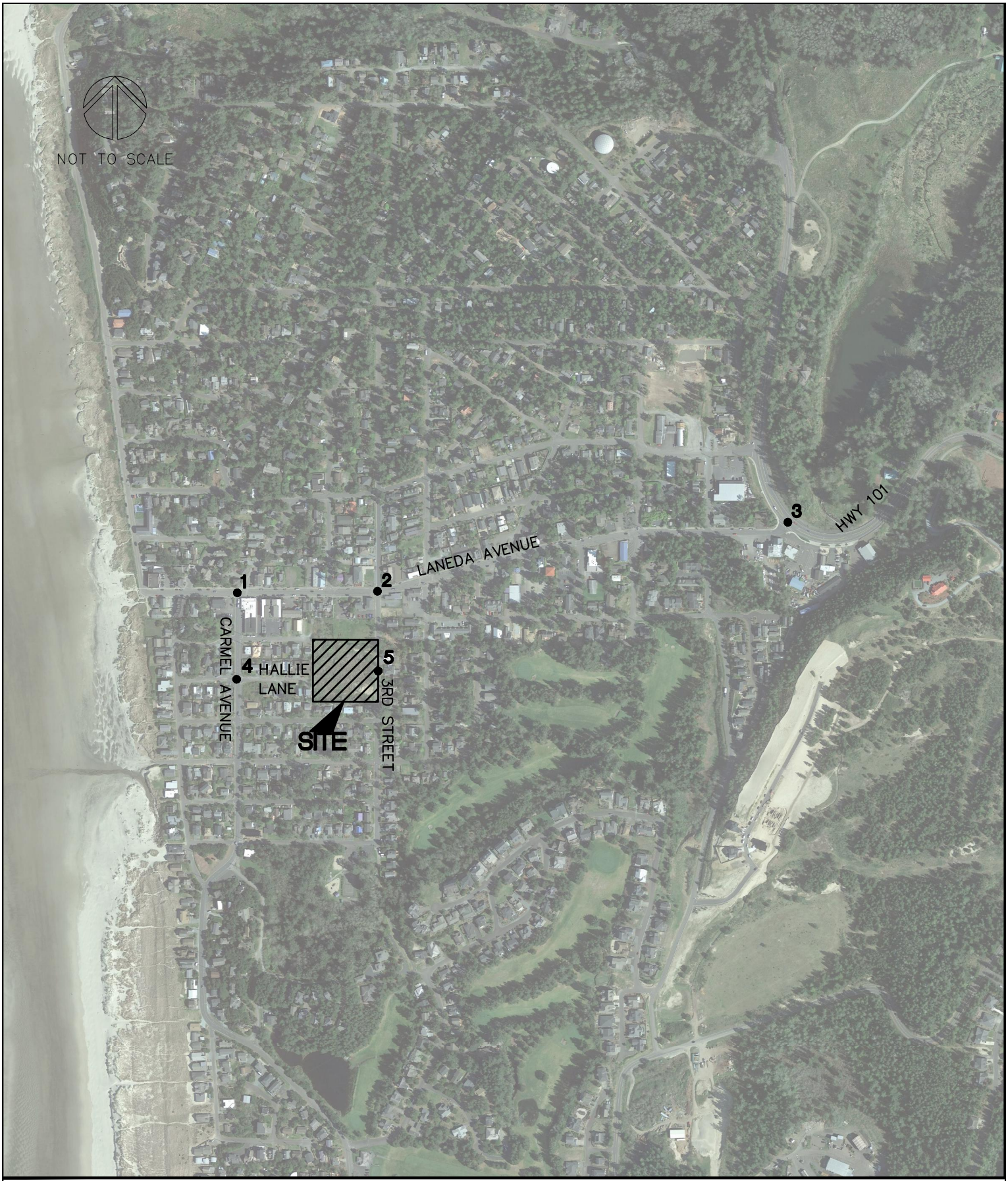
APPENDIX A

FIGURES



Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture ▪ Interiors
Planning ▪ Engineering
MACKENZIE.

DATE: 9.21.2022
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222019400

VICINITY MAP

HERON'S REST
MANZANITA, OREGON

FIGURE 1

Portland 503.224.9560
Vancouver 360.695.7879
Seattle 206.749.9993
www.mcknze.com
Architecture • Interiors
Planning • Engineering
MACKENZIE.

DATE: 9.21.2022
DRAWN BY: CNL
CHECKED BY: JTJ

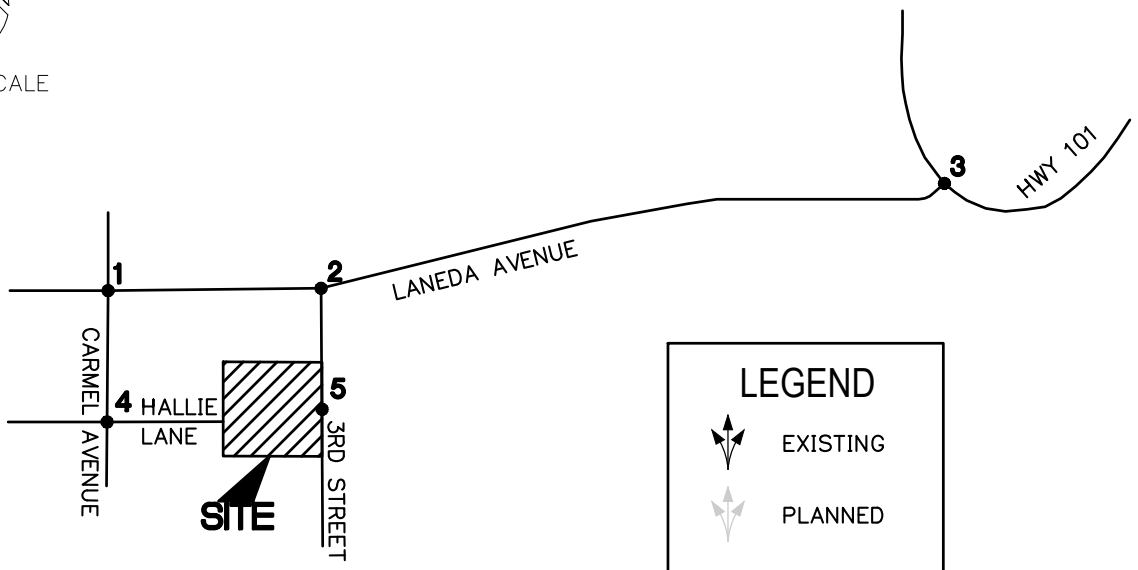
JOB NO:
222019400

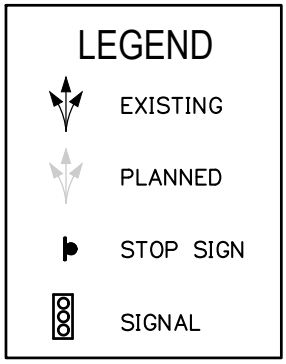
SITE PLAN

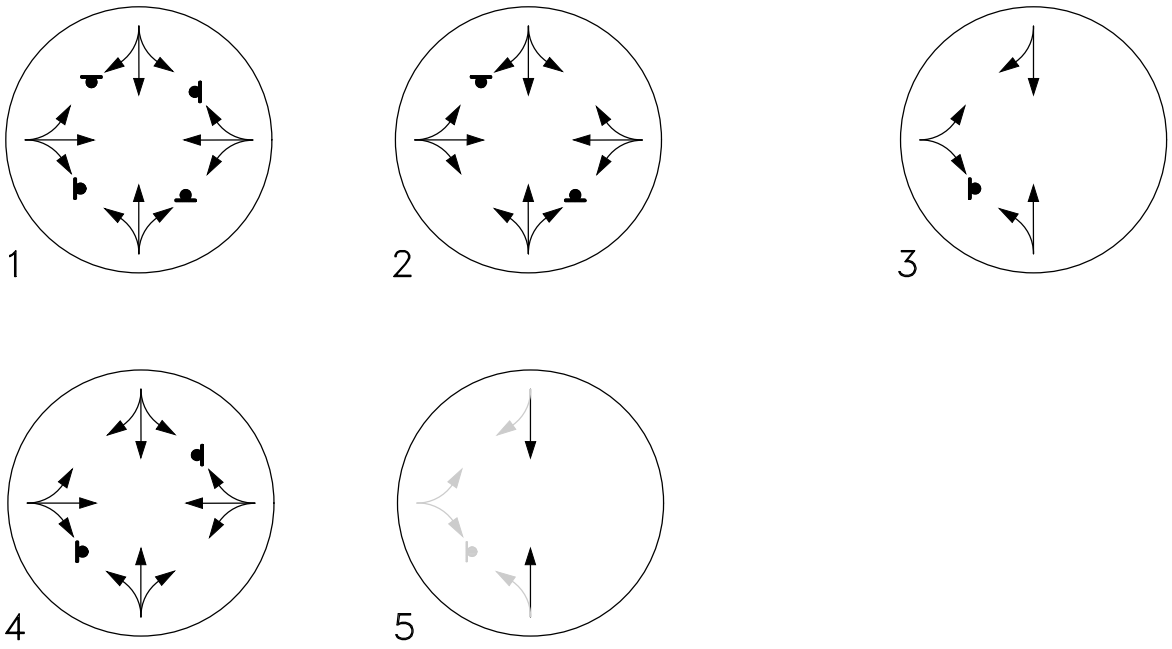
HERON'S REST
MANZANITA, OREGON

FIGURE
2

NOT TO SCALE







Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture · Interiors
Planning · Engineering
MACKENZIE

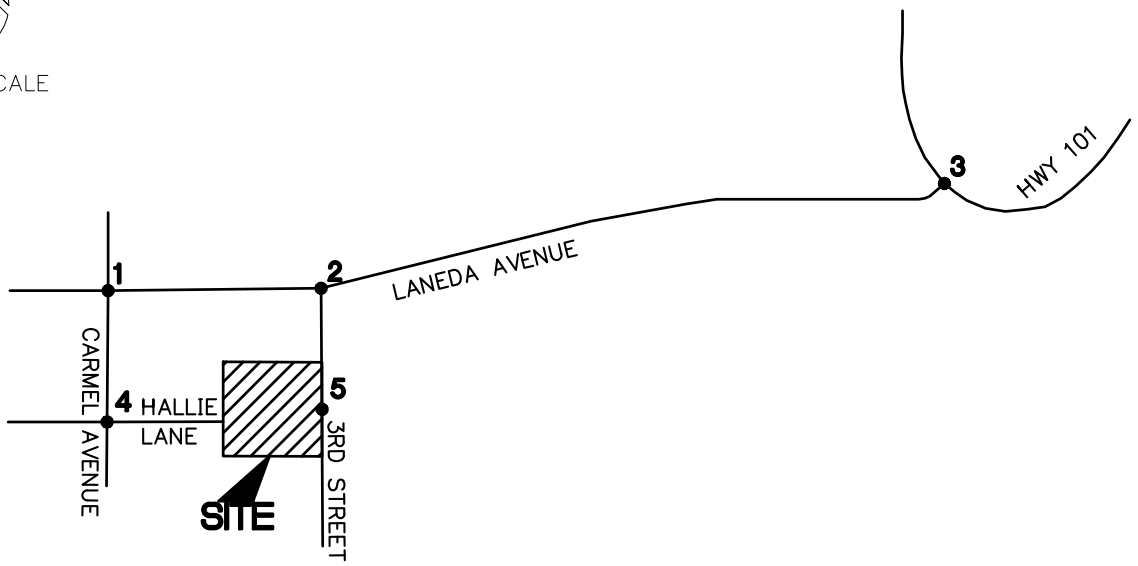
DATE: 9.21.2022
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222019400

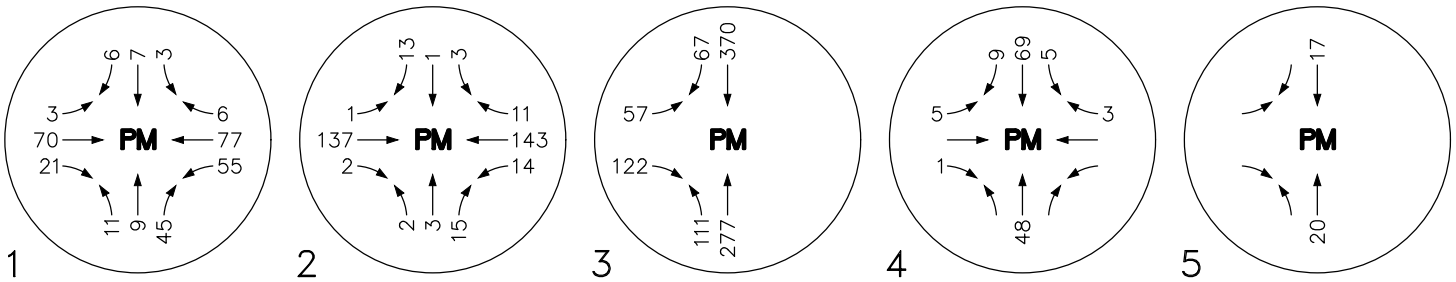
EXISTING + PLANNED TRAFFIC CONTROL DEVICES + LANE CONFIGURATIONS

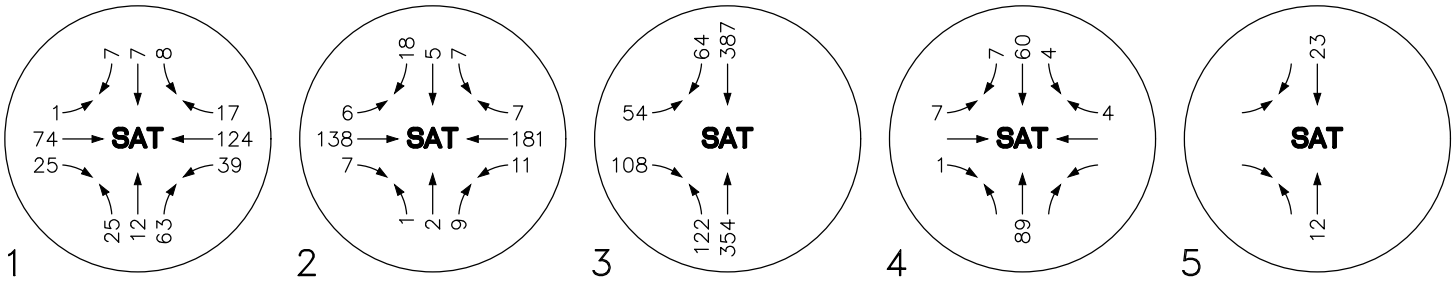
HERON'S REST
MANZANITA, OREGON

FIGURE 3

NOT TO SCALE

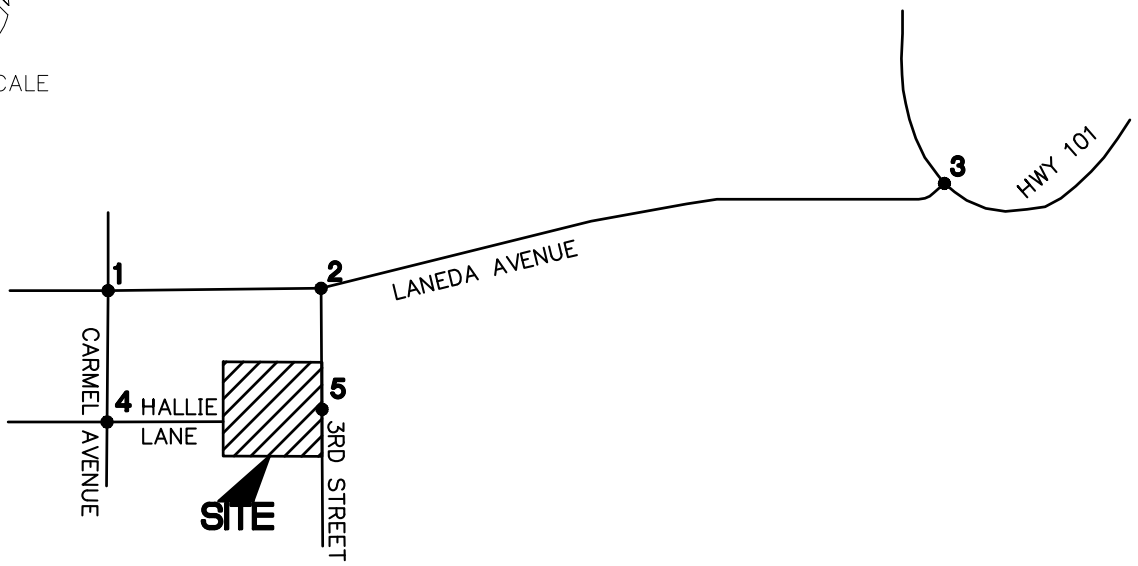


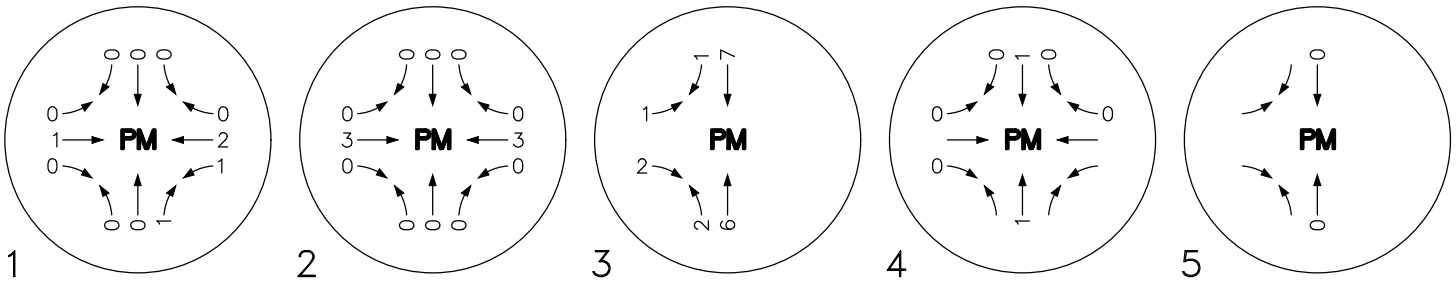


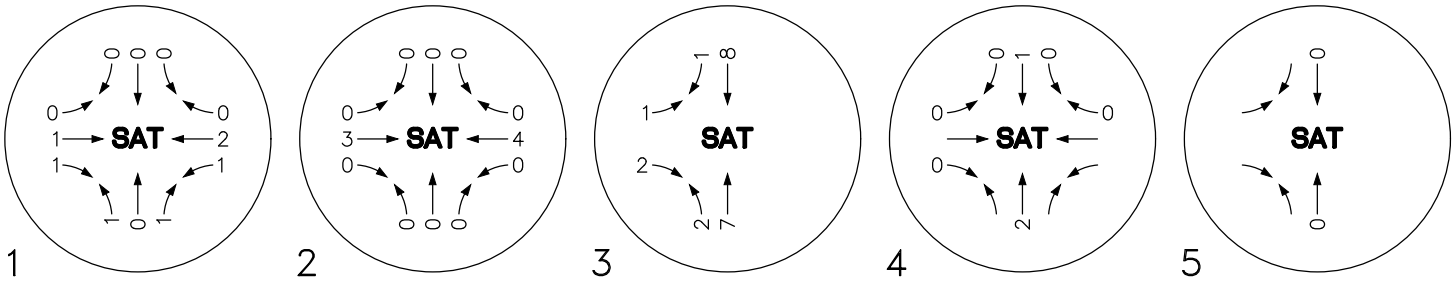


Portland 503.224.9560 · Vancouver 360.695.7879 · Seattle 206.749.9993 www.mcknze.com Architecture · Interiors Planning · Engineering MACKENZIE	DATE: 9.21.2022 DRAWN BY: CNL CHECKED BY: JTJ JOB NO: 222019400	2022 EXISTING TRAFFIC VOLUMES - HERON'S REST MANZANITA, OREGON	FIGURE 4

NOT TO SCALE







Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture • Interiors
Planning • Engineering
MACKENZIE

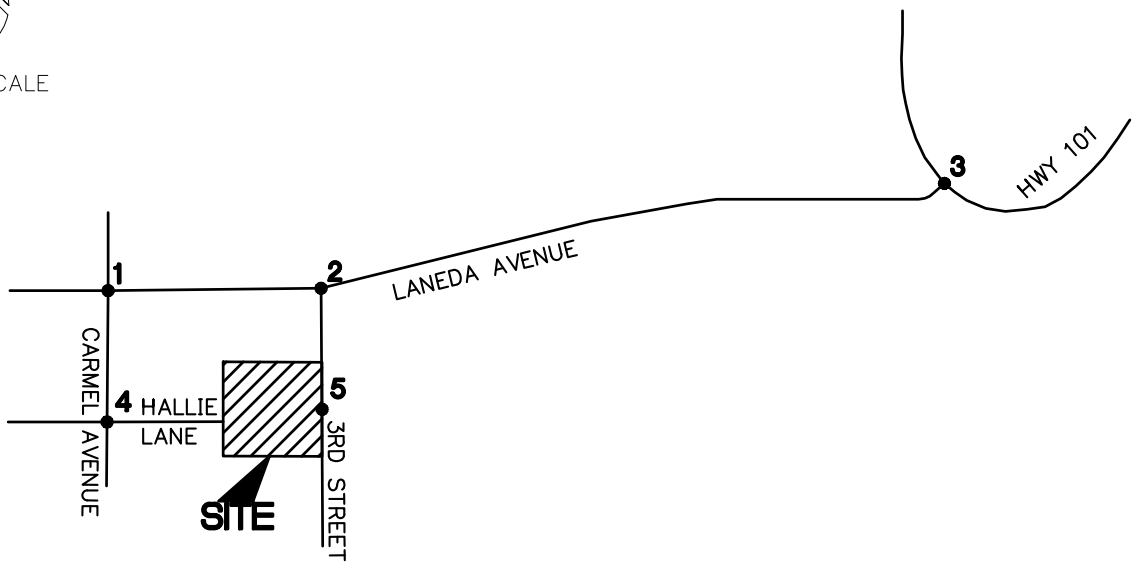
DATE: 9.21.2022
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222019400

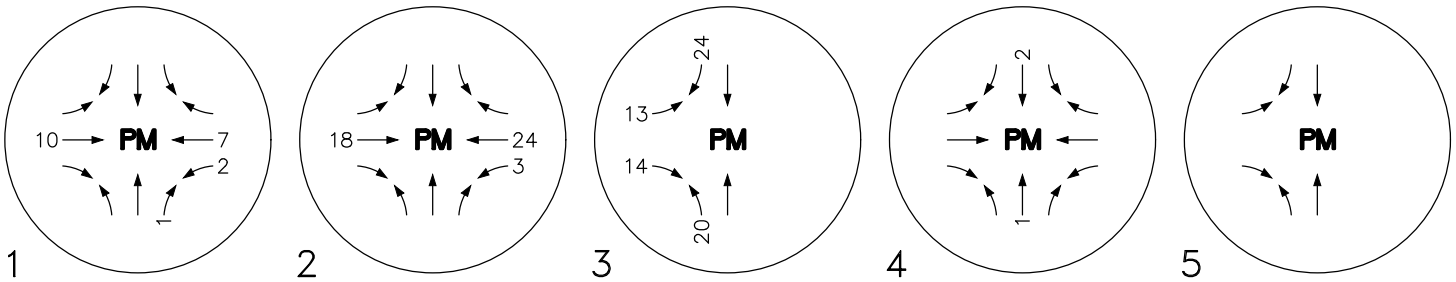
BACKGROUND TRAFFIC GROWTH 2 YEARS AT 1.0% PER YEAR -

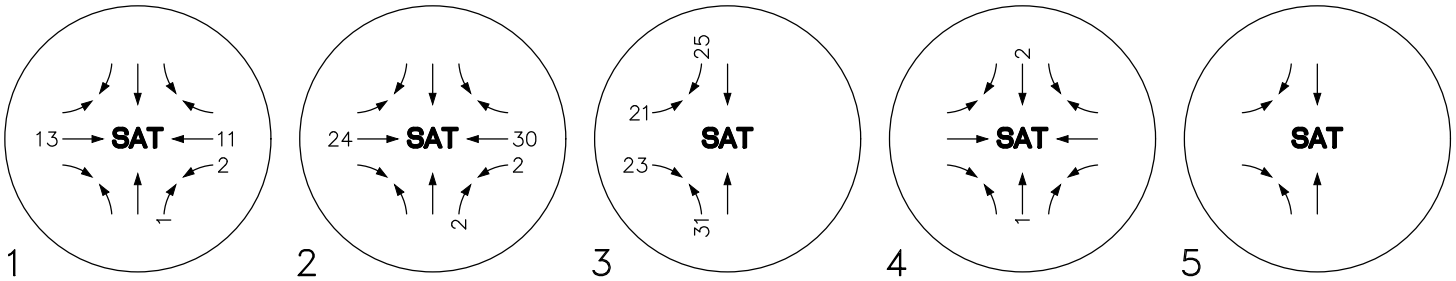
HERON'S REST
MANZANITA, OREGON

FIGURE 5

NOT TO SCALE







Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture ▪ Interiors
Planning ▪ Engineering
MACKENZIE

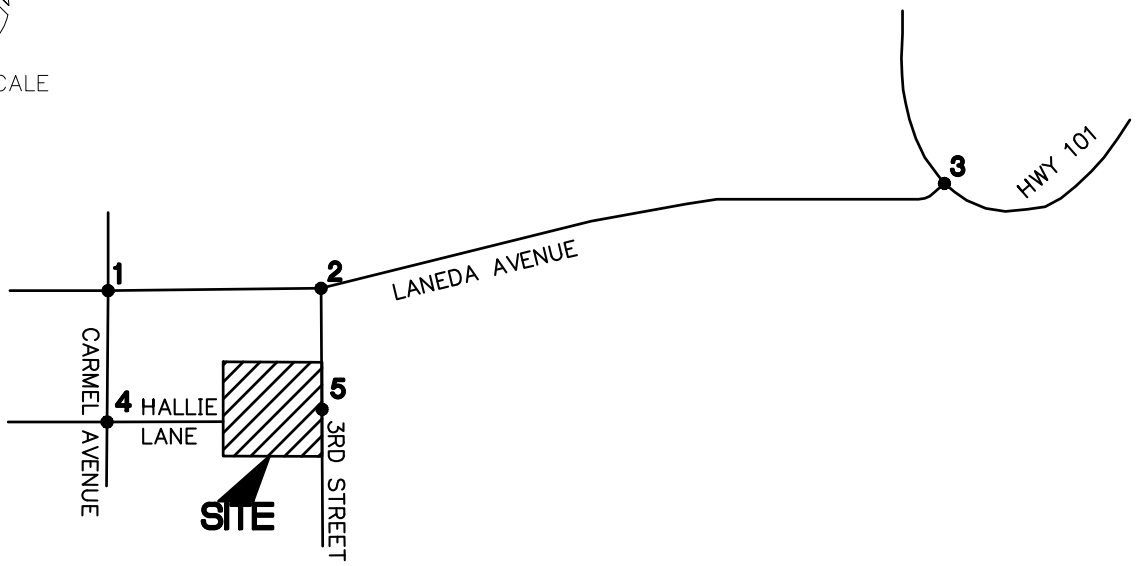
DATE: 9.21.2022
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222019400

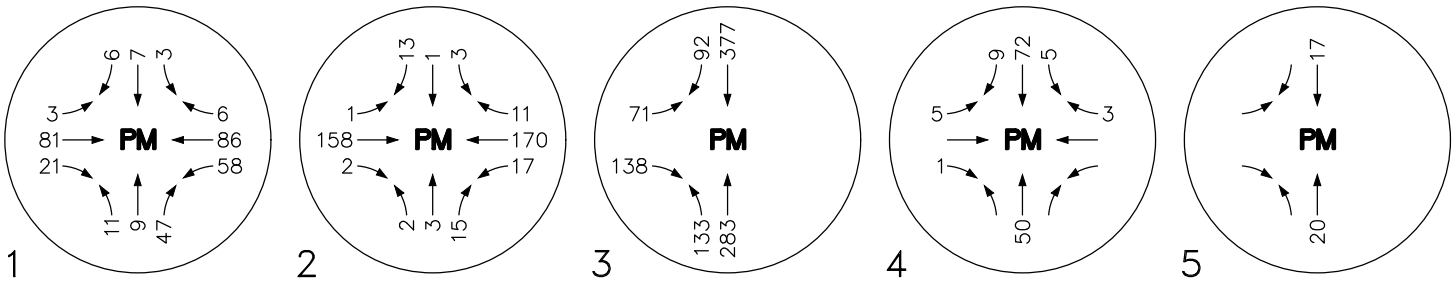
IN-PROCESS TRAFFIC VOLUMES -

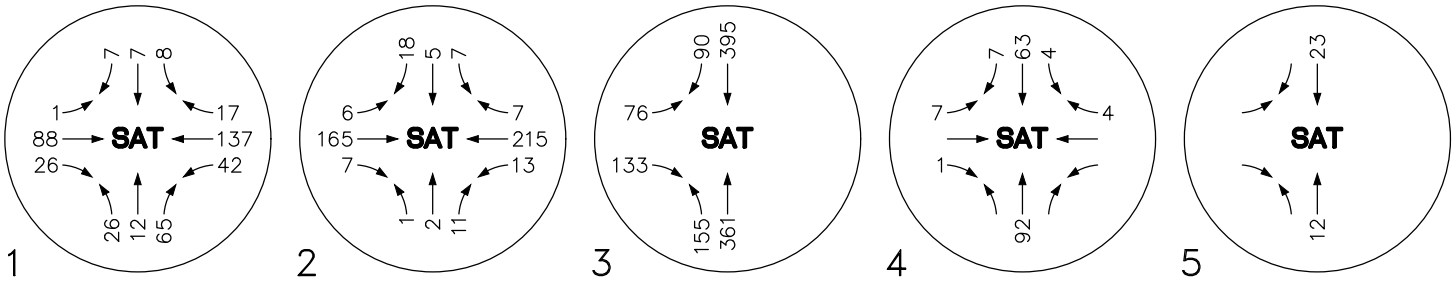
HERON'S REST
MANZANITA, OREGON

FIGURE 6

NOT TO SCALE







Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture • Interiors
Planning • Engineering
MACKENZIE

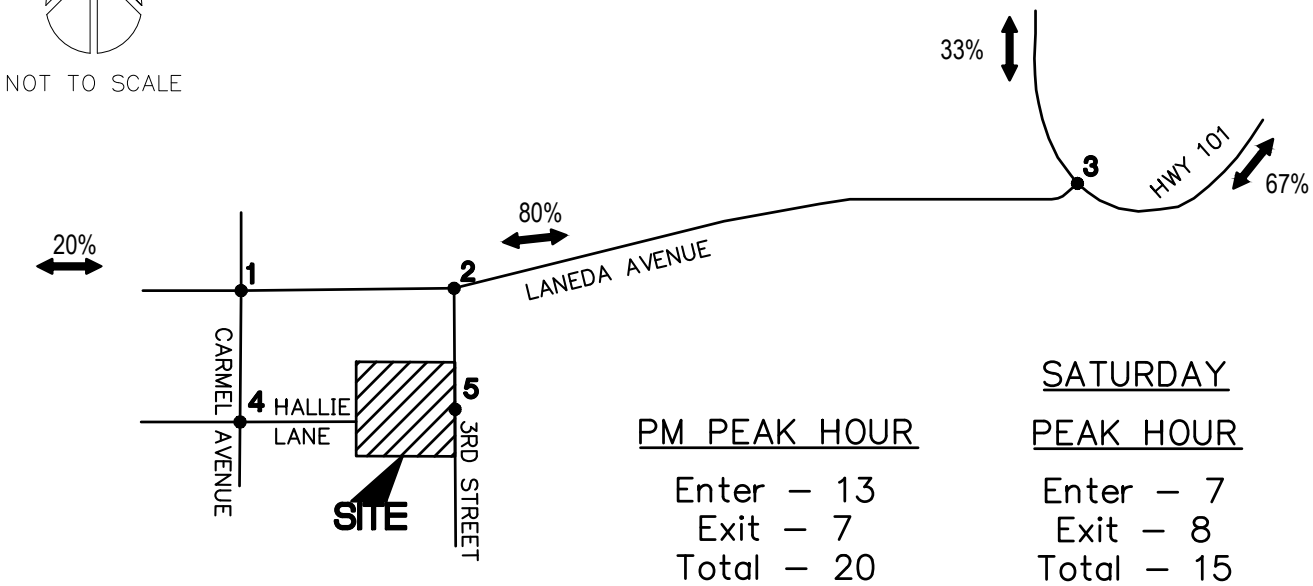
DATE: 9.21.2022
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222019400

2024 PRE-DEVELOPMENT TRAFFIC VOLUMES -

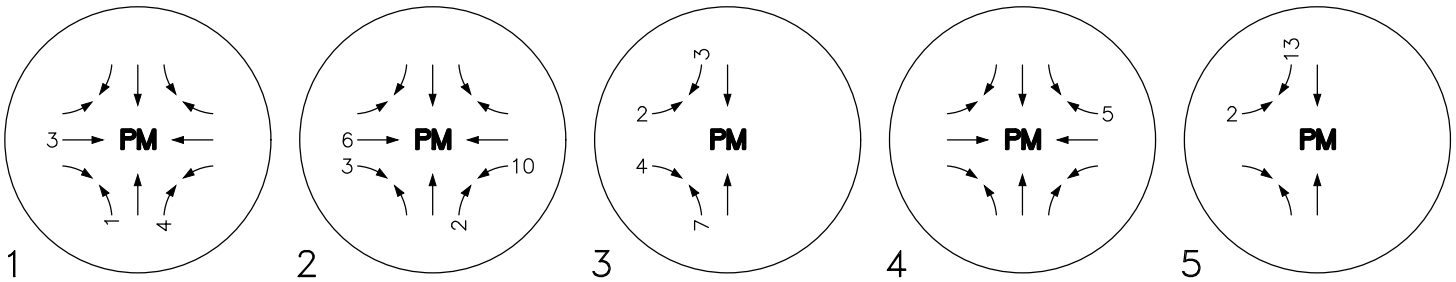
HERON'S REST
MANZANITA, OREGON

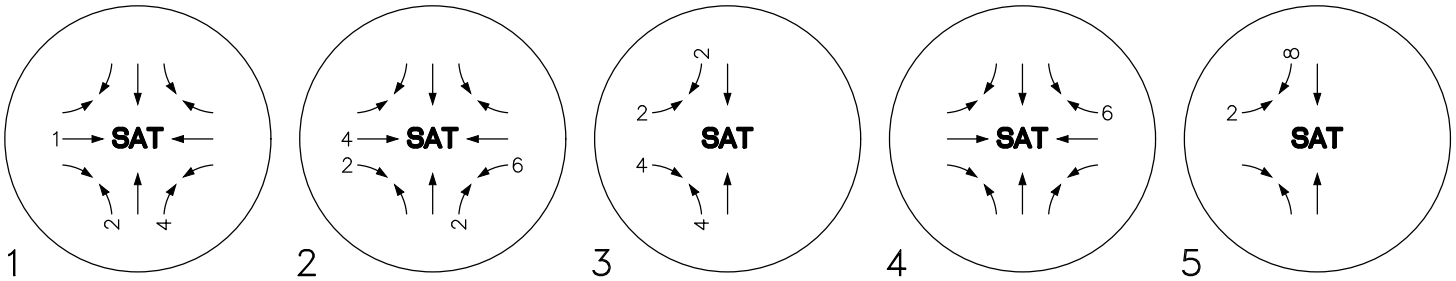
FIGURE 7

NOT TO SCALE



PM PEAK HOUR	SATURDAY PEAK HOUR
Enter – 13	Enter – 7
Exit – 7	Exit – 8
Total – 20	Total – 15





Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture ▪ Interiors
Planning ▪ Engineering
MACKENZIE

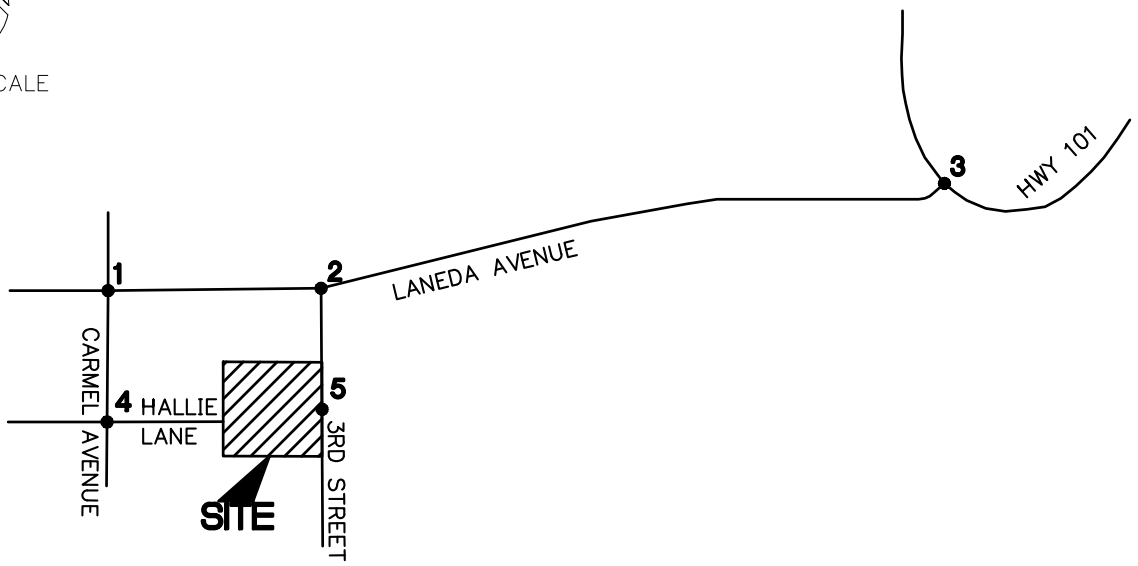
DATE: 9.21.2022
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222019400

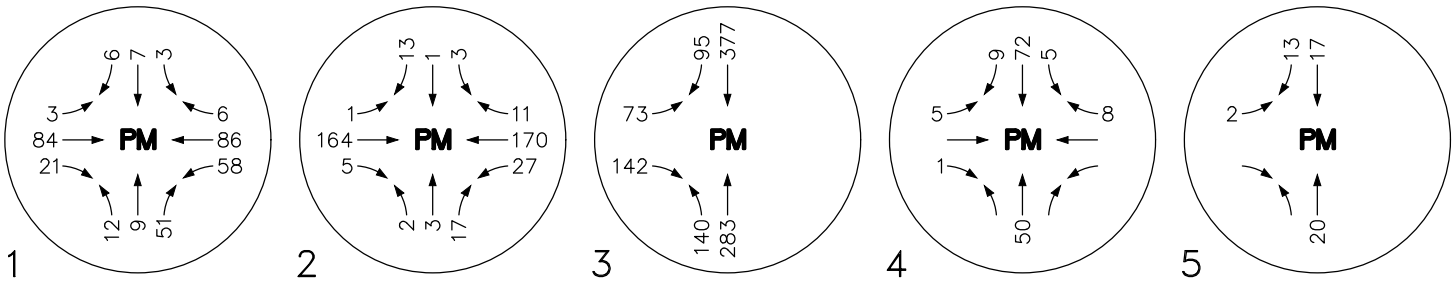
PRIMARY TRIP DISTRIBUTION + ASSIGNMENT -

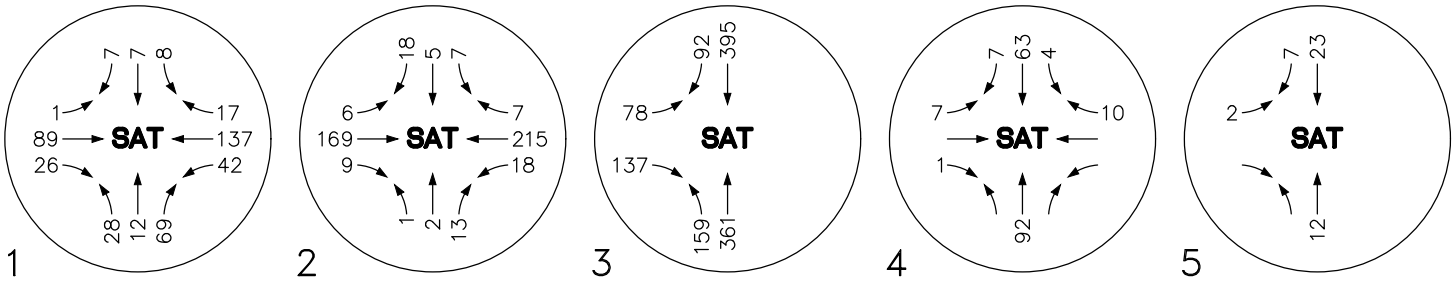
HERON'S REST
MANZANITA, OREGON

FIGURE 8

NOT TO SCALE







Portland 503.224.9560 Vancouver 360.695.7879 Seattle 206.749.9993
www.mcknze.com
Architecture ▪ Interiors
Planning ▪ Engineering
MACKENZIE

DATE: 9.21.2022
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222019400

2024 POST-DEVELOPMENT TRAFFIC VOLUMES -

HERON'S REST
MANZANITA, OREGON

FIGURE 9

APPENDIX B

SCOPING MATERIAL

321 SW 4th Ave., Suite 400
Portland, OR 97204
503.248.0313
lancastermobley.com

August 24, 2022

Scott Gebhart
City of Manzanita
543 Laneda Avenue
Manzanita, OR 97130

Dear Scott,

At your request, I have reviewed the site plan for the Heron's Rest project, located on the west side of Third Street and the existing terminus of Hallie Lane. The project proposes a total of 26 detached dwelling units with common amenities such as a gathering building, a public green, and a park. Access to the site is via Third Street, as well as a private street connection between Third Street and the existing terminus of Hallie Lane at the west property line. The private street is proposed to serve one-way traffic travelling westbound.

Transportation Impact Study

It is recommended that a Transportation Impact Study (TIS) be conducted and submitted as part of the land use application. This letter provides a detailed scope of work for the applicant. The TIS should be prepared by a professional engineer registered in Oregon with specific experience in transportation engineering.

Trip Generation & Distribution

Project-generated trips should be calculated based on the 11th Edition of the *Trip Generation Manual*, published by the Institute of Transportation Engineers (ITE). If other trip generation rates or information are used, they should first be reviewed and approved by the City of Manzanita.

The distribution of project-generated trips should be assigned to the surrounding roadway network based on the traffic count data (see below) as well as anticipated trip origins and destinations and expected travel routes within Manzanita.

Project Study Area

The following intersections shall be included in the project study area. Traffic counts shall be conducted at these intersections during typical weekday conditions during the evening peak hours (4:00 to 6:00 PM) as well as the Saturday afternoon peak (noon to 3:00 PM). To avoid the need to apply excessive seasonal adjustments, it is recommended that the data be collected during the month of August.

1. Laneda Avenue at Highway 101
2. Laneda Avenue at 3rd Street
3. Laneda Avenue at Carmel Avenue

Conditions during the anticipated year of buildout for the site should be analyzed at the three study area intersections. Particularly at the intersection of Laneda Avenue with Highway 101, analysis methodologies should comply with the *Analysis Procedures Manual* published by the Oregon Department of Transportation.

Parking Study

Section 4.090(3) of the Manzanita Zoning Ordinance requires two off-street spaces for each dwelling unit. Should the applicant propose a parking supply that does not satisfy this code requirement, collection of local parking demand data or another acceptable data source will be required. Data in support of a lesser quantity of parking will need to be reviewed and approved by the City of Manzanita.

In addition, if reduced parking is proposed, the applicant may be required to provide additional offsite pedestrian and bicycle paths or connections between the site and other destinations in Manzanita to encourage additional trips to be made via walking or biking in support of a reduced parking supply.

Sight Distance & Hallie Lane Impacts

The TIS shall examine intersection and stopping sight distances at the site access location on 3rd Street as well as at individual driveway locations with direct access to the street. Sight distance standards in the 7th Edition of *A Policy on Geometric Design of Highways and Streets*, published by AASHTO.

The proposed one-way westbound street internal to the site is a unique configuration that presents some challenges that need to be addressed by the applicant. These include:

1. Design considerations at the eastern end of the site that would ensure that vehicles parked closest to 3rd Street are not able to travel eastbound on the internal street, as this will likely appear to be a shorter and more convenient route to exit the site.
2. Design considerations on the west end of the site that would offer similar protections keeping entering trips from travelling westbound on the internal streets. Especially for residents on the western portion of the site, this may appear to be the quickest and most convenient routes.
3. Coordinate with emergency service providers to ensure that adequate access is provided through the site. Maintaining adequate width for fire and emergency access may be in competition with suitable design controls that would discourage wrong-way travel from items 1 and 2 above.
4. The proposed one-way circulation concentrates traffic impacts on the existing portion of Hallie Lane between the project site and Carmel Avenue. This portion of the street is not developed or surfaced to current standards and is likely not able to accommodate the additional trips generated by the site. Some level of physical improvements will likely be required in order to mitigate the impact of additional traffic.

If you have any questions regarding this scope of work, please do not hesitate to call.

Sincerely,

Todd E. Mobley, PE
Principal

James Abbott

From: Todd Mobley <todd@lancastermobley.com>
Sent: Wednesday, September 21, 2022 3:57 PM
To: James Abbott; Brent Ahrend
Subject: Manzanita In-Process

James and Brent,

The City finally confirmed with me that there are no in-process trips to consider from specific developments, other than the projects you guys are working on. I would recommend including some type of local growth rate to estimate build-out year conditions, but no need to include trips from specific developments.

Thanks,

-Todd

Todd E. Mobley, PE

Principal

lancaster mobley

The most *effective* consulting team you've ever worked with.

321 SW 4th Avenue, Suite 400 | Portland, OR 97204
P: 503-248-0313 **C:** 503-319-9811
Website: lancastermobley.com

Offices: Portland, OR | Bend, OR

APPENDIX C

TRANSIT INFORMATION

Fares/ Tarifas

Each Way, Per Zone/
Ida o vuelta, por zona.....$1.50

Zone 1: Hobsonville Point (S. of Garibaldi) to Sand Lake Rd (N. of Hemlock)
Zone 2: Clatsop County Line to Hobsonville Point (S. of Garibladi)
Zone 3: Sand Lake Rd (N. of Hemlock) to Lincoln County Line
Lincoln County Zone: Starts at Lincoln County Line

Clatsop County Zone: Starts at Clatsop County Line

Child Fares/ Tarifas Para Niños

First Child/ Primer Niño (0-4).....FREE
Additional Child/ Niño adicional (0-4)...1/2 Fare
Child/ Niño (5-11).....1/2 Fare
(When traveling with a full fare adult/ Al viajar con un adulto que paga la tarifa completa)

Monthly Pass/ Pase de Un Mes

Regular/ Regular.....$40
Reduced/ Descuento.....$30
Reduced fares offered for age 60+, children, & individuals with verifiable short or long term disability/ Se ofrecen tarifas con descuento para mayores de 60 años, niños y personas con discapacidades de corto o largo plazo comprobables

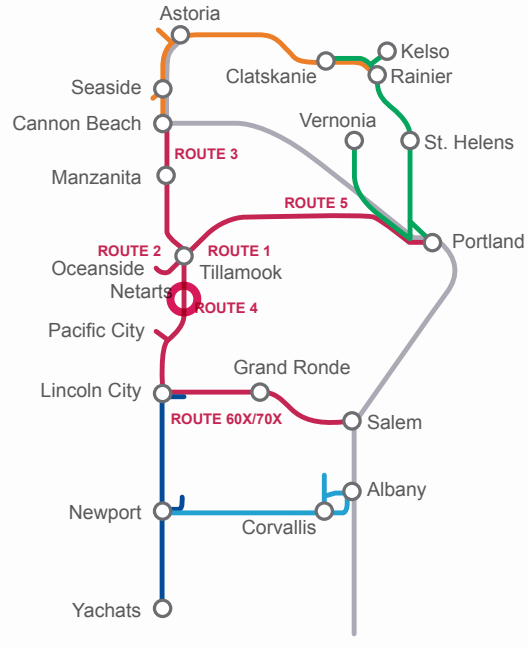
No Bus Service/ No Hay Servicio de Autobuses

New Years Day/ Año Nuevo
Thanksgiving Day/ Día de Acción de Gracias
Christmas Day/ Navidad

Route & Schedule Info/ Información de Rutas y Horarios

800-815-8283
www.TillamookBus.com
800-735-2700/TTY

nwCONNECTOR
NWCONNECTOR.ORG



NWCONNECTOR Visitor Pass/ Pase Para Visitantes
3 Days/ 3 Días $25
7 Days/ 7 Días $30
(includes a round trip to Portland or Salem and unlimited travel on NWConnector routes/ Incluye un viaje redondo a Portland o Salem y viajes ilimitados en las rutas de NWConnector)

CONNECTING SERVICES/ SERVICIOS DE CONEXIÓN

Lincoln County Transit
nwconnector.org | 541-265-4900

Sunset Empire Transportation District
nwconnector.org | 503-861-7433

Point Bus
oregon-point.com | 1-888-846-4183

Greyhound
greyhound.com | 1-800-231-2222

Amtrak
amtrak.com | 1-800-872-7245

Tri-Met
trimet.org | 503-238-7433

ROUTE/ RUTA 3

Tillamook - Cannon Beach

Effective January 23, 2022
A partir del 23 de enero de 2022

RIDE THE WAVE

Tillamook County Transportation District

ROUTE/ RUTA 3
Tillamook - Cannon Beach

SERVICE OPERATES 7 DAYS A WEEK
EL SERVICIO OPERA LOS 7 DÍAS DE LA SEMANA

@TillamookBus

transit

FOR REAL TIME BUS INFO, DOWNLOAD THE TRANSIT APP TODAY!/
PARA OBTENER INFORMACIÓN SOBRE LOS AUTOBUSES EN
TIEMPO REAL, DESCARGUE LA APLICACIÓN TRANSIT.

Transit Center 2nd & Laurel	Tillamook Fred Meyer	Idaville	Bay City	Garibaldi	Rockaway Beach	Wheeler	Nehalem	Manzanita	Cannon Beach
1	2	3	4	5	6	7	8	9	10
Northbound									
4:55	5:00	5:06	5:09	5:17	5:27	5:45	5:53	5:59	--
9:03	9:08	9:14	9:17	9:25	9:35	9:53	10:01	10:07	10:27
1:50	**1:55**	**2:01**	**2:04**	**2:12**	**2:22**	**2:40**	**2:48**	**2:54**	**3:14**
6:05	**6:10**	**6:16**	**6:19**	**6:27**	**6:37**	**6:55**	**7:03**	**7:09**	**7:29**

Bold/ Negritas = PM

Cannon Beach	Manzanita	Nehalem	Wheeler	Rockaway Beach	Garibaldi	Bay City	Idaville	Tillamook Fred Meyer	Transit Center 2nd & Laurel
10	9	8	7	6	5	4	3	2	1
Southbound									
--	6:09	6:15	6:23	6:41	6:51	6:59	7:02	7:08	7:13
10:37	10:57	11:03	11:11	11:29	11:39	11:47	11:50	11:56	**12:01**
3:24	**3:44**	**3:50**	**3:58**	**4:16**	**4:26**	**4:34**	**4:37**	**4:43**	**4:48**
7:39	**7:59**	**8:05**	**8:13**	**8:31**	**8:41**	**8:49**	**8:52**	**8:58**	**9:03**

Bold/ Negritas = PM

APPENDIX D

TRAFFIC COUNT SUMMARIES

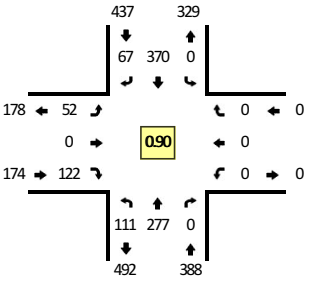
Type of peak hour being reported: Intersection Peak

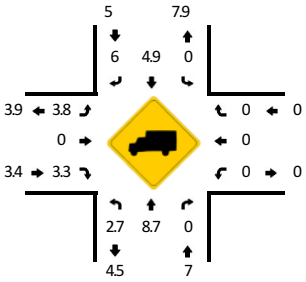
Method for determining peak hour: Total Entering Volume

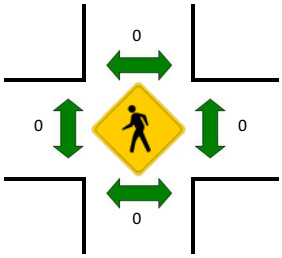
LOCATION: Hwy 101 -- Laneda Ave
CITY/STATE: Manzanita, OR

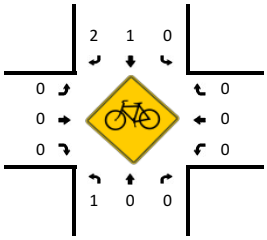
QC JOB #: 15907301
DATE: Thu, Aug 18 2022

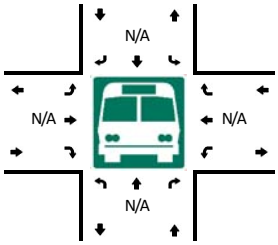
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:40 PM -- 4:55 PM

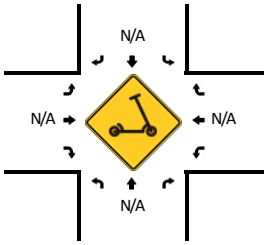












5-Min Count Period Beginning At	Hwy 101 (Northbound)				Hwy 101 (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	12	37	0	0	0	35	8	0	2	0	11	0	0	0	0	0	105	
4:05 PM	5	20	0	0	0	27	5	0	2	0	11	0	0	0	0	0	70	
4:10 PM	13	14	0	0	0	27	7	0	4	0	11	0	0	0	0	0	76	
4:15 PM	12	23	0	0	0	35	12	0	4	0	15	0	0	0	0	0	101	
4:20 PM	7	19	0	0	0	33	4	0	5	0	10	0	0	0	0	0	78	
4:25 PM	4	25	0	0	0	19	1	0	4	0	8	0	0	0	0	0	61	
4:30 PM	7	23	0	0	0	27	3	0	3	0	13	0	0	0	0	0	76	
4:35 PM	7	23	0	0	0	35	3	0	3	0	13	0	0	0	0	0	84	
4:40 PM	11	20	0	0	0	41	3	0	7	0	6	0	0	0	0	0	88	
4:45 PM	12	26	0	0	0	32	10	0	8	0	6	0	0	0	0	0	94	
4:50 PM	12	29	0	0	0	32	4	0	7	0	10	0	0	0	0	0	94	
4:55 PM	9	18	0	0	0	27	7	0	3	0	8	0	0	0	0	0	72	999
5:00 PM	4	19	0	0	0	30	5	0	1	0	12	0	0	0	0	0	71	965
5:05 PM	10	27	0	0	0	27	3	0	2	0	10	0	0	0	0	0	79	974
5:10 PM	10	23	0	0	0	22	6	0	2	0	7	0	0	0	0	0	70	968
5:15 PM	4	10	0	0	0	26	2	0	3	0	9	0	0	0	0	0	54	921
5:20 PM	12	22	0	0	0	29	5	0	3	0	9	0	0	0	0	0	80	923
5:25 PM	4	31	0	0	0	25	2	0	4	0	14	0	0	0	0	0	80	942
5:30 PM	4	24	0	0	0	34	2	0	3	0	8	0	0	0	0	0	75	941
5:35 PM	4	11	0	0	0	27	4	0	2	0	7	0	0	0	0	0	55	912
5:40 PM	9	19	0	0	0	24	1	0	3	0	9	0	0	0	0	0	65	889
5:45 PM	5	24	0	0	0	34	4	0	4	0	6	0	0	0	0	0	77	872
5:50 PM	9	25	0	0	0	25	2	0	1	0	5	0	0	0	0	0	67	845
5:55 PM	8	11	0	0	0	28	7	0	2	0	7	0	0	0	0	0	63	836

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	140	300	0	0	0	420	68	0	88	0	88	0	0	0	0	0	1104
Heavy Trucks	0	24	0		0	16	0		4	0	4		0	0	0		48
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	4	0	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 8/31/2022 11:26 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

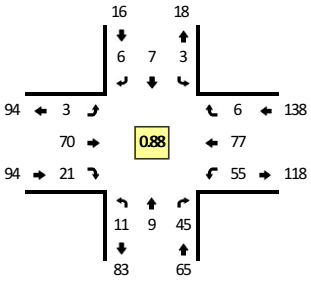
Type of peak hour being reported: Intersection Peak

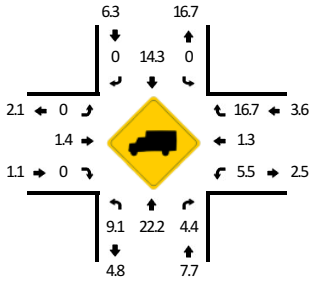
Method for determining peak hour: Total Entering Volume

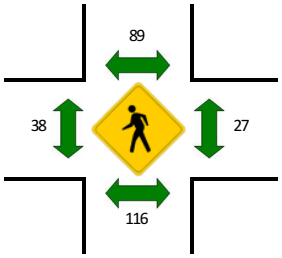
LOCATION: Carmel Ave -- Laneda Ave
CITY/STATE: Manzanita, OR

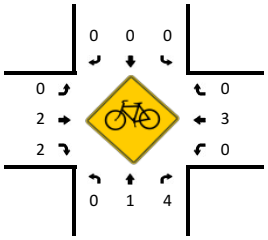
QC JOB #: 15907203
DATE: Thu, Aug 18 2022

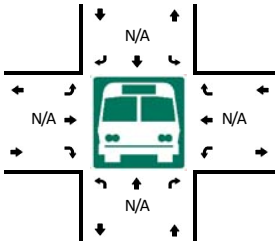
Peak-Hour: 4:00 PM -- 5:00 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

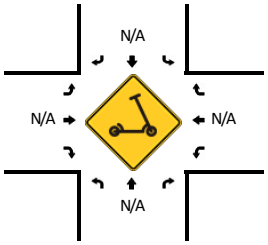












5-Min Count Period Beginning At	Carmel Ave (Northbound)				Carmel Ave (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	0	1	2	0	0	0	0	0	1	3	2	0	5	8	0	0	22	
4:05 PM	2	1	3	0	1	0	1	0	0	9	1	0	2	5	0	0	25	
4:10 PM	2	0	2	0	0	0	1	0	0	9	1	0	8	2	1	0	26	
4:15 PM	0	0	6	0	0	1	1	0	0	9	4	0	6	8	1	0	36	
4:20 PM	2	2	2	0	0	1	0	0	0	7	1	0	4	4	0	0	23	
4:25 PM	1	0	5	0	0	2	0	0	0	6	1	0	4	7	0	0	26	
4:30 PM	0	1	6	0	0	0	0	0	0	0	1	0	4	9	0	0	21	
4:35 PM	0	2	4	0	0	1	0	0	0	7	3	0	3	8	0	0	28	
4:40 PM	0	2	2	0	0	1	0	0	0	6	4	0	4	6	0	0	25	
4:45 PM	2	0	6	0	0	0	2	0	2	6	1	0	6	10	1	0	36	
4:50 PM	1	0	4	0	0	1	1	0	0	3	0	0	5	3	1	0	19	
4:55 PM	1	0	3	0	2	0	0	0	0	5	2	0	4	7	2	0	26	313
5:00 PM	3	0	3	0	1	0	0	0	0	5	0	0	5	2	1	0	20	311
5:05 PM	0	0	8	0	0	1	0	0	0	2	0	0	6	4	2	0	23	309
5:10 PM	1	0	3	0	0	0	1	0	0	7	0	0	0	10	0	0	22	305
5:15 PM	2	2	4	0	0	1	1	0	0	6	2	0	6	5	0	0	29	298
5:20 PM	3	1	8	0	0	1	0	0	0	5	0	0	3	4	1	0	26	301
5:25 PM	2	0	6	0	1	0	1	0	0	6	4	0	5	8	1	0	34	309
5:30 PM	2	1	5	0	0	0	0	0	0	4	0	0	1	4	0	0	17	305
5:35 PM	3	0	3	0	0	0	0	0	0	5	1	0	2	2	0	0	16	293
5:40 PM	0	1	7	0	0	0	1	0	1	4	5	0	1	11	0	0	31	299
5:45 PM	0	0	3	0	0	0	1	0	0	6	3	0	4	3	1	0	21	284
5:50 PM	2	0	5	0	0	1	0	0	1	4	0	0	3	7	0	0	23	288
5:55 PM	1	1	1	0	1	0	0	0	0	6	0	0	3	9	1	0	23	285

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	16	48	0	0	8	8	0	8	76	32	0	52	96	4	0	356
Heavy Trucks	0	4	4		0	0	0		0	0	0		0	0	0		8
Buses																	
Pedestrians		88				84				36				48			256
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 8/30/2022 1:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

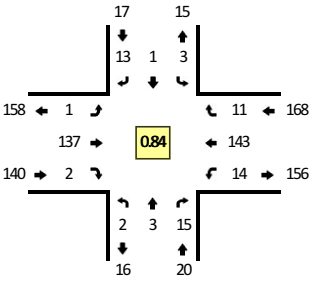
Type of peak hour being reported: Intersection Peak

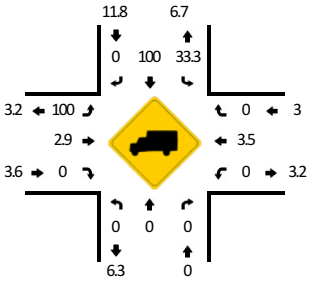
Method for determining peak hour: Total Entering Volume

LOCATION: 3rd St -- Laneda Ave
CITY/STATE: Manzanita, OR

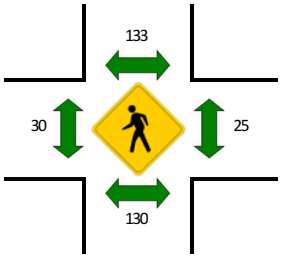
QC JOB #: 15907205
DATE: Thu, Aug 18 2022

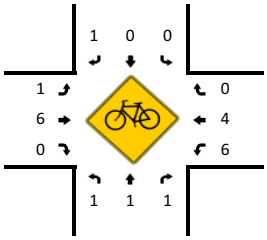
Peak-Hour: 4:05 PM -- 5:05 PM
Peak 15-Min: 4:05 PM -- 4:20 PM

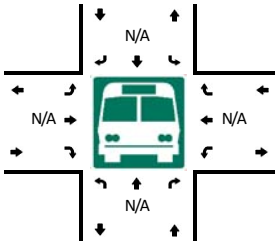


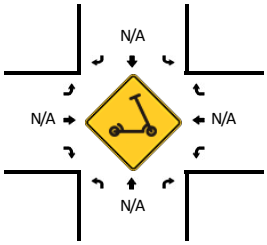


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	3rd St (Northbound)				3rd St (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	1	0	0	0	0	0	3	0	0	9	0	0	0	14	1	0	28	
4:05 PM	1	0	1	0	1	0	0	0	0	14	0	0	1	10	2	1	31	
4:10 PM	0	2	1	0	0	0	2	0	0	13	1	0	0	12	1	0	32	
4:15 PM	0	0	2	0	0	0	0	0	0	14	0	0	1	19	4	0	40	
4:20 PM	0	0	1	0	1	0	0	0	0	13	0	0	2	9	1	0	27	
4:25 PM	1	0	2	0	0	0	2	0	0	10	0	0	2	13	1	0	31	
4:30 PM	0	0	3	0	0	0	1	0	1	13	0	0	0	8	0	0	26	
4:35 PM	0	0	1	0	0	0	1	0	0	11	0	0	0	9	0	0	22	
4:40 PM	0	0	2	0	1	0	2	0	0	9	0	0	0	9	0	0	23	
4:45 PM	0	0	0	0	0	0	1	0	0	12	0	0	2	16	0	0	31	
4:50 PM	0	0	1	0	0	0	2	0	0	9	0	0	1	16	0	0	29	
4:55 PM	0	0	0	0	0	0	0	0	0	6	1	0	3	12	0	0	22	342
5:00 PM	0	1	1	0	0	1	2	0	0	13	0	0	1	10	2	0	31	345
5:05 PM	0	0	0	0	0	0	0	0	0	6	1	0	2	14	0	0	23	337
5:10 PM	0	0	0	0	1	0	1	0	2	7	1	0	3	10	0	0	25	330
5:15 PM	0	0	0	0	0	0	3	0	1	14	0	0	2	9	1	0	30	320
5:20 PM	0	0	4	0	0	0	0	0	0	13	0	0	2	10	2	0	31	324
5:25 PM	0	0	3	0	0	0	2	0	0	10	1	0	0	15	0	0	31	324
5:30 PM	0	0	3	0	0	1	0	0	0	9	1	0	2	3	2	0	21	319
5:35 PM	0	0	1	0	0	0	1	0	0	7	0	0	1	7	0	0	17	314
5:40 PM	0	0	2	0	0	0	1	0	0	10	0	0	1	9	0	0	23	314
5:45 PM	0	0	0	0	0	0	0	0	1	9	1	0	0	11	1	0	23	306
5:50 PM	0	0	2	0	1	0	0	0	1	6	1	0	1	8	0	0	20	297
5:55 PM	0	0	1	0	0	0	0	0	0	6	0	0	0	16	0	0	23	298

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	8	16	0	4	0	8	0	0	164	4	0	8	164	28	4	412
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	12	0		20
Buses																	
Pedestrians		136				104				12				16			268
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 8/30/2022 1:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

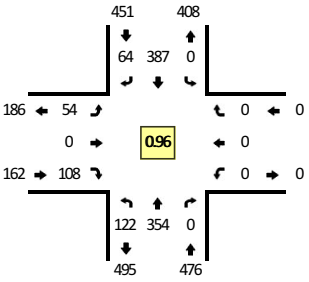
Type of peak hour being reported: Intersection Peak

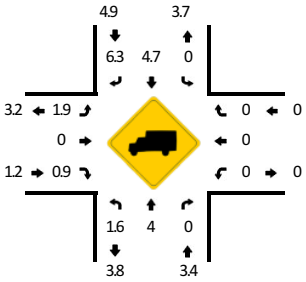
Method for determining peak hour: Total Entering Volume

LOCATION: Hwy 101 -- Laneda Ave
CITY/STATE: Manzanita, OR

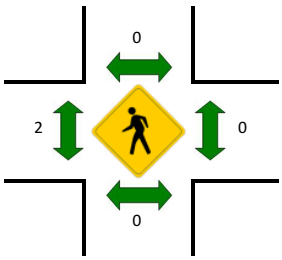
QC JOB #: 15907302
DATE: Sat, Aug 20 2022

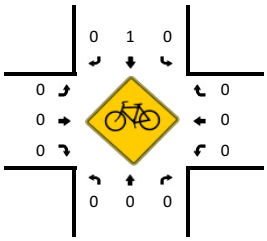
Peak-Hour: 1:50 PM -- 2:50 PM
Peak 15-Min: 2:30 PM -- 2:45 PM

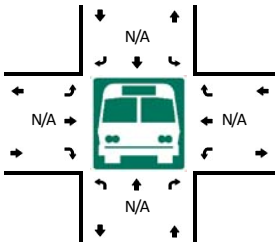


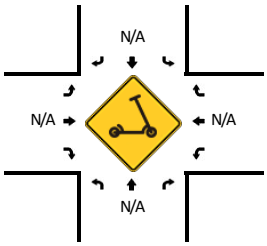


Quality Counts
DATA THAT DRIVES COMMUNITIES









5-Min Count Period Beginning At	Hwy 101 (Northbound)				Hwy 101 (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	10	36	0	0	0	32	3	0	7	0	11	0	0	0	0	0	99	
12:05 PM	12	31	0	0	0	22	3	0	1	0	3	0	0	0	0	0	72	
12:10 PM	13	23	0	0	0	21	4	0	5	0	3	0	0	0	0	0	69	
12:15 PM	14	13	0	0	0	29	3	0	7	0	6	0	0	0	0	0	72	
12:20 PM	5	22	0	0	0	28	7	0	10	0	11	0	0	0	0	0	83	
12:25 PM	11	26	0	0	0	27	4	0	1	0	11	0	0	0	0	0	80	
12:30 PM	10	44	0	0	0	26	7	0	8	0	11	0	0	0	0	0	106	
12:35 PM	9	24	0	0	0	26	7	0	3	0	0	1	0	0	0	0	70	
12:40 PM	9	27	0	0	0	22	5	0	4	0	15	0	0	0	0	0	82	
12:45 PM	8	15	0	0	0	24	6	0	6	0	13	0	0	0	0	0	72	
12:50 PM	10	22	0	0	0	22	4	0	2	0	12	0	0	0	0	0	72	
12:55 PM	15	25	0	0	0	22	2	0	4	0	10	0	0	0	0	0	78	955
1:00 PM	10	22	0	0	0	36	11	0	6	0	7	0	0	0	0	0	92	948
1:05 PM	18	34	0	0	0	26	8	0	5	0	7	0	0	0	0	0	98	974
1:10 PM	15	30	0	0	0	36	5	0	2	0	7	0	0	0	0	0	95	1000
1:15 PM	15	23	0	0	0	22	6	0	4	0	5	0	0	0	0	0	75	1003
1:20 PM	11	25	0	0	0	29	5	0	5	0	16	0	0	0	0	0	91	1011
1:25 PM	21	29	0	0	0	17	3	0	5	0	11	0	0	0	0	0	86	1017
1:30 PM	12	22	0	0	0	29	8	0	3	0	6	0	0	0	0	0	80	991
1:35 PM	13	23	0	0	0	26	6	0	8	0	10	0	0	0	0	0	86	1007
1:40 PM	9	36	0	0	0	27	1	0	6	0	12	0	0	0	0	0	91	1016
1:45 PM	10	24	0	0	0	27	4	0	4	0	13	0	0	0	0	0	82	1026
1:50 PM	16	30	0	0	0	24	3	0	6	0	11	0	0	0	0	0	90	1044
1:55 PM	7	26	0	0	0	43	9	0	4	0	11	0	0	0	0	0	100	1066
2:00 PM	13	24	0	0	0	31	7	0	2	0	10	0	0	0	0	0	87	1061
2:05 PM	10	22	0	0	0	30	1	0	5	0	14	0	0	0	0	0	82	1045
2:10 PM	13	32	0	0	0	25	3	0	5	0	7	0	0	0	0	0	85	1035
2:15 PM	7	27	0	0	0	34	4	0	5	0	6	0	0	0	0	0	83	1043
2:20 PM	7	39	0	0	0	35	8	0	2	0	8	0	0	0	0	0	99	1051
2:25 PM	9	28	0	0	0	28	2	0	5	0	6	0	0	0	0	0	78	1043
2:30 PM	9	29	0	0	0	38	11	0	6	0	9	0	0	0	0	0	102	1065
2:35 PM	7	28	0	0	0	34	8	0	7	0	5	0	0	0	0	0	89	1068
2:40 PM	14	28	0	0	0	28	7	0	6	0	10	0	0	0	0	0	93	1070
2:45 PM	10	41	0	0	0	37	1	0	1	0	11	0	0	0	0	0	101	1089
2:50 PM	14	24	0	0	0	25	7	0	6	0	2	0	0	0	0	0	78	1077
2:55 PM	10	31	0	0	0	30	2	0	3	0	8	0	0	0	0	0	84	1061
3:00 PM	8	27	0	0	0	22	6	0	3	0	11	0	0	0	0	0	77	1051
3:05 PM	12	19	0	0	0	26	4	0	5	0	5	0	0	0	0	0	71	1040

5-Min Count Period Beginning At	Hwy 101 (Northbound)				Hwy 101 (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 PM	11	28	0	0	0	40	7	0	4	0	5	0	0	0	0	0	95	1050
3:15 PM	15	22	0	0	0	30	6	0	5	0	10	0	0	0	0	0	88	1055
3:20 PM	12	19	0	0	0	20	4	0	5	0	4	0	0	0	0	0	64	1020
3:25 PM	8	17	0	0	0	28	4	0	7	0	9	0	0	0	0	0	73	1015
3:30 PM	11	15	0	0	0	38	7	0	9	0	11	0	0	0	0	0	91	1004
3:35 PM	8	9	0	0	0	29	6	0	6	0	8	0	0	0	0	0	66	981
3:40 PM	12	43	0	0	0	37	6	0	0	0	6	0	0	0	0	0	104	992
3:45 PM	5	25	0	0	0	30	5	0	4	0	13	0	0	0	0	0	82	973
3:50 PM	5	22	0	0	0	28	4	0	7	0	4	0	0	0	0	0	70	965
3:55 PM	10	28	0	0	0	28	2	0	3	0	13	0	0	0	0	0	84	965

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	120	340	0	0	0	400	104	0	76	0	96	0	0	0	0	0	1136
Heavy Trucks	4	20	0		0	12	0		4	0	4		0	0	0		44
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 8/31/2022 11:26 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

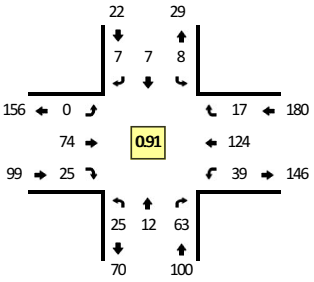
Type of peak hour being reported: Intersection Peak

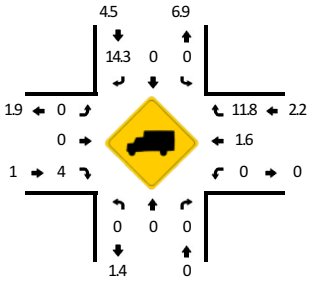
Method for determining peak hour: Total Entering Volume

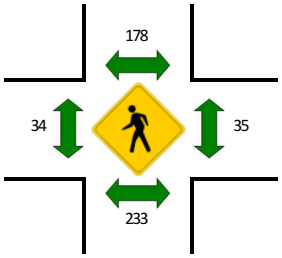
LOCATION: Carmel Ave -- Laneda Ave
CITY/STATE: Manzanita, OR

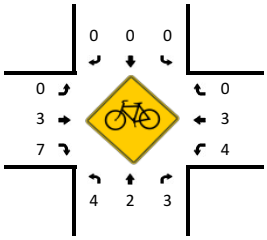
QC JOB #: 15907204
DATE: Sat, Aug 20 2022

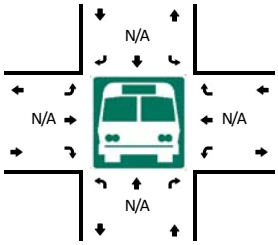
Peak-Hour: 1:05 PM -- 2:05 PM
Peak 15-Min: 1:10 PM -- 1:25 PM

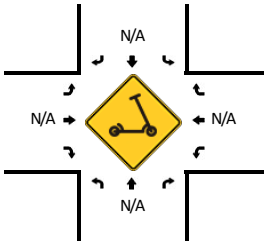












5-Min Count Period Beginning At	Carmel Ave (Northbound)				Carmel Ave (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	0	0	7	0	0	1	0	0	0	7	1	0	1	9	0	0	26	
12:05 PM	3	2	1	0	1	0	1	0	0	7	3	0	1	9	0	0	28	
12:10 PM	1	1	8	0	0	1	1	0	0	6	2	0	2	11	1	0	34	
12:15 PM	2	3	8	0	0	1	0	0	1	7	1	0	3	8	1	0	35	
12:20 PM	4	2	3	0	0	1	0	0	0	4	0	0	2	9	0	0	25	
12:25 PM	2	1	4	0	0	0	0	0	0	5	5	0	3	7	1	0	28	
12:30 PM	2	0	6	0	1	1	0	0	0	7	0	0	1	6	0	0	24	
12:35 PM	1	0	4	0	0	0	0	0	0	5	2	0	3	9	0	0	24	
12:40 PM	0	0	10	0	1	1	1	0	0	8	2	0	5	7	0	0	35	
12:45 PM	2	0	8	0	1	0	0	0	1	5	2	0	8	9	1	0	37	
12:50 PM	2	0	4	0	3	0	1	0	1	2	1	0	5	7	1	0	27	
12:55 PM	1	1	3	0	0	1	0	0	1	8	0	0	3	5	1	0	24	347
1:00 PM	5	0	3	0	0	0	1	0	0	3	0	0	3	9	2	0	26	347
1:05 PM	2	1	5	0	1	1	1	0	0	6	1	0	4	14	0	0	36	355
1:10 PM	1	1	5	0	0	2	2	0	0	6	1	0	4	12	1	0	35	356
1:15 PM	2	2	6	0	0	1	0	0	0	5	2	0	3	12	1	0	34	355
1:20 PM	2	1	6	0	0	0	0	0	0	6	3	0	3	19	1	0	41	371
1:25 PM	1	1	4	0	0	0	1	0	0	3	4	0	3	3	0	0	20	363
1:30 PM	1	2	8	0	1	0	0	0	0	5	0	0	5	11	1	0	34	373
1:35 PM	4	0	3	0	0	0	1	0	0	6	2	0	3	10	1	0	30	379
1:40 PM	2	0	5	0	1	0	0	0	0	8	2	0	3	6	4	0	31	375
1:45 PM	4	0	3	0	3	2	1	0	0	7	2	0	1	11	4	0	38	376
1:50 PM	2	2	8	0	0	0	0	0	0	8	2	0	2	11	2	1	38	387
1:55 PM	2	0	6	0	1	1	1	0	0	5	3	0	6	8	0	0	33	396
2:00 PM	2	2	4	0	1	0	0	0	0	9	3	0	1	7	2	0	31	401
2:05 PM	1	1	0	0	0	0	0	0	1	8	0	0	2	9	1	0	23	388
2:10 PM	2	0	3	0	0	1	0	0	0	3	1	0	2	3	1	0	16	369
2:15 PM	0	2	9	0	0	1	1	0	0	4	0	0	6	11	0	0	34	369
2:20 PM	2	0	3	0	1	1	0	0	0	5	1	0	1	6	0	0	20	348
2:25 PM	3	0	4	0	2	2	1	0	0	5	0	0	4	8	1	0	30	358
2:30 PM	3	2	2	0	2	3	1	0	0	5	2	0	5	14	2	0	41	365
2:35 PM	0	1	5	0	1	3	0	0	0	7	3	0	6	6	1	0	33	368
2:40 PM	5	0	8	0	1	1	0	0	0	3	2	0	1	10	0	0	31	368
2:45 PM	0	0	5	0	0	0	1	0	0	13	1	0	7	8	2	0	37	367
2:50 PM	1	2	4	0	1	0	0	0	0	6	1	0	5	12	0	0	32	361
2:55 PM	1	0	4	0	0	3	0	0	0	7	1	0	3	6	1	1	27	355
3:00 PM	1	0	3	0	0	0	0	0	0	7	1	0	4	6	1	0	23	347
3:05 PM	0	0	7	0	2	2	0	0	1	4	2	0	6	7	1	0	32	356

5-Min Count Period Beginning At	Carmel Ave (Northbound)				Carmel Ave (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 PM	4	1	1	0	0	1	1	0	0	5	2	0	6	12	0	0	33	373
3:15 PM	2	1	5	0	0	1	0	0	0	4	2	0	2	8	1	1	27	366
3:20 PM	2	5	1	0	0	1	0	0	0	4	2	0	6	6	1	0	28	374
3:25 PM	4	0	4	0	1	3	1	0	0	9	0	0	5	3	1	1	32	376
3:30 PM	0	0	3	0	2	0	0	0	0	5	1	0	8	11	0	1	31	366
3:35 PM	1	1	4	0	0	0	0	0	0	3	0	0	2	11	0	0	22	355
3:40 PM	2	1	4	0	0	2	0	0	0	5	1	0	6	5	1	0	27	351
3:45 PM	0	1	5	0	0	1	3	0	0	4	4	0	6	8	3	0	35	349
3:50 PM	1	2	8	0	0	2	0	0	0	6	1	0	4	2	3	0	29	346
3:55 PM	4	0	6	0	0	2	1	0	0	6	2	0	4	4	2	0	31	350

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	20	16	68	0	0	12	8	0	0	68	24	0	40	172	12	0	440
Heavy Trucks	0	0	0		0	0	0		0	0	4		0	8	4		16
Buses																	
Pedestrians		236				172				12				56			476
Bicycles	8	0	8		0	0	0		0	8	0		0	4	0		28
Scooters																	

Comments:

Report generated on 8/30/2022 1:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

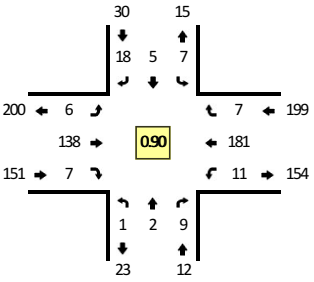
Type of peak hour being reported: Intersection Peak

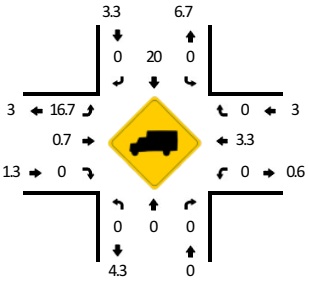
Method for determining peak hour: Total Entering Volume

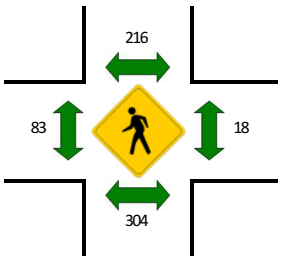
LOCATION: 3rd St -- Laneda Ave
CITY/STATE: Manzanita, OR

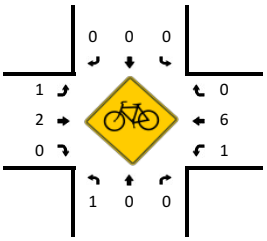
QC JOB #: 15907206
DATE: Sat, Aug 20 2022

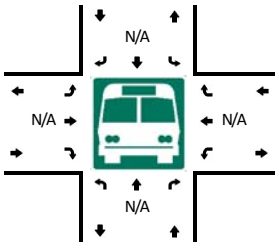
Peak-Hour: 1:05 PM -- 2:05 PM
Peak 15-Min: 1:10 PM -- 1:25 PM

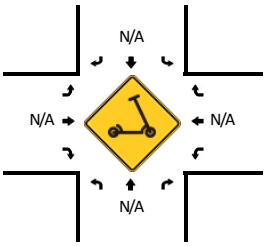












5-Min Count Period Beginning At	3rd St (Northbound)				3rd St (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	1	0	0	0	2	0	0	0	0	15	0	0	2	12	1	0	33	
12:05 PM	0	0	1	0	0	0	3	0	3	4	1	0	0	12	0	0	24	
12:10 PM	0	0	1	0	0	0	1	0	1	11	0	0	1	12	3	0	30	
12:15 PM	0	0	0	0	1	0	1	0	2	19	1	0	1	13	0	0	38	
12:20 PM	0	0	0	0	1	0	0	0	0	9	1	0	1	9	1	0	22	
12:25 PM	0	0	0	0	0	0	1	0	0	9	0	0	2	11	1	0	24	
12:30 PM	0	0	0	0	0	0	2	0	1	10	1	0	2	12	0	0	28	
12:35 PM	0	0	3	0	3	2	1	0	0	7	0	0	1	15	0	0	32	
12:40 PM	0	0	1	0	2	0	2	0	0	13	2	0	3	9	0	0	32	
12:45 PM	0	0	2	0	1	0	1	0	0	14	0	0	0	15	3	0	36	
12:50 PM	0	0	3	0	1	0	1	0	0	9	3	0	2	12	0	0	31	
12:55 PM	0	0	1	0	1	0	1	0	0	8	1	0	1	10	1	0	24	354
1:00 PM	0	0	0	0	1	0	1	0	1	7	0	0	0	15	0	0	25	346
1:05 PM	0	0	0	0	0	1	2	0	1	9	1	0	1	24	1	0	40	362
1:10 PM	0	0	0	0	1	0	0	0	0	11	0	0	1	16	1	0	30	362
1:15 PM	0	1	0	0	1	2	2	0	0	10	1	0	1	19	1	0	38	362
1:20 PM	0	0	1	0	0	2	4	0	0	15	2	0	0	16	1	0	41	381
1:25 PM	0	0	0	0	0	0	1	0	0	7	1	0	3	9	0	0	21	378
1:30 PM	0	0	1	0	0	0	0	0	2	10	0	0	0	21	1	0	35	385
1:35 PM	0	0	1	0	2	0	4	0	1	9	0	0	1	13	0	0	31	384
1:40 PM	0	1	2	0	1	0	2	0	1	11	1	0	0	11	1	0	31	383
1:45 PM	0	0	2	0	1	0	2	0	0	18	1	0	1	15	0	0	40	387
1:50 PM	0	0	2	0	0	0	1	0	1	17	0	0	0	14	0	0	35	391
1:55 PM	0	0	0	0	1	0	0	0	0	10	0	0	1	10	1	0	23	390
2:00 PM	1	0	0	0	0	0	0	0	0	11	0	0	2	13	0	0	27	392
2:05 PM	0	0	1	0	0	0	0	0	1	5	0	0	0	9	0	0	16	368
2:10 PM	0	0	2	0	0	1	1	0	0	8	0	0	2	10	0	0	24	362
2:15 PM	0	0	0	0	2	1	1	0	1	10	1	0	0	13	1	0	30	354
2:20 PM	0	0	1	0	1	0	1	0	0	11	0	0	0	19	2	0	35	348
2:25 PM	0	0	1	0	1	0	0	0	1	8	1	0	0	14	0	0	26	353
2:30 PM	2	0	4	0	0	1	0	0	0	8	2	0	3	21	0	0	41	359
2:35 PM	0	0	2	0	2	0	2	0	1	10	2	0	0	16	2	0	37	365
2:40 PM	0	0	3	0	0	1	0	0	0	9	1	0	2	14	1	0	31	365
2:45 PM	0	1	0	0	1	0	3	0	0	15	0	0	0	17	1	0	38	363
2:50 PM	1	0	1	0	0	1	0	0	0	13	1	0	2	10	0	0	29	357
2:55 PM	2	1	2	0	0	0	0	0	0	13	0	0	0	9	0	0	27	361
3:00 PM	0	1	1	0	0	0	1	0	1	11	1	0	2	14	0	0	32	366
3:05 PM	0	0	0	0	0	0	2	0	0	9	1	0	0	15	0	0	27	377

5-Min Count Period Beginning At	3rd St (Northbound)				3rd St (Southbound)				Laneda Ave (Eastbound)				Laneda Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:10 PM	0	0	3	0	0	0	0	0	0	4	3	0	1	17	0	0	28	381
3:15 PM	2	0	0	0	1	1	0	0	1	9	0	0	0	22	1	0	37	388
3:20 PM	0	0	1	0	0	1	0	0	0	10	0	0	1	17	0	0	30	383
3:25 PM	0	0	2	0	0	0	0	0	0	14	0	0	0	14	2	0	32	389
3:30 PM	0	0	1	0	0	0	2	0	0	7	0	0	0	20	1	0	31	379
3:35 PM	0	0	0	0	1	1	1	0	1	10	1	0	0	16	1	0	32	374
3:40 PM	0	0	0	0	1	1	0	0	0	5	0	0	1	17	2	0	27	370
3:45 PM	0	0	2	0	0	0	1	0	1	12	0	0	1	11	0	0	28	360
3:50 PM	1	0	0	0	2	1	1	0	0	9	0	0	0	11	0	0	25	356
3:55 PM	0	0	0	0	1	2	1	0	1	13	0	0	1	8	0	0	27	356

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	4	4	0	8	16	24	0	0	144	12	0	8	204	12	0	436
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	12	0		12
Buses																	
Pedestrians		328				160				76				8			572
Bicycles	0	0	0		0	0	0		4	8	0		0	12	0		24
Scooters																	

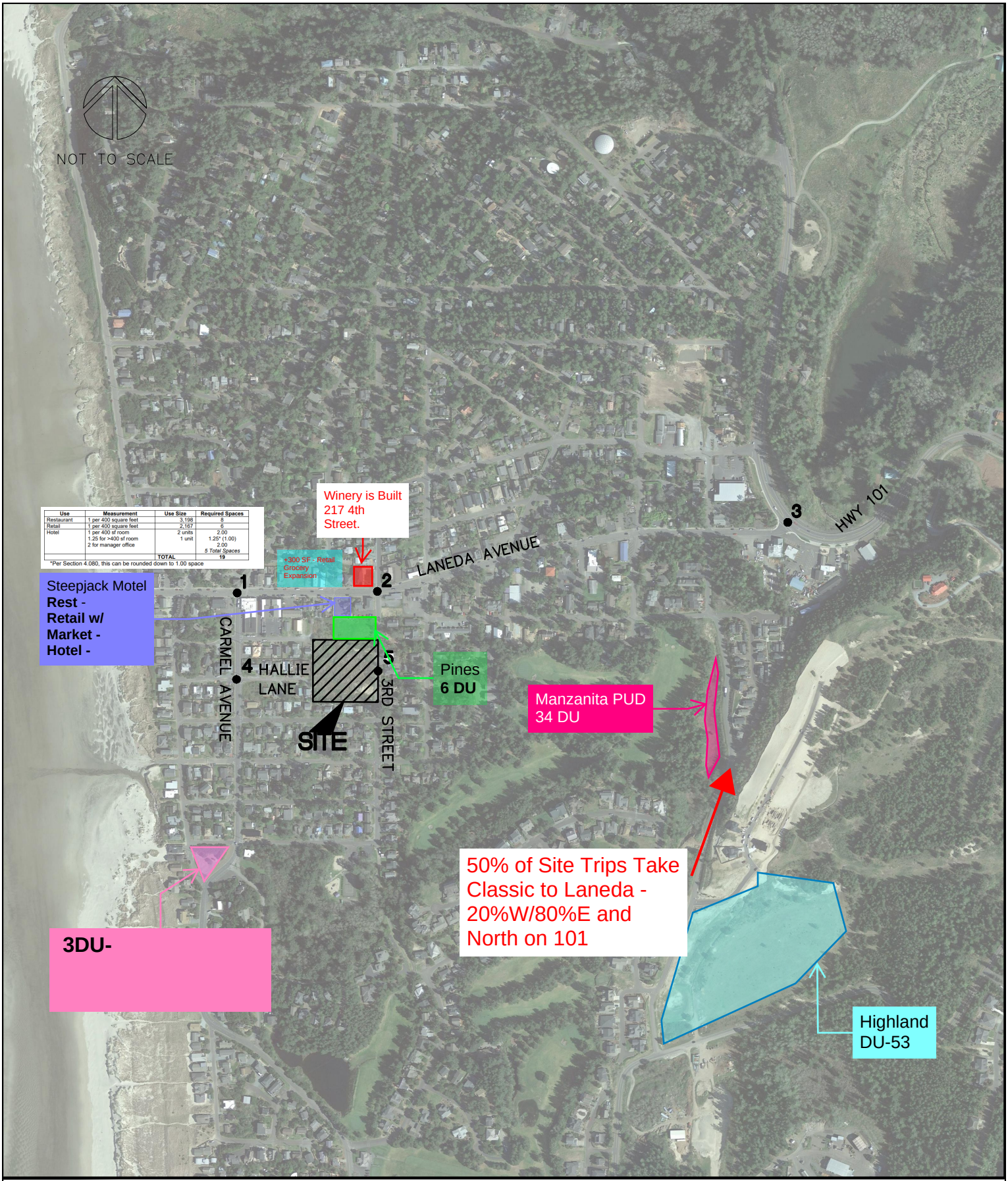
Comments:

Report generated on 8/30/2022 1:33 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

APPENDIX E

IN-PROCESS TRIPS & VICINITY MAP



Use	Measurement	Use Size	Required Spaces
Restaurant	1 per 400 square feet	3,198	8
Retail	1 per 400 square feet	2,167	6
Hotel	1 per 400 sf room	2 units	2.00
	1.25 for >400 sf room	1 unit	1.25* (1.00)
	2 for manager office		2.00
			5 Total Spaces
		TOTAL	19

*Per Section 4.080, this can be rounded down to 1.00 space

Portland 503.224.9560 | Vancouver 360.695.7879 | Seattle 206.749.9993
www.mcknze.com
Architecture ▪ Interiors
Planning ▪ Engineering
MACKENZIE

DATE: 9.2.2022
DRAWN BY: CNL
CHECKED BY: JTJ
JOB NO: 222019400

VICINITY MAP

HERON'S REST
MANZANITA, OREGON

FIGURE 1

MACKENZIE.

May 9, 2022

Manzanita Lofts LLC
Attention: Vito Cerelli
31987 Maxwell Lane
Arch Cape, OR 97102

Re: **Manzanita Lofts PUD**
Traffic Analysis
Project Number 2220120.00

Dear Mr. Cerelli:

This letter has been prepared to address traffic impacts of the proposed Manzanita Lofts vacation rentals. The project consists of 9 cabins (1,000 SF), 6 small cottages (350 SF) and 19 studio hotel rooms (350 SF) for a total of 34 units. Access to the site is proposed on Dorcas Lane, approximately 75 ft west of the intersection with Classic Street.

We understand Planning Commission members have asked for a review of impacts on the intersection of Classic Street with Dorcas Lane, currently stop controlled on the Classic Street approaches. The intersection has a single lane in each direction, and the roadways are approximately 21-22 ft in width. No sidewalks or bicycle facilities are currently provided. Classic Street has a slight offset across the intersection. Traffic volumes are not available from the City. Volumes are typically low on these streets, even during peak season.

Trip Generation

Trip estimates were made based on ITE's Trip Generation Manual, 11th Edition for the Motel Land Use. Weekday trip estimates are 114 daily, 17 AM peak hour, and 19 PM peak hour. On a weekend, Saturday volumes are highest at 309 daily trips. Other Land Uses, such as a hotel, were considered as well, but have lower trip rates and less available data.

Sight Distance

For these low volume and low speed local roadways, sight distances recommendations are 280 ft for 25 mph and 225 ft for 20 mph in accordance with the AASHTO Policy on Geometric Design of Highways and Streets. At the intersection of Classic Street with Dorcas Lane, sight distances can be met on each approach, although brush at the northeast corner of the intersection may need to be trimmed to meet the recommendations. Sight distance of 280 ft can be met at the proposed site access on Dorcas Lane with trimming of brush to the west of the driveway.

Crash History

A review of the last five years of crash data on the ODOT database did not indicate any crashes at the intersection of Dorcas Lane with Classic Street. One crash was noted on Laneda Avenue near the intersection with Classic Street, involving a vehicle backing up.

Pedestrian Access

No sidewalks are provided. Consistent with the character of the neighborhood, the project will not provide sidewalks on the street frontages. The roadways are intended to be shared by all users with slow speeds and low volumes encouraged by the narrow roadways.

Traffic Impacts

Most of the added trips from the project will travel through the Classic Street with Dorcas Lane intersection. With fewer than 20 trips added in even the busiest hour (one vehicle every three minutes) and an average of less than one vehicle every three minutes during even the busiest day, the intersection impact will be small. While a detailed analysis has not been prepared for this review, it is expected the intersection operates at a level of service "A" with very low delays with the exiting two-way stop control.

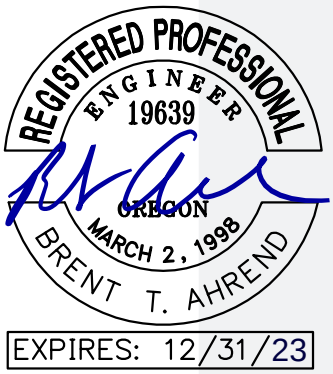
Summary

The addition of trips from the proposed Manzanita Lofts PUD will have a small impact on the existing roadways in the area, with operation remaining at a level of service "A" with low delays. Sight distances can be met and there are no noted safety deficiencies in the area based on a review of available crash data.

Sincerely,

Brent Ahrend, PE
Associate Principal | Traffic Engineer

Enclosure(s): Site Plan, crash data



SITE INFORMATION:

OWNER:
MANZANITA LOFTS LLC

TAX LOT
3N 10W TAX LOT 2600 + 2100

ZONING:
SR-R

LOT AREA:
146,456 SF

HOTEL AREA:
6,521 SF

CABIN AREA:
9,000 SF

MICRO CABIN AREA:
2,100 SF

ROAD/PARKING AREA:
26,479 SF

PERCENTAGE LOT COVERAGE w/ ROAD:
(6,521 + 9,000 + 2,100 + 26,479 SF) / (146,456 SF) x 100 = 30.11%

PERCENTAGE LOT COVERAGE w/o ROAD:
(6,521 + 9,000 + 2,100 SF) / (146,456 SF) x 100 = 12.03%

1 SITE PLAN
1" = 50'-0"

NOT FOR CONSTRUCTION

11251 SE 232nd AVE

DC STRUCTURES

DAMASCUS, OR 97089

MANZANITA RETREAT

TAX LOT:
3N 10W TAX LOT 2600 + 2100

SITE PLAN

Drawn By
TL
4/29/2022 2:44:43 PM

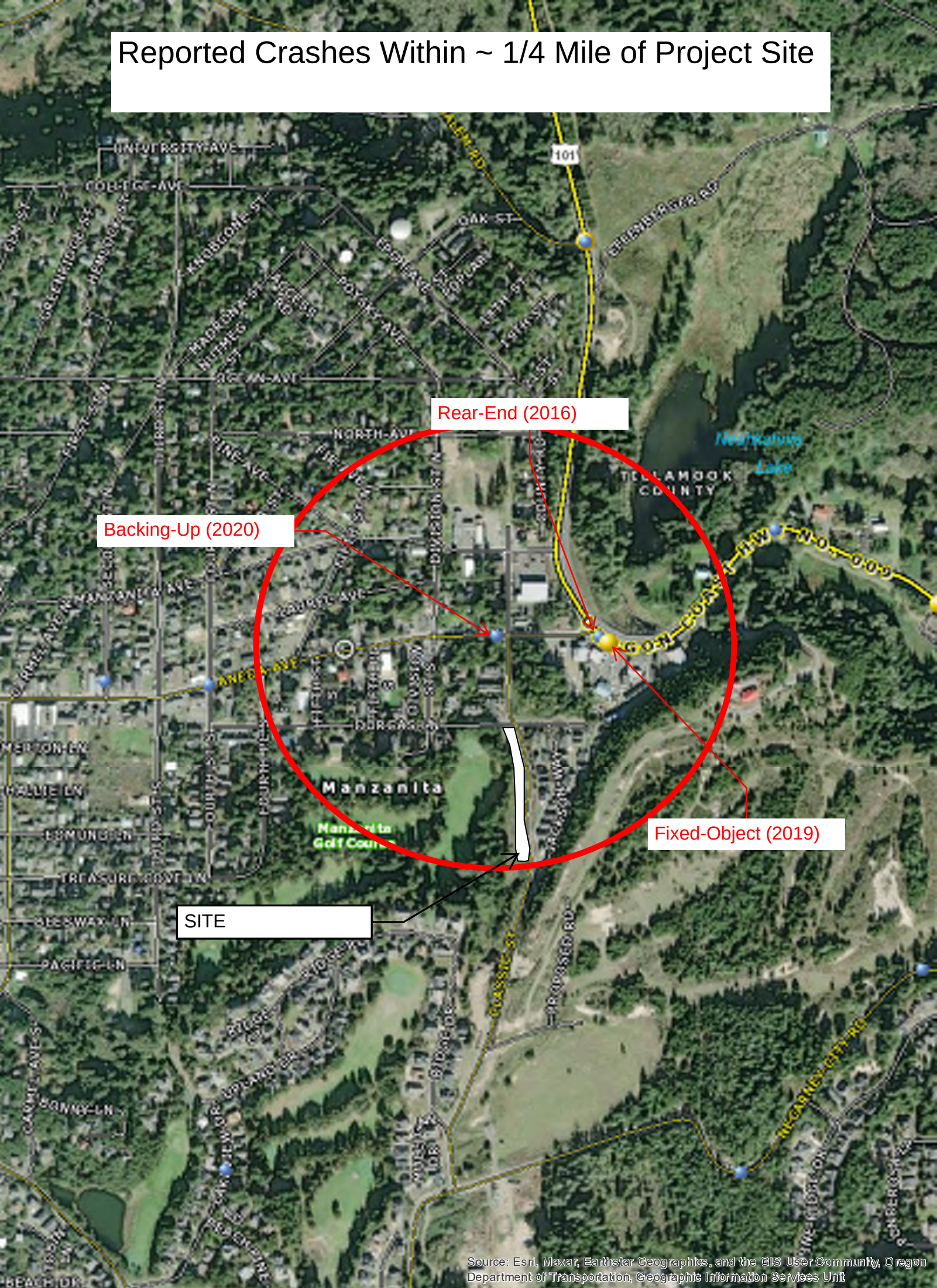
Drawing Index

No.	Date	Description

SITE

4/29/2022 2:44:43 PM

Reported Crashes Within ~ 1/4 Mile of Project Site



APPENDIX F

CRASH DATA

CITY OF MANZANITA, TILLAMOOK COUNTY

LANEDA AVE at CARMEL AVE, City of Manzanita, Tillamook County, 01/01/2016 to 12/31/2020

SER# / INVEST / RD DPT / UNLOC?	S P E D (SPEC)	A L C	D R U G S	J I N V	S C H L	M W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	SPCL USE / TRLR QTY / OWNER / V# TYPE	MOVE / FROM / TO	PRTC / P# TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED / LOC	ERROR	ACT EVENT	CAUSE

CITY OF MANZANITA, TILLAMOOK COUNTY

LANEDA AVE at 3RD ST, City of Manzanita, Tillamook County, 01/01/2016 to 12/31/2020

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE

CITY OF MANZANITA, TILLAMOOK COUNTY

LANEDA AVE at OREGON COAST HY, City of Manzanita, Tillamook County, 01/01/2016 to 12/31/2020

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R U G S	M J I N V	S C H L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE

2016 (2:00PM) - Crash ID (1706759) Rear-End - Failed to Avoid Vehicle ahead - Both Vehicles from the Same Direction (From the West) - Property Damage Only

CITY OF MANZANITA, TILLAMOOK COUNTY

LANEDA AVE and Intersectional Crashes at LANEDA AVE, City of Manzanita, Tillamook County, 01/01/2016 to 12/31/2020

1 - 3 of 3 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	M R U G S	J N H V	S I C L	W O R K	DATE / DAY / TIME / LAT	CLASS / DIST / FROM / LONG	CITY STREET / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC / TYPE	INJ / SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00153	N	N	N				06/25/2020	07	CLASSIC ST	INTER	CROSS	N	N	CLR	O-OTHER	01	NONE 9	STRGHT											10
NO RPT							TH	0	LANEDA AVE	N		UNKNOWN	N	DRY	BACK		N/A	W -E									088		00
N							5P			05	0		N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 43 9.38	-123 55 47.67																UNK					
																02	NONE 9	STOP											
																	N/A	E -W									011		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					
00029	N	N	N				02/13/2018	07	LANEDA AVE	STRGHT		N	Y	CLR	PRKD MV	01	NONE 9	STRGHT											10
NONE							TU	25	1ST ST	W	(NONE)	UNKNOWN	N	DRY	SS-O		N/A	E -W									000		00
Y							5P			05			N	DUSK	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 43 6.53	-123 56 23.35			(02)													UNK					
																02	NONE 9	PRKD-P											
																	N/A	E -W									008		00
																	PSNGR CAR												
00266	N	N	N				08/19/2016	07	LANEDA AVE	INTER	CROSS	N	N	CLR	ANGL-STP	01	NONE 9	TURN-L											08
NO RPT							FR	0	4TH ST	NE		STOP SIGN	N	DRY	TURN		N/A	N -NE									015		00
N							12P			06	0		N	DAY	PDO		SEMI TOW		01	DRVR	NONE	00	Unk	UNK		000	000		00
N							45 43 7.15	-123 56 6.36																UNK					
																02	NONE 9	STOP											
																	N/A	NE-SW									011		00
																	PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
																								UNK					

Not Study Area Intersection

OREGON DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION

TRANSPORTATION DATA SECTION - CRASH ANAYLYSIS AND REPORTING UNIT

CONTINUOUS SYSTEM CRASH LISTING

009: OREGON COAST

Highway 009 ALL ROAD TYPES, MP 43.0 to 43.9 01/01/2016 to 12/31/2020, Both Add and Non-Add mileage

1 - 5 of 11 Crash records shown.

SER# / INVEST / RD DPT / UNLOC?	S D M / P R J S W / E A U I C O / E L G N H R / D C S V L K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS / (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
00362	N N Y N N N	09/16/2019	TILLAMOOK	1 02		CURVE		N	Y	CLR	FIX OBJ	01	NONE	STRGHT										040	17,12
STATE		MO		MN 0		UN	(NONE)	UNKNOWN	N	DRY	FIX		PRVTE	N -S									088	040	00
Y		7A		43.19		06			Y	DAY	INJ		OTH BUS		01	DRVR	INJA	44	M	OTH-Y		079,081	028		12,17
N		45 43 9.06	-123 55 40.38		000900100S00		(02)													N-RES					
00317	Y N N N	09/14/2018	TILLAMOOK	1 02		CURVE		N	Y	CLR	FIX OBJ	01	NONE 9	STRGHT										079	01
NO RPT		FR		MN 0		UN	(NONE)	UNKNOWN	N	DRY	FIX		N/A	S -N									000		00
Y		11A		43.38		06			N	DAY	PDO		PSNGR CAR		01	DRVR	NONE	00	Unk	UNK		000	000		00
N		45 43 14.19	-123 55 29.53		000900100S00		(02)													UNK					
00256	N N N N N N	08/03/2019	TILLAMOOK	1 02		INTER	3-LEG	N	N	CLR	S-OTHER	01	NONE 0	U-TURN											02
CITY		SA		MN 0		N		NONE	N	DRY	TURN		PRVTE	N -N									051		00
N		12P		43.54		06	0		N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	37	F	OR-Y		028	000		02
N		45 43 10.81	-123 55 18.9		000900100S00															OR>25					
												02	NONE 0	STRGHT											
													PRVTE	N -S									000		00
			Neahkahnie Creek Rd										PSNGR CAR		01	DRVR	INJC	16	F	OR-Y		000	000		00
																				OR<25					
												02	NONE 0	STRGHT											
													PRVTE	N -S									000		00
													PSNGR CAR		02	PSNG	INJB	10	M			000	000		00
00395	N N N N N N	11/17/2018	TILLAMOOK	1 02		CURVE		N	Y	CLR	O-STRGHT	01	NONE 0	STRGHT											32,05,16
STATE		SA		MN 0		UN	(NONE)	NONE	N	DRY	SS-M		PRVTE	N -S									000		00
Y		5P		43.55		06			N	DARK	INJ		PSNGR CAR		01	DRVR	NONE	26	M	OR-Y		052,080,081	025		32,05,16
N		45 43 10.52	-123 55 18.34		000900100S00		(02)													OR<25					
												02	NONE 0	STRGHT											
													PRVTE	S -N									088		00
													PSNGR CAR		01	DRVR	INJC	58	M	OR-Y		000	000		00
																				OR>25					
												02	NONE 0	STRGHT											
													PRVTE	S -N									088		00
													PSNGR CAR		02	PSNG	INJC	58	F			000	000		00
												02	NONE 0	STRGHT											
													PRVTE	S -N									088		00
													PSNGR CAR		03	PSNG	INJC	16	F			000	000		00
00248	N N N N N N	07/22/2017	TILLAMOOK	1 02		ALLEY		N	N	CLR	BIKE	01	NONE	TURN-L											02,40
STATE		SA		MN 0		UN	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	S -W									019		00
N		4P		43.66		03			N	DAY	INJ		PSNGR CAR		01	DRVR	NONE	80	M	OTH-Y		027	026		02,40
N		45 43 7.76	-123 55 11.69		000900100S00		(02)													N-RES					
														-											
														STRGHT	01	BIKE	INJB	27	M		SHLDR	000	046		00
														N S											
00341	N N N N	10/02/2018	TILLAMOOK	1 02		ALLEY		N	N	CLR	ANGL-OTH	01	NONE 0	TURN-L											02
NONE		TU		MN 0		UN	(NONE)	UNKNOWN	N	DRY	TURN		PRVTE	W -N									018		00
N		7P		43.75		04			N	DARK	INJ		PSNGR CAR		01	DRVR	INJC	19	F	OR-Y		028	000		02
N		45 43 5.87	-123 55 5.96		000900100S00		(02)													OR<25					

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J N V	S I H L	W C O K	DATE / DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# / COMPNT / MLG / MILEPNT	FC / TYP	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TO	MOVE / FROM	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																		02	NONE 0 PRVTE PSNGR CAR	UNK UN-W	01	DRVR	NONE	00	M	OR-Y OR<25		000	019 000		00 00
00325 STATE N N	N	N	N	N	N	N	10/29/2020 TH 8A 45 43 5.87	TILLAMOOK -123 55 5.95	1 02 MN 0 43.75		000900100S00	STRGHT UN 04	(NONE) (02)	N UNKNOWN	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	61	M	OR-Y OR<25		026	000 000		27,10 00 10,27
																		02	NONE PRVTE PSNGR CAR	STOP S -N	01	DRVR	INJC	20	M	OR-Y OR<25		000	012 000		00 00
00378 STATE N N	N	N	N	N	N	N	10/19/2017 TH 10A 45 43 4.18	TILLAMOOK -123 55 .86	1 02 MN 0 43.83		000900100S00	STRGHT UN 03	(NONE) (02)	N UNKNOWN	N N	RAIN WET DAY	S-STRGHT REAR INJ	01	NONE PRVTE PSNGR CAR	STRGHT W -E	01	DRVR	NONE	71	F	OR-Y OR<25		016,042	000 038		27,29 00 27,29
																		02	NONE RENTL PSNGR CAR	STRGHT W -E	01	DRVR	INJC	41	M	OTH-Y N-RES		000	006 000		00 00
																		02	NONE RENTL PSNGR CAR	STRGHT W -E	02	PSNG	INJC	39	F			000	006 000		00 00
																		02	NONE RENTL PSNGR CAR	STRGHT W -E	03	PSNG	INJC	13	M			000	006 000		00 00
00145 NONE N N	N	N	N	N			05/25/2018 FR 2P 45 43 3.75	TILLAMOOK -123 54 59.6	1 02 MN 0 43.85		000900100S00	ALLEY UN 04	(NONE) (02)	N STOP SIGN	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT E -W	01	DRVR	NONE	69	F	OR-Y OR<25		026	000 000		29 00 29
																		02	NONE 0 PRVTE PSNGR CAR	STOP E -W	01	DRVR	INJC	17	F	OR-Y OR<25		000	012 000		00 00
																		02	NONE 0 PRVTE PSNGR CAR	STOP E -W	02	PSNG	INJC	00	Unk			000	012 000		00 00
00188 STATE N N	N	N	N	N	N	N	06/24/2019 MO 5P 45 43 3.56	TILLAMOOK -123 54 58.95	1 02 MN 0 43.86		000900100S00	ALLEY UN 04	(NONE) (02)	N NONE	N N	CLR DRY DAY	S-1STOP REAR INJ	01	NONE 0 PRVTE PSNGR CAR	STRGHT S -N	01	DRVR	NONE	68	M	OR-Y OR<25		016,043	000 038		27,29 00 27,29
																		02	NONE 0 PRVTE PSNGR CAR	STOP S -N	01	DRVR	INJB	39	F	OR-Y OR<25		000	012 000		00 00

Lighthouse Grill Driveway

Shell Driveway

Shell Driveway

Shell Driveway

SER# / INVEST / RD DPT / UNLOC?	S P E D	A L C	D R G S	M J U N V	S I H L	C N R K	W O DAY / TIME / LAT	COUNTY / CITY / URBAN AREA / LONG	RD# FC / COMPNT / MLG TYP / MILEPNT	CONN# / FIRST STREET / SECOND STREET / LRS	RD CHAR / DIRECT / LOCTN	INT-TYPE / (MEDIAN) / LEGS (#LANES)	INT-REL / TRAF- / CONTL	OFFRD / RNDBT / DRVWY	WTHR / SURF / LIGHT	CRASH / COLL / SVRTY	V#	SPCL USE / TRLR QTY / OWNER / TYPE	MOVE / FROM / TO	P#	PRTC TYPE	INJ SVRTY	A G E	S E X	LICNS / RES	PED LOC	ERROR	ACT	EVENT	CAUSE
																	02	NONE 0 PRVTE PSNGR CAR	STOP S -N	02	PSNG	INJB	00	F			000	012 000		00 00
00227 STATE N N	N	Y	N	N	N	N	07/19/2018 TH 9P 45 43 3.07	TILLAMOOK -123 54 56.95	1 02 MN 0 43.89	 000900100S00	INTER S 05 0	3-LEG	N STOP SIGN	Y N N	CLR DRY DUSK	FIX OBJ FIX INJ	01	NONE 0 PRVTE PSNGR CAR	TURN-L E -S	01	DRVR	INJB	45	M	OR-Y OR>25		001,081	088	053 053	08 00 08

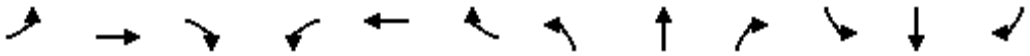
Carney City Rd

APPENDIX G

OPERATIONS CALCULATIONS

HCM Unsignalized Intersection Capacity Analysis
1: Carmel Avenue & Laneda Avenue

09/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	70	21	55	77	6	11	9	45	3	7	6
Future Volume (vph)	3	70	21	55	77	6	11	9	45	3	7	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	80	24	62	88	7	12	10	51	3	8	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	107	157	73	18
Volume Left (vph)	3	62	12	3
Volume Right (vph)	24	7	51	7
Hadj (s)	-0.10	0.12	-0.26	-0.08
Departure Headway (s)	4.2	4.3	4.2	4.5
Degree Utilization, x	0.12	0.19	0.09	0.02
Capacity (veh/h)	835	809	793	740
Control Delay (s)	7.8	8.4	7.6	7.6
Approach Delay (s)	7.8	8.4	7.6	7.6
Approach LOS	A	A	A	A

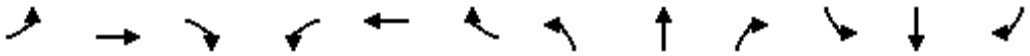
Intersection Summary			
Delay	8.0		
Level of Service	A		
Intersection Capacity Utilization	32.5%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	70	21	55	77	6	11	9	45	3	7	6
Future Vol, veh/h	3	70	21	55	77	6	11	9	45	3	7	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	2	1	6	2	17	9	22	4	1	14	1
Mvmt Flow	3	80	24	63	88	7	13	10	51	3	8	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.7	8.4	7.7	7.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	3%	40%	19%
Vol Thru, %	14%	74%	56%	44%
Vol Right, %	69%	22%	4%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	65	94	138	16
LT Vol	11	3	55	3
Through Vol	9	70	77	7
RT Vol	45	21	6	6
Lane Flow Rate	74	107	157	18
Geometry Grp	1	1	1	1
Degree of Util (X)	0.088	0.121	0.187	0.022
Departure Headway (Hd)	4.279	4.07	4.299	4.401
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	842	865	825	818
Service Time	2.28	2.168	2.377	2.403
HCM Lane V/C Ratio	0.088	0.124	0.19	0.022
HCM Control Delay	7.7	7.7	8.4	7.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.4	0.7	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	137	2	14	143	11	2	3	15	3	1	13
Future Volume (Veh/h)	1	137	2	14	143	11	2	3	15	3	1	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	1	163	2	17	170	13	2	4	18	4	1	15
Pedestrians		30			25			130			133	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		3			2			12			13	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	316			295			552	646	319	554	640	340
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	316			295			552	646	319	554	640	340
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.4	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	100			98			99	99	97	98	100	97
cM capacity (veh/h)	1097			1115			299	295	619	264	298	598

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	166	200	24	20
Volume Left	1	17	2	4
Volume Right	2	13	18	15
cSH	1097	1115	487	459
Volume to Capacity	0.00	0.02	0.05	0.04
Queue Length 95th (ft)	0	1	4	3
Control Delay (s)	0.1	0.8	12.8	13.2
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.8	12.8	13.2
Approach LOS			B	B

Intersection Summary				
Average Delay	1.8			
Intersection Capacity Utilization	36.5%	ICU Level of Service	A	
Analysis Period (min)	15			

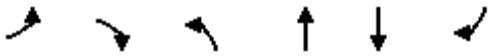
Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	137	2	14	143	11	2	3	15	3	1	13
Future Vol, veh/h	1	137	2	14	143	11	2	3	15	3	1	13
Conflicting Peds, #/hr	133	0	130	130	0	133	30	0	25	25	0	30
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	2	1	1	4	1	1	1	1	33	0	1
Mvmt Flow	1	163	2	17	170	13	2	4	18	4	1	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	316	0	0	295	0	0	545	646	319	546	641	340
Stage 1	-	-	-	-	-	-	296	296	-	344	344	-
Stage 2	-	-	-	-	-	-	249	350	-	202	297	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.11	6.51	6.21	7.43	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.509	4.009	3.309	3.797	4	3.309
Pot Cap-1 Maneuver	1256	-	-	1272	-	-	451	392	724	404	395	705
Stage 1	-	-	-	-	-	-	715	670	-	612	640	-
Stage 2	-	-	-	-	-	-	757	635	-	734	671	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1097	-	-	1115	-	-	368	294	619	327	297	598
Mov Cap-2 Maneuver	-	-	-	-	-	-	368	294	-	327	297	-
Stage 1	-	-	-	-	-	-	626	586	-	534	549	-
Stage 2	-	-	-	-	-	-	703	545	-	691	587	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.7	12.5	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	502	1097	-	-	1115	-	-	496
HCM Lane V/C Ratio	0.047	0.001	-	-	0.015	-	-	0.041
HCM Control Delay (s)	12.5	8.3	0	-	8.3	0	-	12.6
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	57	122	111	277	370	67
Future Volume (Veh/h)	57	122	111	277	370	67
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	63	136	123	308	411	74
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1002	448	485			
vC1, stage 1 conf vol	448					
vC2, stage 2 conf vol	554					
vCu, unblocked vol	1002	448	485			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	86	78	89			
cM capacity (veh/h)	438	609	1073			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	199	123	308	485
Volume Left	63	123	0	0
Volume Right	136	0	0	74
cSH	542	1073	1700	1700
Volume to Capacity	0.37	0.11	0.18	0.29
Queue Length 95th (ft)	42	10	0	0
Control Delay (s)	15.4	8.8	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	15.4	2.5		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

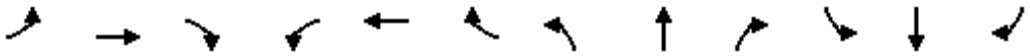
Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	57	122	111	277	370	67
Future Vol, veh/h	57	122	111	277	370	67
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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	3	3	9	5	6
Mvmt Flow	63	136	123	308	411	74

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1002	448	485	0	-	0
Stage 1	448	-	-	-	-	-
Stage 2	554	-	-	-	-	-
Critical Hdwy	6.44	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	266	609	1073	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	235	609	1073	-	-	-
Mov Cap-2 Maneuver	235	-	-	-	-	-
Stage 1	566	-	-	-	-	-
Stage 2	572	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	22.2	2.5	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1073	-	404	-	-
HCM Lane V/C Ratio	0.115	-	0.492	-	-
HCM Control Delay (s)	8.8	-	22.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	2.6	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	1	0	0	3	0	48	0	5	69	9
Future Volume (Veh/h)	5	0	1	0	0	3	0	48	0	5	69	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	0	1	0	0	3	0	55	0	6	78	10
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	153	150	83	151	155	55	88			55		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	153	150	83	151	155	55	88			55		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	809	739	976	813	734	1012	1508			1550		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	3	55	94
Volume Left	6	0	0	6
Volume Right	1	3	0	10
cSH	830	1012	1508	1550
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	9.4	8.6	0.0	0.5
Lane LOS	A	A		A
Approach Delay (s)	9.4	8.6	0.0	0.5
Approach LOS	A	A		

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	20.6%	ICU Level of Service	A	
Analysis Period (min)	15			

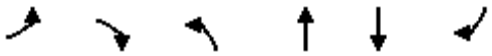
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	1	0	0	3	0	48	0	5	69	9
Future Vol, veh/h	5	0	1	0	0	3	0	48	0	5	69	9
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	6	0	1	0	0	3	0	55	0	6	78	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	152	150	83	151	155	55	88	0	0	55	0	0
Stage 1	95	95	-	55	55	-	-	-	-	-	-	-
Stage 2	57	55	-	96	100	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	815	742	976	816	737	1012	1508	-	-	1550	-	-
Stage 1	912	816	-	957	849	-	-	-	-	-	-	-
Stage 2	955	849	-	911	812	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	810	739	976	813	734	1012	1508	-	-	1550	-	-
Mov Cap-2 Maneuver	810	739	-	813	734	-	-	-	-	-	-	-
Stage 1	912	813	-	957	849	-	-	-	-	-	-	-
Stage 2	952	849	-	906	809	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.4	8.6	0	0.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1508	-	-	834	1012	1550	-	-
HCM Lane V/C Ratio	-	-	-	0.008	0.003	0.004	-	-
HCM Control Delay (s)	0	-	-	9.4	8.6	7.3	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	20	17	0
Future Volume (Veh/h)	0	0	0	20	17	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	24	20	0
Pedestrians	30					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	3					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	74	50	50			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	74	50	50			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	908	995	1525			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	24	20
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1525	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	12.3%	ICU Level of Service	A
Analysis Period (min)	15		

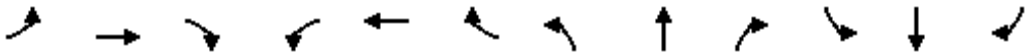
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	20	17	0
Future Vol, veh/h	0	0	0	20	17	0
Conflicting Peds, #/hr	0	0	30	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	0	24	20	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	74	50	50	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	935	1024	1570	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	882	995	1525	-	-	-
Mov Cap-2 Maneuver	882	-	-	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	975	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1525	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	74	25	39	124	17	25	12	63	8	7	7
Future Volume (vph)	1	74	25	39	124	17	25	12	63	8	7	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	81	27	43	136	19	27	13	69	9	8	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	109	198	109	25
Volume Left (vph)	1	43	27	9
Volume Right (vph)	27	19	69	8
Hadj (s)	-0.12	0.03	-0.31	-0.03
Departure Headway (s)	4.3	4.4	4.3	4.7
Degree Utilization, x	0.13	0.24	0.13	0.03
Capacity (veh/h)	800	789	778	702
Control Delay (s)	8.0	8.7	8.0	7.9
Approach Delay (s)	8.0	8.7	8.0	7.9
Approach LOS	A	A	A	A

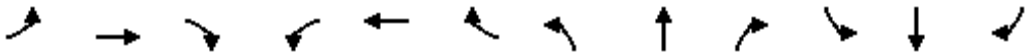
Intersection Summary			
Delay	8.3		
Level of Service	A		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	8.3
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	74	25	39	124	17	25	12	63	8	7	7
Future Vol, veh/h	1	74	25	39	124	17	25	12	63	8	7	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	1	1	4	1	2	13	1	1	1	1	1	14
Mvmt Flow	1	81	27	43	136	19	27	13	69	9	8	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	8.7	8	7.8
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	1%	22%	36%
Vol Thru, %	12%	74%	69%	32%
Vol Right, %	63%	25%	9%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	100	100	180	22
LT Vol	25	1	39	8
Through Vol	12	74	124	7
RT Vol	63	25	17	7
Lane Flow Rate	110	110	198	24
Geometry Grp	1	1	1	1
Degree of Util (X)	0.131	0.131	0.238	0.031
Departure Headway (Hd)	4.301	4.281	4.337	4.61
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	835	840	833	777
Service Time	2.32	2.299	2.337	2.634
HCM Lane V/C Ratio	0.132	0.131	0.238	0.031
HCM Control Delay	8	7.9	8.7	7.8
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.5	0.9	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	138	7	11	181	7	1	2	9	7	5	18
Future Volume (Veh/h)	6	138	7	11	181	7	1	2	9	7	5	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			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)	7	153	8	12	201	8	1	2	10	8	6	20
Pedestrians		86			18			304			216	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		8			2			29			21	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	425			465			813	924	479	645	924	507
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	425			465			813	924	479	645	924	507
tC, single (s)	4.3			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	99			98			99	99	98	96	96	95
cM capacity (veh/h)	841			783			116	149	411	189	139	414

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	168	221	13	34
Volume Left	7	12	1	8
Volume Right	8	8	10	20
cSH	841	783	281	254
Volume to Capacity	0.01	0.02	0.05	0.13
Queue Length 95th (ft)	1	1	4	11
Control Delay (s)	0.5	0.7	18.5	21.4
Lane LOS	A	A	C	C
Approach Delay (s)	0.5	0.7	18.5	21.4
Approach LOS			C	C

Intersection Summary			
Average Delay	2.7		
Intersection Capacity Utilization	35.3%	ICU Level of Service	A
Analysis Period (min)	15		

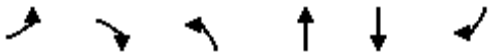
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		⇕			⇕			⇕			⇕	
Traffic Vol, veh/h	6	138	7	11	181	7	1	2	9	7	5	18
Future Vol, veh/h	6	138	7	11	181	7	1	2	9	7	5	18
Conflicting Peds, #/hr	216	0	304	304	0	216	86	0	18	18	0	83
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	17	2	1	1	3	1	1	1	1	1	20	1
Mvmt Flow	7	153	8	12	201	8	1	2	10	8	6	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	425	0	0	465	0	0	803	924	479	640	924	507
Stage 1	-	-	-	-	-	-	475	475	-	445	445	-
Stage 2	-	-	-	-	-	-	328	449	-	195	479	-
Critical Hdwy	4.27	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.7	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.7	-
Follow-up Hdwy	2.353	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.18	3.309
Pot Cap-1 Maneuver	1058	-	-	1102	-	-	303	270	589	390	252	568
Stage 1	-	-	-	-	-	-	572	559	-	594	545	-
Stage 2	-	-	-	-	-	-	687	574	-	809	526	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	840	-	-	783	-	-	179	148	411	288	138	414
Mov Cap-2 Maneuver	-	-	-	-	-	-	179	148	-	288	138	-
Stage 1	-	-	-	-	-	-	403	394	-	467	426	-
Stage 2	-	-	-	-	-	-	582	448	-	764	370	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5	17.9	19.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	293	840	-	-	783	-	-	288
HCM Lane V/C Ratio	0.046	0.008	-	-	0.016	-	-	0.116
HCM Control Delay (s)	17.9	9.3	0	-	9.7	0	-	19.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	0.4



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	108	122	354	387	64
Future Volume (Veh/h)	54	108	122	354	387	64
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)	56	112	127	369	403	67
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1062	438	472			
vC1, stage 1 conf vol	438					
vC2, stage 2 conf vol	623					
vCu, unblocked vol	1062	438	472			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	87	82	88			
cM capacity (veh/h)	417	617	1088			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	168	127	369	470
Volume Left	56	127	0	0
Volume Right	112	0	0	67
cSH	532	1088	1700	1700
Volume to Capacity	0.32	0.12	0.22	0.28
Queue Length 95th (ft)	34	10	0	0
Control Delay (s)	14.9	8.7	0.0	0.0
Lane LOS	B	A		
Approach Delay (s)	14.9	2.2		0.0
Approach LOS	B			

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

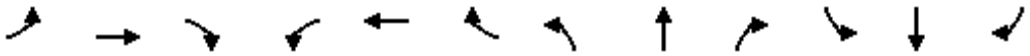
Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	54	108	122	354	387	64
Future Vol, veh/h	54	108	122	354	387	64
Conflicting Peds, #/hr	0	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	4	5	6
Mvmt Flow	56	113	127	369	403	67

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1062	439	472	0	-	0
Stage 1	439	-	-	-	-	-
Stage 2	623	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	247	618	1090	-	-	-
Stage 1	650	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	217	617	1088	-	-	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	573	-	-	-	-	-
Stage 2	534	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	21.7	2.2	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1088	-	382	-	-
HCM Lane V/C Ratio	0.117	-	0.442	-	-
HCM Control Delay (s)	8.7	-	21.7	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	2.2	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	1	0	0	4	0	89	0	4	60	7
Future Volume (Veh/h)	7	0	1	0	0	4	0	89	0	4	60	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	0	1	0	0	4	0	98	0	4	66	8
Pedestrians		34			35							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		3			3							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	214	245	104	212	249	133	108			133		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	214	245	104	212	249	133	108			133		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	683	616	925	686	613	891	1447			1415		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	9	4	98	78
Volume Left	8	0	0	4
Volume Right	1	4	0	8
cSH	703	891	1447	1415
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	10.2	9.1	0.0	0.4
Lane LOS	B	A		A
Approach Delay (s)	10.2	9.1	0.0	0.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	0.8			
Intersection Capacity Utilization	24.1%	ICU Level of Service	A	
Analysis Period (min)	15			

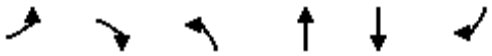
Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	1	0	0	4	0	89	0	4	60	7
Future Vol, veh/h	7	0	1	0	0	4	0	89	0	4	60	7
Conflicting Peds, #/hr	0	0	0	0	0	0	34	0	35	35	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	8	0
Mvmt Flow	8	0	1	0	0	4	0	98	0	4	66	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	212	245	104	212	249	133	108	0	0	133	0	0
Stage 1	112	112	-	133	133	-	-	-	-	-	-	-
Stage 2	100	133	-	79	116	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	749	661	956	749	657	922	1495	-	-	1464	-	-
Stage 1	898	807	-	875	790	-	-	-	-	-	-	-
Stage 2	911	790	-	935	803	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	720	617	925	721	613	891	1447	-	-	1415	-	-
Mov Cap-2 Maneuver	720	617	-	721	613	-	-	-	-	-	-	-
Stage 1	869	779	-	846	764	-	-	-	-	-	-	-
Stage 2	907	764	-	931	775	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.9	9.1	0	0.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1447	-	-	741	891	1415	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.005	0.003	-	-
HCM Control Delay (s)	0	-	-	9.9	9.1	7.6	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	12	23	0
Future Volume (Veh/h)	0	0	0	12	23	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	13	26	0
Pedestrians	83					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	8					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	109	109			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	109	109			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	809	875	1376			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	13	26
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1376	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		

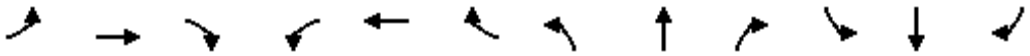
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	12	23	0
Future Vol, veh/h	0	0	0	12	23	0
Conflicting Peds, #/hr	0	0	83	0	0	83
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	0	0	0	13	26	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	122	109	109	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	13	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	878	950	1494	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	745	875	1376	-	-	-
Mov Cap-2 Maneuver	745	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	935	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1376	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	81	21	58	86	6	11	9	47	3	7	6
Future Volume (vph)	3	81	21	58	86	6	11	9	47	3	7	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	92	24	66	98	7	12	10	53	3	8	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	119	171	75	18
Volume Left (vph)	3	66	12	3
Volume Right (vph)	24	7	53	7
Hadj (s)	-0.09	0.12	-0.22	-0.08
Departure Headway (s)	4.2	4.4	4.3	4.6
Degree Utilization, x	0.14	0.21	0.09	0.02
Capacity (veh/h)	826	804	772	726
Control Delay (s)	7.9	8.5	7.8	7.7
Approach Delay (s)	7.9	8.5	7.8	7.7
Approach LOS	A	A	A	A

Intersection Summary				
Delay	8.1			
Level of Service	A			
Intersection Capacity Utilization	33.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

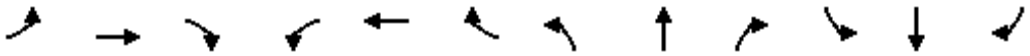
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	81	21	58	86	6	11	9	47	3	7	6
Future Vol, veh/h	3	81	21	58	86	6	11	9	47	3	7	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	2	1	6	2	17	4	22	9	1	14	1
Mvmt Flow	3	92	24	66	98	7	13	10	53	3	8	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	8.5	7.7	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	16%	3%	39%	19%
Vol Thru, %	13%	77%	57%	44%
Vol Right, %	70%	20%	4%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	67	105	150	16
LT Vol	11	3	58	3
Through Vol	9	81	86	7
RT Vol	47	21	6	6
Lane Flow Rate	76	119	170	18
Geometry Grp	1	1	1	1
Degree of Util (X)	0.09	0.139	0.204	0.023
Departure Headway (Hd)	4.247	4.203	4.312	4.462
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	847	858	822	805
Service Time	2.254	2.203	2.399	2.472
HCM Lane V/C Ratio	0.09	0.139	0.207	0.022
HCM Control Delay	7.7	7.9	8.5	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.8	0.1

HCM Unsignalized Intersection Capacity Analysis
2: 3rd Street & Laneda Avenue

09/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	158	2	17	170	11	2	3	15	3	1	13
Future Volume (Veh/h)	1	158	2	17	170	11	2	3	15	3	1	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	1	188	2	20	202	13	2	4	18	4	1	15
Pedestrians		30			25			130			133	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		3			2			12			13	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	348			320			615	709	344	618	704	372
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	348			320			615	709	344	618	704	372
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.4	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.8	4.0	3.3
p0 queue free %	100			98			99	99	97	98	100	97
cM capacity (veh/h)	1067			1091			270	270	600	238	273	574

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	191	235	24	20
Volume Left	1	20	2	4
Volume Right	2	13	18	15
cSH	1067	1091	460	429
Volume to Capacity	0.00	0.02	0.05	0.05
Queue Length 95th (ft)	0	1	4	4
Control Delay (s)	0.1	0.9	13.3	13.8
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.9	13.3	13.8
Approach LOS			B	B

Intersection Summary				
Average Delay	1.7			
Intersection Capacity Utilization	40.5%	ICU Level of Service	A	
Analysis Period (min)	15			

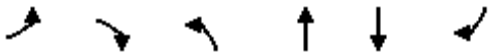
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	158	2	17	170	11	2	3	15	3	1	13
Future Vol, veh/h	1	158	2	17	170	11	2	3	15	3	1	13
Conflicting Peds, #/hr	133	0	130	130	0	133	30	0	25	25	0	30
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	2	1	1	4	1	1	1	1	33	0	1
Mvmt Flow	1	188	2	20	202	13	2	4	18	4	1	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	320	0	0	608	709	344	609	704	372
Stage 1	-	-	-	-	-	-	321	321	-	382	382	-
Stage 2	-	-	-	-	-	-	287	388	-	227	322	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.11	6.51	6.21	7.43	6.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.43	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.43	5.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.509	4.009	3.309	3.797	4	3.309
Pot Cap-1 Maneuver	1222	-	-	1246	-	-	409	360	701	366	364	676
Stage 1	-	-	-	-	-	-	693	653	-	582	616	-
Stage 2	-	-	-	-	-	-	723	611	-	711	655	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1067	-	-	1092	-	-	332	269	600	295	272	574
Mov Cap-2 Maneuver	-	-	-	-	-	-	332	269	-	295	272	-
Stage 1	-	-	-	-	-	-	606	571	-	508	527	-
Stage 2	-	-	-	-	-	-	668	522	-	669	573	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	0.7	13	13.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	474	1067	-	-	1092	-	-	466
HCM Lane V/C Ratio	0.05	0.001	-	-	0.019	-	-	0.043
HCM Control Delay (s)	13	8.4	0	-	8.4	0	-	13.1
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	71	138	133	283	377	92
Future Volume (Veh/h)	71	138	133	283	377	92
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	79	153	148	314	419	102
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1080	470	521			
vC1, stage 1 conf vol	470					
vC2, stage 2 conf vol	610					
vCu, unblocked vol	1080	470	521			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	81	74	86			
cM capacity (veh/h)	407	589	1040			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	232	148	314	521
Volume Left	79	148	0	0
Volume Right	153	0	0	102
cSH	511	1040	1700	1700
Volume to Capacity	0.45	0.14	0.18	0.31
Queue Length 95th (ft)	58	12	0	0
Control Delay (s)	17.8	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	17.8	2.9		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

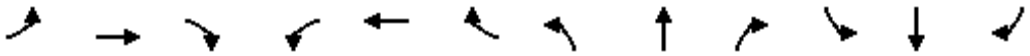
Intersection	
Int Delay, s/veh	7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	71	138	133	283	377	92
Future Vol, veh/h	71	138	133	283	377	92
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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	4	3	9	5	6
Mvmt Flow	79	153	148	314	419	102

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1080	470	521	0	-	0
Stage 1	470	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Critical Hdwy	6.42	6.24	4.13	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.336	2.227	-	-	-
Pot Cap-1 Maneuver	241	589	1040	-	-	-
Stage 1	629	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	207	589	1040	-	-	-
Mov Cap-2 Maneuver	207	-	-	-	-	-
Stage 1	540	-	-	-	-	-
Stage 2	542	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	31.1	2.9	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1040	-	362	-	-
HCM Lane V/C Ratio	0.142	-	0.641	-	-
HCM Control Delay (s)	9	-	31.1	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.5	-	4.3	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	1	0	0	3	0	50	0	9	72	5
Future Volume (Veh/h)	5	0	1	0	0	3	0	50	0	9	72	5
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	0	1	0	0	3	0	57	0	10	82	6
Pedestrians		38			27							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		4			3							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	203	227	123	190	230	84	126			84		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203	227	123	190	230	84	126			84		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	99	100	100	100	100	100	100			99		
cM capacity (veh/h)	692	630	900	715	628	956	1420			1486		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	3	57	98
Volume Left	6	0	0	10
Volume Right	1	3	0	6
cSH	716	956	1420	1486
Volume to Capacity	0.01	0.00	0.00	0.01
Queue Length 95th (ft)	1	0	0	1
Control Delay (s)	10.1	8.8	0.0	0.8
Lane LOS	B	A		A
Approach Delay (s)	10.1	8.8	0.0	0.8
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	24.4%	ICU Level of Service	A	
Analysis Period (min)	15			

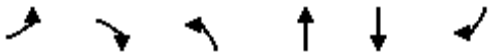
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	1	0	0	3	0	50	0	9	72	5
Future Vol, veh/h	5	0	1	0	0	3	0	50	0	9	72	5
Conflicting Peds, #/hr	0	0	0	0	0	0	38	0	27	27	0	38
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	9	0	0	5	0
Mvmt Flow	6	0	1	0	0	3	0	57	0	10	82	6

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	202	227	123	190	230	84	126	0	0	84	0	0
Stage 1	143	143	-	84	84	-	-	-	-	-	-	-
Stage 2	59	84	-	106	146	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	761	676	933	774	673	981	1473	-	-	1526	-	-
Stage 1	865	782	-	929	829	-	-	-	-	-	-	-
Stage 2	958	829	-	905	780	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	727	630	899	749	627	956	1420	-	-	1487	-	-
Mov Cap-2 Maneuver	727	630	-	749	627	-	-	-	-	-	-	-
Stage 1	834	748	-	905	807	-	-	-	-	-	-	-
Stage 2	955	807	-	898	746	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	8.8	0	0.8
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1420	-	-	751	956	1487	-	-
HCM Lane V/C Ratio	-	-	-	0.009	0.004	0.007	-	-
HCM Control Delay (s)	0	-	-	9.8	8.8	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	20	17	0
Future Volume (Veh/h)	0	0	0	20	17	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	0	0	0	24	20	0
Pedestrians	30					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	3					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	74	50	50			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	74	50	50			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	908	995	1525			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	24	20
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1525	1700
Volume to Capacity	0.00	0.00	0.01
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	12.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	20	17	0
Future Vol, veh/h	0	0	0	20	17	0
Conflicting Peds, #/hr	0	0	30	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	0	0	0	24	20	0

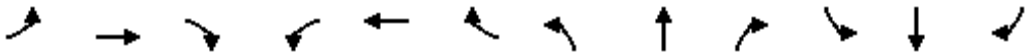
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	74	50	50	0	-	0
Stage 1	50	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	935	1024	1570	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	882	995	1525	-	-	-
Mov Cap-2 Maneuver	882	-	-	-	-	-
Stage 1	950	-	-	-	-	-
Stage 2	975	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1525	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

HCM Unsignalized Intersection Capacity Analysis
1: Carmel Avenue & Laneda Avenue

09/20/2022



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	88	26	42	137	17	26	12	65	8	7	7
Future Volume (vph)	1	88	26	42	137	17	26	12	65	8	7	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	97	29	46	151	19	29	13	71	9	8	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	127	216	113	25
Volume Left (vph)	1	46	29	9
Volume Right (vph)	29	19	71	8
Hadj (s)	-0.11	0.04	-0.31	-0.03
Departure Headway (s)	4.4	4.4	4.4	4.8
Degree Utilization, x	0.15	0.26	0.14	0.03
Capacity (veh/h)	791	783	758	684
Control Delay (s)	8.1	9.0	8.1	8.0
Approach Delay (s)	8.1	9.0	8.1	8.0
Approach LOS	A	A	A	A

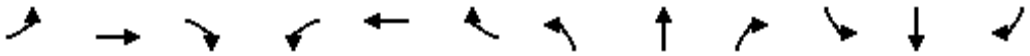
Intersection Summary				
Delay	8.5			
Level of Service	A			
Intersection Capacity Utilization	37.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	88	26	42	137	17	26	12	65	8	7	7
Future Vol, veh/h	1	88	26	42	137	17	26	12	65	8	7	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	1	1	4	1	2	13	1	1	1	1	1	14
Mvmt Flow	1	97	29	46	151	19	29	13	71	9	8	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.1	8.9	8.1	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	25%	1%	21%	36%
Vol Thru, %	12%	77%	70%	32%
Vol Right, %	63%	23%	9%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	103	115	196	22
LT Vol	26	1	42	8
Through Vol	12	88	137	7
RT Vol	65	26	17	7
Lane Flow Rate	113	126	215	24
Geometry Grp	1	1	1	1
Degree of Util (X)	0.138	0.152	0.261	0.032
Departure Headway (Hd)	4.378	4.328	4.356	4.696
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	819	829	825	762
Service Time	2.402	2.35	2.376	2.725
HCM Lane V/C Ratio	0.138	0.152	0.261	0.031
HCM Control Delay	8.1	8.1	8.9	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.5	1	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	165	7	13	215	7	1	2	11	7	5	18
Future Volume (Veh/h)	6	165	7	13	215	7	1	2	11	7	5	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			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)	7	183	8	14	239	8	1	2	12	8	6	20
Pedestrians		83			18			304			216	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		8			2			29			21	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	463			495			882	996	509	719	996	542
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463			495			882	996	509	719	996	542
tC, single (s)	4.3			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	99			98			99	99	97	95	95	95
cM capacity (veh/h)	813			763			104	135	395	167	125	397

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	198	261	15	34
Volume Left	7	14	1	8
Volume Right	8	8	12	20
cSH	813	763	274	232
Volume to Capacity	0.01	0.02	0.05	0.15
Queue Length 95th (ft)	1	1	4	13
Control Delay (s)	0.4	0.7	18.9	23.1
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	0.7	18.9	23.1
Approach LOS			C	C

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	38.5%	ICU Level of Service	A	
Analysis Period (min)	15			

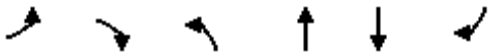
Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	165	7	13	215	7	1	2	11	7	5	18
Future Vol, veh/h	6	165	7	13	215	7	1	2	11	7	5	18
Conflicting Peds, #/hr	216	0	304	304	0	216	83	0	18	18	0	83
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	17	2	1	1	3	1	1	1	1	1	20	1
Mvmt Flow	7	183	8	14	239	8	1	2	12	8	6	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	463	0	0	495	0	0	872	996	509	713	996	542
Stage 1	-	-	-	-	-	-	505	505	-	487	487	-
Stage 2	-	-	-	-	-	-	367	491	-	226	509	-
Critical Hdwy	4.27	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.7	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.7	-
Follow-up Hdwy	2.353	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.18	3.309
Pot Cap-1 Maneuver	1024	-	-	1074	-	-	272	245	566	348	228	542
Stage 1	-	-	-	-	-	-	551	542	-	564	522	-
Stage 2	-	-	-	-	-	-	655	550	-	779	510	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	813	-	-	763	-	-	159	134	395	254	124	396
Mov Cap-2 Maneuver	-	-	-	-	-	-	159	134	-	254	124	-
Stage 1	-	-	-	-	-	-	387	381	-	443	406	-
Stage 2	-	-	-	-	-	-	553	427	-	730	359	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.5	18.4	20.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	285	813	-	-	763	-	-	265
HCM Lane V/C Ratio	0.055	0.008	-	-	0.019	-	-	0.126
HCM Control Delay (s)	18.4	9.5	0	-	9.8	0	-	20.5
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.4



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	76	133	155	361	395	90
Future Volume (Veh/h)	76	133	155	361	395	90
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)	79	139	161	376	411	94
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1158	460	507			
vC1, stage 1 conf vol	460					
vC2, stage 2 conf vol	698					
vCu, unblocked vol	1158	460	507			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	77	85			
cM capacity (veh/h)	374	600	1056			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	218	161	376	505
Volume Left	79	161	0	0
Volume Right	139	0	0	94
cSH	492	1056	1700	1700
Volume to Capacity	0.44	0.15	0.22	0.30
Queue Length 95th (ft)	56	13	0	0
Control Delay (s)	18.0	9.0	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.0	2.7		0.0
Approach LOS	C			

Intersection Summary				
Average Delay	4.3			
Intersection Capacity Utilization	62.5%	ICU Level of Service	B	
Analysis Period (min)	15			

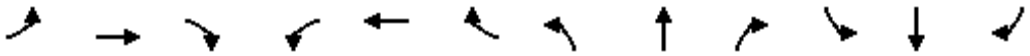
Intersection	
Int Delay, s/veh	7.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	76	133	155	361	395	90
Future Vol, veh/h	76	133	155	361	395	90
Conflicting Peds, #/hr	0	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	4	5	6
Mvmt Flow	79	139	161	376	411	94

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1158	460	507	0	-	0
Stage 1	460	-	-	-	-	-
Stage 2	698	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	217	601	1058	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	183	600	1056	-	-	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	538	-	-	-	-	-
Stage 2	493	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	35.2	2.7	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1056	-	328	-	-
HCM Lane V/C Ratio	0.153	-	0.664	-	-
HCM Control Delay (s)	9	-	35.2	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.5	-	4.5	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	4	0	1	0	0	4	0	92	0	4	63	7
Future Volume (Veh/h)	4	0	1	0	0	4	0	92	0	4	63	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	4	0	1	0	0	4	0	101	0	4	69	8
Pedestrians		34			35							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		3			3							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	220	251	107	218	255	136	111			136		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	220	251	107	218	255	136	111			136		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	99	100	100	100	100	100	100			100		
cM capacity (veh/h)	676	611	922	680	608	887	1443			1412		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	5	4	101	81
Volume Left	4	0	0	4
Volume Right	1	4	0	8
cSH	714	887	1443	1412
Volume to Capacity	0.01	0.00	0.00	0.00
Queue Length 95th (ft)	1	0	0	0
Control Delay (s)	10.1	9.1	0.0	0.4
Lane LOS	B	A		A
Approach Delay (s)	10.1	9.1	0.0	0.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	0.6			
Intersection Capacity Utilization	22.2%	ICU Level of Service	A	
Analysis Period (min)	15			

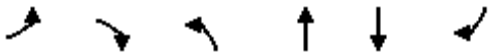
Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	0	1	0	0	4	0	92	0	4	63	7
Future Vol, veh/h	4	0	1	0	0	4	0	92	0	4	63	7
Conflicting Peds, #/hr	0	0	0	0	0	0	34	0	35	35	0	34
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	8	0
Mvmt Flow	4	0	1	0	0	4	0	101	0	4	69	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	218	251	107	218	255	136	111	0	0	136	0	0
Stage 1	115	115	-	136	136	-	-	-	-	-	-	-
Stage 2	103	136	-	82	119	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	743	656	953	743	652	918	1492	-	-	1461	-	-
Stage 1	895	804	-	872	788	-	-	-	-	-	-	-
Stage 2	908	788	-	931	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	714	612	922	716	608	887	1444	-	-	1412	-	-
Mov Cap-2 Maneuver	714	612	-	716	608	-	-	-	-	-	-	-
Stage 1	866	776	-	843	762	-	-	-	-	-	-	-
Stage 2	904	762	-	927	773	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	9.1	0	0.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1444	-	-	748	887	1412	-	-
HCM Lane V/C Ratio	-	-	-	0.007	0.005	0.003	-	-
HCM Control Delay (s)	0	-	-	9.8	9.1	7.6	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	0	0	12	23	0
Future Volume (Veh/h)	0	0	0	12	23	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	0	0	0	13	26	0
Pedestrians	83					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	8					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	122	109	109			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	122	109	109			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	809	875	1376			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	0	13	26
Volume Left	0	0	0
Volume Right	0	0	0
cSH	1700	1376	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	0
Control Delay (s)	0.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	0.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.0		
Intersection Capacity Utilization	16.0%	ICU Level of Service	A
Analysis Period (min)	15		

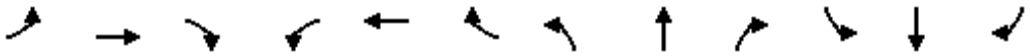
Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	12	23	0
Future Vol, veh/h	0	0	0	12	23	0
Conflicting Peds, #/hr	0	0	83	0	0	83
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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	0	0	0	13	26	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	122	109	109	0	-	0
Stage 1	109	-	-	-	-	-
Stage 2	13	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	878	950	1494	-	-	-
Stage 1	921	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	745	875	1376	-	-	-
Mov Cap-2 Maneuver	745	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	935	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1376	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	3	84	21	58	86	6	12	9	51	3	7	6
Future Volume (vph)	3	84	21	58	86	6	12	9	51	3	7	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	3	95	24	66	98	7	14	10	58	3	8	7

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	122	171	82	18
Volume Left (vph)	3	66	14	3
Volume Right (vph)	24	7	58	7
Hadj (s)	-0.08	0.12	-0.22	-0.08
Departure Headway (s)	4.2	4.4	4.4	4.6
Degree Utilization, x	0.14	0.21	0.10	0.02
Capacity (veh/h)	821	790	771	723
Control Delay (s)	7.9	8.5	7.8	7.7
Approach Delay (s)	7.9	8.5	7.8	7.7
Approach LOS	A	A	A	A

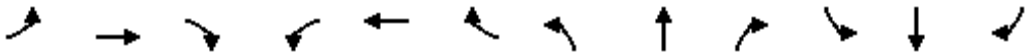
Intersection Summary				
Delay	8.2			
Level of Service	A			
Intersection Capacity Utilization	33.4%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.1
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	84	21	58	86	6	12	9	51	3	7	6
Future Vol, veh/h	3	84	21	58	86	6	12	9	51	3	7	6
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	1	2	1	6	2	17	4	22	9	1	14	1
Mvmt Flow	3	95	24	66	98	7	14	10	58	3	8	7
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	7.9	8.6	7.7	7.6
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	3%	39%	19%
Vol Thru, %	12%	78%	57%	44%
Vol Right, %	71%	19%	4%	38%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	72	108	150	16
LT Vol	12	3	58	3
Through Vol	9	84	86	7
RT Vol	51	21	6	6
Lane Flow Rate	82	123	170	18
Geometry Grp	1	1	1	1
Degree of Util (X)	0.097	0.144	0.205	0.023
Departure Headway (Hd)	4.253	4.221	4.324	4.479
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	846	854	818	802
Service Time	2.261	2.221	2.417	2.49
HCM Lane V/C Ratio	0.097	0.144	0.208	0.022
HCM Control Delay	7.7	7.9	8.6	7.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.3	0.5	0.8	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1	164	5	27	170	11	2	3	17	3	1	13
Future Volume (Veh/h)	1	164	5	27	170	11	2	3	17	3	1	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	1	195	6	32	202	13	2	4	20	4	1	15
Pedestrians		30			25			130			133	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		3			2			12			13	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	348			331			648	742	353	652	738	372
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	348			331			648	742	353	652	738	372
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.4	7.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.8	4.9	3.3
p0 queue free %	100			97			99	98	97	98	99	97
cM capacity (veh/h)	1067			1081			254	256	593	222	186	574

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	202	247	26	20
Volume Left	1	32	2	4
Volume Right	6	13	20	15
cSH	1067	1081	454	404
Volume to Capacity	0.00	0.03	0.06	0.05
Queue Length 95th (ft)	0	2	5	4
Control Delay (s)	0.1	1.3	13.4	14.4
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	1.3	13.4	14.4
Approach LOS			B	B

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	46.5%	ICU Level of Service	A	
Analysis Period (min)	15			

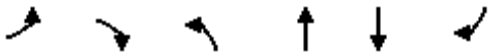
Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	164	5	27	170	11	2	3	17	3	1	13
Future Vol, veh/h	1	164	5	27	170	11	2	3	17	3	1	13
Conflicting Peds, #/hr	133	0	130	130	0	133	30	0	25	25	0	30
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	0	2	1	1	4	1	1	1	1	33	100	1
Mvmt Flow	1	195	6	32	202	13	2	4	20	4	1	15

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	348	0	0	331	0	0	641	742	353	643	739	372
Stage 1	-	-	-	-	-	-	330	330	-	406	406	-
Stage 2	-	-	-	-	-	-	311	412	-	237	333	-
Critical Hdwy	4.1	-	-	4.11	-	-	7.11	6.51	6.21	7.43	7.5	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.43	6.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.43	6.5	-
Follow-up Hdwy	2.2	-	-	2.209	-	-	3.509	4.009	3.309	3.797	4.9	3.309
Pot Cap-1 Maneuver	1222	-	-	1234	-	-	389	345	693	346	250	676
Stage 1	-	-	-	-	-	-	685	648	-	564	459	-
Stage 2	-	-	-	-	-	-	702	596	-	702	501	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1067	-	-	1081	-	-	312	255	593	274	185	574
Mov Cap-2 Maneuver	-	-	-	-	-	-	312	255	-	274	185	-
Stage 1	-	-	-	-	-	-	599	567	-	492	387	-
Stage 2	-	-	-	-	-	-	639	502	-	657	438	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	1.1	13.1	13.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	470	1067	-	-	1081	-	-	436
HCM Lane V/C Ratio	0.056	0.001	-	-	0.03	-	-	0.046
HCM Control Delay (s)	13.1	8.4	0	-	8.4	0	-	13.7
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.1



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	73	142	140	283	377	95
Future Volume (Veh/h)	73	142	140	283	377	95
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	81	158	156	314	419	106
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1098	472	525			
vC1, stage 1 conf vol	472					
vC2, stage 2 conf vol	626					
vCu, unblocked vol	1098	472	525			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	79	73	85			
cM capacity (veh/h)	395	590	1037			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	239	156	314	525
Volume Left	81	156	0	0
Volume Right	158	0	0	106
cSH	505	1037	1700	1700
Volume to Capacity	0.47	0.15	0.18	0.31
Queue Length 95th (ft)	63	13	0	0
Control Delay (s)	18.4	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.4	3.0		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.7		
Intersection Capacity Utilization	61.4%	ICU Level of Service	B
Analysis Period (min)	15		

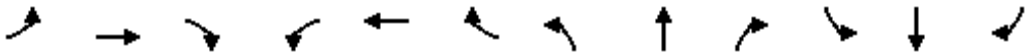
Intersection	
Int Delay, s/veh	7.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	73	142	140	283	377	95
Future Vol, veh/h	73	142	140	283	377	95
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	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	4	3	3	9	5	6
Mvmt Flow	81	158	156	314	419	106

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1098	472	525	0	-	0
Stage 1	472	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.44	6.23	4.13	-	-	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.327	2.227	-	-	-
Pot Cap-1 Maneuver	233	590	1037	-	-	-
Stage 1	623	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	198	590	1037	-	-	-
Mov Cap-2 Maneuver	198	-	-	-	-	-
Stage 1	530	-	-	-	-	-
Stage 2	529	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.1	3	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1037	-	353	-	-
HCM Lane V/C Ratio	0.15	-	0.677	-	-
HCM Control Delay (s)	9.1	-	34.1	-	-
HCM Lane LOS	A	-	D	-	-
HCM 95th %tile Q(veh)	0.5	-	4.7	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	0	1	0	0	8	0	50	0	5	72	9
Future Volume (Veh/h)	5	0	1	0	0	8	0	50	0	5	72	9
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Hourly flow rate (vph)	6	0	1	0	0	9	0	57	0	6	82	10
Pedestrians		38			27							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		4			3							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	203	221	125	184	226	84	130			84		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	203	221	125	184	226	84	130			84		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	99	100	100	100	100	99	100			100		
cM capacity (veh/h)	689	637	897	723	633	956	1415			1486		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	7	9	57	98
Volume Left	6	0	0	6
Volume Right	1	9	0	10
cSH	713	956	1415	1486
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	10.1	8.8	0.0	0.5
Lane LOS	B	A		A
Approach Delay (s)	10.1	8.8	0.0	0.5
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.2			
Intersection Capacity Utilization	23.8%	ICU Level of Service	A	
Analysis Period (min)	15			

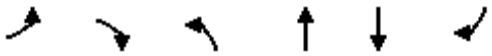
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	5	0	1	0	0	8	0	50	0	5	72	9
Future Vol, veh/h	5	0	1	0	0	8	0	50	0	5	72	9
Conflicting Peds, #/hr	0	0	0	0	0	0	38	0	27	27	0	38
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	0	0	0	0	0	0	9	0	0	5	0
Mvmt Flow	6	0	1	0	0	9	0	57	0	6	82	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	199	221	125	184	226	84	130	0	0	84	0	0
Stage 1	137	137	-	84	84	-	-	-	-	-	-	-
Stage 2	62	84	-	100	142	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	764	681	931	781	677	981	1468	-	-	1526	-	-
Stage 1	871	787	-	929	829	-	-	-	-	-	-	-
Stage 2	954	829	-	911	783	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	727	637	897	758	633	956	1415	-	-	1487	-	-
Mov Cap-2 Maneuver	727	637	-	758	633	-	-	-	-	-	-	-
Stage 1	840	756	-	905	807	-	-	-	-	-	-	-
Stage 2	945	807	-	906	752	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.8	8.8	0	0.4
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1415	-	-	751	956	1487	-	-
HCM Lane V/C Ratio	-	-	-	0.009	0.01	0.004	-	-
HCM Control Delay (s)	0	-	-	9.8	8.8	7.4	0	-
HCM Lane LOS	A	-	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	0	0	20	17	13
Future Volume (Veh/h)	2	0	0	20	17	13
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84
Hourly flow rate (vph)	2	0	0	24	20	15
Pedestrians	30					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	3					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	82	58	65			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	82	58	65			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	899	985	1506			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	24	35
Volume Left	2	0	0
Volume Right	0	0	15
cSH	899	1506	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.0	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.0	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	19.0%	ICU Level of Service	A
Analysis Period (min)	15		

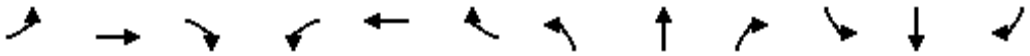
Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	20	17	13
Future Vol, veh/h	2	0	0	20	17	13
Conflicting Peds, #/hr	0	0	30	0	0	25
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	2	0	0	24	20	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	82	58	65	0	-	0
Stage 1	58	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	925	1014	1550	-	-	-
Stage 1	970	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	872	985	1506	-	-	-
Mov Cap-2 Maneuver	872	-	-	-	-	-
Stage 1	942	-	-	-	-	-
Stage 2	975	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1506	-	872	-	-
HCM Lane V/C Ratio	-	-	0.003	-	-
HCM Control Delay (s)	0	-	9.1	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	1	89	26	42	137	17	28	12	69	8	7	7
Future Volume (vph)	1	89	26	42	137	17	28	12	69	8	7	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	1	98	29	46	151	19	31	13	76	9	8	8

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total (vph)	128	216	120	25
Volume Left (vph)	1	46	31	9
Volume Right (vph)	29	19	76	8
Hadj (s)	-0.11	0.04	-0.31	-0.03
Departure Headway (s)	4.4	4.4	4.4	4.8
Degree Utilization, x	0.16	0.27	0.15	0.03
Capacity (veh/h)	786	778	758	681
Control Delay (s)	8.2	9.0	8.2	8.0
Approach Delay (s)	8.2	9.0	8.2	8.0
Approach LOS	A	A	A	A

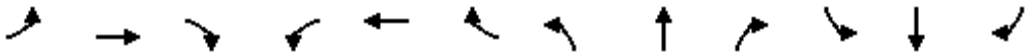
Intersection Summary				
Delay	8.5			
Level of Service	A			
Intersection Capacity Utilization	37.8%	ICU Level of Service	A	
Analysis Period (min)	15			

Intersection	
Intersection Delay, s/veh	8.5
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	89	26	42	137	17	28	12	69	8	7	7
Future Vol, veh/h	1	89	26	42	137	17	28	12	69	8	7	7
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	1	1	4	1	2	13	1	1	1	1	1	14
Mvmt Flow	1	98	29	46	151	19	31	13	76	9	8	8
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay	8.2	8.9	8.2	7.9
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	26%	1%	21%	36%
Vol Thru, %	11%	77%	70%	32%
Vol Right, %	63%	22%	9%	32%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	109	116	196	22
LT Vol	28	1	42	8
Through Vol	12	89	137	7
RT Vol	69	26	17	7
Lane Flow Rate	120	127	215	24
Geometry Grp	1	1	1	1
Degree of Util (X)	0.146	0.154	0.262	0.032
Departure Headway (Hd)	4.383	4.344	4.372	4.709
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	818	826	823	760
Service Time	2.407	2.369	2.394	2.739
HCM Lane V/C Ratio	0.147	0.154	0.261	0.032
HCM Control Delay	8.2	8.2	8.9	7.9
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.5	1.1	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	169	9	18	215	7	1	2	13	7	5	18
Future Volume (Veh/h)	6	169	9	18	215	7	1	2	13	7	5	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			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)	7	188	10	20	239	8	1	2	14	8	6	20
Pedestrians		86			18			304			216	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		8			2			29			21	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	463			502			903	1014	515	739	1015	545
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	463			502			903	1014	515	739	1015	545
tC, single (s)	4.3			4.1			7.1	6.5	6.2	7.1	6.7	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			3.5	4.0	3.3	3.5	4.2	3.3
p0 queue free %	99			97			99	98	96	95	95	95
cM capacity (veh/h)	813			758			100	130	392	160	121	394

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	205	267	17	34
Volume Left	7	20	1	8
Volume Right	10	8	14	20
cSH	813	758	278	226
Volume to Capacity	0.01	0.03	0.06	0.15
Queue Length 95th (ft)	1	2	5	13
Control Delay (s)	0.4	1.0	18.8	23.7
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	1.0	18.8	23.7
Approach LOS			C	C

Intersection Summary			
Average Delay	2.8		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

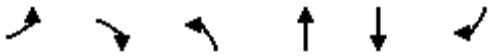
Intersection	
Int Delay, s/veh	2.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	169	9	18	215	7	1	2	13	7	5	18
Future Vol, veh/h	6	169	9	18	215	7	1	2	13	7	5	18
Conflicting Peds, #/hr	216	0	304	304	0	216	86	0	18	18	0	83
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	17	2	1	1	3	1	1	1	1	1	20	1
Mvmt Flow	7	188	10	20	239	8	1	2	14	8	6	20

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	463	0	0	502	0	0	893	1014	515	732	1015	545
Stage 1	-	-	-	-	-	-	511	511	-	499	499	-
Stage 2	-	-	-	-	-	-	382	503	-	233	516	-
Critical Hdwy	4.27	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.7	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.7	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.7	-
Follow-up Hdwy	2.353	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.18	3.309
Pot Cap-1 Maneuver	1024	-	-	1068	-	-	263	239	562	338	222	540
Stage 1	-	-	-	-	-	-	547	539	-	555	515	-
Stage 2	-	-	-	-	-	-	643	543	-	772	506	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	813	-	-	759	-	-	152	129	392	243	120	394
Mov Cap-2 Maneuver	-	-	-	-	-	-	152	129	-	243	120	-
Stage 1	-	-	-	-	-	-	385	379	-	436	396	-
Stage 2	-	-	-	-	-	-	535	418	-	719	356	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.7	18.2	21
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	290	813	-	-	759	-	-	258
HCM Lane V/C Ratio	0.061	0.008	-	-	0.026	-	-	0.129
HCM Control Delay (s)	18.2	9.5	0	-	9.9	0	-	21
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.4



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	78	137	159	361	395	92
Future Volume (Veh/h)	78	137	159	361	395	92
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)	81	143	166	376	411	96
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type				TWLTL	None	
Median storage veh)				2		
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1169	461	509			
vC1, stage 1 conf vol	461					
vC2, stage 2 conf vol	708					
vCu, unblocked vol	1169	461	509			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)	5.4					
tF (s)	3.5	3.3	2.2			
p0 queue free %	78	76	84			
cM capacity (veh/h)	368	599	1054			

Direction, Lane #	EB 1	NB 1	NB 2	SB 1
Volume Total	224	166	376	507
Volume Left	81	166	0	0
Volume Right	143	0	0	96
cSH	489	1054	1700	1700
Volume to Capacity	0.46	0.16	0.22	0.30
Queue Length 95th (ft)	59	14	0	0
Control Delay (s)	18.5	9.1	0.0	0.0
Lane LOS	C	A		
Approach Delay (s)	18.5	2.8		0.0
Approach LOS	C			

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

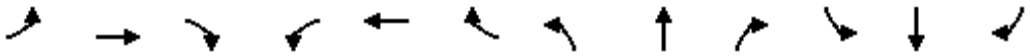
Intersection	
Int Delay, s/veh	7.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	78	137	159	361	395	92
Future Vol, veh/h	78	137	159	361	395	92
Conflicting Peds, #/hr	0	0	2	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	4	5	6
Mvmt Flow	81	143	166	376	411	96

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1169	461	509	0	-	0
Stage 1	461	-	-	-	-	-
Stage 2	708	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	213	600	1056	-	-	-
Stage 1	635	-	-	-	-	-
Stage 2	488	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	179	599	1054	-	-	-
Mov Cap-2 Maneuver	179	-	-	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	487	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	37.6	2.8	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1054	-	324	-	-
HCM Lane V/C Ratio	0.157	-	0.691	-	-
HCM Control Delay (s)	9.1	-	37.6	-	-
HCM Lane LOS	A	-	E	-	-
HCM 95th %tile Q(veh)	0.6	-	4.8	-	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	0	1	0	0	10	0	92	0	4	63	7
Future Volume (Veh/h)	7	0	1	0	0	10	0	92	0	4	63	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Hourly flow rate (vph)	8	0	1	0	0	11	0	101	0	4	69	8
Pedestrians		34			35							
Lane Width (ft)		12.0			12.0							
Walking Speed (ft/s)		3.5			3.5							
Percent Blockage		3			3							
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	227	251	107	218	255	136	111			136		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	227	251	107	218	255	136	111			136		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	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 %	99	100	100	100	100	99	100			100		
cM capacity (veh/h)	664	611	922	680	608	887	1443			1412		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	9	11	101	81
Volume Left	8	0	0	4
Volume Right	1	11	0	8
cSH	685	887	1443	1412
Volume to Capacity	0.01	0.01	0.00	0.00
Queue Length 95th (ft)	1	1	0	0
Control Delay (s)	10.3	9.1	0.0	0.4
Lane LOS	B	A		A
Approach Delay (s)	10.3	9.1	0.0	0.4
Approach LOS	B	A		

Intersection Summary				
Average Delay	1.1			
Intersection Capacity Utilization	24.9%	ICU Level of Service	A	
Analysis Period (min)	15			

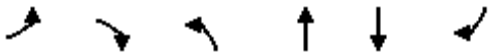
Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	7	0	1	0	0	10	0	92	0	4	63	7
Future Vol, veh/h	7	0	1	0	0	10	0	92	0	4	63	7
Conflicting Peds, #/hr	0	0	0	0	0	0	34	0	35	35	0	34
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	0	0	0	0	1	0	0	8	0
Mvmt Flow	8	0	1	0	0	11	0	101	0	4	69	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	222	251	107	218	255	136	111	0	0	136	0	0
Stage 1	115	115	-	136	136	-	-	-	-	-	-	-
Stage 2	107	136	-	82	119	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	738	656	953	743	652	918	1492	-	-	1461	-	-
Stage 1	895	804	-	872	788	-	-	-	-	-	-	-
Stage 2	903	788	-	931	801	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	703	612	922	716	608	887	1444	-	-	1412	-	-
Mov Cap-2 Maneuver	703	612	-	716	608	-	-	-	-	-	-	-
Stage 1	866	776	-	843	762	-	-	-	-	-	-	-
Stage 2	892	762	-	927	773	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	9.1	0	0.4
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1444	-	-	725	887	1412	-	-
HCM Lane V/C Ratio	-	-	-	0.012	0.012	0.003	-	-
HCM Control Delay (s)	0	-	-	10	9.1	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0	0	-	-



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	2	0	0	12	23	7
Future Volume (Veh/h)	2	0	0	12	23	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	0	0	13	26	8
Pedestrians	83					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	8					
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	126	113	117			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	126	113	117			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	100	100			
cM capacity (veh/h)	804	871	1367			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	2	13	34
Volume Left	2	0	0
Volume Right	0	0	8
cSH	804	1367	1700
Volume to Capacity	0.00	0.00	0.02
Queue Length 95th (ft)	0	0	0
Control Delay (s)	9.5	0.0	0.0
Lane LOS	A		
Approach Delay (s)	9.5	0.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	0	0	12	23	7
Future Vol, veh/h	2	0	0	12	23	7
Conflicting Peds, #/hr	0	0	83	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	90	90	90	90	90	90
Heavy Vehicles, %	0	0	0	1	2	0
Mvmt Flow	2	0	0	13	26	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	126	113	117	0	-	0
Stage 1	113	-	-	-	-	-
Stage 2	13	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	874	945	1484	-	-	-
Stage 1	917	-	-	-	-	-
Stage 2	1015	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	741	870	1367	-	-	-
Mov Cap-2 Maneuver	741	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	935	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1367	-	741	-	-
HCM Lane V/C Ratio	-	-	0.003	-	-
HCM Control Delay (s)	0	-	9.9	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

APPENDIX H

QUEUING ANALYSIS

Intersection: 1: Carmel Avenue & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	81	112	85	30
Average Queue (ft)	41	50	39	11
95th Queue (ft)	66	85	69	32
Link Distance (ft)	272	136	373	125
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Street & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	41	82	42	43
Average Queue (ft)	4	10	15	13
95th Queue (ft)	21	46	43	40
Link Distance (ft)	188	236	378	411
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Highway 101 & Laneda Avenue

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	208	95	10
Average Queue (ft)	76	36	1
95th Queue (ft)	153	69	7
Link Distance (ft)	308		319
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Carmel Avenue & Hallie Lane

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	34	34	6
Average Queue (ft)	7	2	0
95th Queue (ft)	30	16	5
Link Distance (ft)	98	302	373
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: 3rd Street & Site Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 1: Carmel Avenue & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	86	138	103	52
Average Queue (ft)	42	59	46	15
95th Queue (ft)	71	103	80	40
Link Distance (ft)	272	136	373	125
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Street & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	96	66	32	70
Average Queue (ft)	14	14	12	21
95th Queue (ft)	57	45	37	54
Link Distance (ft)	188	236	378	411
Upstream Blk Time (%)	0			
Queuing Penalty (veh)	0			
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Highway 101 & Laneda Avenue

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	153	90	10
Average Queue (ft)	60	36	1
95th Queue (ft)	112	73	6
Link Distance (ft)	308		319
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Carmel Avenue & Hallie Lane

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	34	34	20
Average Queue (ft)	6	4	1
95th Queue (ft)	28	22	12
Link Distance (ft)	98	302	373
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: 3rd Street & Site Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 1: Carmel Avenue & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	79	104	82	46
Average Queue (ft)	41	52	38	12
95th Queue (ft)	66	84	71	35
Link Distance (ft)	272	136	373	125
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Street & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	53	86	36	48
Average Queue (ft)	5	12	14	14
95th Queue (ft)	29	51	40	42
Link Distance (ft)	188	236	378	411
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Highway 101 & Laneda Avenue

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	228	84	16
Average Queue (ft)	94	37	1
95th Queue (ft)	181	73	10
Link Distance (ft)	308		319
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Carmel Avenue & Hallie Lane

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	35	34	19
Average Queue (ft)	7	4	1
95th Queue (ft)	29	23	10
Link Distance (ft)	98	302	373
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: 3rd Street & Site Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 1: Carmel Avenue & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	84	137	85	42
Average Queue (ft)	45	59	44	14
95th Queue (ft)	74	105	74	36
Link Distance (ft)	272	136	373	125
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Street & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	63	73	32	62
Average Queue (ft)	11	15	11	21
95th Queue (ft)	44	54	36	49
Link Distance (ft)	188	236	378	411
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Highway 101 & Laneda Avenue

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	225	108	15
Average Queue (ft)	90	45	1
95th Queue (ft)	179	88	7
Link Distance (ft)	308		319
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		150	
Storage Blk Time (%)		0	
Queuing Penalty (veh)		0	

Intersection: 4: Carmel Avenue & Hallie Lane

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	34	34	13
Average Queue (ft)	6	4	0
95th Queue (ft)	26	21	7
Link Distance (ft)	98	302	373
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: 3rd Street & Site Driveway

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 1: Carmel Avenue & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	77	105	78	36
Average Queue (ft)	42	49	41	13
95th Queue (ft)	68	81	68	35
Link Distance (ft)	272	136	373	125
Upstream Blk Time (%)		0		
Queuing Penalty (veh)		0		
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Street & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	41	76	52	52
Average Queue (ft)	4	16	19	15
95th Queue (ft)	24	56	46	43
Link Distance (ft)	188	236	378	411
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Highway 101 & Laneda Avenue

Movement	EB	NB	SB
Directions Served	LR	L	TR
Maximum Queue (ft)	247	97	17
Average Queue (ft)	86	38	1
95th Queue (ft)	176	72	7
Link Distance (ft)	308		319
Upstream Blk Time (%)	0		
Queuing Penalty (veh)	0		
Storage Bay Dist (ft)		150	
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 4: Carmel Avenue & Hallie Lane

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	34	34	20
Average Queue (ft)	7	9	1
95th Queue (ft)	28	33	8
Link Distance (ft)	98	302	373
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: 3rd Street & Site Driveway

Movement	EB
Directions Served	LR
Maximum Queue (ft)	21
Average Queue (ft)	2
95th Queue (ft)	15
Link Distance (ft)	194
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0

Intersection: 1: Carmel Avenue & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	92	144	94	53
Average Queue (ft)	47	65	45	15
95th Queue (ft)	81	114	74	39
Link Distance (ft)	272	136	373	125
Upstream Blk Time (%)		0		0
Queuing Penalty (veh)		0		0
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 2: 3rd Street & Laneda Avenue

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	LTR	LTR
Maximum Queue (ft)	81	102	42	73
Average Queue (ft)	14	15	13	22
95th Queue (ft)	51	56	39	57
Link Distance (ft)	188	236	378	411
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 3: Highway 101 & Laneda Avenue

Movement	EB	NB
Directions Served	LR	L
Maximum Queue (ft)	243	103
Average Queue (ft)	89	44
95th Queue (ft)	177	80
Link Distance (ft)	308	
Upstream Blk Time (%)	0	
Queuing Penalty (veh)	0	
Storage Bay Dist (ft)		150
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 4: Carmel Avenue & Hallie Lane

Movement	EB	WB	SB
Directions Served	LTR	LTR	LTR
Maximum Queue (ft)	35	34	12
Average Queue (ft)	9	8	0
95th Queue (ft)	33	32	8
Link Distance (ft)	98	302	373
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 5: 3rd Street & Site Driveway

Movement	EB
Directions Served	LR
Maximum Queue (ft)	26
Average Queue (ft)	1
95th Queue (ft)	12
Link Distance (ft)	194
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Zone Summary

Zone wide Queuing Penalty: 0