PM	0	108	94	0	54	151	0	0	0	0	0	0	88	0	28	0	523	2163	1
5:30 PM	0	89	77	0	49	116	0	0	0	0	0	0	79	0	29	0	439	2070	1
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Bicycles Scooters

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2:30 PM	13	1	5	0	0	1	7	0	5	142	20	0	1	110	2	0	307	
2:45 PM	15	0	6	0	0	0	4	0	5	149	26	0	5	147	2	0	359	1231
3:00 PM	14	1	8	0	1	0	10	0	12	126	21	0	2	159	3	0	357	1330
3:15 PM	10	0	1	0	1	4	15	0	11	141	29	0	6	153	0	0	371	1394
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4.13 T M	16		5	0	1	0	3	0	6	161	25	0	2 1	170	1	0	201	1501
4.50 FIVI 4.45 PM	23	0	2	0	0	0	4 2	0	14	166	20	0	5	170	1	0	365	1545
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5:15 PM	18	Õ	5	õ	4	ō	8	Õ	11	165	32	õ	2	129	2	õ	376	1533
5:30 PM	16	1	5	Ō	1	Ō	17	Ō	2	146	12	Ō	3	85	0	Ō	288	1430
5:45 PM	12	0	8	0	1	1	5	0	5	97	15	0	1	97	1	0	243	1308
Peak 15-Min		North	bound			South	bound			Eastb	ound			West	oound		_	
Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	To	tal
All Vehicles	96	8	12	0	0	8	36	0	40	564	92	0	8	768	16	0	16	48
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		()
Buses																		
Pedestrians		8				4				8				0			2	0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		()
Commonte																		
comments:																		

Report generated on 9/20/2022 8:29 AM

Comments:

Report generated on 9/20/2022 8:29 AM

QC JOB #: 15952707 DATE: Mon, Mar 28 2022

LOCATION: 37122 - NE Douglas Ave -- NE Diamond Lake Blvd CITY/STATE: Roseburg, OR

	0 ♦ 0 0	0 ♠ 0				Pe Pea	ak-Hou Ik 15-N	ır: 3:45 lin: 3:4	5 PM 15 PM -				0 • 0 0	0 1 0				
567 ← 0 474 479 ← 5	• 09 • 09 • 4 0 • 11	4 + <i>f</i> 10 14	0 ← 569 563 6 → 484				Qua DATA TH				5			0 ← 0 0 0 ← 0			• 0 ← • 0 • 0 →	0
0		→ [→ [0		-	510					 	-		0 0 0			- 0 - 0 - 0	
← 3 N/A → → 7			► N/A		-		Ì			₩		-		N/A			- • N/A	
15-Min Count Period	371	.22 - NE (North	Douglas / bound)	Ave	371	22 - NE (South	Douglas bound)	Ave	NE	Diamon (Eastb	d Lake Bl ound)	lvd	NE	Diamon (West	id Lake B bound)	lvd	Total	Hourly
Beginning At	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	120	iotais
2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM	1 0 1 1 0 1	0 0 0 0 0	U 1 3 1 2 1 1	0 0 0 0 0		0 0 0 0 0	0 0 0 0 0	0 0 0 0 0		68 88 108 133 109 111 113	U 2 3 1 1 1	0 0 0 0 0	0 0 3 0 1 1 3	69 83 86 99 139 122 129	0 0 0 0 0		138 175 203 237 253 236 248	753 868 929 974
4:00 PM	2	0	2	0	0	0	0	0	0	118	2	0	0	155	0	0	282	1019
4:15 PM 4:30 PM	1 0	0 0	2 3	0 0	0 0	0 0	0 0	0 0	0 0	112 121	0 0	0 0	2 2	162 131	0 0	0 0	279 257	1053 1062
4:45 PM 5:00 PM	1 1	0	4 1	0	0	0	0	0	0	133 133	1 0	0	0	105 112	0	0 0	244 247	1024 1027
5:15 PM 5:30 PM	0	0	1	0	0	0	0	0	0	145 125	0	0	1	88 62	0	0	235 189	983 915
5:45 PM	Ő	Õ	1	0	Õ	Ő	Ō	Ő	Õ	80	Ō	Ō	2	72	Ő	Ō	155	826
Peak 15-Min Flowrates	left	North Thru	bound Right	U	left	South Thru	bound Right	U	left	Eastb	ound Right	U	left	West	oound Right	U	Tot	tal
All Vehicles Heavy Trucks Buses	4 0	0	12 0	0	0	0	0 0	0	0	472 0	12 0	0	8 0	620 0	0	0	112 0	28
Pedestrians Bicycles	0	0 0	0		0	0 0	0		0	0 0	0		0	0 0	0		0 0)

Comments:

Report generated on 9/20/2022 8:29 AM

Report generated on 9/20/2022 8:29 AM

Scooters Comments:

LOCATION: 3 CITY/STATE:	37124 Roseb	- SE Ra ourg, O	mp Rd - R	SE D	ouglas	s Ave								ſ	QC DATE: V	: JOB # Ved, N	#: 1595 Mar 30	52709 2022
137 ← 0 _ 60 ■ 146 → 86 ■	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 + 0 	0 ← 96 47 49 → 110			Pe Pea	ak-Hou k 15-M Qua Data TH	In: 2:00 lin: 2:3							• 0 • • 0 • 0 •	0		
0		→ [→ [0		-	S 10					4	-		0			0 • 0 • 0	
+ 9 N/A → + 3	* N/. + +		× N/A ►		-	-•	Ì			1 (* [STOP	-		N/A			⊾ ►N/A	
15-Min Count Period	3	7124 - S (North	E Ramp R bound)	d	37	7124 - Sl (South	E Ramp F bound)	۲d		SE Dou (Eastb	glas Ave ound)			SE Doug (Westb	glas Ave bound)		Total	Hourly Totals
2:00 PM	Left 9	Thru 0	Right 3	U 0	Left 0	Thru 0	Right 0	U	Left 0	Thru 11	Right 22	U 0	Left 11	Thru 17	Right 0	U 0	73	
2:15 PM 2:30 PM	10 52	0	7 29	0	0	0	0	0	0	16 19	30 21	0	19 15	9 11	0	0	91 147	
2:45 PM	19	0	11	0	0	0	0	0	0	14	13	0	4	10	0	0	71	382
3:15 PM	6	0	3	0	0	0	0	0	0	9 11	12	0	9	10	0	0	49 51	318
3:30 PM 3:45 PM	10 10	0 0	6 5	0 0	0 0	0 0	0 0	0 0	0 0	18 14	3 10	0 0	5 5	9 16	0 0	0 0	51 60	222 211
4:00 PM	14	Ő	7	0	0	0	0	0	0	12	11	0	8	5	0	0	57	219
4:15 PM 4:30 PM	8	0	11 10	0	0	0	0	0	0	13 7	8 9	0	4 5	8 12	0	0	51 51	219 219
4:45 PM	15 10	0	6 २	0	0	0	0	0	0	20 22	16 16	0	10 २	7 19	0	0	74 73	233 240
5:15 PM	5	0	5	0	0	0	0	0	0	13	15	0	9	11	0	0	58	256
5:30 PM 5:45 PM	8 11	0 0	3 1	0 0	0 0	0 0	0 0	0 0	0 0	13 10	15 6	0 0	9 3	10 17	0 0	0 0	58 48	263 237
Peak 15-Min		North	bound			South	bound	_		Eastb	ound			Westb	ound		Та	hal
Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	10	ldi
All Vehicles Heavy Trucks Buses	208 0	0 0	116 0	0	0 0	0 0	0 0	0	0 0	76 0	84 0	0	60 0	44 0	0 0	0	58 (8
Pedestrians Bicycles Scooters	0	0 0	0		0	0 0	0		0	0 0	0		0	0 0	0		C)

Comments:

Report generated on 9/20/2022 8:29 AM

LOCATION: 3 CITY/STATE:	87125 - Roseb	- SE Ka urg, Ol	ne St R	SE Do	uglas A	Ave								[QC Date: V	: JOB # Ved, N	‡: 1595 ⁄Iar 30	2710 2022
194 ← 0 206 266 → 60	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 ← 204 153 51 → 261			Pe Pea	ak-Hou k 15-M Qua DATA TH	In: 2:3				0 + 0 . 0 - 0 + 0 ⁻			0 + 0 0 +	0		
0		• [•] • [0		-	S								0.000			0 0 7 0	
+ 3 N/A +	* N/A • •		► N/A ►		-	-	}			^] (*	5002			N/A			N/A	
15-Min Count Period Beginning At	3	37125 - 9 (North	E Kane S bound)	t	3	7125 - 9 (South	SE Kane S bound)	it		SE Doug (Eastb	glas Ave ound)			SE Doug (Westb	glas Ave		Total	Hourly Totals
2:00 PM	11	0 0	Right 12	0	Left 0	0 0		0	0	43	15	0	Left 7	31 30		0	119	
2:30 PM	8	0	20	0	0	0	0	0	0	52	12	0	21	56	0	0	169	
2:45 PM 3:00 PM 3:15 PM 3:30 PM 4:00 PM 4:15 PM 4:30 PM 4:45 PM 5:00 PM 5:15 PM 5:30 PM 5:345 PM	11 12 18 7 8 4 12 7 8 13 6 11 5		11 8 9 11 12 16 12 10 16 22 12 9 8	0 0 0 0 0 0 0 0 0 0 0 0				0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0	53 40 28 37 46 40 30 36 47 45 44 33 28	19 12 14 19 14 10 16 9 20 13 17 8 8 8		11 10 6 3 15 9 13 11 8 18 12 11 7	36 29 30 40 51 38 41 27 36 74 41 33 38		0 0 0 0 0 0 0 0 0 0 0 0	141 111 105 117 146 117 124 100 135 185 132 105 94	566 558 526 474 479 485 504 487 487 526 504 557 516
Peak 15-Min Flowrates	Left	Thru	Right	U	Left	Thru	Right	U	Left Thru Right U					Thru	U	Total		
All Vehicles Heavy Trucks Buses Pedestrians Bicycles	32 0	0 0 0	80 0	0	0 0	0 0 0	0 0	0	0 0	208 0 0	48 0	0	84 0	224 0 0	0 0	0	67 0 0	6
Scooters	J	J	Ŭ		J.	Ĵ	J		Ĵ	J	Ū		Ĵ	J	Ū		Ū	

Comments:

Report generated on 9/20/2022 8:29 AM

LOCATION: 37127 - NE Stephens St -- NE Winchester St OC JOB #: 15952711 DATE: Wed, Apr 6 2022 CITY/STATE: Roseburg, OR Peak-Hour: 4:30 PM -- 5:30 PM Peak 15-Min: 5:00 PM -- 5:15 PM ŧ ŧ 848 464 . . **•** 0 **•** ★ 429 ★ 429 0 - 0 + 0 £ 0.92 + + + 0 + 0 7 **€** 0 **→** 0 0 7 0 🔹 466 0 🔸 £ ŧ ŧ ÷ ŧ ÷ ŧ Quality Counts DATA THAT DRIVES COMMUNITIES . ι. • • **t** 0 A + 0 7 **f** 0 • ŧ C N/A N/A ÷ و t t N/A 🛥 N/A N/A 🛥 N/A Î a ſ ç ŧ r N/A N/A ŧ 37127 - NE Stephens St 37127 - NE Stephens St **NE Winchester St** NE Winchester St 15-Min Count Period Hourly Totals (Northbound) (Southbound) (Eastbound) (Westbound) Total Beginning At Left Thru Right υ Left Thru Right υ Left Thru Right υ Left Thru Right U 2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 0 0 0 3:30 PM 0 3:45 PM 2 3 4:00 PM

Scooters Comments:

4:15 PM

4:30 PM

4:45 PM

5.00 PM

5:15 PM

5:30 PM

5:45 PM

Peak 15-Min Flowrates

All Vehicles

Heavy Trucks

Buses Pedestrians

Bicycles

Report generated on 9/20/2022 8:29 AM

Thru

0

Right

Northbound

Left

υ

Left

Thru

Right

Southbound

υ

Λ

Left

0

Thru

n

Right

Eastbound

0

υ

Λ

Left

Thru

Right

Westbound

υ

607

 Total

LOCATION: 9 CITY/STATE:	99110 Roseb)127 - I urg, O	NE Fowl R	ler St -	NE D	iamon	d Lake I	Blvd						(QC DATE: V	: JOB # Ved, N	l: 1595 Nar 30	2712 2022
864 ← 0 894 930 → 36	0 ↓ 0 0 0 0 0 0 0 0 0 0 0 0 0	0 + 0 - - - - - - - - - - - - -	0 ← 896 342 54 → 962			Pe Pea	ak-Hou k 15-M Data TH	r: 4:15 in: 5:0				0 + 0 . 0 0			0 + 0	0		
0		• [•] • [0		-	STOP					► ► ₹			0.			0 0 0	
← 9 N/A → + 3	* N/2 • •		← N/A →		_		•			^	STOP	-		N/A			- N/A	
15-Min Count Period Beginning At	9991	- 10127. (North	NE Fowle bound)	er St	9991	10127 - (South	NE Fowle bound)	er St	NE	Diamor (Eastb	nd Lake Bl bound) Bight	vd	NE	Diamon (Westb	d Lake Bl ound)	vd	Total	Hourly Totals
2:00 PM 2:15 PM 2:30 PM 2:45 PM 3:00 PM 3:15 PM 3:30 PM 4:30 PM 4:30 PM 4:30 PM 5:15 PM 5:30 PM 5:30 PM 5:30 PM	Left 4 4 7 7 6 6 4 2 6 1 7 5 9 1 2 1 2 1 2 1	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 10 13 12 15 9 5 13 16 19 17 14 10 27 21 10 8		Left 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Right 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	сент 0 0 0 0 0 0 0 0 0 0 0 0 0	1776 121 203 201 203 171 184 180 208 225 187 242 240 221 195 185	Right 11 8 7 2 8 6 9 6 5 10 9 12 8 12 3	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Left 8 14 9 14 9 14 9 13 21 18 23 11 10 9 9 9 7	Inru 161 154 166 165 191 224 210 229 231 197 235 195 161 156 153	Right 0	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	370 314 407 404 425 423 430 457 488 468 468 468 468 468 491 491 384 357	1495 1550 1659 1735 1735 1798 1843 1877 1911 1916 1869 1789 1655
Peak 15-Min Flowrates	Left	North Thru	bound Right	U	Left	South Thru	bound Right	U	Left	Eastb Thru	oound Right	U	Left	Westb Thru	ound Right	U	Tot	:al
All Vehicles Heavy Trucks Buses Pedestrians Bicycles Scooters	36 0 0	0 0 0 0	108 0 0	0	0 0 0	0 0 0 0	0 0 0	0	0 0 0	960 0 0 0	48 0 0	0	40 0 0	780 0 0 0	0 0 0	0	19 0 0 0	72

Comments:

Report generated on 9/20/2022 8:29 AM

Comments:

Report generated on 9/20/2022 8:29 AM