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MEMORANDUM

Date: August 14, 2020

Project #: 23641.0

To: Virginia Elandt, Oregon Department of Transportation
Karl MacNair, City of Medford

From: Matt Hughart, AICP, Matt Bell, and Miranda Barrus, Kittelson & Associates, Inc.

Project: I-5 Exit 30 Interchange Area Management Plan (IAMP)

Subject: Future (No-Build) Traffic Conditions – Supplement Analysis

This memorandum summarizes the results of a supplemental analysis for the I-5 Exit 30 Interchange Area Management Plan (IAMP). The supplemental analysis evaluates future (no-build) traffic conditions within the Interchange Management Study Area (IMSA) with the addition of new retail/commercial uses at the Rogue Valley Mall site. The information in this memo is intended to supplement information provided in *Draft Tech Memo #4: Future (No-build) Traffic Conditions*, which serves as a basis for identifying future deficiencies and for developing transportation system alternatives for the IAMP.

FUTURE (NO-BUILD) TRAFFIC CONDITIONS – SUPPLEMENTAL ANALYSIS

As indicated in *Draft Tech Memo #4: Future (No-build) Traffic Conditions*, forecast traffic volumes were developed for the study intersections based on existing traffic volumes and information provided in the Rogue Valley Metropolitan Planning Organization (RVMPO) travel demand model. The RVMPO travel demand model provides base year 2010 and forecast year 2042 traffic volume projections for study area roadways that reflect anticipated land use changes and planned transportation improvements in the IMSA; land use changes in the RVMPO travel demand model are represented by household and employment growth assumptions and organized into Transportation Analysis Zones (TAZ), or geographic areas that reflect current zoning designations, the location of major transportation facilities, and other land use and transportation characteristics.

The household and employment growth assumptions in the RVMPO travel demand model were compared to household and employment growth estimates developed by the project team. The project team's growth estimates are based on developable and re-developable lands within each TAZ and an assessment of potential land use. When compared to the RVMPO travel demand model, the project team's estimates were shown to exceed the assumptions included in the RVMPO model in a limited number of TAZs. Notably, the project team assumed the Rogue Valley Mall has some redevelopment potential over the planning horizon that resulted in comparatively higher employment growth. This supplemental analysis addresses the potential impacts of additional employment growth on the transportation system in the TAZ that reflects the Rogue Valley Mall site.

Rogue Valley Mall Redevelopment

The City of Medford Planning Department received a pre-application on November 29, 2017 for the development of new retail/commercial uses at the Rogue Valley Mall site. The pre-application includes three Quick Service Restaurants (QSR) with drive-through windows; a restaurant attached to the south side of the Rogue Valley Mall; and a hotel. While a formal application has not been submitted, the new retail/commercial uses included in the pre-application represent a reasonable proxy for future development at the Rogue Valley Mall site and therefore, was used as a basis for the supplemental analysis.

Trip Generation

A trip generation estimate was prepared for the new retail/commercial uses at the Rogue Valley Mall site based on information provided in the *Trip Generation Manual, 10th Edition*, published by the Institute of Transportation Engineers (ITE). ITE land use code 934 (Fast-Food Restaurant w/Drive-Through) and 932 (High-Turnover Sit-down Restaurant) were used to represent the quick services and other restaurants, and ITE land use code 310 (Hotel) was used to represent the hotel. The pass-by trip reductions applied to the quick service and other restaurants were determined based on information in ITE's *Trip Generation Handbook, 3rd Edition*.

Further, internal capture rates within the Rogue Valley Mall site were evaluated as some patrons are expected to utilize more than one land use during one trip (e.g. shop at the mall and eat at a restaurant), and reduce external trips to the adjacent transportation system. Table 1 summarizes the trip generation estimate for the new retail/commercial uses during the weekday AM and PM peak hours.

Table 1: Trip Generation Estimate

Land Use	ITE Code	Size	Weekday Daily Trips	Weekday PM Peak Hour		
				Total Trips	In	Out
Hotel	310	132 Rooms	1,104	80	41	39
		<i>Internal Trips</i>	-	(38)	(21)	(17)
		<i>Net New Hotel Trips</i>	-	42	20	22
High-Turnover (Sit-Down) Restaurant	932	2,500 SF	280	25	16	9
		<i>Internal Trips</i>	-	(11)	(6)	(5)
		<i>Pass-By Trips (43%)</i>	-	(6)	(3)	(3)
		<i>Net New Restaurant Trips</i>	-	8	7	1
Fast-Food Restaurant w/Drive-Through	934	12,237 SF	5,764	400	208	192
		<i>Internal Trips</i>	-	(162)	(70)	(92)
		<i>Pass-By Trips (50%)</i>	-	(120)	(59)	(60)
		<i>Net New Fast-Food Trips</i>	-	119	79	40
		<i>Total Trips</i>	7,148	505	265	240
		<i>Total Internal Trips</i>	-	(211)	(97)	(114)
		<i>Total Pass-By Trips</i>	-	(125)	(62)	(63)
		Total Net New Trips	-	169	106	63

Trip Distribution/Assignment

A trip distribution pattern was developed for the new retail/commercial uses based on existing traffic patterns, transportation facilities, and the locations of major origins and destinations in the City. The net new trips shown in Table 1 were distributed to study area roadways and assigned to the study intersections based on the trip distribution pattern. Figure 1 illustrates the study intersections, trip distribution pattern, and trip assignment. Figure 2 summarizes the year 2042 traffic volumes with the new retail/commercial uses at the Rogue Valley Mall site. The volumes shown in Figure 2 were used to evaluate intersections operations as indicated below.

Intersection Operations Analysis

The intersection operations analysis was conducted following the same methodology used in the future (no-build) intersection operations analysis. Table 2 summarizes the intersection operations analysis results and compares them to applicable mobility standards and targets. As shown, no new study intersections are forecast to exceed their applicable mobility standards and targets with traffic generated by the new retail/commercial uses at the RV Mall site. *Attachment A contains the future no-build traffic conditions HCM 6th and HCM 2000 worksheets.*

Table 2: Future Intersection Operations – Supplemental Analysis

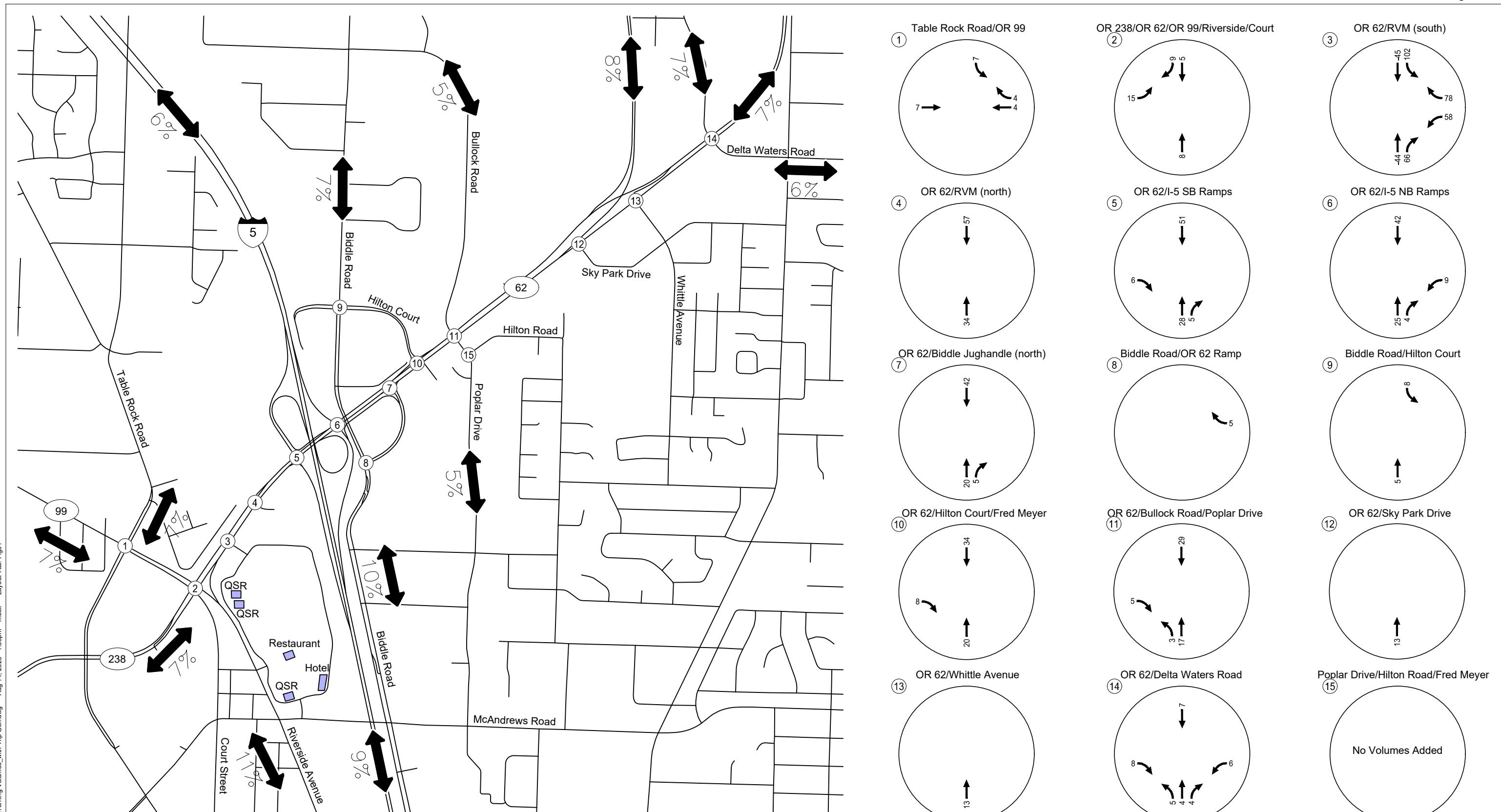
Map ID	Location	Control Type	Mobility Standard/Target	CM	V/C	Del	LOS
1	OR 99 / Table Rock Road	Signal	0.95	N/A	0.88	42.7	D
2	OR 62-OR 238 / OR 99-Court Street-N Riverside Avenue	Signal	0.90	N/A	1.00	69.4	E
3	OR 62 / Rogue Valley Mall entrance (west)	Signal	0.90	N/A	0.86	16.1	B
4	OR 62 / Rogue Valley Mall entrance (east, at Target)	Unsignalized	0.90 N-S/0.95 E-W	SBL	>1.0	>80.0	F
5 ¹	OR 62 / I-5 Southbound Ramp Terminal	Signal	0.85 ³	N/A	0.90	28.7	C
6 ¹	OR 62 / I-5 Northbound Ramp Terminal	Signal	0.85 ³	N/A	1.00	40.6	D
7 ²	OR 62 / Biddle Road (north end of jug handle)	Unsignalized	0.85 N-S/0.95 E-W	WBR	0.50	13.3	B
8 ¹	OR 62 / Biddle Road (south end of jug handle)	Signal	0.95	N/A	0.90	25.6	C
9	Biddle Road / Hilton Court	Signal	0.95	N/A	0.66	14.6	B
10 ²	OR 62 / Hilton Court-Fred Meyer Parking Lot Entrance	Unsignalized	0.85 N-S/0.95 E-W	EBR	>1.0	>80.0	F
11	OR 62 / Bullock Road-Poplar Drive	Signal	0.85	N/A	>1.0	>80.0	F
12	OR 62 / Sky Park Drive	Unsignalized	0.85 N-S/0.95 E-W	WBR	0.04	19.5	C
13	OR 62 / Whittle Avenue	Unsignalized	0.90 N-S/0.95 E-W	SBL	0.45	23.5	C
14	OR 62 / Delta Waters Road	Signal	0.90/LOS D	N/A	>1.0	>80.0	F
15	Poplar Drive / Hilton Road	Unsignalized	LOS D	WBR	0.34	18.6	C

¹Lane configurations not supported by HCM 2010 or 6th Edition methodologies, therefore, HCM 2000 results are reported.

²The HCM 2010 and HCM 6th Edition analysis results do not reflect field observations. Therefore, the HCM 2000 analysis results are reported.

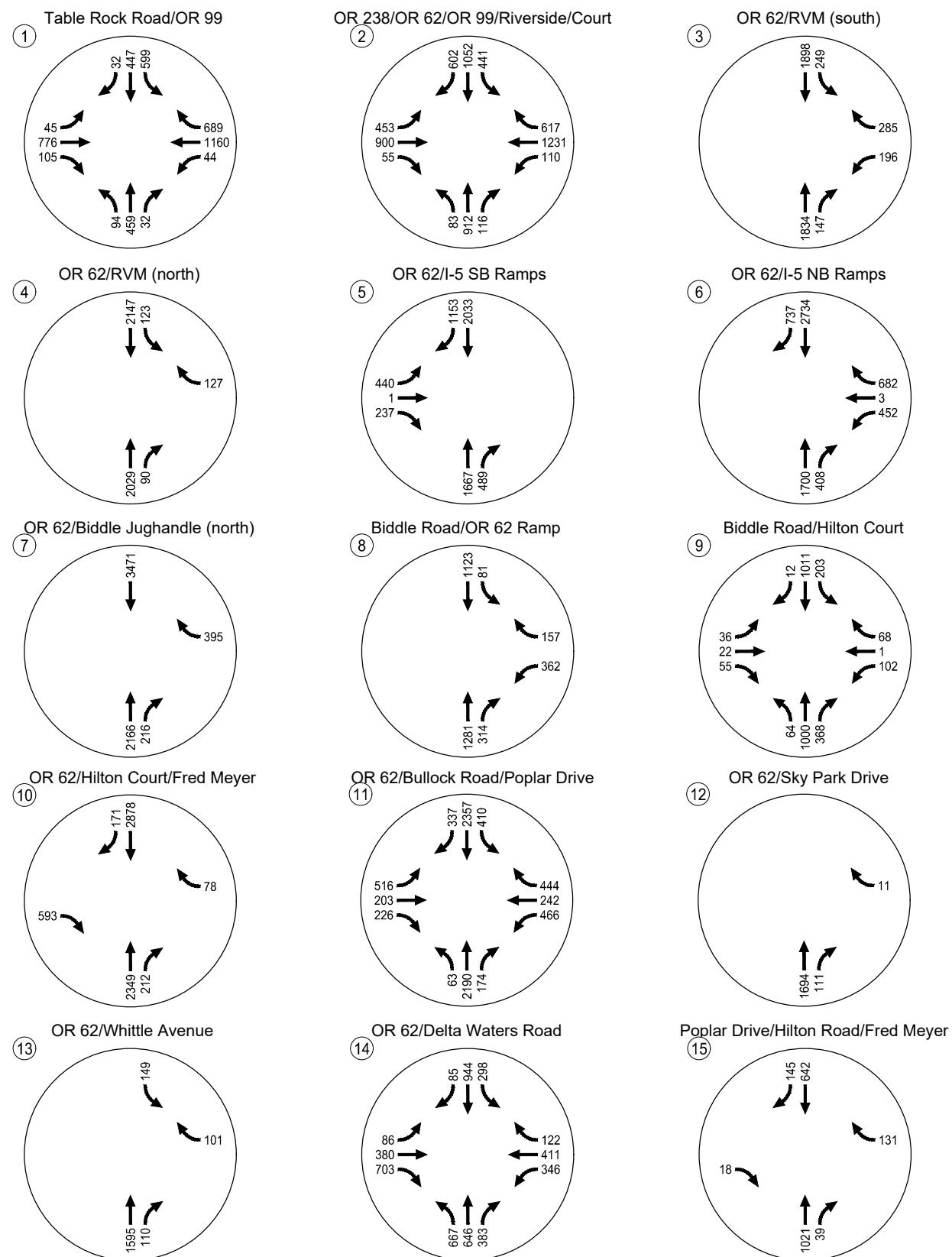
³This mobility target may be increased to as much as 0.90 through the IAMP adoption process.

⁴City and State mobility standards and targets are shown given the upcoming jurisdictional transfer.



Estimated Trip Distribution Pattern and Rogue Valley Mall Site-generated Trips
Weekday PM Peak Hour
Medford, Oregon

Figure
1



Future 2042 Traffic Volumes with Rogue Valley Mall
Site-generated Trips - Weekday PM Peak Hour
Medford, Oregon

Figure
2

Queueing Analysis

A queueing analysis was conducted at the study intersections following the same methodology used in the future (no-build) queueing analysis. Table 3 summarizes the queueing analysis results and indicates if existing storage can accommodate future queues. The vehicle queue and storage lengths were rounded to the nearest 25-feet. The turning movement storage lengths reflect the striped storage for each turn-lane pocket at the intersections and the through movement storage lengths reflect the distance from the intersections to the nearest adjacent intersection and/or driveway. *Attachment B contains the SimTraffic reports.*

Table 3: Future Queueing Analysis – Supplemental Analysis

Map ID	Location	Movement ¹	Storage Length (Feet)	95 th Percentile Queue (Feet)	Adequate?
1	OR 99 /Table Rock Road	NBL	340	175	Yes
		NBT	525	250	Yes
		NBTR	340	275	Yes
		SBL (x2)	500	625-1450	No
		SBTR	160	1450	No
		EBL	250	275	Yes ⁵
		EBT-TR	150	1025-1050	Yes ²
		WBL	200	225	No
		WBT (x2)	190	825	No
		WBR	975	800	Yes
2	OR 62-OR 238 / OR 99-Court Street-N Riverside Avenue	NBL	150	425	No
		NBT (x2)	750	5250-5300	No
		NBR	400	725	No
		SBL (x2)	325	225-300	Yes
		SBT (x2)	530	450	Yes
		SBR	400	400	Yes
		EBL (x2)	400	425-675	No
		EBT-TR	810	975-1000	No
		WBL	385	750	Yes ²
		WBT (x3)	385	875-900	Yes ²
3	OR 62 / Rogue Valley Mall entrance (west)	WBR (x2)	680	100-625	Yes
		NBT (x3)	530	350-600	No
		NBR	100	250	No
		SBL (x2)	300	100-125	Yes
		SBT (x2)	1215	275-300	Yes
		WBL	175	200	Yes
4	OR 62 / Rogue Valley Mall entrance (east, at Target)	WBR (x2)	175	125	Yes
		NBR	125	100	Yes
		SBL	200	150	Yes
5	OR 62 / I-5 Southbound Ramp Terminal	WBR	180	250	No ⁷
		NBT (x3)	670	250-525	Yes
		NBR	75	100	No
		SBT (x2)	530	200	Yes

Map ID	Location	Movement ¹	Storage Length (Feet)	95 th Percentile Queue (Feet)	Adequate?
		SBR	625	150	Yes
		EBL	200	325	Yes ³
		EBTL	200	375	Yes ³
		EBR	350	650	Yes ³
6	OR 62 / I-5 Northbound Ramp Terminal	NBT (x3)	530	550-650	No
		SBT (x3)	1100	425-525	Yes
		SBR	295	350	Yes
		WBL	675	3850	No
		WBLTR	675	3800	No
		WBR	675	3775	No
7	OR 62 / Biddle Road (north end of jug handle)	WBR	1,125	650	Yes
8	OR 62 / Biddle Road (south end of jug handle)	NBT-TR	275	1500-1525	No
		SBL	100	175	No
		SBT (x2)	640	1150-1175	Yes ²
		WBL	875	225	Yes
		WBLR	875	275	Yes
9	Biddle Road / Hilton Court	NBL	320	125	Yes
		NBT (x2)	425	2000-2050	No
		NBR	220	475	No
		SBL	175	400	Yes ⁵
		SBT-TR	540	1550-1575	Yes ²
		EBL	375	75	Yes
		EBTR	300	150	Yes
		WBL (x2)	220	50-75	Yes
		WBTR	220	50	Yes
10	OR 62 / Hilton Court-Fred Meyer Parking Lot Entrance	NBR	90	225	No
		EBR	1,200	1650	Yes ⁶
		WBR	200	325	No ⁷
11	OR 62 / Bullock Road-Poplar Drive	NBL	450	375	Yes
		NBT (x2)	360	575	Yes ²
		NBTR	360	575	Yes ²
		SBL (x2)	410	350-475	Yes ⁸
		SBT (x3)	2200	325-475	Yes
		SBR	425	475	Yes
		EBL (x2)	350	475-525	No
		EBT	165	1450	Yes ²
		EBR	150	200	No
		WBL (x2)	250	275	Yes ⁶
		WBT	930	275	Yes
12	OR 62 / Sky Park Drive	WBR	100	50	Yes
13	OR 62 / Whittle Avenue	WBR	135	100	Yes
14	OR 62 / Delta Waters Road	NBL (x2)	500	325	Yes
		NBT (x2)	620	325	Yes
		NBR	500	200	Yes

Map ID	Location	Movement ¹	Storage Length (Feet)	95 th Percentile Queue (Feet)	Adequate?
		SBL	200	375	Yes ⁶
		SBT-TR	1190	1650-1675	Yes ²
		EBL	225	350	Yes ⁸
		EBT (x2)	400	700-725	Yes ²
		EBR (x2)	415	425-450	Yes
		WBL	400	550	Yes ⁸
		WBT-TR	130	925	No

¹ WB= Westbound, SB = Southbound, EB = Eastbound, NB = Northbound, L = Left, T = Through, R = Right

²Sufficient storage is available, but queue blocks nearest driveway or minor street intersection.

³Additional storage is available on the southbound ramp, outside of the deceleration lane.

⁴Additional storage is available on the northbound ramp, outside of the deceleration lane.

⁵Additional storage is available in the center two-way left-turn lane.

⁶Additional storage is available in the through lane(s).

⁷Queue extends onto private property.

⁸Sufficient storage is available for this queue beyond the striped storage.

As shown in Table 3, 95th percentile queues for one or more movements at the following study intersections exceed their current striped storage in 2042 with the new retail/commercial uses; these movements are in addition to those shown in the future (no-build) queuing analysis:

- 1: OR 99 / Table Rock Road – the southbound left-turn queue exceeds its striped storage and the southbound through/right-turn queue blocks an upstream signalized intersection.
- 3: OR 62 / Rogue Valley Mall entrance (west) – the northbound through queue blocks an upstream signalized intersection.
- 5: OR 62 / I-5 Southbound Ramp Terminal – the eastbound right-turn queue exceeds its striped storage.
- 14: OR 62 / Delta Waters Road – the westbound through/right-turn queue blocks an upstream signalized intersection.

**Attachment A Future No-build Traffic
Conditions Worksheets**

HCM 6th Worksheets

Future No-Build + RVM Conditions Analysis
1: 48748. Table Rock Rd & Hwy 63/N Pacific Hwy

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↓		↑	↑↑	↑	↑	↑↑		↑↑	↑	
Traffic Volume (veh/h)	45	776	105	44	1160	689	94	459	32	599	447	32
Future Volume (veh/h)	45	776	105	44	1160	689	94	459	32	599	447	32
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00		0.99	1.00		1.00	1.00	0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No		No		No	
Adj Sat Flow, veh/h/ln	1573	1723	1723	1750	1723	1750	1750	1736	1736	1750	1723	1723
Adj Flow Rate, veh/h	47	808	109	46	1208	718	98	478	33	624	466	33
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	13	2	2	0	2	0	0	1	1	0	2	2
Cap, veh/h	56	1062	143	61	1200	871	125	575	40	731	532	38
Arrive On Green	0.04	0.37	0.37	0.04	0.37	0.37	0.07	0.18	0.18	0.23	0.33	0.33
Sat Flow, veh/h	1498	2889	390	1667	3273	1461	1667	3131	216	3233	1588	112
Grp Volume(v), veh/h	47	458	459	46	1208	718	98	251	260	624	0	499
Grp Sat Flow(s), veh/h/ln	1498	1637	1642	1667	1637	1461	1667	1650	1697	1617	0	1700
Q Serve(g_s), s	3.0	23.8	23.8	2.6	35.5	35.5	5.6	14.2	14.3	17.9	0.0	26.7
Cycle Q Clear(g_c), s	3.0	23.8	23.8	2.6	35.5	35.5	5.6	14.2	14.3	17.9	0.0	26.7
Prop In Lane	1.00			0.24	1.00		1.00	1.00		0.13	1.00	0.07
Lane Grp Cap(c), veh/h	56	602	604	61	1200	871	125	303	312	731	0	570
V/C Ratio(X)	0.83	0.76	0.76	0.75	1.01	0.82	0.78	0.83	0.83	0.85	0.00	0.88
Avail Cap(c_a), veh/h	209	602	604	232	1200	871	336	434	447	918	0	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	46.3	26.9	26.9	46.2	30.7	15.8	44.0	38.1	38.1	35.9	0.0	30.3
Incr Delay (d2), s/veh	20.3	6.1	6.1	12.9	27.6	6.8	7.8	7.6	7.8	6.1	0.0	13.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	1.4	9.9	9.9	1.3	17.8	12.7	2.5	6.2	6.5	7.5	0.0	12.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	66.6	33.0	33.0	59.1	58.3	22.6	51.8	45.7	45.8	42.0	0.0	43.7
LnGrp LOS	E	C	C	E	F	C	D	D	D	D	A	D
Approach Vol, veh/h	964				1972			609			1123	
Approach Delay, s/veh	34.6				45.3			46.7			42.8	
Approach LOS	C				D			D			D	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+R _c), s	8.0	40.1	11.8	36.9	8.1	40.0	26.4	22.3				
Change Period (Y+R _c), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	13.5	35.5	19.5	33.5	13.5	35.5	27.5	25.5				
Max Q Clear Time (g_c+l1), s	4.6	25.8	7.6	28.7	5.0	37.5	19.9	16.3				
Green Ext Time (p_c), s	0.1	7.3	0.2	1.0	0.1	0.0	2.0	1.5				
Intersection Summary												
HCM 6th Ctrl Delay				42.7								
HCM 6th LOS				D								

Future No-Build + RVM Conditions Analysis
2: 37165. OR-62 & OR-99

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑		↑	↑↑↑	↑↑	↑	↑↑	↑	↑↑	↑↑	↑
Traffic Volume (veh/h)	453	900	55	110	1231	617	83	912	116	441	1052	602
Future Volume (veh/h)	453	900	55	110	1231	617	83	912	116	441	1052	602
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1723	1736	1736	1736	1723	1736	1723	1695	1709	1736	1709	1723
Adj Flow Rate, veh/h	477	947	58	116	1296	649	87	960	122	464	1107	634
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	1	1	1	2	1	2	4	3	1	3	2
Cap, veh/h	541	1164	71	139	1332	1132	107	787	351	523	1110	744
Arrive On Green	0.17	0.37	0.37	0.08	0.28	0.28	0.07	0.24	0.24	0.16	0.34	0.34
Sat Flow, veh/h	3183	3155	193	1654	4703	2508	1641	3221	1438	3208	3247	1452
Grp Volume(v), veh/h	477	495	510	116	1296	649	87	960	122	464	1107	634
Grp Sat Flow(s), veh/h/ln1591	1650	1698	1654	1568	1254	1641	1611	1438	1604	1624	1452	
Q Serve(g_s), s	18.9	34.9	34.9	8.9	35.1	24.9	6.7	31.5	9.0	18.2	43.9	44.0
Cycle Q Clear(g_c), s	18.9	34.9	34.9	8.9	35.1	24.9	6.7	31.5	9.0	18.2	43.9	44.0
Prop In Lane	1.00		0.11	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	541	609	627	139	1332	1132	107	787	351	523	1110	744
V/C Ratio(X)	0.88	0.81	0.81	0.84	0.97	0.57	0.81	1.22	0.35	0.89	1.00	0.85
Avail Cap(c_a), veh/h	630	621	639	173	1332	1132	172	787	351	585	1110	744
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	52.2	36.6	36.6	58.2	45.7	26.7	59.4	48.7	40.2	52.8	42.4	27.3
Incr Delay (d2), s/veh	12.1	8.5	8.3	22.5	18.6	0.9	10.8	110.1	0.4	14.0	26.3	9.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/lr8.4	15.2	15.6	4.6	15.7	7.5	3.1	24.5	3.2	8.3	21.3	18.1	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	64.3	45.2	44.9	80.7	64.3	27.6	70.2	158.8	40.6	66.8	68.7	36.5
LnGrp LOS	E	D	D	F	E	C	E	F	D	E	E	D
Approach Vol, veh/h	1482			2061			1169			2205		
Approach Delay, s/veh	51.3			53.6			139.9			59.0		
Approach LOS	D			D			F			E		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), \$5.3	52.1	12.9	48.5	26.4	41.0	25.5	36.0					
Change Period (Y+Rc), s 4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s 4.5	48.5	13.5	41.5	25.5	36.5	23.5	31.5					
Max Q Clear Time (g_c+l10), s 4.5	36.9	8.7	46.0	20.9	37.1	20.2	33.5					
Green Ext Time (p_c), s 0.1	0.1	9.0	0.1	0.0	1.0	0.0	0.7	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				69.4								
HCM 6th LOS				E								

Future No-Build + RVM Conditions Analysis
3: 110085. OR-62 & Rogue Valley Mall Main Ent

Weekday PM Peak Hour
07/21/2020

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↗ ↘ ↗ ↘	↖ ↗ ↘ ↗ ↘ ↗ ↘	↑ ↑ ↑ ↗ ↘ ↗ ↘	↖ ↗ ↘ ↗ ↘ ↗ ↘	↖ ↗ ↘ ↗ ↘ ↗ ↘	↑ ↑ ↑ ↗ ↘ ↗ ↘
Traffic Volume (veh/h)	196	285	1834	147	249	1898
Future Volume (veh/h)	196	285	1834	147	249	1898
Initial Q (Q _b), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		0.98	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1736	1736	1709	1736	1750	1695
Adj Flow Rate, veh/h	206	300	1931	155	262	1998
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	1	3	1	0	4
Cap, veh/h	258	677	2716	839	341	2383
Arrive On Green	0.16	0.16	0.58	0.58	0.11	0.74
Sat Flow, veh/h	1654	2590	4820	1441	3233	3306
Grp Volume(v), veh/h	206	300	1931	155	262	1998
Grp Sat Flow(s), veh/h/ln1654	1295	1555	1441	1617	1611	
Q Serve(g_s), s	10.4	8.3	25.4	4.3	6.8	36.6
Cycle Q Clear(g_c), s	10.4	8.3	25.4	4.3	6.8	36.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	258	677	2716	839	341	2383
V/C Ratio(X)	0.80	0.44	0.71	0.18	0.77	0.84
Avail Cap(c_a), veh/h	317	769	2716	839	432	2411
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	35.1	26.6	12.8	8.4	37.5	7.7
Incr Delay (d2), s/veh	10.3	0.3	1.0	0.2	5.7	2.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln4.9	2.6	7.8	1.3	2.9	9.2	
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	45.4	26.9	13.8	8.6	43.2	10.6
LnGrp LOS	D	C	B	A	D	B
Approach Vol, veh/h	506		2086		2260	
Approach Delay, s/veh	34.5		13.4		14.4	
Approach LOS	C		B		B	
Timer - Assigned Phs	1	2		6	8	
Phs Duration (G+Y+Rc), \$3.6	54.7			68.2	17.9	
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	
Max Green Setting (Gmax), .5	48.5			64.5	16.5	
Max Q Clear Time (g_c+l18), .8	27.4			38.6	12.4	
Green Ext Time (p_c), s	0.3	20.4		25.1	1.1	
Intersection Summary						
HCM 6th Ctrl Delay			16.1			
HCM 6th LOS			B			

Future No-Build + RVM Conditions Analysis
4: 110080. OR-62 & Rogue Valley Mall Ent

Weekday PM Peak Hour
07/21/2020

Intersection

Int Delay, s/veh 10.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	127	2029	90	123	2147
Future Vol, veh/h	0	127	2029	90	123	2147
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	-	100	200	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	0	1	2	0	1	3
Mvmt Flow	0	135	2159	96	131	2284

Major/Minor	Minor1	Major1	Major2	
Conflicting Flow All	-	1080	0	0 2255 0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	7.12	-	- 5.32 -
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.91	-	- 3.11 -
Pot Cap-1 Maneuver	0	185	-	- ~ 94 -
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	185	-	- ~ 94 -
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	64.2	0	16.8
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	185	~ 94	-
HCM Lane V/C Ratio	-	-	0.73	1.392	-
HCM Control Delay (s)	-	-	64.2	\$ 309.7	-
HCM Lane LOS	-	-	F	F	-
HCM 95th %tile Q(veh)	-	-	4.7	9.7	-

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

Future No-Build + RVM Conditions Analysis 7: north-south street name & east-west street name

Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	44.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑↑↑	↑		↑↑↑	
Traffic Vol, veh/h	0	395	2166	216	0	3471
Future Vol, veh/h	0	395	2166	216	0	3471
Conflicting Peds, #/hr	0	0	0	1	1	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	Stop	-	Free	-	Free
Storage Length	-	0	-	75	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	0	6	0	0
Mvmt Flow	0	411	2256	225	0	3616
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	1128	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.1	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.9	-	-	-	-
Pot Cap-1 Maneuver	0	~ 173	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	~ 173	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, \$	680.1	0		0		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	WBL	Ln1	SBT		
Capacity (veh/h)	-	173		-		
HCM Lane V/C Ratio	-	2.378		-		
HCM Control Delay (s)	\$	680.1		-		
HCM Lane LOS	-	F		-		
HCM 95th %tile Q(veh)	-	34.3		-		
Notes						
~:	Volume exceeds capacity	\$:	Delay exceeds 300s	+: Computation Not Defined	*:	All major volume in platoon

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

Future No-Build + RVM Conditions Analysis
9: 110088. Biddle Rd Conn 1 & Hilton Ct

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖ ↗ ↘ ↙ ↖ ↙ ↖ ↗ ↘ ↙ ↖ ↙ ↖			↖ ↗ ↘ ↙ ↖ ↙ ↖ ↗ ↘ ↙ ↖ ↙ ↖			↖ ↗ ↘ ↙ ↖ ↙ ↖ ↗ ↘ ↙ ↖ ↙ ↖			↖ ↗ ↘ ↙ ↖ ↙ ↖ ↗ ↘ ↙ ↖ ↙ ↖		
Traffic Volume (veh/h)	36	22	55	102	1	68	64	1000	368	203	1011	12
Future Volume (veh/h)	36	22	55	102	1	68	64	1000	368	203	1011	12
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1750	1682	1682	1682	1750	1750	1723	1709	1750	1723	1736	1736
Adj Flow Rate, veh/h	38	23	58	107	1	72	67	1053	387	214	1064	13
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	5	0	0	2	3	0	2	1	1
Cap, veh/h	266	35	89	510	2	164	351	1503	783	360	1709	21
Arrive On Green	0.04	0.08	0.08	0.07	0.11	0.11	0.05	0.46	0.46	0.10	0.51	0.51
Sat Flow, veh/h	1667	421	1061	3107	20	1458	1641	3247	1478	1641	3337	41
Grp Volume(v), veh/h	38	0	81	107	0	73	67	1053	387	214	526	551
Grp Sat Flow(s), veh/h/ln1667	0	1482	1554	0	1478	1641	1624	1478	1641	1650	1728	
Q Serve(g_s), s	1.3	0.0	3.4	1.9	0.0	2.9	1.3	16.4	10.6	4.0	14.5	14.6
Cycle Q Clear(g_c), s	1.3	0.0	3.4	1.9	0.0	2.9	1.3	16.4	10.6	4.0	14.5	14.6
Prop In Lane	1.00		0.72	1.00		0.99	1.00		1.00	1.00		0.02
Lane Grp Cap(c), veh/h	266	0	125	510	0	166	351	1503	783	360	845	885
V/C Ratio(X)	0.14	0.00	0.65	0.21	0.00	0.44	0.19	0.70	0.49	0.60	0.62	0.62
Avail Cap(c_a), veh/h	607	0	360	1059	0	360	789	1554	806	717	845	885
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.1	0.0	28.3	23.9	0.0	26.4	8.9	13.6	9.6	11.4	11.1	11.1
Incr Delay (d2), s/veh	0.2	0.0	4.2	0.2	0.0	1.4	0.2	1.6	0.7	1.2	1.7	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/lr0.5	0.0	1.3	0.7	0.0	1.0	0.4	5.5	3.0	1.2	4.8	5.0	
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.3	0.0	32.5	24.0	0.0	27.8	9.1	15.2	10.3	12.5	12.8	12.8
LnGrp LOS	C	A	C	C	A	C	A	B	B	B	B	B
Approach Vol, veh/h	119			180			1507			1291		
Approach Delay, s/veh	30.2			25.6			13.7			12.8		
Approach LOS	C			C			B			B		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s8.0	37.1	6.9	11.7	11.1	34.0	8.7	9.9					
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gma _{20.5})	30.5	15.5	15.5	20.5	30.5	15.5	15.5					
Max Q Clear Time (g_c+l _{13.3})	16.6	3.3	4.9	6.0	18.4	3.9	5.4					
Green Ext Time (p_c), s	0.2	11.2	0.1	0.2	0.7	11.1	0.3	0.2				
Intersection Summary												
HCM 6th Ctrl Delay				14.6								
HCM 6th LOS				B								

Future No-Build + RVM Conditions Analysis
10: 37166. OR-62 & Biddle Rd Ramp

Weekday PM Peak Hour
07/21/2020

Intersection

Int Delay, s/veh 252.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	593	0	0	78	0	2349	212	0	2878	171
Future Vol, veh/h	0	0	593	0	0	78	0	2349	212	0	2878	171
Conflicting Peds, #/hr	4	0	0	0	0	4	4	0	2	2	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	Stop	-	-	None	-	-	None	-	-	Free
Storage Length	-	-	0	-	-	0	-	-	90	-	-	140
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	0	0	4	0	0	2	0	2	1	0	2	5
Mvmt Flow	0	0	618	0	0	81	0	2447	221	0	2998	178

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	1499	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	7.18	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.94	-	-
Pot Cap-1 Maneuver	0	0 ~ 94	0 0 145	0 - - 0 - 0
Stage 1	0 0 -	0 0 -	0 - -	0 - 0
Stage 2	0 0 -	0 0 -	0 - -	0 - 0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	~ 94	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, \$	2594.8	58.3	0	0
HCM LOS	F	F		
<hr/>				
Minor Lane/Major Mvmt	NBT	NBR EBLn1WBLn1	SBT	
Capacity (veh/h)	-	- 94 144	-	
HCM Lane V/C Ratio	-	- 6.571 0.564	-	
HCM Control Delay (s)	-	\$ 2594.8 58.3	-	
HCM Lane LOS	-	- F F	-	
HCM 95th %tile Q(veh)	-	- 68.8 2.8	-	

Notes

~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Future No-Build + RVM Conditions Analysis
11: 37163. OR-62 & Poplar Dr

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑↑↑	↑	↑↑	↑↑↑	↑
Traffic Volume (veh/h)	516	203	226	466	242	444	63	2190	174	410	2357	337
Future Volume (veh/h)	516	203	226	466	242	444	63	2190	174	410	2357	337
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No		No		No	
Adj Sat Flow, veh/h/ln	1723	1736	1709	1750	1736	1736	1723	1723	1723	1750	1723	1709
Adj Flow Rate, veh/h	538	211	235	485	252	462	66	2281	181	427	2455	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	1	3	0	1	1	2	2	2	0	2	3
Cap, veh/h	502	240	197	540	247	206	83	1849	145	486	2402	
Arrive On Green	0.16	0.14	0.14	0.16	0.14	0.14	0.02	0.14	0.14	0.15	0.51	0.00
Sat Flow, veh/h	3183	1736	1426	3333	1736	1450	1641	4446	349	3333	4703	1448
Grp Volume(v), veh/h	538	211	235	485	252	462	66	1600	862	427	2455	0
Grp Sat Flow(s), veh/h/ln	1591	1736	1426	1667	1736	1450	1641	1568	1660	1667	1568	1448
Q Serve(g_s), s	20.5	15.5	17.9	18.6	18.5	13.9	5.2	54.1	54.1	16.3	66.4	0.0
Cycle Q Clear(g_c), s	20.5	15.5	17.9	18.6	18.5	13.9	5.2	54.1	54.1	16.3	66.4	0.0
Prop In Lane	1.00			1.00		1.00	1.00		0.21	1.00		1.00
Lane Grp Cap(c), veh/h	502	240	197	540	247	206	83	1304	690	486	2402	
V/C Ratio(X)	1.07	0.88	1.19	0.90	1.02	2.24	0.79	1.23	1.25	0.88	1.02	
Avail Cap(c_a), veh/h	502	240	197	577	247	206	170	1304	690	551	2402	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	54.8	55.0	56.0	53.4	55.8	31.3	63.2	56.1	56.1	54.4	31.8	0.0
Incr Delay (d2), s/veh	60.8	28.8	126.1	16.0	62.5	573.0	11.6	109.3	123.8	13.4	24.2	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	12.4	8.6	13.3	8.9	12.3	37.7	2.5	42.6	47.9	7.6	28.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	115.6	83.8	182.1	69.4	118.2	604.3	74.9	165.3	179.9	67.8	56.0	0.0
LnGrp LOS	F	F	F	E	F	F	E	F	F	E	F	
Approach Vol, veh/h	984				1199			2528			2882	A
Approach Delay, s/veh	124.6				285.8			167.9			57.8	
Approach LOS	F				F			F			E	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	23.4	58.6	25.6	22.4	11.1	70.9	25.0	23.0				
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5				
Max Green Setting (Gmax), s	21.5	51.5	22.5	16.5	13.5	59.5	20.5	18.5				
Max Q Clear Time (g_c+l1), s	18.3	56.1	20.6	19.9	7.2	68.4	22.5	20.5				
Green Ext Time (p_c), s	0.6	0.0	0.5	0.0	0.1	0.0	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay				139.1								
HCM 6th LOS				F								
Notes												
Unsignalized Delay for [SBR] is excluded from calculations of the approach delay and intersection delay.												

Intersection

Int Delay, s/veh 0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	11	1694	111	0	0
Future Vol, veh/h	0	11	1694	111	0	0
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	99	99	99	99	99	99
Heavy Vehicles, %	0	11	2	2	0	2
Mvmt Flow	0	11	1711	112	0	0

Major/Minor Minor1 Major1 Major2

Conflicting Flow All	-	912	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.12	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.41	-	-	-	-
Pot Cap-1 Maneuver	0	260	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	260	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach WB NB SB

HCM Control Delay, s	19.5	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	260	-
HCM Lane V/C Ratio	-	-	0.043	-
HCM Control Delay (s)	-	-	19.5	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Intersection

Int Delay, s/veh 3.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
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Lane Configurations						
Traffic Vol, veh/h	0	101	1595	110	149	0
Future Vol, veh/h	0	101	1595	110	149	0
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	-	-	650	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	5	3	2	0	2
Mvmt Flow	0	106	1679	116	157	0

Major/Minor	Minor1	Major1	Major2	
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Conflicting Flow All	-	898	0	0	1795	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7	-	-	4.1	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.35	-	-	2.2	-
Pot Cap-1 Maneuver	0	277	-	-	349	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	277	-	-	349	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB	
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HCM Control Delay, s	25.9	0	23.5	
HCM LOS	D			

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	277	349	-
HCM Lane V/C Ratio	-	-	0.384	0.449	-
HCM Control Delay (s)	-	-	25.9	23.5	-
HCM Lane LOS	-	-	D	C	-
HCM 95th %tile Q(veh)	-	-	1.7	2.2	-

Future No-Build + RVM Conditions Analysis
14: 140087. Crater Lake Hwy & Delta Waters Rd

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑↑	↑	↑↑	↑↑	↑↑	↑↑	↑	↑	↑↑	↑↑
Traffic Volume (veh/h)	86	380	703	346	411	122	667	646	383	298	944	85
Future Volume (veh/h)	86	380	703	346	411	122	667	646	383	298	944	85
Initial Q (Q _b), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00		1.00	1.00		1.00	1.00	0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No		No		No	
Adj Sat Flow, veh/h/ln	1709	1736	1736	1723	1709	1709	1736	1682	1723	1709	1709	1709
Adj Flow Rate, veh/h	91	400	740	364	433	128	702	680	403	314	994	89
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	1	1	2	3	3	1	5	2	3	3	3
Cap, veh/h	94	457	870	379	771	226	642	1003	457	292	882	79
Arrive On Green	0.06	0.14	0.14	0.23	0.31	0.31	0.20	0.31	0.31	0.18	0.29	0.29
Sat Flow, veh/h	1628	3299	2543	1641	2474	724	3208	3195	1457	1628	3010	269
Grp Volume(v), veh/h	91	400	740	364	283	278	702	680	403	314	536	547
Grp Sat Flow(s), veh/h/ln	1628	1650	1272	1641	1624	1575	1604	1598	1457	1628	1624	1656
Q Serve(g_s), s	7.3	15.5	18.0	28.5	18.9	19.2	26.0	24.1	34.1	23.3	38.1	38.1
Cycle Q Clear(g_c), s	7.3	15.5	18.0	28.5	18.9	19.2	26.0	24.1	34.1	23.3	38.1	38.1
Prop In Lane	1.00			1.00		0.46	1.00		1.00	1.00		0.16
Lane Grp Cap(c), veh/h	94	457	870	379	506	491	642	1003	457	292	476	485
V/C Ratio(X)	0.97	0.88	0.85	0.96	0.56	0.57	1.09	0.68	0.88	1.08	1.13	1.13
Avail Cap(c_a), veh/h	94	457	870	379	506	491	642	1003	457	292	476	485
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	61.1	54.9	40.1	49.4	37.3	37.4	52.0	38.9	42.3	53.3	45.9	46.0
Incr Delay (d2), s/veh	82.1	16.5	7.7	35.9	0.8	1.0	63.9	1.5	17.3	74.5	80.7	80.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%), veh/ln	5.1	7.4	11.7	15.3	7.6	7.5	15.8	9.4	14.3	15.3	25.4	25.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	143.2	71.4	47.7	85.3	38.2	38.4	115.9	40.4	59.6	127.8	126.7	126.5
LnGrp LOS	F	E	D	F	D	D	F	D	E	F	F	F
Approach Vol, veh/h	1231				925			1785			1397	
Approach Delay, s/veh	62.5				56.8			74.4			126.9	
Approach LOS	E				E			E			F	
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	27.3	46.2	34.0	22.5	30.0	43.5	11.5	45.0				
Change Period (Y+Rc), s	4.0	* 5.4	4.0	4.5	4.0	* 5.4	4.0	4.5				
Max Green Setting (Gmax), s	23.3	* 41	30.0	18.0	26.0	* 38	7.5	40.5				
Max Q Clear Time (g_c+l1), s	25.3	36.1	30.5	20.0	28.0	40.1	9.3	21.2				
Green Ext Time (p_c), s	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.8				
Intersection Summary												
HCM 6th Ctrl Delay				82.3								
HCM 6th LOS				F								
Notes												

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection

Int Delay, s/veh 1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	0	18	0	0	131	0	1021	39	0	642	145
Future Vol, veh/h	0	0	18	0	0	131	0	1021	39	0	642	145
Conflicting Peds, #/hr	1	0	1	1	0	1	0	0	4	4	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None									
Storage Length	-	-	0	-	-	0	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	0	0	0	0	0	1	0	1	0	0	1	1
Mvmt Flow	0	0	19	0	0	138	0	1075	41	0	676	153

Major/Minor	Minor2	Minor1	Major1	Major2
Conflicting Flow All	-	416	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	6.9	-	7.12
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.3	-	3.91
Pot Cap-1 Maneuver	0	0	591	0
Stage 1	0	0	0	0
Stage 2	0	0	0	0
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	-	590	-	402
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB	
HCM Control Delay, s	11.3	18.6	0	0	
HCM LOS	B	C			
<hr/>					
Minor Lane/Major Mvmt	NBT	NBR	EBLn1WBLn1	SBT	SBR
Capacity (veh/h)	-	-	590	402	-
HCM Lane V/C Ratio	-	-	0.032	0.343	-
HCM Control Delay (s)	-	-	11.3	18.6	-
HCM Lane LOS	-	-	B	C	-
HCM 95th %tile Q(veh)	-	-	0.1	1.5	-

HCM 2000 Worksheets

Future No-Build + RVM Conditions Analysis
1: 48748. Table Rock Rd & Hwy 63/N Pacific Hwy

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑		↑	↑↑	↑	↑	↑↑		↑↑	↑	
Traffic Volume (vph)	45	776	105	44	1160	689	94	459	32	599	447	32
Future Volume (vph)	45	776	105	44	1160	689	94	459	32	599	447	32
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lane Util. Factor	1.00	0.95		1.00	0.95	1.00	1.00	0.95		0.97	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Fr _t	1.00	0.98		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1471	3197		1662	3260	1475	1662	3259		3225	1690	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1471	3197		1662	3260	1475	1662	3259		3225	1690	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	47	808	109	46	1208	718	98	478	33	624	466	33
RTOR Reduction (vph)	0	8	0	0	0	112	0	4	0	0	2	0
Lane Group Flow (vph)	47	909	0	46	1208	606	98	507	0	624	497	0
Confl. Peds. (#/hr)	1					1			2	2		
Confl. Bikes (#/hr)			1			3					2	
Heavy Vehicles (%)	13%	2%	1%	0%	2%	0%	0%	1%	0%	0%	2%	9%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA		Prot	NA	
Protected Phases	5	2		1	6	7	3	8		7	4	
Permitted Phases						6						
Actuated Green, G (s)	7.0	36.8		6.6	36.4	60.4	9.4	22.1		24.0	36.7	
Effective Green, g (s)	7.0	36.8		6.6	36.4	60.4	9.4	22.1		24.0	36.7	
Actuated g/C Ratio	0.07	0.34		0.06	0.34	0.56	0.09	0.21		0.22	0.34	
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Vehicle Extension (s)	2.5	4.2		2.5	4.2	2.5	2.5	2.5		2.5	2.5	
Lane Grp Cap (vph)	95	1094		102	1103	890	145	669		720	576	
v/s Ratio Prot	c0.03	0.28		0.03	c0.37	0.15	0.06	0.16		c0.19	c0.29	
v/s Ratio Perm						0.26						
v/c Ratio	0.49	0.83		0.45	1.10	0.68	0.68	0.76		0.87	0.86	
Uniform Delay, d1	48.5	32.5		48.7	35.5	16.7	47.6	40.2		40.2	33.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	2.9	5.8		2.3	57.0	2.0	10.8	4.7		10.6	12.6	
Delay (s)	51.5	38.3		51.0	92.5	18.7	58.3	44.9		50.8	45.6	
Level of Service	D	D		D	F	B	E	D		D	D	
Approach Delay (s)		39.0				64.7		47.0			48.5	
Approach LOS		D				E		D			D	
Intersection Summary												
HCM 2000 Control Delay		53.2										D
HCM 2000 Volume to Capacity ratio		0.95										
Actuated Cycle Length (s)		107.5										18.0
Intersection Capacity Utilization		85.3%										E
Analysis Period (min)		15										
c Critical Lane Group												

Future No-Build + RVM Conditions Analysis
2: 37165. OR-62 & OR-99

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑↑		↑	↑↑↑	↑↑	↑	↑↑	↑	↑↑	↑↑	↑
Traffic Volume (vph)	453	900	55	110	1231	617	83	912	116	441	1052	602
Future Volume (vph)	453	900	55	110	1231	617	83	912	116	441	1052	602
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	0.97	0.95		1.00	0.91	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	1.00	0.99	1.00	1.00	0.98	1.00	1.00	0.99
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	1.00	0.99		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	3162	3257		1646	4684	2568	1630	3197	1422	3193	3228	1444
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	3162	3257		1646	4684	2568	1630	3197	1422	3193	3228	1444
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	477	947	58	116	1296	649	87	960	122	464	1107	634
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	92	0	0	48
Lane Group Flow (vph)	477	1002	0	116	1296	649	87	960	30	464	1107	586
Confl. Peds. (#/hr)	3		18	18		3	6		3	3		6
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	2%	1%	2%	1%	2%	1%	2%	4%	3%	1%	3%	2%
Turn Type	Prot	NA		Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov
Protected Phases	5	2		1	6	7	3	8		7	4	5
Permitted Phases						6			8			4
Actuated Green, G (s)	23.3	47.7		12.2	36.6	58.0	11.0	31.7	31.7	21.4	42.1	65.4
Effective Green, g (s)	23.3	47.7		12.2	36.6	58.0	11.0	31.7	31.7	21.4	42.1	65.4
Actuated g/C Ratio	0.18	0.36		0.09	0.28	0.44	0.08	0.24	0.24	0.16	0.32	0.50
Clearance Time (s)	4.5	4.5		4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	4.2		2.5	4.2	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Lane Grp Cap (vph)	562	1185		153	1308	1225	136	773	344	521	1037	770
v/s Ratio Prot	c0.15	0.31		0.07	c0.28	0.09	0.05	c0.30		c0.15	c0.34	c0.14
v/s Ratio Perm						0.17			0.02			0.27
v/c Ratio	0.85	0.85		0.76	0.99	0.53	0.64	1.24	0.09	0.89	1.07	0.76
Uniform Delay, d1	52.1	38.3		58.0	47.0	26.6	58.1	49.6	38.4	53.7	44.5	26.5
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	11.3	6.0		18.3	22.6	0.3	8.4	119.7	0.1	17.1	47.8	4.3
Delay (s)	63.4	44.3		76.3	69.7	26.9	66.4	169.4	38.5	70.8	92.3	30.8
Level of Service	E	D		E	E	C	E	F	D	E	F	C
Approach Delay (s)		50.5			56.6			148.1			70.1	
Approach LOS		D			E			F			E	
Intersection Summary												
HCM 2000 Control Delay		75.0										E
HCM 2000 Volume to Capacity ratio		1.03										
Actuated Cycle Length (s)		131.0										18.0
Intersection Capacity Utilization		95.9%										F
Analysis Period (min)		15										
c Critical Lane Group												

Future No-Build + RVM Conditions Analysis
3: 110085. OR-62 & Rogue Valley Mall Main Ent

Weekday PM Peak Hour
07/21/2020

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↖ ↗ ↘ ↗ ↘ ↗ ↘	↖ ↗ ↘ ↗ ↘ ↗ ↘	↑ ↑ ↑ ↗ ↘ ↗ ↘	↖ ↗ ↘ ↗ ↘ ↗ ↘	↖ ↗ ↘ ↗ ↘ ↗ ↘	↑ ↑ ↑ ↗ ↘ ↗ ↘
Traffic Volume (vph)	196	285	1834	147	249	1898
Future Volume (vph)	196	285	1834	147	249	1898
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Lane Util. Factor	1.00	0.88	0.91	1.00	0.97	0.95
Frpb, ped/bikes	1.00	0.99	1.00	0.99	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t	1.00	0.85	1.00	0.85	1.00	1.00
Fl _t Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1646	2570	4638	1454	3225	3197
Fl _t Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	1646	2570	4638	1454	3225	3197
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	206	300	1931	155	262	1998
RTOR Reduction (vph)	0	10	0	46	0	0
Lane Group Flow (vph)	206	290	1931	109	262	1998
Confl. Peds. (#/hr)			3			
Confl. Bikes (#/hr)				1		
Heavy Vehicles (%)	1%	1%	3%	1%	0%	4%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	3	1	2		1	6
Permitted Phases		3		2		
Actuated Green, G (s)	13.6	23.9	40.3	40.3	10.3	55.1
Effective Green, g (s)	13.6	23.9	40.3	40.3	10.3	55.1
Actuated g/C Ratio	0.18	0.31	0.52	0.52	0.13	0.71
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5
Vehicle Extension (s)	2.5	2.5	4.2	4.2	2.5	4.2
Lane Grp Cap (vph)	288	939	2405	754	427	2267
v/s Ratio Prot	c0.13	0.04	0.42		0.08	c0.62
v/s Ratio Perm		0.07		0.08		
v/c Ratio	0.72	0.31	0.80	0.14	0.61	0.88
Uniform Delay, d1	30.2	20.6	15.4	9.7	31.8	8.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	7.6	0.1	2.2	0.1	2.2	4.6
Delay (s)	37.9	20.7	17.6	9.9	34.1	13.3
Level of Service	D	C	B	A	C	B
Approach Delay (s)	27.7		17.0			15.7
Approach LOS	C		B			B
Intersection Summary						
HCM 2000 Control Delay		17.5		HCM 2000 Level of Service		B
HCM 2000 Volume to Capacity ratio		0.91				
Actuated Cycle Length (s)		77.7		Sum of lost time (s)		13.5
Intersection Capacity Utilization		76.3%		ICU Level of Service		D
Analysis Period (min)		15				
c Critical Lane Group						

Future No-Build + RVM Conditions Analysis
4: 110080. OR-62 & Rogue Valley Mall Ent

Weekday PM Peak Hour
07/21/2020

	↖	↗	↑	↗	↘	↓		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations		↑	↑↑↑	↑	↑	↑↑		
Traffic Volume (veh/h)	0	127	2029	90	123	2147		
Future Volume (Veh/h)	0	127	2029	90	123	2147		
Sign Control	Stop		Free			Free		
Grade	0%		0%			0%		
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94		
Hourly flow rate (vph)	0	135	2159	96	131	2284		
Pedestrians								
Lane Width (ft)								
Walking Speed (ft/s)								
Percent Blockage								
Right turn flare (veh)								
Median type			None			None		
Median storage veh								
Upstream signal (ft)			833			508		
pX, platoon unblocked	0.45	0.68			0.68			
vC, conflicting volume	3563	720			2255			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	0	0			1179			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	82			67			
cM capacity (veh/h)	314	735			402			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	135	720	720	720	96	131	1142	1142
Volume Left	0	0	0	0	0	131	0	0
Volume Right	135	0	0	0	96	0	0	0
cSH	735	1700	1700	1700	1700	402	1700	1700
Volume to Capacity	0.18	0.42	0.42	0.42	0.06	0.33	0.67	0.67
Queue Length 95th (ft)	17	0	0	0	0	35	0	0
Control Delay (s)	11.0	0.0	0.0	0.0	0.0	18.2	0.0	0.0
Lane LOS	B				C			
Approach Delay (s)	11.0	0.0				1.0		
Approach LOS	B							
Intersection Summary								
Average Delay			0.8					
Intersection Capacity Utilization			67.8%		ICU Level of Service			C
Analysis Period (min)			15					

Future No-Build + RVM Conditions Analysis
5: 37160. OR-62 & I-5 SB Ramps

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↓	↑					↑↑	↑		↑↑	↑
Traffic Volume (vph)	440	1	237	0	0	0	0	1667	489	0	2033	1153
Future Volume (vph)	440	1	237	0	0	0	0	1667	489	0	2033	1153
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5					4.5	4.5		4.5	4.5
Lane Util. Factor	0.95	0.95	1.00					0.91	1.00		0.95	1.00
Frpb, ped/bikes	1.00	1.00	1.00					1.00	0.97		1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00					1.00	1.00		1.00	1.00
Fr _t	1.00	1.00	0.85					1.00	0.85		1.00	0.85
Flt Protected	0.95	0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (prot)	1533	1538	1417					4684	1407		3228	1417
Flt Permitted	0.95	0.95	1.00					1.00	1.00		1.00	1.00
Satd. Flow (perm)	1533	1538	1417					4684	1407		3228	1417
Peak-hour factor, PHF	0.90	0.90	0.90	0.96	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	489	1	263	0	0	0	0	1755	515	0	2140	1214
RTOR Reduction (vph)	0	0	14	0	0	0	0	0	61	0	0	290
Lane Group Flow (vph)	244	246	249	0	0	0	0	1755	454	0	2140	924
Confl. Peds. (#/hr)								12	7	7		12
Confl. Bikes (#/hr)									2			1
Heavy Vehicles (%)	3%	0%	5%	0%	0%	0%	0%	2%	3%	100%	3%	2%
Turn Type	Perm	NA	Perm					NA	Perm		NA	Perm
Protected Phases		4						2			6	
Permitted Phases	4		4						2			6
Actuated Green, G (s)	25.6	25.6	25.6					95.4	95.4		95.4	95.4
Effective Green, g (s)	25.6	25.6	25.6					95.4	95.4		95.4	95.4
Actuated g/C Ratio	0.20	0.20	0.20					0.73	0.73		0.73	0.73
Clearance Time (s)	4.5	4.5	4.5					4.5	4.5		4.5	4.5
Vehicle Extension (s)	2.5	2.5	2.5					4.2	4.2		4.2	4.2
Lane Grp Cap (vph)	301	302	279					3437	1032		2368	1039
v/s Ratio Prot								0.37		c0.66		
v/s Ratio Perm	0.16	0.16	c0.18						0.32			0.65
v/c Ratio	0.81	0.81	0.89					0.51	0.44		0.90	0.89
Uniform Delay, d1	49.9	49.9	50.9					7.4	6.8		13.7	13.2
Progression Factor	1.00	1.00	1.00					1.00	1.00		0.32	5.94
Incremental Delay, d2	14.8	15.0	28.1					0.5	1.4		1.6	3.1
Delay (s)	64.7	65.0	79.0					7.9	8.2		6.1	81.8
Level of Service	E	E	E					A	A		A	F
Approach Delay (s)		69.8			0.0			8.0			33.5	
Approach LOS		E			A			A			C	
Intersection Summary												
HCM 2000 Control Delay		28.7		HCM 2000 Level of Service					C			
HCM 2000 Volume to Capacity ratio		0.90										
Actuated Cycle Length (s)		130.0		Sum of lost time (s)					9.0			
Intersection Capacity Utilization		84.4%		ICU Level of Service					E			
Analysis Period (min)		15										
c Critical Lane Group												

Future No-Build + RVM Conditions Analysis
6: 37161. OR-62 & I-5 NB Ramps

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations				↑	↔	↑	↑↑	↑↑	↑	↑↑↑	↑↑↑	↑↑
Traffic Volume (vph)	0	0	0	452	3	682	0	1700	408	0	2734	737
Future Volume (vph)	0	0	0	452	3	682	0	1700	408	0	2734	737
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)				4.5	4.5	4.5		4.5	4.5		4.5	4.5
Lane Util. Factor				0.95	0.91	0.95		0.91	1.00		0.91	1.00
Frpb, ped/bikes				1.00	0.97	0.96		1.00	0.98		1.00	0.96
Flpb, ped/bikes				1.00	1.00	1.00		1.00	1.00		1.00	1.00
Fr _t				1.00	0.87	0.85		1.00	0.85		1.00	0.85
Flt Protected				0.95	0.99	1.00		1.00	1.00		1.00	1.00
Satd. Flow (prot)				1504	1275	1295		4684	1386		4638	1373
Flt Permitted				0.95	0.99	1.00		1.00	1.00		1.00	1.00
Satd. Flow (perm)				1504	1275	1295		4684	1386		4638	1373
Peak-hour factor, PHF	0.98	0.98	0.98	0.88	0.88	0.88	0.93	0.93	0.93	0.97	0.97	0.97
Adj. Flow (vph)	0	0	0	514	3	775	0	1828	439	0	2819	760
RTOR Reduction (vph)	0	0	0	0	11	11	0	0	54	0	0	256
Lane Group Flow (vph)	0	0	0	447	416	407	0	1828	385	0	2819	504
Confl. Peds. (#/hr)	12					12	24		1	1		24
Confl. Bikes (#/hr)									1			1
Heavy Vehicles (%)	0%	0%	0%	5%	0%	5%	0%	2%	5%	0%	3%	4%
Turn Type				Perm	NA	Perm		NA	Perm		NA	Perm
Protected Phases					8			2			6	
Permitted Phases				8		8			2			6
Actuated Green, G (s)				43.3	43.3	43.3		77.7	77.7		77.7	77.7
Effective Green, g (s)				43.3	43.3	43.3		77.7	77.7		77.7	77.7
Actuated g/C Ratio				0.33	0.33	0.33		0.60	0.60		0.60	0.60
Clearance Time (s)				4.5	4.5	4.5		4.5	4.5		4.5	4.5
Vehicle Extension (s)				2.5	2.5	2.5		4.2	4.2		4.2	4.2
Lane Grp Cap (vph)				500	424	431		2799	828		2772	820
v/s Ratio Prot								0.39			c0.61	
v/s Ratio Perm				0.30	0.33	0.31			0.28			0.37
v/c Ratio				0.89	0.98	0.95		0.65	0.46		1.02	0.61
Uniform Delay, d1				41.2	43.0	42.2		17.3	14.6		26.1	16.6
Progression Factor				1.00	1.00	1.00		0.85	0.68		1.07	2.87
Incremental Delay, d2				18.1	38.7	29.6		1.0	1.6		17.1	1.9
Delay (s)				59.3	81.7	71.8		15.6	11.5		45.2	49.6
Level of Service				E	F	E		B	B		D	D
Approach Delay (s)				0.0		70.7		14.8			46.1	
Approach LOS				A		E		B			D	
Intersection Summary												
HCM 2000 Control Delay				40.6								D
HCM 2000 Volume to Capacity ratio				1.00								
Actuated Cycle Length (s)				130.0								9.0
Intersection Capacity Utilization				86.5%								E
Analysis Period (min)				15								
c Critical Lane Group												

Future No-Build + RVM Conditions Analysis
7: north-south street name & east-west street name

Weekday PM Peak Hour
07/21/2020

	↖	↗	↑	↗	↘	↓		
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations		↑	↑↑↑	↑		↑↑↑		
Traffic Volume (veh/h)	0	395	2166	216	0	3471		
Future Volume (Veh/h)	0	395	2166	216	0	3471		
Sign Control	Stop		Free			Free		
Grade	0%		0%			0%		
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96		
Hourly flow rate (vph)	0	411	2256	225	0	3616		
Pedestrians	1							
Lane Width (ft)	12.0							
Walking Speed (ft/s)	3.5							
Percent Blockage	0							
Right turn flare (veh)								
Median type			None			None		
Median storage veh)								
Upstream signal (ft)			827			1005		
pX, platoon unblocked	0.64	0.77			0.77			
vC, conflicting volume	3462	753			2257			
vC1, stage 1 conf vol								
vC2, stage 2 conf vol								
vCu, unblocked vol	489	0			1589			
tC, single (s)	6.8	6.9			4.1			
tC, 2 stage (s)								
tF (s)	3.5	3.3			2.2			
p0 queue free %	100	51			100			
cM capacity (veh/h)	331	840			322			
Direction, Lane #	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3
Volume Total	411	752	752	752	225	1205	1205	1205
Volume Left	0	0	0	0	0	0	0	0
Volume Right	411	0	0	0	225	0	0	0
cSH	840	1700	1700	1700	1700	1700	1700	1700
Volume to Capacity	0.49	0.44	0.44	0.44	0.13	0.71	0.71	0.71
Queue Length 95th (ft)	68	0	0	0	0	0	0	0
Control Delay (s)	13.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	B							
Approach Delay (s)	13.3	0.0				0.0		
Approach LOS	B							
Intersection Summary								
Average Delay			0.8					
Intersection Capacity Utilization			78.7%		ICU Level of Service			D
Analysis Period (min)			15					

Future No-Build + RVM Conditions Analysis
8: 110086. Biddle Rd Conn 1 & South End of Jug Handle

Weekday PM Peak Hour
07/21/2020

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↑↑		↑↓		↑	↑↑
Traffic Volume (vph)	362	157	1281	314	81	1123
Future Volume (vph)	362	157	1281	314	81	1123
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5		4.5		4.5	4.5
Lane Util. Factor	0.97		0.95		1.00	0.95
Frpb, ped/bikes	0.99		1.00		1.00	1.00
Flpb, ped/bikes	1.00		1.00		1.00	1.00
Fr _t	0.95		0.97		1.00	1.00
Flt Protected	0.97		1.00		0.95	1.00
Satd. Flow (prot)	3032		3157		1662	3292
Flt Permitted	0.97		1.00		0.95	1.00
Satd. Flow (perm)	3032		3157		1662	3292
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	381	165	1348	331	85	1182
RTOR Reduction (vph)	55	0	20	0	0	0
Lane Group Flow (vph)	491	0	1659	0	85	1182
Confl. Peds. (#/hr)			1			
Heavy Vehicles (%)	2%	4%	2%	3%	0%	1%
Turn Type	Prot		NA		Prot	NA
Protected Phases	8		2		1	6
Permitted Phases						
Actuated Green, G (s)	16.3		43.7		7.5	55.7
Effective Green, g (s)	16.3		43.7		7.5	55.7
Actuated g/C Ratio	0.20		0.54		0.09	0.69
Clearance Time (s)	4.5		4.5		4.5	4.5
Vehicle Extension (s)	2.5		4.2		2.5	4.2
Lane Grp Cap (vph)	610		1703		153	2263
v/s Ratio Prot	c0.16		c0.53		0.05	c0.36
v/s Ratio Perm						
v/c Ratio	0.80		0.97		0.56	0.52
Uniform Delay, d1	30.8		18.1		35.2	6.2
Progression Factor	1.00		1.00		1.00	1.00
Incremental Delay, d2	7.4		16.1		3.5	0.3
Delay (s)	38.2		34.2		38.6	6.5
Level of Service	D		C		D	A
Approach Delay (s)	38.2		34.2			8.6
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay		25.6		HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio		0.90				
Actuated Cycle Length (s)		81.0		Sum of lost time (s)		13.5
Intersection Capacity Utilization		82.1%		ICU Level of Service		E
Analysis Period (min)		15				

c Critical Lane Group

Future No-Build + RVM Conditions Analysis
9: 110088. Biddle Rd Conn 1 & Hilton Ct

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑		↑	↑		↑	↑↑	↑	↑	↑↑	
Traffic Volume (vph)	36	22	55	102	1	68	64	1000	368	203	1011	12
Future Volume (vph)	36	22	55	102	1	68	64	1000	368	203	1011	12
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Lane Util. Factor	1.00	1.00		0.97	1.00		1.00	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00	0.98	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Fr _t	1.00	0.89		1.00	0.85		1.00	1.00	0.85	1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1662	1519		3065	1491		1630	3228	1461	1630	3286	
Flt Permitted	0.71	1.00		0.55	1.00		0.22	1.00	1.00	0.14	1.00	
Satd. Flow (perm)	1242	1519		1767	1491		374	3228	1461	238	3286	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	38	23	58	107	1	72	67	1053	387	214	1064	13
RTOR Reduction (vph)	0	53	0	0	64	0	0	0	186	0	0	0
Lane Group Flow (vph)	38	28	0	107	9	0	67	1053	201	214	1077	0
Confl. Peds. (#/hr)				2	2			3		1	1	3
Confl. Bikes (#/hr)												2
Heavy Vehicles (%)	0%	5%	0%	5%	0%	0%	2%	3%	0%	2%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	
Protected Phases	3	8		7	4		1	6	7	5	2	
Permitted Phases	8			4			6		6	2		
Actuated Green, G (s)	10.1	6.3		13.7	8.1		37.0	32.2	37.8	47.2	37.9	
Effective Green, g (s)	10.1	6.3		13.7	8.1		37.0	32.2	37.8	47.2	37.9	
Actuated g/C Ratio	0.14	0.09		0.19	0.11		0.51	0.44	0.52	0.65	0.52	
Clearance Time (s)	4.5	4.5		4.5	4.5		4.5	4.5	4.5	4.5	4.5	
Vehicle Extension (s)	2.5	2.5		2.5	2.5		2.5	4.2	2.5	2.5	4.2	
Lane Grp Cap (vph)	194	131		433	166		273	1431	851	356	1715	
v/s Ratio Prot	0.01	0.02		0.02	0.01		0.02	c0.33	c0.02	c0.09	0.33	
v/s Ratio Perm	0.02			c0.03			0.11		0.12	0.30		
v/c Ratio	0.20	0.21		0.25	0.05		0.25	0.74	0.24	0.60	0.63	
Uniform Delay, d1	27.5	30.8		24.8	28.8		9.4	16.7	9.5	9.2	12.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	0.4	0.6		0.2	0.1		0.3	2.2	0.1	2.4	0.9	
Delay (s)	27.9	31.4		25.0	28.9		9.7	18.9	9.6	11.6	13.2	
Level of Service	C	C		C	C		A	B	A	B	B	
Approach Delay (s)		30.3			26.6			16.1			12.9	
Approach LOS		C			C			B			B	
Intersection Summary												
HCM 2000 Control Delay		15.9										B
HCM 2000 Volume to Capacity ratio		0.62										
Actuated Cycle Length (s)		72.6										18.0
Intersection Capacity Utilization		63.3%										B
Analysis Period (min)		15										
c Critical Lane Group												

Future No-Build + RVM Conditions Analysis
10: 37166. OR-62 & Biddle Rd Ramp

Weekday PM Peak Hour

07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑↑	↑		↑↑↑	↑
Traffic Volume (veh/h)	0	0	593	0	0	78	0	2349	212	0	2878	171
Future Volume (Veh/h)	0	0	593	0	0	78	0	2349	212	0	2878	171
Sign Control			Stop			Stop		Free			Free	
Grade			0%			0%		0%			0%	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	0	0	618	0	0	81	0	2447	221	0	2998	178
Pedestrians			4			2					4	
Lane Width (ft)			12.0			12.0					12.0	
Walking Speed (ft/s)			3.5			3.5					3.5	
Percent Blockage			0			0					0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								1229			603	
pX, platoon unblocked	0.62	0.62	0.52	0.62	0.62	0.81	0.52				0.81	
vC, conflicting volume	3903	5672	1003	3448	5451	822	3002				2670	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1428	4295	0	692	3937	0	1625				2234	
tC, single (s)	7.5	6.5	7.0	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	0	0	100	91	100				100	
cM capacity (veh/h)	54	1	559	0	2	871	211				190	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	NB 4	SB 1	SB 2	SB 3	SB 4		
Volume Total	618	81	816	816	816	221	999	999	999	178		
Volume Left	0	0	0	0	0	0	0	0	0	0		
Volume Right	618	81	0	0	0	221	0	0	0	178		
cSH	559	871	1700	1700	1700	1700	1700	1700	1700	1700		
Volume to Capacity	1.10	0.09	0.48	0.48	0.48	0.13	0.59	0.59	0.59	0.10		
Queue Length 95th (ft)	483	8	0	0	0	0	0	0	0	0		
Control Delay (s)	96.3	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Lane LOS	F	A										
Approach Delay (s)	96.3	9.6	0.0				0.0					
Approach LOS	F	A										
Intersection Summary												
Average Delay			9.2									
Intersection Capacity Utilization			106.9%				ICU Level of Service			G		
Analysis Period (min)			15									

Future No-Build + RVM Conditions Analysis
11: 37163. OR-62 & Poplar Dr

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	↑	↑↑	↑↑↑		↑↑	↑↑↑	↑
Traffic Volume (vph)	516	203	226	466	242	444	63	2190	174	410	2357	337
Future Volume (vph)	516	203	226	466	242	444	63	2190	174	410	2357	337
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Lane Util. Factor	0.97	1.00	1.00	*1.00	1.00	1.00	1.00	0.91		*1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Fr _t	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	3162	1733	1444	3325	1733	1434	1630	4636		3325	4684	1413
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	3162	1733	1444	3325	1733	1434	1630	4636		3325	4684	1413
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	538	211	235	485	252	462	66	2281	181	427	2455	351
RTOR Reduction (vph)	0	0	151	0	0	189	0	7	0	0	0	151
Lane Group Flow (vph)	538	211	84	485	252	274	66	2455	0	427	2455	200
Confl. Peds. (#/hr)	7					7	1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	1%	3%	0%	1%	1%	2%	2%	1%	0%	2%	3%
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA		Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases			4			8						6
Actuated Green, G (s)	20.5	17.5	17.5	21.5	18.5	18.5	8.7	53.0		20.0	64.3	64.3
Effective Green, g (s)	20.5	17.5	17.5	21.5	18.5	18.5	8.7	53.0		20.0	64.3	64.3
Actuated g/C Ratio	0.16	0.13	0.13	0.17	0.14	0.14	0.07	0.41		0.15	0.49	0.49
Clearance Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	4.5
Vehicle Extension (s)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	4.2		2.5	4.2	4.2
Lane Grp Cap (vph)	498	233	194	549	246	204	109	1890		511	2316	698
v/s Ratio Prot	c0.17	0.12		0.15	0.15		0.04	c0.53		c0.13	c0.52	
v/s Ratio Perm			0.06			c0.19						0.14
v/c Ratio	1.08	0.91	0.43	0.88	1.02	1.34	0.61	1.30		0.84	1.06	0.29
Uniform Delay, d1	54.8	55.4	51.7	53.0	55.8	55.8	59.0	38.5		53.4	32.9	19.3
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	1.10		1.00	1.00	1.00
Incremental Delay, d2	63.7	34.4	1.1	15.4	63.8	184.1	6.2	137.7		11.1	37.0	1.0
Delay (s)	118.5	89.8	52.8	68.5	119.6	239.8	61.0	180.2		64.5	69.9	20.4
Level of Service	F	F	D	E	F	F	E	F		E	E	C
Approach Delay (s)		96.6			145.3			177.1			63.8	
Approach LOS		F			F			F			E	
Intersection Summary												
HCM 2000 Control Delay				116.2						F		
HCM 2000 Volume to Capacity ratio				1.20								
Actuated Cycle Length (s)				130.0						18.0		
Intersection Capacity Utilization				108.0%						G		
Analysis Period (min)				15								
c Critical Lane Group												

Future No-Build + RVM Conditions Analysis
12: 110083. OR-62 & Sky Park Dr

Weekday PM Peak Hour
07/21/2020

	↖	↗	↑	↗	↘	↓
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↖ ↗	↑ ↗		↑↑↑	
Traffic Volume (veh/h)	0	11	1694	111	0	0
Future Volume (Veh/h)	0	11	1694	111	0	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.99	0.99	0.99	0.99	0.99	0.99
Hourly flow rate (vph)	0	11	1711	112	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			Raised		Raised	
Median storage veh			2		2	
Upstream signal (ft)			998			
pX, platoon unblocked	0.62	0.62		0.62		
vC, conflicting volume	1767	912		1823		
vC1, stage 1 conf vol	1767					
vC2, stage 2 conf vol	0					
vCu, unblocked vol	1015	0		1105		
tC, single (s)	6.8	7.1		4.1		
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.4		2.2		
p0 queue free %	100	98		100		
cM capacity (veh/h)	191	656		397		
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	11	1141	682	0	0	0
Volume Left	0	0	0	0	0	0
Volume Right	11	0	112	0	0	0
cSH	656	1700	1700	1700	1700	1700
Volume to Capacity	0.02	0.67	0.40	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0	0	0
Control Delay (s)	10.6	0.0	0.0	0.0	0.0	0.0
Lane LOS	B					
Approach Delay (s)	10.6	0.0		0.0		
Approach LOS	B					
Intersection Summary						
Average Delay		0.1				
Intersection Capacity Utilization		64.7%		ICU Level of Service		C
Analysis Period (min)		15				

Future No-Build + RVM Conditions Analysis
13: 110084. OR-62 & Whittle Ave

Weekday PM Peak Hour
07/21/2020

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↑	↑↓		↑	↑↑
Traffic Volume (veh/h)	0	101	1595	110	149	0
Future Volume (Veh/h)	0	101	1595	110	149	0
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	106	1679	116	157	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			Raised		Raised	
Median storage veh			2		2	
Upstream signal (ft)					917	
pX, platoon unblocked						
vC, conflicting volume	2051	898		1795		
vC1, stage 1 conf vol	1737					
vC2, stage 2 conf vol	314					
vCu, unblocked vol	2051	898		1795		
tC, single (s)	6.8	7.0		4.1		
tC, 2 stage (s)	5.8					
tF (s)	3.5	3.3		2.2		
p0 queue free %	100	62		55		
cM capacity (veh/h)	121	277		349		
Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	106	1119	676	157	0	0
Volume Left	0	0	0	157	0	0
Volume Right	106	0	116	0	0	0
cSH	277	1700	1700	349	1700	1700
Volume to Capacity	0.38	0.66	0.40	0.45	0.00	0.00
Queue Length 95th (ft)	43	0	0	56	0	0
Control Delay (s)	25.9	0.0	0.0	23.5	0.0	0.0
Lane LOS	D			C		
Approach Delay (s)	25.9	0.0		23.5		
Approach LOS	D					
Intersection Summary						
Average Delay			3.1			
Intersection Capacity Utilization		67.3%		ICU Level of Service		C
Analysis Period (min)			15			

Future No-Build + RVM Conditions Analysis
14: 140087. Crater Lake Hwy & Delta Waters Rd

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↑	↑↑	↑↑	↑	↑↑	↑↑	↑↑	↑↑	↑	↑	↑↑	↑↑
Traffic Volume (vph)	86	380	703	346	411	122	667	646	383	298	944	85
Future Volume (vph)	86	380	703	346	411	122	667	646	383	298	944	85
Ideal Flow (vphpl)	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750	1750
Total Lost time (s)	4.0	4.5	4.0	4.0	4.5		4.0	5.4	5.4	4.0	5.4	
Lane Util. Factor	1.00	0.95	0.88	1.00	0.95		0.97	0.95	1.00	1.00	0.95	
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00		1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Fr _t	1.00	1.00	0.85	1.00	0.97		1.00	1.00	0.85	1.00	0.99	
Flt Protected	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1614	3292	2564	1630	3139		3193	3167	1437	1614	3193	
Flt Permitted	0.95	1.00	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	
Satd. Flow (perm)	1614	3292	2564	1630	3139		3193	3167	1437	1614	3193	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	91	400	740	364	433	128	702	680	403	314	994	89
RTOR Reduction (vph)	0	0	72	0	22	0	0	0	275	0	5	0
Lane Group Flow (vph)	91	400	668	364	539	0	702	680	128	314	1078	0
Confl. Peds. (#/hr)			5	5					2	2		
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	3%	1%	1%	2%	3%	0%	1%	5%	2%	3%	3%	0%
Turn Type	Prot	NA	pm+ov	Prot	NA		Prot	NA	Perm	Prot	NA	
Protected Phases	7	4	5	3	8		5	2		1	6	
Permitted Phases			4						2			
Actuated Green, G (s)	7.5	16.8	42.8	29.5	38.8		26.0	40.8	40.8	23.3	38.1	
Effective Green, g (s)	7.5	16.8	42.8	29.5	38.8		26.0	40.8	40.8	23.3	38.1	
Actuated g/C Ratio	0.06	0.13	0.33	0.23	0.30		0.20	0.32	0.32	0.18	0.30	
Clearance Time (s)	4.0	4.5	4.0	4.0	4.5		4.0	5.4	5.4	4.0	5.4	
Vehicle Extension (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0	1.0	1.0	1.0	
Lane Grp Cap (vph)	94	431	855	374	949		647	1007	456	293	948	
v/s Ratio Prot	0.06	c0.12	0.16	c0.22	0.17		c0.22	c0.21		0.19	c0.34	
v/s Ratio Perm			0.10						0.09			
v/c Ratio	0.97	0.93	0.78	0.97	0.57		1.09	0.68	0.28	1.07	1.14	
Uniform Delay, d1	60.3	55.2	38.5	49.0	37.7		51.2	38.0	32.8	52.5	45.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	81.1	25.7	4.3	39.0	0.5		60.7	1.4	0.1	72.9	74.7	
Delay (s)	141.4	80.9	42.9	88.1	38.2		111.8	39.4	32.9	125.4	119.8	
Level of Service	F	F	D	F	D		F	D	C	F	F	
Approach Delay (s)		62.5			57.8			66.4			121.1	
Approach LOS		E			E			E			F	
Intersection Summary												
HCM 2000 Control Delay			78.3				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			128.3				Sum of lost time (s)			17.9		
Intersection Capacity Utilization			99.1%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Future No-Build + RVM Conditions Analysis
15: 110089. Poplar Dr & Hilton Rd

Weekday PM Peak Hour
07/21/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↑			↑		↑↑			↑↑	
Traffic Volume (veh/h)	0	0	18	0	0	131	0	1021	39	0	642	145
Future Volume (Veh/h)	0	0	18	0	0	131	0	1021	39	0	642	145
Sign Control			Stop			Stop		Free			Free	
Grade			0%			0%		0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	0	0	19	0	0	138	0	1075	41	0	676	153
Pedestrians						4			1			1
Lane Width (ft)						12.0			12.0			12.0
Walking Speed (ft/s)						3.5			3.5			3.5
Percent Blockage						0			0			0
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)											326	
pX, platoon unblocked												
vC, conflicting volume	1250	1872	416	1458	1928	384	829				1120	
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1250	1872	416	1458	1928	384	829				1120	
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	4.1				4.1	
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2				2.2	
p0 queue free %	100	100	97	100	100	78	100				100	
cM capacity (veh/h)	102	73	591	89	67	614	811				629	
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3	SB 1	SB 2					
Volume Total	19	138	430	430	256	451	378					
Volume Left	0	0	0	0	0	0	0					
Volume Right	19	138	0	0	41	0	153					
cSH	591	614	1700	1700	1700	1700	1700					
Volume to Capacity	0.03	0.22	0.25	0.25	0.15	0.27	0.22					
Queue Length 95th (ft)	2	21	0	0	0	0	0					
Control Delay (s)	11.3	12.6	0.0	0.0	0.0	0.0	0.0					
Lane LOS	B	B										
Approach Delay (s)	11.3	12.6	0.0				0.0					
Approach LOS	B	B										
Intersection Summary												
Average Delay			0.9									
Intersection Capacity Utilization			38.1%			ICU Level of Service					A	
Analysis Period (min)			15									

Attachment B SimTraffic Reports

1: 48748. Table Rock Rd & Hwy 63/N Pacific Hwy Performance by movement

Movement	EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	1.5	0.2
Total Delay (hr)	1.3	20.1	2.7	0.8	21.4	4.4	1.2	5.7	0.3	28.1	13.0	0.9
Stop Delay (hr)	1.1	16.8	2.3	0.7	16.4	2.3	1.1	4.8	0.3	25.7	10.7	0.8

1: 48748. Table Rock Rd & Hwy 63/N Pacific Hwy Performance by movement

Movement	All
Denied Delay (hr)	4.0
Total Delay (hr)	100.0
Stop Delay (hr)	82.9

2: 37165. OR-62 & OR-99 Performance by movement

Movement	EBL	EBT	EBC	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.5	0.5	0.0	0.0	0.0
Total Delay (hr)	15.9	25.6	1.5	3.1	47.4	1.5	14.4	178.4	21.2	5.3	8.8	2.7
Stop Delay (hr)	13.9	20.8	1.2	2.9	42.2	0.4	14.1	175.9	21.2	4.7	6.9	2.0

2: 37165. OR-62 & OR-99 Performance by movement

Movement	All
Denied Delay (hr)	5.6
Total Delay (hr)	325.7
Stop Delay (hr)	306.0

3: 110085. OR-62 & Rogue Valley Mall Main Ent Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	1.6	1.1	14.8	1.1	1.4	3.7	23.5
Stop Delay (hr)	1.4	1.0	9.7	0.7	1.1	1.2	15.1

4: 110080. OR-62 & Rogue Valley Mall Ent Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	2.1	3.2	0.2	0.9	0.9	7.3
Stop Delay (hr)	2.2	0.4	0.0	0.8	0.0	3.5

5: 37160. OR-62 & I-5 SB Ramps Performance by movement

Movement	EBL	EBT	EBR	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.6
Total Delay (hr)	8.7	0.0	2.9	5.6	2.2	3.1	2.6	25.1
Stop Delay (hr)	7.6	0.0	2.6	3.0	1.1	1.0	0.0	15.3

6: 37161. OR-62 & I-5 NB Ramps Performance by movement

Movement	WBL	WBT	WBR	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	15.7	0.0	25.7	0.0	0.1	0.0	0.1	41.7
Total Delay (hr)	60.3	0.3	103.0	15.4	3.8	9.7	1.4	193.9
Stop Delay (hr)	59.9	0.3	104.2	10.4	2.5	4.9	0.4	182.6

7: north-south street name & east-west street name Performance by movement

Movement	WBT	WBR	NBT	NBR	SBT	All
Denied Delay (hr)	0.0	4.7	9.1	1.2	0.0	15.1
Total Delay (hr)	0.2	17.0	50.0	3.3	2.9	73.3
Stop Delay (hr)	0.2	17.1	40.8	2.4	1.7	62.1

8: 110086. Biddle Rd Conn 1 & South End of Jug Handle Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	322.0	82.6	0.0	0.1	404.7
Total Delay (hr)	3.3	1.2	30.4	31.5	16.1	6.5	89.1
Stop Delay (hr)	2.9	1.1	28.6	31.5	16.1	4.6	84.8

9: 110088. Biddle Rd Conn 1 & Hilton Ct Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.3	187.8	2.4
Total Delay (hr)	0.2	0.5	0.6	0.5	0.0	0.1	0.7	18.9	25.0	25.2	22.7	0.2
Stop Delay (hr)	0.2	0.5	0.6	0.4	0.0	0.1	0.7	17.3	25.3	25.4	21.1	0.2

9: 110088. Biddle Rd Conn 1 & Hilton Ct Performance by movement

Movement	All
Denied Delay (hr)	226.5
Total Delay (hr)	94.8
Stop Delay (hr)	91.7

10: 37166. OR-62 & Biddle Rd Ramp Performance by movement

Movement	EBT	EBR	WBR	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	9.3	20.4	10.1	0.3	0.0	0.0	40.1
Total Delay (hr)	0.9	35.2	8.8	31.9	1.6	2.7	0.2	81.4
Stop Delay (hr)	0.9	36.8	8.9	26.2	1.2	0.1	0.0	74.1

11: 37163. OR-62 & Poplar Dr Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	31.0	12.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	101.3	550.4	77.5
Total Delay (hr)	27.0	11.1	10.8	10.4	7.2	4.7	0.7	40.4	2.8	5.8	17.6	1.3
Stop Delay (hr)	23.5	9.6	9.3	9.8	6.7	4.6	0.6	32.4	2.2	5.5	14.1	1.0

11: 37163. OR-62 & Poplar Dr Performance by movement

Movement	All
Denied Delay (hr)	786.5
Total Delay (hr)	139.8
Stop Delay (hr)	119.3

12: 110083. OR-62 & Sky Park Dr Performance by movement

Movement	WBR	NBT	NBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.6	0.0	0.6
Stop Delay (hr)	0.0	0.0	0.0	0.0

13: 110084. OR-62 & Whittle Ave Performance by movement

Movement	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.2	0.4	0.0	6.3	5.1	12.0
Stop Delay (hr)	0.2	0.0	0.0	6.0	3.1	9.4

14: 140087. Crater Lake Hwy & Delta Waters Rd Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Denied Delay (hr)	0.1	0.1	0.5	0.9	1.1	0.5	0.0	0.0	0.0	21.9	67.7	6.1
Total Delay (hr)	3.7	12.2	8.5	13.9	8.0	2.3	7.6	5.3	1.1	20.2	62.6	5.4
Stop Delay (hr)	3.5	10.9	6.3	13.1	6.9	2.0	6.6	4.2	0.8	17.9	54.2	4.8

14: 140087. Crater Lake Hwy & Delta Waters Rd Performance by movement

Movement	All
Denied Delay (hr)	98.9
Total Delay (hr)	150.8
Stop Delay (hr)	131.4

15: 110089. Poplar Dr & Hilton Rd Performance by movement

Movement	EBR	WBR	NBT	NBR	SBT	SBR	All
Denied Delay (hr)	0.0	19.1	41.0	1.7	0.0	0.0	61.8
Total Delay (hr)	0.0	15.6	16.7	0.5	0.2	0.0	33.1
Stop Delay (hr)	0.0	15.7	15.3	0.5	0.0	0.0	31.5

Total Network Performance

Denied Delay (hr)	1685.7
Total Delay (hr)	1400.4
Stop Delay (hr)	1235.2

Queuing and Blocking Report

Weekday PM Peak Hour

07/21/2020

Intersection: 1: 48748. Table Rock Rd & Hwy 63/N Pacific Hwy

Movement	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	SB	SB
Directions Served	L	T	TR	L	T	T	R	L	T	TR	L	L
Maximum Queue (ft)	274	830	813	290	732	737	779	190	286	279	499	1171
Average Queue (ft)	91	483	480	70	477	494	370	80	169	171	382	651
95th Queue (ft)	251	1044	1025	217	805	822	790	153	246	254	615	1434
Link Distance (ft)		1924	1924		852	852	852		2093	2093		1571
Upstream Blk Time (%)					0	1	1					8
Queuing Penalty (veh)					2	4	3					0
Storage Bay Dist (ft)	250			200				340			500	
Storage Blk Time (%)	0	33			43				0		6	26
Queuing Penalty (veh)	0	15			19				0		17	78

Intersection: 1: 48748. Table Rock Rd & Hwy 63/N Pacific Hwy

Movement	SB
Directions Served	TR
Maximum Queue (ft)	1216
Average Queue (ft)	668
95th Queue (ft)	1431
Link Distance (ft)	1571
Upstream Blk Time (%)	6
Queuing Penalty (veh)	0
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Queuing and Blocking Report

Weekday PM Peak Hour

07/21/2020

Intersection: 2: 37165. OR-62 & OR-99

Movement	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB	B26	B26
Directions Served	L	L	T	TR	L	T	T	T	R	R	T	T
Maximum Queue (ft)	440	540	874	880	565	700	715	687	652	109	192	211
Average Queue (ft)	262	484	702	709	307	533	557	537	154	9	36	58
95th Queue (ft)	401	652	977	972	739	863	876	856	611	83	179	239
Link Distance (ft)			852	852	686	686	686	686	686		4343	4343
Upstream Blk Time (%)			5	5	9	24	27	18	0			
Queuing Penalty (veh)			32	37	0	0	0	0	0			
Storage Bay Dist (ft)	380	380								250		
Storage Blk Time (%)	1	5	52							0	0	
Queuing Penalty (veh)	4	22	234							0	0	

Intersection: 2: 37165. OR-62 & OR-99

Movement	B26	B26	NB	NB	NB	NB	SB	SB	SB	SB	SB	SB
Directions Served	T	T	L	T	T	R	L	L	T	T	R	
Maximum Queue (ft)	363	379	315	4733	4730	500	228	346	454	457	440	
Average Queue (ft)	88	97	181	3282	3283	363	139	165	272	279	202	
95th Queue (ft)	345	381	401	5278	5243	704	222	296	426	436	379	
Link Distance (ft)	4343	4343		4693	4693				524	524		
Upstream Blk Time (%)				20	19				0	0		
Queuing Penalty (veh)				0	0				1	3		
Storage Bay Dist (ft)			150			390	315	315			400	
Storage Blk Time (%)			2	72	83	0			4	1	1	
Queuing Penalty (veh)			7	60	96	0			20	9	4	

Intersection: 3: 110085. OR-62 & Rogue Valley Mall Main Ent

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB	SB
Directions Served	L	R	R	T	T	T	R	L	L	T	T	
Maximum Queue (ft)	235	156	143	405	624	657	180	108	124	336	326	
Average Queue (ft)	108	57	60	173	309	373	111	40	71	141	155	
95th Queue (ft)	191	112	115	332	573	600	234	90	111	267	279	
Link Distance (ft)	338	338	338	524	524	524				766	766	
Upstream Blk Time (%)				0	2	5						
Queuing Penalty (veh)				0	15	32						
Storage Bay Dist (ft)							100	280	280			
Storage Blk Time (%)							35	0			0	
Queuing Penalty (veh)							52	0			1	

Queuing and Blocking Report

Weekday PM Peak Hour

07/21/2020

Intersection: 4: 110080. OR-62 & Rogue Valley Mall Ent

Movement	WB	NB	NB	NB	NB	SB
Directions Served	R	T	T	T	R	L
Maximum Queue (ft)	242	56	108	337	125	142
Average Queue (ft)	104	2	13	59	12	67
95th Queue (ft)	227	40	98	247	87	128
Link Distance (ft)	341	766	766	766		
Upstream Blk Time (%)	1					
Queuing Penalty (veh)	0					
Storage Bay Dist (ft)				100	200	
Storage Blk Time (%)				4	0	
Queuing Penalty (veh)				4	0	

Intersection: 5: 37160. OR-62 & I-5 SB Ramps

Movement	EB	EB	EB	NB	NB	NB	SB	SB	SB
Directions Served	L	LT	R	T	T	T	R	T	R
Maximum Queue (ft)	270	344	780	269	432	456	80	224	198
Average Queue (ft)	218	273	280	113	189	321	67	90	93
95th Queue (ft)	303	370	644	226	352	507	81	190	188
Link Distance (ft)			1196	438	438	438		551	551
Upstream Blk Time (%)			0		0	3			0
Queuing Penalty (veh)			0		0	18			1
Storage Bay Dist (ft)	195	195					50		
Storage Blk Time (%)	7	33	9				26	3	
Queuing Penalty (veh)	17	78	41				128	14	

Intersection: 6: 37161. OR-62 & I-5 NB Ramps

Movement	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	L	LTR	R	T	T	T	R	T	T	T	R
Maximum Queue (ft)	2618	2623	2620	534	572	582	88	431	493	605	368
Average Queue (ft)	1756	1814	1800	289	333	418	73	240	266	268	117
95th Queue (ft)	3842	3796	3760	529	573	632	83	418	459	501	329
Link Distance (ft)	3096	3096	3096	551	551	551		749	749	749	
Upstream Blk Time (%)	32	33	32	1	2	5			0	0	
Queuing Penalty (veh)	0	0	0	7	10	38			0	1	
Storage Bay Dist (ft)							50				290
Storage Blk Time (%)							41	5		5	0
Queuing Penalty (veh)							168	30		38	0

Queuing and Blocking Report

Weekday PM Peak Hour

07/21/2020

Intersection: 7: north-south street name & east-west street name

Movement	WB	B44	NB	NB	NB	NB	SB
Directions Served	R	T	T	T	T	R	T
Maximum Queue (ft)	569	636	779	801	794	100	30
Average Queue (ft)	538	570	643	661	658	76	1
95th Queue (ft)	649	846	957	969	982	141	23
Link Distance (ft)	476	618	749	749	749		347
Upstream Blk Time (%)	94	81	10	16	19		
Queuing Penalty (veh)	370	318	75	122	146		
Storage Bay Dist (ft)					75		
Storage Blk Time (%)					43	1	
Queuing Penalty (veh)					92	7	

Intersection: 8: 110086. Biddle Rd Conn 1 & South End of Jug Handle

Movement	WB	WB	NB	NB	SB	SB	SB
Directions Served	L	LR	T	TR	L	T	T
Maximum Queue (ft)	253	280	1212	1209	125	1140	1159
Average Queue (ft)	138	155	1066	1074	109	519	478
95th Queue (ft)	218	252	1502	1492	155	1153	1142
Link Distance (ft)	618	618	1175	1175		1967	1967
Upstream Blk Time (%)			76	79		2	2
Queuing Penalty (veh)			0	0		11	11
Storage Bay Dist (ft)					100		
Storage Blk Time (%)					82	2	
Queuing Penalty (veh)					455	2	

Intersection: 9: 110088. Biddle Rd Conn 1 & Hilton Ct

Movement	EB	EB	WB	WB	WB	NB	NB	NB	NB	SB	SB	SB
Directions Served	L	TR	L	L	TR	L	T	T	R	L	T	TR
Maximum Queue (ft)	64	159	68	84	57	146	1451	1460	286	253	1132	1137
Average Queue (ft)	25	65	14	31	19	24	737	833	232	237	875	867
95th Queue (ft)	57	147	46	70	44	110	1994	2030	452	388	1549	1553
Link Distance (ft)	849	849			1196		1967	1967			1100	1100
Upstream Blk Time (%)							3	4			68	65
Queuing Penalty (veh)							23	29			0	0
Storage Bay Dist (ft)			220	220		320			220	175		
Storage Blk Time (%)							2	4	64	80	3	
Queuing Penalty (veh)							2	16	321	404	5	

Queuing and Blocking Report

Weekday PM Peak Hour

07/21/2020

Intersection: 10: 37166. OR-62 & Biddle Rd Ramp

Movement	EB	WB	NB	NB	NB	NB	SB	SB	SB	SB
Directions Served	R	R	T	T	T	R	T	T	T	R
Maximum Queue (ft)	1134	268	406	406	423	140	83	62	67	10
Average Queue (ft)	1036	230	362	367	417	97	4	4	4	0
95th Queue (ft)	1634	305	418	423	480	202	36	35	31	7
Link Distance (ft)	1196	237	347	347	347		507	507	507	
Upstream Blk Time (%)	46	86	41	47	97					
Queuing Penalty (veh)	273	0	353	397	825					
Storage Bay Dist (ft)						90				140
Storage Blk Time (%)						54	0			
Queuing Penalty (veh)						114	0			

Intersection: 11: 37163. OR-62 & Poplar Dr

Movement	EB	EB	EB	EB	WB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	L	T	R	L	L	T	R	L	T	T	TR
Maximum Queue (ft)	389	460	1239	160	230	265	274	302	506	555	564	571
Average Queue (ft)	307	451	1147	147	196	236	242	253	102	522	530	523
95th Queue (ft)	466	501	1432	199	268	263	270	285	360	560	569	569
Link Distance (ft)			1187			230	230	230		507	507	507
Upstream Blk Time (%)			50			1	42	62	47	0	45	50
Queuing Penalty (veh)			0			0	160	237	179	0	362	407
Storage Bay Dist (ft)	350	350		135	250				450			
Storage Blk Time (%)	15	26	51	33	1	42				59		
Queuing Penalty (veh)	66	113	380	237	3	97				37		

Intersection: 11: 37163. OR-62 & Poplar Dr

Movement	SB	SB	SB	SB	SB	SB
Directions Served	L	L	T	T	T	R
Maximum Queue (ft)	252	259	272	331	341	277
Average Queue (ft)	160	248	251	312	314	236
95th Queue (ft)	336	455	459	325	331	454
Link Distance (ft)						
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	410	410			350	
Storage Blk Time (%)					1	0
Queuing Penalty (veh)					2	0

Queuing and Blocking Report

Weekday PM Peak Hour

07/21/2020

Intersection: 12: 110083. OR-62 & Sky Park Dr

Movement	WB	NB	B19	B19	B19
Directions Served	R	TR	T	T	
Maximum Queue (ft)	54	11	620	643	469
Average Queue (ft)	11	0	191	254	47
95th Queue (ft)	41	8	623	724	306
Link Distance (ft)	432	275	591	591	591
Upstream Blk Time (%)			0	1	0
Queuing Penalty (veh)			3	11	1
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Intersection: 13: 110084. OR-62 & Whittle Ave

Movement	WB	NB	NB	SB	SB
Directions Served	R	T	TR	L	T
Maximum Queue (ft)	103	33	71	341	182
Average Queue (ft)	47	1	7	204	109
95th Queue (ft)	79	19	35	525	569
Link Distance (ft)	479	409	409		823
Upstream Blk Time (%)					6
Queuing Penalty (veh)					57
Storage Bay Dist (ft)			650		
Storage Blk Time (%)				7	1
Queuing Penalty (veh)				0	2

Queuing and Blocking Report

Weekday PM Peak Hour

07/21/2020

Intersection: 14: 140087. Crater Lake Hwy & Delta Waters Rd

Movement	EB	EB	EB	EB	EB	WB	WB	WB	NB	NB	NB	NB
Directions Served	L	T	T	R	R	L	T	TR	L	L	T	T
Maximum Queue (ft)	309	590	577	448	420	502	695	665	332	372	373	391
Average Queue (ft)	162	318	327	302	266	337	397	375	201	217	169	180
95th Queue (ft)	326	687	714	444	419	530	925	907	303	325	320	319
Link Distance (ft)		1246	1246				1401	1401			823	823
Upstream Blk Time (%)		1	2				6	5				
Queuing Penalty (veh)		0	0				0	0				
Storage Bay Dist (ft)	225			450	450	400			500	500		
Storage Blk Time (%)	9	24	2	3	1	16	13					6
Queuing Penalty (veh)	18	20	16	5	2	32	44					24

Intersection: 14: 140087. Crater Lake Hwy & Delta Waters Rd

Movement	NB	SB	SB	SB
Directions Served	R	L	T	TR
Maximum Queue (ft)	242	300	1492	1479
Average Queue (ft)	98	283	1405	1395
95th Queue (ft)	185	359	1641	1652
Link Distance (ft)		1423	1423	
Upstream Blk Time (%)		75	64	
Queuing Penalty (veh)		0	0	
Storage Bay Dist (ft)	200	200		
Storage Blk Time (%)	1	30	67	
Queuing Penalty (veh)	2	144	201	

Intersection: 15: 110089. Poplar Dr & Hilton Rd

Movement	EB	WB	NB	NB	NB	SB	SB
Directions Served	R	R	T	T	TR	T	TR
Maximum Queue (ft)	39	485	314	292	293	44	40
Average Queue (ft)	17	427	269	269	269	2	1
95th Queue (ft)	44	608	348	337	327	20	25
Link Distance (ft)	464	466	260	260	260	230	230
Upstream Blk Time (%)		71	65	74	62		
Queuing Penalty (veh)		0	0	0	0		
Storage Bay Dist (ft)							
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 8929