APPENDIX A

Traffic Volume Counts

TRAFSTATS
PO Box 13699
Salem, OR 97309
Tel: (503) 646-2942
Fax: (503) 526-0628

Intersection Turning Movement

Summary Report

Location E SCOTT AVENUE AT ATLANTIC AVENUE- I-5 NB ON RAMP
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: CR

	Eastbound			Westbound			Northbound			Southbound			
Time Period	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
16:00 - 16:15	0	0	0	7	0	13	12	62	0	0	0	0	94
16:15 - 16:30	0	0	0	7	0	20	10	50	0	0	0	0	87
16:30 - 16:45	0	0	0	7	0	12	20	58	0	0	0	0	97
16:45 - 17:00	0	0	0	10	0	10	11	56	0	0	0	0	87
17:00 - 17:15	0	0	0	4	0	12	13	65	0	0	0	0	94
17:15 - 17:30	0	0	0	7	0	18	14	49	0	0	0	0	88
17:30 - 17:45	0	0	0	4	0	12	14	59	0	0	0	0	89
17:45 - 18:00	0	0	0	5	0	11	11	48	0	0	0	0	75
Movement Totals	0	0	0	51	0	108	105	447	0	0	0	0	711
Enter Totals	0			159			552			0			
Exit Totals	105			0			498			108			

Two-Hour Totals

Light Trucks	0	0	0	1	0	9	5	14	0	0	0	0	29
Medium Trucks	0	0	0	0	0	4	0	0	0	0	0	0	4
Heavy Trucks	0	0	0	0	0	1	0	10	0	0	0	0	11
% Trucks	NA	NA	NA	2.0%	NA	13.0%	4.8%	5.4%	NA	NA	NA	NA	6.2%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0

	South	West	East	North	
Pedestrians	0	0	0	0	0

Peak Hour Information

Peak Hour 16:30 17:30

	Eastbound			Westbound			Northbound			Southbound			
	Right	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
Movement Total	0	0	0	28	0	52	58	228	0	0	0	0	366
Peak Hour Factor	NA	NA	NA	0.70	NA	0.72	0.73	0.88	NA	NA	NA	NA	0.94
Enter Totals	0			80			286			0			
Peak Hour Factor	NA			0.80			0.92			NA			
Exit Totals	58			0			256			52			
Peak Hour Factor	0.73			NA			0.93			0.72			
Light Trucks	0	0	0	0	0	4	5	8	0	0	0	0	17
Medium Trucks	0	0	0	0	0	1	0	0	0	0	0	0	1
Heavy Trucks	0	0	0	0	0	0	0	5	0	0	0	0	5
% Trucks	NA	NA	NA	0.0%	NA	9.6%	8.6%	5.7%	NA	NA	NA	NA	6.3%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0

	South	West	East	North	
Pedestrians	0	0	0	0	0

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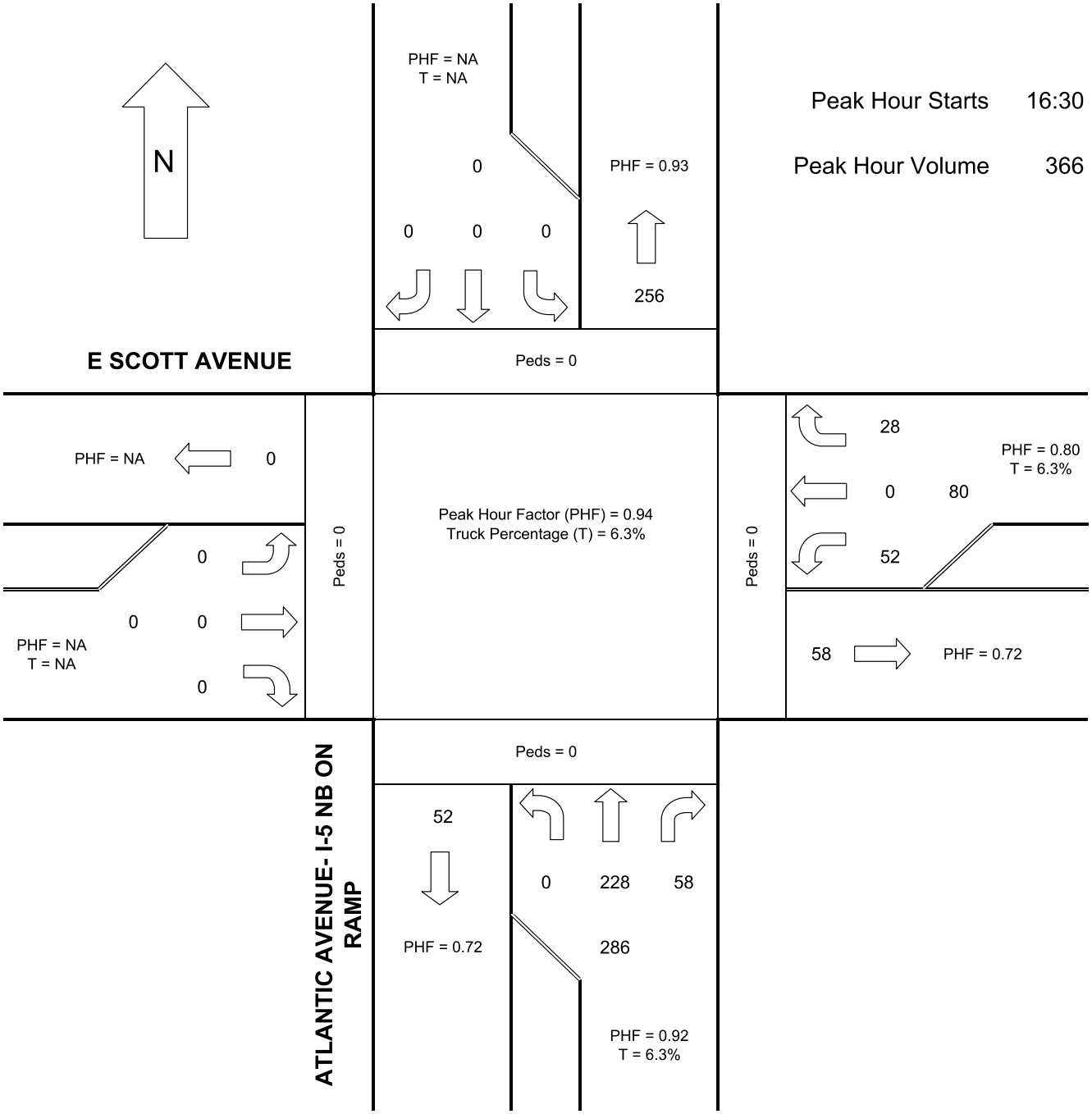
Intersection Turning Movement

Peak Hour Diagram

Location E SCOTT AVENUE AT ATLANTIC AVENUE- I-5 NB ON RAMP
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: CR



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Intersection Turning Movement

Summary Report

Location E SCOTT AVENUE AT OLD PACIFIC HIGHWAY
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: CR

	Eastbound			Westbound			Northbound			Southbound			
Time Period	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
16:00 - 16:15	4	4	3	17	2	0	0	9	5	8	25	22	99
16:15 - 16:30	2	1	4	18	5	1	1	16	2	10	19	24	103
16:30 - 16:45	1	4	6	23	5	1	0	14	3	8	28	22	115
16:45 - 17:00	2	3	2	10	4	0	0	13	1	8	22	24	89
17:00 - 17:15	3	2	4	9	8	1	0	17	1	5	23	25	98
17:15 - 17:30	3	0	5	16	4	1	0	18	2	13	14	30	106
17:30 - 17:45	2	3	6	17	3	2	0	14	3	5	18	31	104
17:45 - 18:00	0	3	4	8	2	0	0	18	1	4	25	24	89
Movement Totals	17	20	34	118	33	6	1	119	18	61	174	202	803
Enter Totals	71			157			138			437			
Exit Totals	223			112			271			197			

Two-Hour Totals

Light Trucks	1	3	1	1	0	0	0	2	2	6	3	1	20
Medium Trucks	0	0	0	3	2	0	0	0	0	1	1	3	10
Heavy Trucks	0	0	0	3	1	0	0	0	0	2	0	1	7
% Trucks	5.9%	15.0%	2.9%	5.9%	9.1%	0.0%	0.0%	1.7%	11.1%	14.8%	2.3%	2.5%	4.6%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	3	0	3

	South	West	East	North	
Pedestrians	0	1	0	0	1

Peak Hour Information

Peak Hour 16:30 17:30

	Eastbound			Westbound			Northbound			Southbound			
	Right	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
Movement Total	9	9	17	58	21	3	0	62	7	34	87	101	408
Peak Hour Factor	0.75	0.56	0.71	0.63	0.66	0.75	NA	0.86	0.58	0.65	0.78	0.84	0.89
Enter Totals	35			82			69			222			
Peak Hour Factor	0.80			0.71			0.86			0.96			
Exit Totals	110			62			137			99			
Peak Hour Factor	0.92			0.82			0.80			0.83			
Light Trucks	1	1	0	0	0	0	0	1	0	2	3	0	8
Medium Trucks	0	0	0	0	0	0	0	0	0	1	1	2	4
Heavy Trucks	0	0	0	2	0	0	0	0	0	1	0	1	4
% Trucks	11.1%	11.1%	0.0%	3.4%	0.0%	0.0%	NA	1.6%	0.0%	11.8%	4.6%	3.0%	3.9%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	1	0	1

	South	West	East	North	
Pedestrians	0	0	0	0	0

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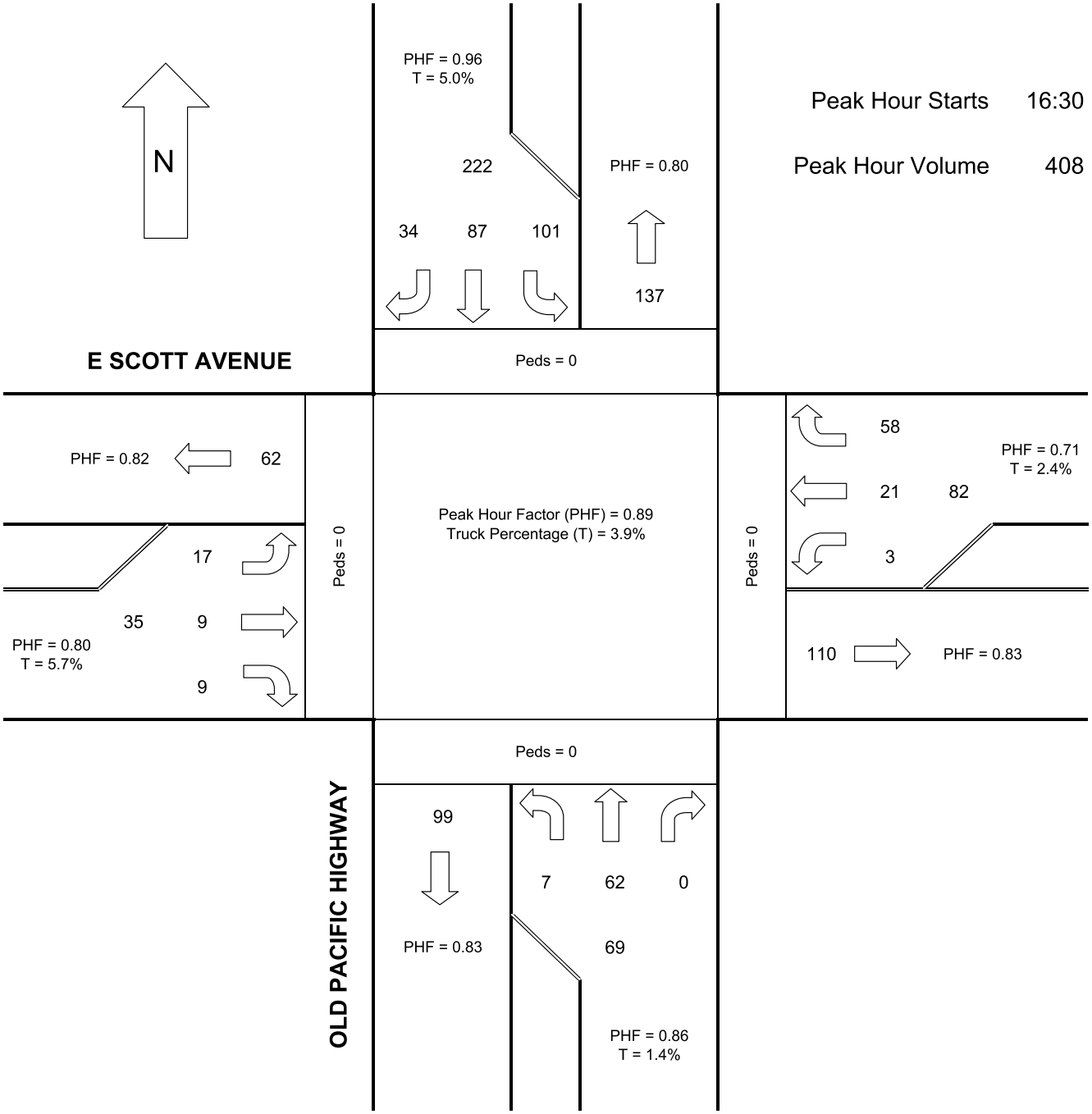
Intersection Turning Movement

Peak Hour Diagram

Location E SCOTT AVENUE AT OLD PACIFIC HIGHWAY
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: CR



Peak Hour Starts	16:30
Peak Hour Volume	408

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Intersection Turning Movement

Summary Report

Location SR 503 AT CC STREET
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: CR

	Eastbound			Westbound			Northbound			Southbound			
Time Period	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
16:00 - 16:15	67	178	0	0	109	21	19	0	53	0	0	0	447
16:15 - 16:30	71	174	0	0	124	24	19	0	47	0	0	0	459
16:30 - 16:45	51	187	0	0	104	27	18	0	33	0	0	0	420
16:45 - 17:00	63	196	0	0	95	28	10	0	44	0	0	0	436
17:00 - 17:15	62	202	0	0	98	25	20	0	46	0	0	0	453
17:15 - 17:30	68	205	0	0	115	30	21	0	47	0	0	0	486
17:30 - 17:45	74	191	0	0	104	23	18	0	47	0	0	0	457
17:45 - 18:00	85	201	0	0	115	21	15	0	43	0	0	0	480
Movement Totals	541	1534	0	0	864	199	140	0	360	0	0	0	3638
Enter Totals	2075			1063			500			0			
Exit Totals	1674			1224			0			740			

Two-Hour Totals

Light Trucks	11	20	0	0	21	5	1	0	7	0	0	0	65
Medium Trucks	9	6	0	0	10	1	0	0	3	0	0	0	29
Heavy Trucks	4	1	0	0	3	0	0	0	4	0	0	0	12
% Trucks	4.4%	1.8%	NA	NA	3.9%	3.0%	0.7%	NA	3.9%	NA	NA	NA	2.9%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0

	South	West	East	North	
Pedestrians	4	0	2	0	6

Peak Hour Information

Peak Hour 17:00 18:00

	Eastbound			Westbound			Northbound			Southbound			
	Right	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
Movement Total	289	799	0	0	432	99	74	0	183	0	0	0	1876
Peak Hour Factor	0.85	0.97	NA	NA	0.94	0.83	0.88	NA	0.97	NA	NA	NA	0.97
Enter Totals	1088			531			257			0			
Peak Hour Factor	0.95			0.92			0.94			NA			
Exit Totals	873			615			0			388			
Peak Hour Factor	0.97			0.95			NA			0.92			
Light Trucks	8	4	0	0	5	5	1	0	3	0	0	0	26
Medium Trucks	2	1	0	0	4	0	0	0	2	0	0	0	9
Heavy Trucks	1	0	0	0	2	0	0	0	0	0	0	0	3
% Trucks	3.8%	0.6%	NA	NA	2.5%	5.1%	1.4%	NA	2.7%	NA	NA	NA	2.0%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0

	South	West	East	North	
Pedestrians	4	0	2	0	6

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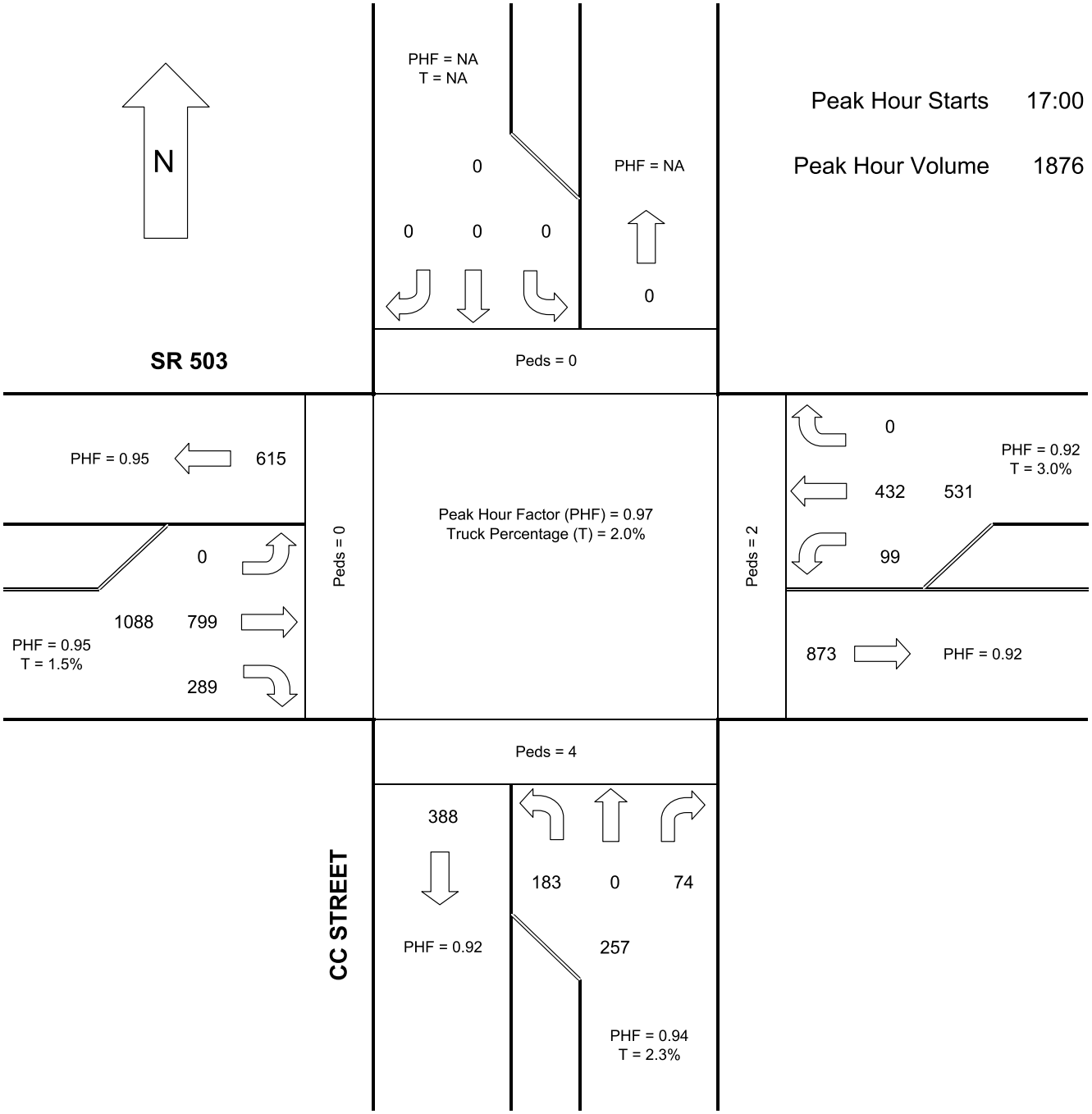
Intersection Turning Movement

Peak Hour Diagram

Location SR 503 AT CC STREET
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: CR



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Intersection Turning Movement

Summary Report

Location SR 503 AT I-5 NB OFF RAMP
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: CR

	Eastbound			Westbound			Northbound			Southbound			
Time Period	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
16:00 - 16:15	0	116	46	28	150	0	112	10	73	24	0	6	565
16:15 - 16:30	0	146	39	34	150	0	90	16	74	30	0	10	589
16:30 - 16:45	0	133	45	26	113	0	111	25	60	37	0	3	553
16:45 - 17:00	0	134	48	29	115	0	116	15	80	31	0	8	576
17:00 - 17:15	0	132	48	35	113	0	116	11	82	32	0	8	577
17:15 - 17:30	0	132	50	26	129	0	133	15	75	32	0	11	603
17:30 - 17:45	0	136	38	35	126	0	121	13	72	28	0	8	577
17:45 - 18:00	0	160	40	28	139	0	121	15	74	25	0	3	605
Movement Totals	0	1089	354	241	1035	0	920	120	590	239	0	57	4645
Enter Totals	1443			1276			1630			296			
Exit Totals	2066			1864			715			0			

Two-Hour Totals

Light Trucks	0	6	5	3	25	0	16	7	21	5	0	2	90
Medium Trucks	0	7	0	2	10	0	7	0	2	1	0	1	30
Heavy Trucks	0	3	1	4	4	0	2	3	10	3	0	0	30
% Trucks	NA	1.5%	1.7%	3.7%	3.8%	NA	2.7%	8.3%	5.6%	3.8%	NA	5.3%	3.2%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	1	0	0	1	0	0	0	0	0	0	0	2

	South	West	East	North	
Pedestrians	1	5	0	10	16

Peak Hour Information

Peak Hour 17:00 18:00

	Eastbound			Westbound			Northbound			Southbound			
	Right	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
Movement Total	0	560	176	124	507	0	491	54	303	117	0	30	2362
Peak Hour Factor	NA	0.88	0.88	0.89	0.91	NA	0.92	0.90	0.92	0.91	NA	0.68	0.98

Enter Totals	736	631	848	147
Peak Hour Factor	0.92	0.94	0.95	0.85

Exit Totals	1081	927	354	0
Peak Hour Factor	0.95	0.97	0.94	NA

Light Trucks	0	3	2	1	4	0	5	2	10	2	0	1	30
Medium Trucks	0	1	0	2	4	0	1	0	0	1	0	1	10
Heavy Trucks	0	0	1	1	1	0	1	3	5	0	0	0	12
% Trucks	NA	0.7%	1.7%	3.2%	1.8%	NA	1.4%	9.3%	5.0%	2.6%	NA	6.7%	2.2%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	1	0	0	0	0	0	0	0	0	0	0	1

	South	West	East	North	
Pedestrians	0	2	0	1	3

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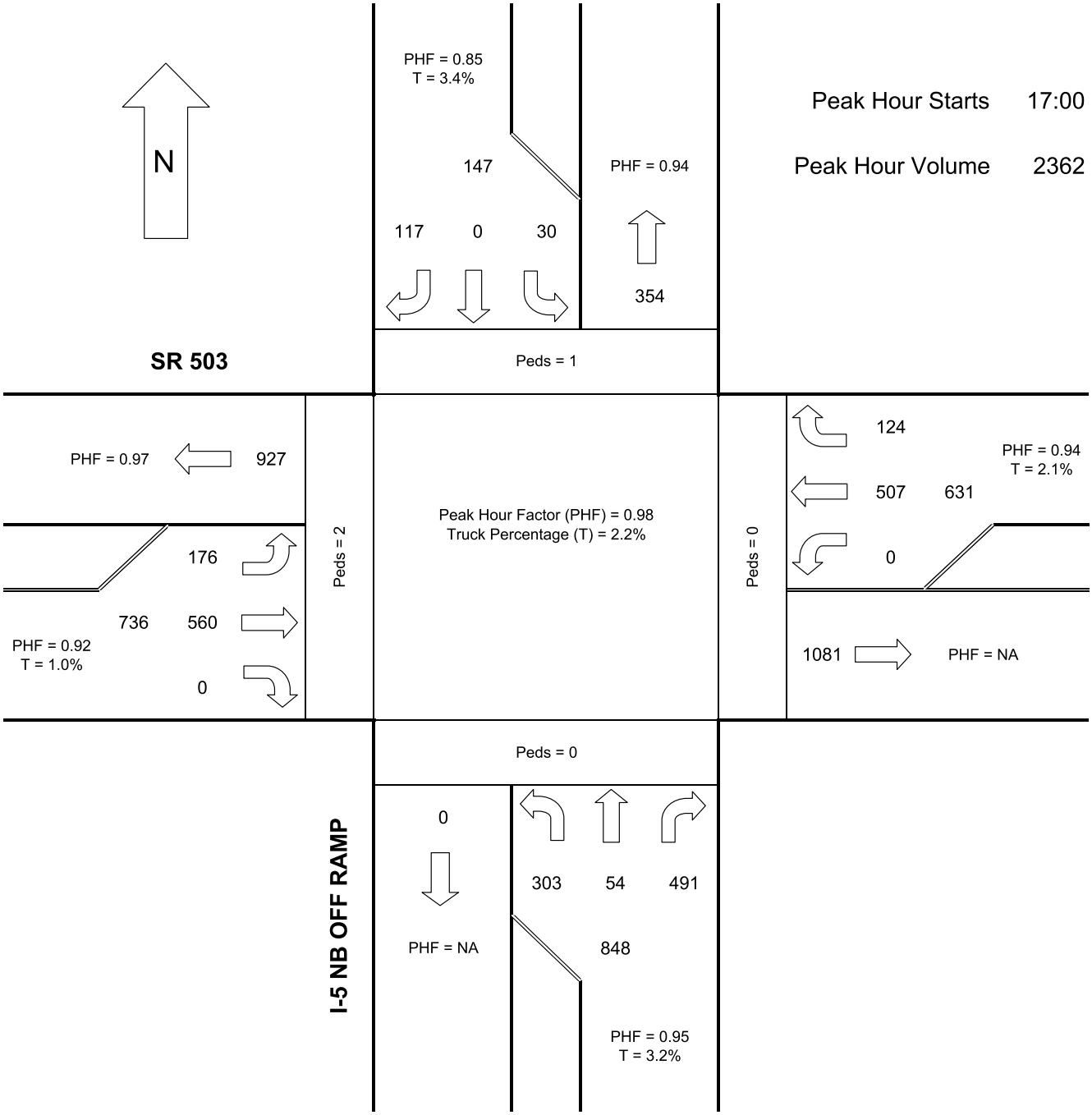
Intersection Turning Movement

Peak Hour Diagram

Location SR 503 AT I-5 NB OFF RAMP
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: CR



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Intersection Turning Movement

Summary Report

Location SR 503 AT I-5 SB ON RAMP-PACIFIC AVENUE
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:02
Reviewed By: BV

	Eastbound			Westbound			Northbound			Southbound			
Time Period	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
16:02 - 16:17	26	106	9	71	107	67	0	0	0	2	52	65	505
16:17 - 16:32	36	89	15	73	94	68	0	0	0	15	39	73	502
16:32 - 16:47	36	91	18	69	76	71	0	0	0	10	51	86	508
16:47 - 17:02	32	96	16	76	101	50	0	0	0	12	57	83	523
17:02 - 17:17	54	113	21	66	101	54	0	0	0	8	35	75	527
17:17 - 17:32	42	114	12	71	108	73	0	0	0	5	49	83	557
17:32 - 17:47	31	84	16	64	96	51	0	0	0	7	32	77	458
17:47 - 18:02	16	69	11	69	98	44	0	0	0	6	32	78	423
Movement Totals	273	762	118	559	781	478	0	0	0	65	347	620	4003
Enter Totals	1153			1818			0			1032			
Exit Totals	1382			846			677			1098			

Two-Hour Totals

Light Trucks	7	7	1	5	28	13	0	0	0	3	7	14	85
Medium Trucks	1	3	0	5	1	13	0	0	0	2	2	7	34
Heavy Trucks	1	1	1	3	4	3	0	0	0	10	20	1	44
% Trucks	3.3%	1.4%	1.7%	2.3%	4.2%	6.1%	NA	NA	NA	23.1%	8.4%	3.5%	4.1%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0

	South	West	East	North	
Pedestrians	11	1	0	19	31

Peak Hour Information

Peak Hour 16:32 17:32

	Eastbound			Westbound			Northbound			Southbound			
	Right	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
Movement Total	164	414	67	282	386	248	0	0	0	35	192	327	2115
Peak Hour Factor	0.76	0.91	0.80	0.93	0.89	0.85	NA	NA	NA	0.73	0.84	0.95	0.95
Enter Totals	645			916			0			554			
Peak Hour Factor	0.86			0.91			NA			0.91			
Exit Totals	741			421			349			604			
Peak Hour Factor	0.94			0.93			0.95			0.92			
Light Trucks	6	3	0	1	10	10	0	0	0	2	2	4	38
Medium Trucks	1	1	0	0	0	6	0	0	0	0	1	4	13
Heavy Trucks	1	0	1	1	0	1	0	0	0	3	8	0	15
% Trucks	4.9%	1.0%	1.5%	0.7%	2.6%	6.9%	NA	NA	NA	14.3%	5.7%	2.4%	3.1%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0

	South	West	East	North	
Pedestrians	3	1	0	9	13

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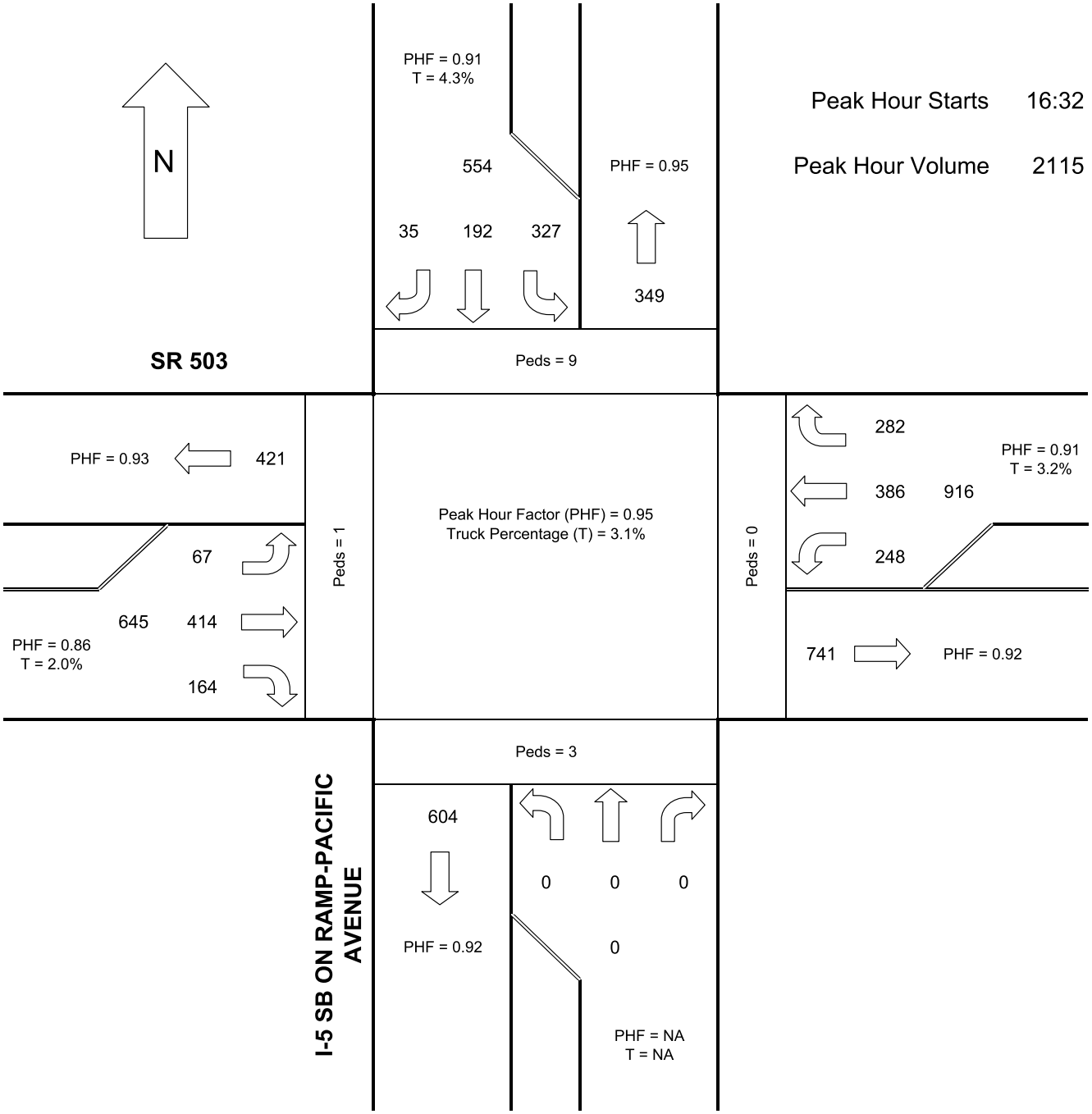
Intersection Turning Movement

Peak Hour Diagram

Location SR 503 AT I-5 SB ON RAMP-PACIFIC AVENUE
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:02
Reviewed By: BV



TrafStats

1225 NW Murray St. Suite 110
Portland, OR 97229 503-646-2942

Location	: LEWIS RIVER RD/SR 503	Site:	000000000000
Description 2	: NORTH OF McCRACKEN ROAD	Date:	6/19/2007
Description 3	: WOODLAND, WA		Tuesday

24 Hour Volume (2 Channel/pg., 60 Min.)

Interval Begin	SB	NB	Combined
12:00 AM	8	27	35
1:00 AM	4	16	20
2:00 AM	7	13	20
3:00 AM	18	13	31
4:00 AM	51	31	82
5:00 AM	171	46	217
6:00 AM	263	62	325
7:00 AM	295	72	367
8:00 AM	230	126	356
9:00 AM	148	100	248
10:00 AM	166	105	271
11:00 AM	164	92	256
12:00 PM	158	74	232
1:00 PM	191	50	241
2:00 PM	209	24	233
3:00 PM	207	32	239
4:00 PM	197	42	239
5:00 PM	208	107	315
6:00 PM	198	117	315
7:00 PM	132	151	283
8:00 PM	104	104	208
9:00 PM	92	98	190
10:00 PM	45	70	115
11:00 PM	17	27	44
Totals	3283	1599	4882
	67.2 %	32.8 %	

Peak Hours

AM	7:00 AM	8:00 AM	7:00 AM
Volume	295	126	367
PM	2:00 PM	7:00 PM	5:00 PM
Volume	209	151	315

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Intersection Turning Movement

Summary Report

Location W SCOTT AVENUE AT I-5 SB OFF RAMP- PACIFIC AVENUE
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: BV

	Eastbound			Westbound			Northbound			Southbound			
Time Period	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
16:00 - 16:15	9	0	0	0	0	0	0	0	21	0	52	0	82
16:15 - 16:30	15	0	0	0	0	0	0	0	17	3	70	0	105
16:30 - 16:45	36	0	0	0	0	0	0	0	17	1	77	0	131
16:45 - 17:00	17	0	0	0	0	0	0	0	18	2	68	0	105
17:00 - 17:15	28	0	0	0	0	0	0	0	22	4	79	0	133
17:15 - 17:30	12	0	0	0	0	0	0	0	20	1	76	0	109
17:30 - 17:45	12	0	0	0	0	0	0	0	18	5	69	0	104
17:45 - 18:00	14	0	0	0	0	0	0	0	22	6	60	0	102
Movement Totals	143	0	0	0	0	0	0	0	155	22	551	0	871
Enter Totals	143			0			155			573			
Exit Totals	0			177			0			694			

Two-Hour Totals

Light Trucks	5	0	0	0	0	0	0	0	5	1	12	0	23
Medium Trucks	2	0	0	0	0	0	0	0	1	1	8	0	12
Heavy Trucks	7	0	0	0	0	0	0	0	5	5	19	0	36
% Trucks	9.8%	NA	NA	NA	NA	NA	NA	NA	7.1%	31.8%	7.1%	NA	8.2%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0

	South	West	East	North	
Pedestrians	0	0	0	0	0

Peak Hour Information

Peak Hour 16:30 17:30

	Eastbound			Westbound			Northbound			Southbound			
	Right	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Right**	**Thru**	**Left**	**Totals**
Movement Total	93	0	0	0	0	0	0	0	77	8	300	0	478
Peak Hour Factor	0.65	NA	NA	NA	NA	NA	NA	NA	0.88	0.50	0.95	NA	0.90
Enter Totals	93			0			77			308			
Peak Hour Factor	0.65			NA			0.88			0.93			
Exit Totals	0			85			0			393			
Peak Hour Factor	NA			0.82			NA			0.87			
Light Trucks	3	0	0	0	0	0	0	0	2	0	8	0	13
Medium Trucks	2	0	0	0	0	0	0	0	0	0	3	0	5
Heavy Trucks	3	0	0	0	0	0	0	0	2	2	9	0	16
% Trucks	8.6%	NA	NA	NA	NA	NA	NA	NA	5.2%	25.0%	6.7%	NA	7.1%
Stopped Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0

	South	West	East	North	
Pedestrians	0	0	0	0	0

TRAFSTATS
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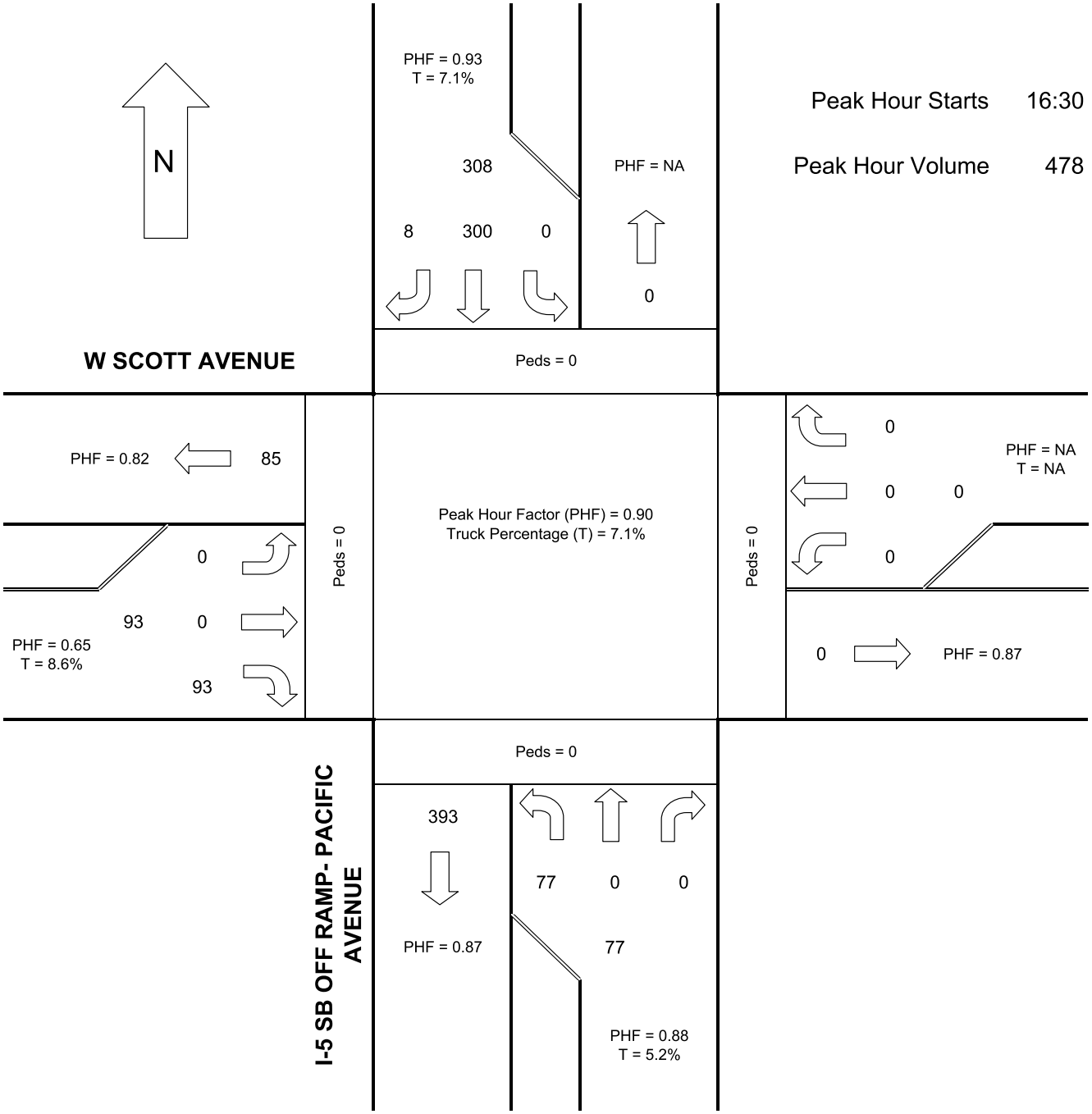
Intersection Turning Movement

Peak Hour Diagram

Location W SCOTT AVENUE AT I-5 SB OFF RAMP- PACIFIC AVENUE
Date 6/19/2007
Day of Week Tuesday
Time Begin 16:00
Reviewed By: BV



Peak Hour Starts	16:30
Peak Hour Volume	478

APPENDIX B

2007 Intersection Analysis Worksheets

1: Dike Access Rd & Robinson Rd

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	35	0	5	35	0	0	0	5	0	0	0
Peak Hour Factor	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76	0.76
Hourly flow rate (vph)	0	46	0	7	46	0	0	0	7	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	46			46			105	105	46	112	105	46
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	46			46			105	105	46	112	105	46
tC, single (s)	4.1			4.2			7.3	6.8	6.5	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.7	4.2	3.5	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	100
cM capacity (veh/h)	1575			1494			820	740	962	862	785	1029

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	46	53	7	0
Volume Left	0	7	0	0
Volume Right	0	0	7	0
cSH	1575	1494	962	1700
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (ft)	0	0	1	0
Control Delay (s)	0.0	1.0	8.8	0.0
Lane LOS		A	A	A
Approach Delay (s)	0.0	1.0	8.8	0.0
Approach LOS			A	A

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	16.1%	ICU Level of Service	A
Analysis Period (min)	15		

2: Dike Access Rd & Shurman Way

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	35	5	40	35	5	240
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	41	6	47	41	6	282
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			47		179	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			47		179	44
tC, single (s)			4.4		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.4		3.5	3.3
p0 queue free %			97		99	72
cM capacity (veh/h)			1414		777	1017

Direction, Lane #	EB 1	WB 1	WB 2	NB 1	NB 2
Volume Total	47	47	41	6	282
Volume Left	0	47	0	6	0
Volume Right	6	0	0	0	282
cSH	1700	1414	1700	777	1017
Volume to Capacity	0.03	0.03	0.02	0.01	0.28
Queue Length 95th (ft)	0	3	0	1	28
Control Delay (s)	0.0	7.6	0.0	9.7	9.9
Lane LOS		A		A	A
Approach Delay (s)	0.0	4.1		9.9	
Approach LOS				A	

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	24.9%	ICU Level of Service	A
Analysis Period (min)	15		

3: Dike Access Rd & I-5 SB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	175	100	55	45	0	0	0	0	110	5	30
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	0	206	118	65	53	0	0	0	0	129	6	35
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	53			324			485	447	265	447	506	53
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	53			324			485	447	265	447	506	53
tC, single (s)	4.1			4.2			7.1	6.5	6.2	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.3			3.5	4.0	3.3	3.6	4.1	3.4
p0 queue free %	100			95			100	100	100	73	99	96
cM capacity (veh/h)	1540			1193			453	482	779	486	432	990

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	324	118	171
Volume Left	0	65	129
Volume Right	118	0	35
cSH	1700	1193	540
Volume to Capacity	0.19	0.05	0.32
Queue Length 95th (ft)	0	4	34
Control Delay (s)	0.0	4.7	14.7
Lane LOS		A	B
Approach Delay (s)	0.0	4.7	14.7
Approach LOS			B

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

4: Dike Access Rd & I-5 NB Ramps

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	115	170	0	0	75	40	25	0	50	0	0	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	128	189	0	0	83	44	28	0	56	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	128			189			550	572	189	606	550	106
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	128			189			550	572	189	606	550	106
tC, single (s)	4.2			4.1			7.2	6.6	6.3	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.2			3.6	4.1	3.4	3.5	4.0	3.3
p0 queue free %	91			100			93	100	93	100	100	100
cM capacity (veh/h)	1416			1367			401	379	828	358	405	954

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	317	128	83
Volume Left	128	0	28
Volume Right	0	44	56
cSH	1416	1700	611
Volume to Capacity	0.09	0.08	0.14
Queue Length 95th (ft)	7	0	12
Control Delay (s)	3.6	0.0	11.8
Lane LOS	A		B
Approach Delay (s)	3.6	0.0	11.8
Approach LOS			B

Intersection Summary			
Average Delay	4.0		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

5: Green Mtn Rd & Old Pacific Hwy

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	25	25	95	40	50	175
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	29	29	112	47	59	206
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	459	135			159	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	459	135			159	
tC, single (s)	6.5	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.3	
p0 queue free %	94	97			96	
cM capacity (veh/h)	518	885			1391	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	59	159	265
Volume Left	29	0	59
Volume Right	29	47	0
cSH	653	1700	1391
Volume to Capacity	0.09	0.09	0.04
Queue Length 95th (ft)	7	0	3
Control Delay (s)	11.1	0.0	2.0
Lane LOS	B		A
Approach Delay (s)	11.1	0.0	2.0
Approach LOS	B		

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

6: Guild Rd & Shurman Way

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	10	15	20	130	45	5
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	12	18	24	155	54	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	179				143	101
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	179				143	101
tC, single (s)	4.1				6.6	6.5
tC, 2 stage (s)						
tF (s)	2.2				3.7	3.5
p0 queue free %	99				93	99
cM capacity (veh/h)	1409				792	895

Direction, Lane #	EB 1	EB 2	WB 1	SB 1	SB 2
Volume Total	12	18	179	54	6
Volume Left	12	0	0	54	0
Volume Right	0	0	155	0	6
cSH	1409	1700	1700	792	895
Volume to Capacity	0.01	0.01	0.11	0.07	0.01
Queue Length 95th (ft)	1	0	0	5	1
Control Delay (s)	7.6	0.0	0.0	9.9	9.1
Lane LOS	A			A	A
Approach Delay (s)	3.0		0.0	9.8	
Approach LOS				A	

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	19.1%	ICU Level of Service	A
Analysis Period (min)	15		

7: W Scott Ave & N Pekin Rd

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Volume (veh/h)	50	20	25	90	45	15
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	59	24	29	106	53	18
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			82		235	71
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			82		235	71
tC, single (s)			4.1		6.5	6.3
tC, 2 stage (s)						
tF (s)			2.2		3.6	3.4
p0 queue free %			98		93	98
cM capacity (veh/h)			1502		725	975

Direction, Lane #	EB 1	WB 1	WB 2	NB 1
Volume Total	82	29	106	71
Volume Left	0	29	0	53
Volume Right	24	0	0	18
cSH	1700	1502	1700	775
Volume to Capacity	0.05	0.02	0.06	0.09
Queue Length 95th (ft)	0	1	0	7
Control Delay (s)	0.0	7.4	0.0	10.1
Lane LOS		A		B
Approach Delay (s)	0.0	1.6		10.1
Approach LOS				B

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	18.1%	ICU Level of Service	A
Analysis Period (min)	15		

8: W Scott Ave & Pacific Ave

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	0	75	75	0	300	20
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	83	83	0	333	22
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	511	344	356			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	511	344	356			
tC, single (s)	6.5	6.3	4.2			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.3			
p0 queue free %	100	88	93			
cM capacity (veh/h)	468	676	1145			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	83	83	356
Volume Left	0	83	0
Volume Right	83	0	22
cSH	676	1145	1700
Volume to Capacity	0.12	0.07	0.21
Queue Length 95th (ft)	10	6	0
Control Delay (s)	11.1	8.4	0.0
Lane LOS	B	A	
Approach Delay (s)	11.1	8.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	28.3%	ICU Level of Service	A
Analysis Period (min)	15		

9: E Scott Ave & Atlantic Ave

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Volume (veh/h)	50	30	230	60	0	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	53	32	245	64	0	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	245	245			309	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	245	245			309	
tC, single (s)	6.5	6.3			4.1	
tC, 2 stage (s)						
tF (s)	3.6	3.4			2.2	
p0 queue free %	93	96			100	
cM capacity (veh/h)	731	780			1264	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2
Volume Total	53	32	245	64
Volume Left	53	0	0	0
Volume Right	0	32	0	64
cSH	731	780	1700	1700
Volume to Capacity	0.07	0.04	0.14	0.04
Queue Length 95th (ft)	6	3	0	0
Control Delay (s)	10.3	9.8	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	10.1		0.0	
Approach LOS	B			

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	22.1%	ICU Level of Service	A
Analysis Period (min)	15		

10: E Scott Ave & Old Pacific Hwy

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	20	15	15	10	20	60	15	60	0	95	80	35
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	22	17	17	11	22	67	17	67	0	107	90	39

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	56	101	84	236
Volume Left (vph)	22	11	17	107
Volume Right (vph)	17	67	0	39
Hadj (s)	-0.05	-0.28	0.09	0.13
Departure Headway (s)	4.7	4.5	4.6	4.5
Degree Utilization, x	0.07	0.13	0.11	0.30
Capacity (veh/h)	697	745	735	765
Control Delay (s)	8.1	8.1	8.2	9.4
Approach Delay (s)	8.1	8.1	8.2	9.4
Approach LOS	A	A	A	A

Intersection Summary			
Delay	8.8		
HCM Level of Service	A		
Intersection Capacity Utilization	32.1%	ICU Level of Service	A
Analysis Period (min)	15		

14: Caples Rd & N Pekin Rd

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	20	25	45	60	5
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	5	22	27	49	66	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	173	69	71			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	173	69	71			
tC, single (s)	6.5	6.3	4.1			
tC, 2 stage (s)						
tF (s)	3.6	3.4	2.2			
p0 queue free %	99	98	98			
cM capacity (veh/h)	778	964	1542			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	27	77	71
Volume Left	5	27	0
Volume Right	22	0	5
cSH	920	1542	1700
Volume to Capacity	0.03	0.02	0.04
Queue Length 95th (ft)	2	1	0
Control Delay (s)	9.0	2.7	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	2.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	20.4%	ICU Level of Service	A
Analysis Period (min)	15		

15: Davidson Ave & 5th St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	5	60	20	65	35	5	20	15	60	0	20	10
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Hourly flow rate (vph)	6	69	23	75	40	6	23	17	69	0	23	11
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	46			92			307	287	80	362	296	43
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	46			92			307	287	80	362	296	43
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.2	6.6	6.3
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.6	4.1	3.4
p0 queue free %	100			95			96	97	93	100	96	99
cM capacity (veh/h)	1562			1503			588	585	971	509	575	1013

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	98	121	109	34
Volume Left	6	75	23	0
Volume Right	23	6	69	11
cSH	1562	1503	782	672
Volume to Capacity	0.00	0.05	0.14	0.05
Queue Length 95th (ft)	0	4	12	4
Control Delay (s)	0.5	4.8	10.3	10.6
Lane LOS	A	A	B	B
Approach Delay (s)	0.5	4.8	10.3	10.6
Approach LOS			B	B

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	31.3%	ICU Level of Service	A
Analysis Period (min)	15		

16: Buckeye St & Lewis River Rd (SR 503)

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Volume (veh/h)	100	5	10	10	10	85	5	460	5	70	250	110
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	5	11	11	11	92	5	500	5	76	272	120
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)											362	
pX, platoon unblocked	0.83	0.83	0.83	0.83	0.83		0.83					
vC, conflicting volume	1095	1000	332	1011	1057	503	391			505		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1114	1000	197	1013	1069	503	269			505		
tC, single (s)	7.1	6.5	6.2	7.2	6.6	6.3	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.1	3.4	2.2			2.3		
p0 queue free %	6	97	98	93	93	83	99			93		
cM capacity (veh/h)	116	187	705	160	166	557	1073			1034		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	125	114	511	467
Volume Left	109	11	5	76
Volume Right	11	92	5	120
cSH	127	381	1073	1034
Volume to Capacity	0.98	0.30	0.01	0.07
Queue Length 95th (ft)	168	31	0	6
Control Delay (s)	141.9	18.4	0.1	2.1
Lane LOS	F	C	A	A
Approach Delay (s)	141.9	18.4	0.1	2.1
Approach LOS	F	C		

Intersection Summary			
Average Delay	17.2		
Intersection Capacity Utilization	71.6%	ICU Level of Service	C
Analysis Period (min)	15		

17: Lewis River Rd (SR 503) & Pacific Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0		4.0	4.0	4.0				4.0	4.0	4.0
Lane Util. Factor	1.00	0.95		1.00	1.00	1.00				1.00	1.00	1.00
Frt	1.00	0.96		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
Satd. Flow (prot)	1752	3355		1719	1810	1538				1719	1810	1538
Flt Permitted	0.95	1.00		0.95	1.00	1.00				0.95	1.00	1.00
Satd. Flow (perm)	1752	3355		1719	1810	1538				1719	1810	1538
Volume (vph)	65	415	165	245	375	275	0	0	0	325	190	55
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)	68	437	174	258	395	289	0	0	0	342	200	58
RTOR Reduction (vph)	0	68	0	0	0	178	0	0	0	0	0	41
Lane Group Flow (vph)	68	543	0	258	395	111	0	0	0	342	200	17
Heavy Vehicles (%)	3%	3%	3%	5%	5%	5%	0%	0%	0%	5%	5%	5%
Turn Type	Prot			Prot		Perm				Split		Perm
Protected Phases	1	6		5	2					4	4	
Permitted Phases						2						4
Actuated Green, G (s)	3.8	13.7		9.1	19.0	19.0				14.5	14.5	14.5
Effective Green, g (s)	3.8	13.7		9.1	19.0	19.0				14.5	14.5	14.5
Actuated g/C Ratio	0.08	0.28		0.18	0.39	0.39				0.29	0.29	0.29
Clearance Time (s)	4.0	4.0		4.0	4.0	4.0				4.0	4.0	4.0
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0				3.0	3.0	3.0
Lane Grp Cap (vph)	135	932		317	698	593				506	532	452
v/s Ratio Prot	0.04	c0.16		c0.15	c0.22					c0.20	0.11	
v/s Ratio Perm						0.07						0.01
v/c Ratio	0.50	0.58		0.81	0.57	0.19				0.68	0.38	0.04
Uniform Delay, d1	21.8	15.3		19.3	11.9	10.0				15.3	13.8	12.4
Progression Factor	1.00	1.00		1.00	1.00	1.00				1.00	1.00	1.00
Incremental Delay, d2	2.9	0.9		14.7	1.1	0.2				3.6	0.4	0.0
Delay (s)	24.8	16.3		34.0	13.0	10.2				18.9	14.3	12.5
Level of Service	C	B		C	B	B				B	B	B
Approach Delay (s)		17.1			17.9			0.0			16.7	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	17.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	49.3	Sum of lost time (s)	8.0
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

18: Lewis River Rd (SR 503) & Atlantic Ave

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0			4.0	4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95			1.00	1.00	1.00		1.00
Frt	1.00	1.00			0.97			1.00	0.85	1.00		0.85
Flt Protected	0.95	1.00			1.00			0.96	1.00	0.95		1.00
Satd. Flow (prot)	1770	3539			3337			1738	1538	1703		1524
Flt Permitted	0.95	1.00			1.00			0.96	1.00	0.95		1.00
Satd. Flow (perm)	1770	3539			3337			1738	1538	1703		1524
Volume (vph)	210	530	0	0	470	115	295	65	475	30	0	130
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	214	541	0	0	480	117	301	66	485	31	0	133
RTOR Reduction (vph)	0	0	0	0	21	0	0	0	392	0	0	115
Lane Group Flow (vph)	214	541	0	0	576	0	0	367	93	31	0	18
Heavy Vehicles (%)	2%	2%	2%	5%	5%	5%	5%	5%	5%	6%	6%	6%
Turn Type	Prot						Split		Prot	Prot		custom
Protected Phases	1	6			2 8		3	3	3	4		
Permitted Phases												4
Actuated Green, G (s)	9.1	17.7			31.0			17.1	17.1	11.7		11.7
Effective Green, g (s)	9.1	17.7			31.0			17.1	17.1	11.7		11.7
Actuated g/C Ratio	0.10	0.20			0.35			0.19	0.19	0.13		0.13
Clearance Time (s)	4.0	4.0						4.0	4.0	4.0		4.0
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0		3.0
Lane Grp Cap (vph)	181	705			1164			334	296	224		201
v/s Ratio Prot	c0.12	c0.15			c0.17			c0.21	0.06	c0.02		
v/s Ratio Perm												0.01
v/c Ratio	1.18	0.77			0.49			1.10	0.32	0.14		0.09
Uniform Delay, d1	39.9	33.7			22.8			35.9	30.9	34.1		33.9
Progression Factor	1.00	1.00			0.17			1.00	1.00	1.00		1.00
Incremental Delay, d2	124.5	5.0			0.2			78.4	0.6	0.3		0.2
Delay (s)	164.4	38.7			4.2			114.3	31.5	34.4		34.1
Level of Service	F	D			A			F	C	C		C
Approach Delay (s)		74.3			4.2			67.2			34.2	
Approach LOS		E			A			E			C	

Intersection Summary			
HCM Average Control Delay	51.3	HCM Level of Service	D
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	16.0
Intersection Capacity Utilization	64.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

19: Lewis River Rd (SR 503) & CC St

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0		4.0	4.0	4.0	4.0
Lane Util. Factor	0.95		1.00	0.95	1.00	1.00
Frt	0.96		1.00	1.00	1.00	0.85
Flt Protected	1.00		0.95	1.00	0.95	1.00
Satd. Flow (prot)	3413		1736	3471	1719	1538
Flt Permitted	1.00		0.95	1.00	0.95	1.00
Satd. Flow (perm)	3413		1736	3471	1719	1538
Volume (vph)	790	245	110	410	175	70
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	814	253	113	423	180	72
RTOR Reduction (vph)	30	0	0	0	0	60
Lane Group Flow (vph)	1037	0	113	423	180	12
Heavy Vehicles (%)	2%	2%	4%	4%	5%	5%
Turn Type			Prot			Perm
Protected Phases	3 4 6		5	2	8	
Permitted Phases						8
Actuated Green, G (s)	54.5		7.1	15.7	15.3	15.3
Effective Green, g (s)	54.5		7.1	15.7	15.3	15.3
Actuated g/C Ratio	0.61		0.08	0.18	0.17	0.17
Clearance Time (s)			4.0	4.0	4.0	4.0
Vehicle Extension (s)			3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	2092		139	613	296	265
v/s Ratio Prot	c0.30		c0.07	c0.12	c0.10	
v/s Ratio Perm						0.01
v/c Ratio	0.50		0.81	0.69	0.61	0.05
Uniform Delay, d1	9.6		40.2	34.3	34.0	30.7
Progression Factor	0.46		1.00	1.00	1.00	1.00
Incremental Delay, d2	0.1		29.1	3.3	3.5	0.1
Delay (s)	4.5		69.4	37.7	37.5	30.8
Level of Service	A		E	D	D	C
Approach Delay (s)	4.5			44.3	35.6	
Approach LOS	A			D	D	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	88.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	70	10	10	745	510	70
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	75	11	11	801	548	75
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1409	586	624			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1409	586	624			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	50	98	99			
cM capacity (veh/h)	150	506	957			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	86	812	624
Volume Left	75	11	0
Volume Right	11	0	75
cSH	164	957	1700
Volume to Capacity	0.52	0.01	0.37
Queue Length 95th (ft)	65	1	0
Control Delay (s)	48.9	0.3	0.0
Lane LOS	E	A	
Approach Delay (s)	48.9	0.3	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	2.9		
Intersection Capacity Utilization	58.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	125	5	5	685	415	55
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	134	5	5	737	446	59
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1223	476	505			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1223	476	505			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	32	99	99			
cM capacity (veh/h)	197	589	1059			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	140	742	505
Volume Left	134	5	0
Volume Right	5	0	59
cSH	202	1059	1700
Volume to Capacity	0.69	0.01	0.30
Queue Length 95th (ft)	108	0	0
Control Delay (s)	55.2	0.1	0.0
Lane LOS	F	A	
Approach Delay (s)	55.2	0.1	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	35	700	395	5	5	30
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	39	778	439	6	6	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	444				1297	442
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	444				1297	442
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	95
cM capacity (veh/h)	1121				173	618

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	817	444	39
Volume Left	39	0	6
Volume Right	0	6	33
cSH	1121	1700	452
Volume to Capacity	0.03	0.26	0.09
Queue Length 95th (ft)	3	0	7
Control Delay (s)	0.9	0.0	13.7
Lane LOS	A		B
Approach Delay (s)	0.9	0.0	13.7
Approach LOS			B

Intersection Summary			
Average Delay		1.0	
Intersection Capacity Utilization		73.2%	ICU Level of Service D
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	60	570	405	5	5	35
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	67	633	450	6	6	39
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	456				1219	453
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	456				1219	453
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				97	94
cM capacity (veh/h)	1111				184	601

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	700	456	44
Volume Left	67	0	6
Volume Right	0	6	39
cSH	1111	1700	469
Volume to Capacity	0.06	0.27	0.09
Queue Length 95th (ft)	5	0	8
Control Delay (s)	1.5	0.0	13.5
Lane LOS	A		B
Approach Delay (s)	1.5	0.0	13.5
Approach LOS			B

Intersection Summary			
Average Delay		1.4	
Intersection Capacity Utilization		68.3%	ICU Level of Service C
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	180	530	315	5	5	105
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	188	552	328	5	5	109
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	333				1258	331
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	333				1258	331
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	85				97	85
cM capacity (veh/h)	1226				161	713

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	740	333	115
Volume Left	188	0	5
Volume Right	0	5	109
cSH	1226	1700	617
Volume to Capacity	0.15	0.20	0.19
Queue Length 95th (ft)	13	0	17
Control Delay (s)	3.6	0.0	12.2
Lane LOS	A		B
Approach Delay (s)	3.6	0.0	12.2
Approach LOS			B

Intersection Summary			
Average Delay		3.4	
Intersection Capacity Utilization		71.5%	ICU Level of Service C
Analysis Period (min)		15	

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Volume (veh/h)	25	455	345	0	0	10
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	26	474	359	0	0	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type					None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	359				885	359
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	359				885	359
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				100	98
cM capacity (veh/h)	1199				310	687

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	500	359	10
Volume Left	26	0	0
Volume Right	0	0	10
cSH	1199	1700	687
Volume to Capacity	0.02	0.21	0.02
Queue Length 95th (ft)	2	0	1
Control Delay (s)	0.7	0.0	10.3
Lane LOS	A		B
Approach Delay (s)	0.7	0.0	10.3
Approach LOS			B

Intersection Summary			
Average Delay		0.5	
Intersection Capacity Utilization		54.4%	ICU Level of Service A
Analysis Period (min)		15	

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Volume (veh/h)	5	5	5	455	340	5
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Hourly flow rate (vph)	5	5	5	474	354	5
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None					
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	841	357	359			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	841	357	359			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	99	100			
cM capacity (veh/h)	335	690	1199			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	10	479	359
Volume Left	5	5	0
Volume Right	5	0	5
cSH	451	1199	1700
Volume to Capacity	0.02	0.00	0.21
Queue Length 95th (ft)	2	0	0
Control Delay (s)	13.2	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	13.2	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	37.9%	ICU Level of Service	A
Analysis Period (min)	15		

APPENDIX C

Photolog of Biological Resources

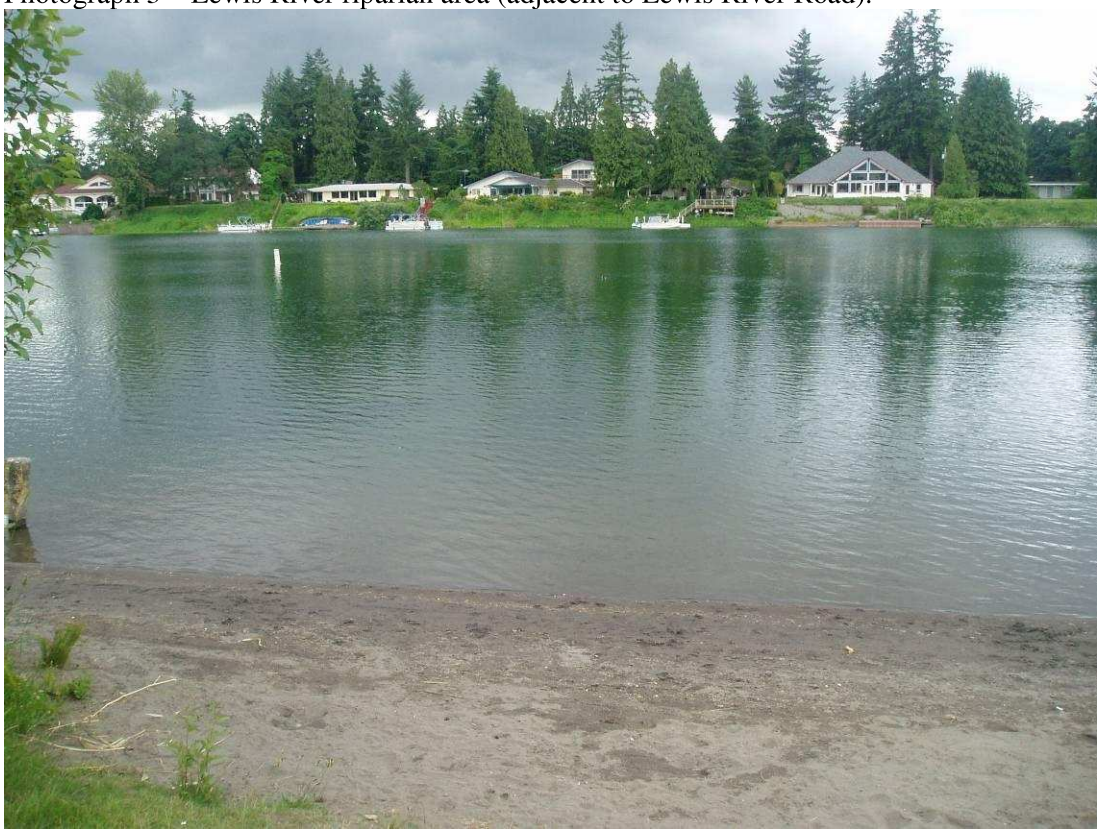
Photograph 1 – Residential area.

Photograph 2 – Commercial area.

Photograph 3 – Open field.

Photograph 4 – Horseshoe Lake Park.

Photograph 5 – Lewis River riparian area (adjacent to Lewis River Road).



Photograph 6 – Horseshoe Lake.

Photograph 7 – Lewis River.

Photograph 8 – Wetlands within Belmont Loop area.

Photograph 9 – Wetlands within Belmont Loop area.

Photograph 10 – Potential Lewis River wetlands (adjacent to Lewis River Road).

Photograph 11 – Robinson Creek, culvert beneath Lewis River Road (NE boundary of APE).

Photograph 12 – Robinson Creek fish ladder between culvert and Lewis River.