APPENDIX [A]

This section describes the improvements to Colwood's street network for each major street, following complete streets principles. For each category of road, corridors are identified and presented in detail. This includes a summary of current and future transportation infrastructure, recommended road cross sections, and plan views of the corridor to summarize recommended improvements. A majority of the corridors are assumed to have a right-of-way of 20 m.

Parking. The potential to provide on-street parking on each major road in this plan was evaluated based on:

- Road classification;
- Right of Way;
- Current and future land use;
- Current and future density;
- Current demand for on-street parking;
- Multi-modal road uses; and
- Traffic calming priorities

On-street parking was identified in instances where suitable conditions were met. The results are documented in the concept designs.

Implementing more innovative storm water management is an important objective of the City of Colwood. The road cross sections provide green space that could be an area of bioswales and rain gardens as appropriate. As well, traffic calming features can be combined with effective rain water infiltration.

Transit. BC Transit has undertaken extensive studies on Light Rail Transit (LRT) between Downtown Victoria and the Western communities. Goldstream Ave and Island Highway north of Goldstream Ave are part of the future alignment of Bus Rapid Transit (BRT) to build ridership and implement LRT.

Corridors. The roadways do not have consistent right-of-way available and therefore variations in the recommended cross section may be required. As well, dedicated left hand turn lanes should be included where appropriate.

Arterial Roads are intended for longer-distance regional mobility and facilitate higher vehicle speeds, often are more than two lanes of vehicle traffic and support regional connections. Arterial roads identified for improvements are:

- **Island Highway**
- **Goldstream Avenue**
- **Sooke Road**
- **Kelly Road**
- **Metchosin Road**
- **Veterans Memorial Parkway**
- **Latoria Road**

1.1 Goldstream Avenue

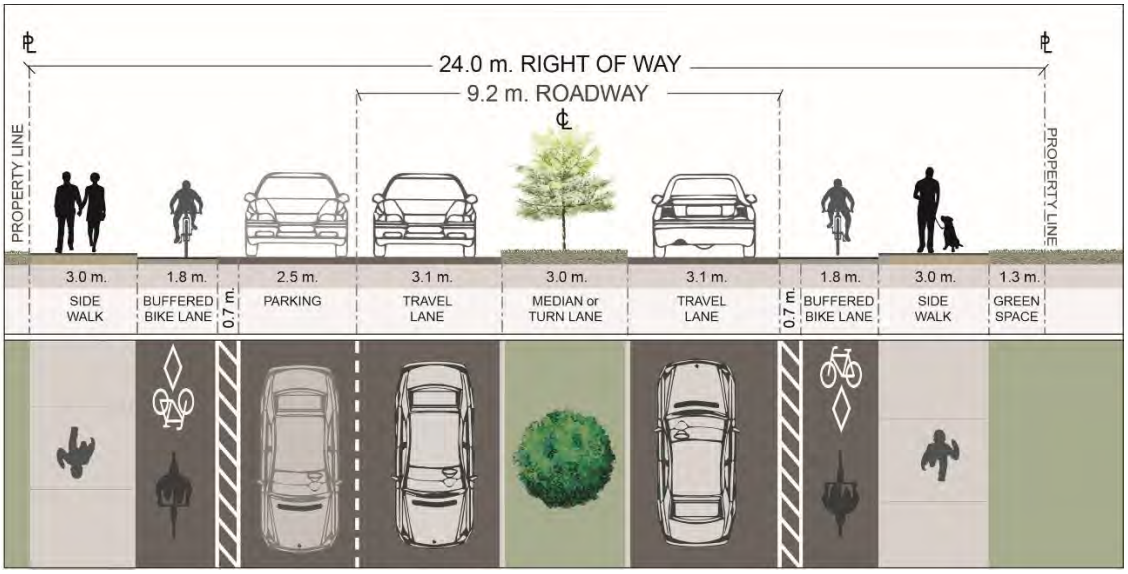
Goldstream Ave is part of the future alignment of the Bus Rapid Transit (BRT) or Light Rapid Transit (LRT) that is planned between Downtown Victoria and Langford. In the interim, Colwood will pursue an enhanced multi-modal road cross section.

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• 8,000 vpd between Wale and Langford/Colwood boundary • 6,500 vpd between Wale and Island Highway
Vehicle Lanes	• Two lane arterial
Parking	• North side in front of residential and south side fronting the golf course
Transit Services	• Bus route: 50
Cycling Facilities	• Bicycle lanes on both sides of the street
Pedestrian Facilities	• Concrete sidewalk on both sides of the street transitioning to asphalt 240 metres west of Island Highway on northside

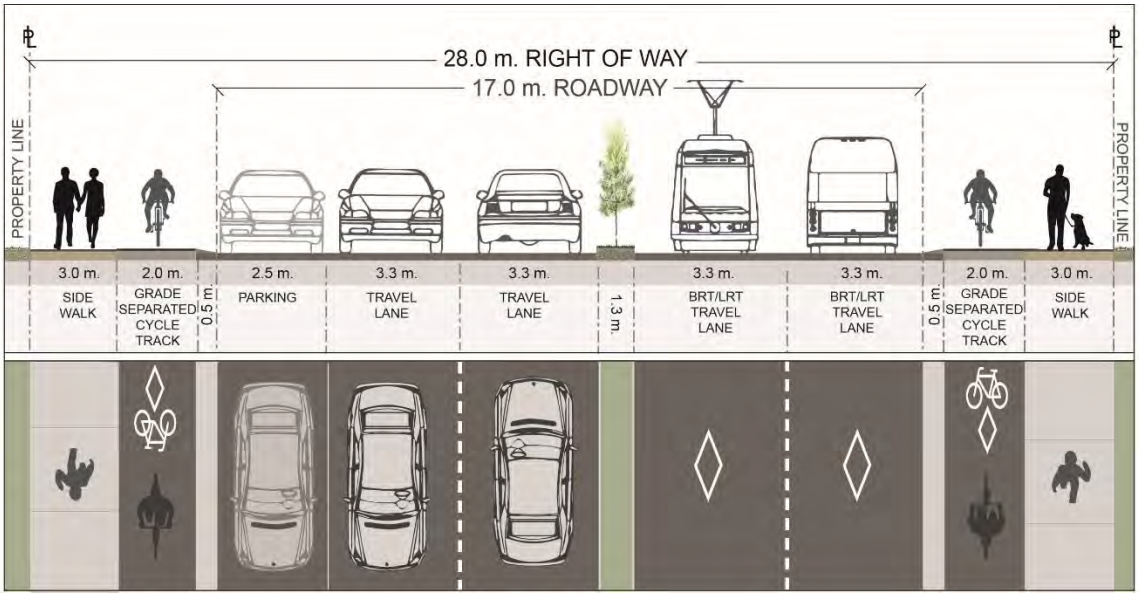
PROPOSED ACTIONS	
Vehicle Lanes	• Maintain two lanes
Parking	• Maintain parking on north side of the street
Transit Services	• Plan for Bus Rapid Transit and long term potential for Light Rail Transit in coordination with the CRD and BC Transit
Cycling Facilities	• Provide buffered bicycle lanes on both sides of the street with redevelopment to accommodate BRT or LRT services.
Pedestrian Facilities	• Complete concrete sidewalk treatment to Island Highway (short term) • Expand pedestrian walkway to support urban design features (benches, public art, patios and terraces) and integrate with commercial services associated with Colwood City Centre commercial development on north side of Goldstream Avenue between Wale Road and Island Highway

Recommended Cross Sections:

Interim:



Long Term (BRT or LRT with dedicated lane):



Summary:


Langford / Colwood border
Install Concrete Sidewalks, Buffered Bicycle Lanes, and plan for Light Rail Transit throughout corridor
Northbound Transit - Queue Jumper Signals
Island Highway
Wale Road
Goldstream Avenue
West
East
Upgrade intersection to urban standard
Explore options for seconday Galloping Goose detour through City Centre

1.2 Island Highway

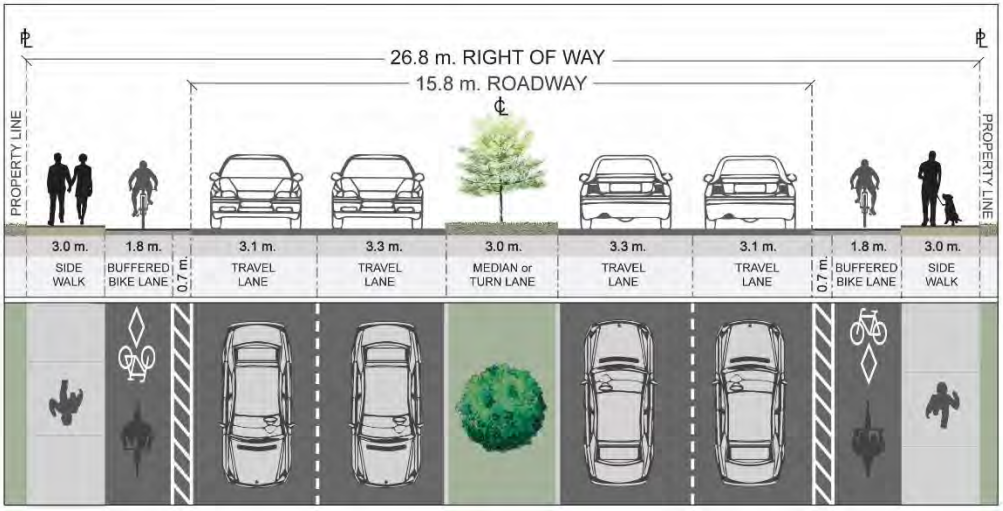
Island Highway north of Goldstream Ave is part of the future alignment of the Bus Rapid Transit (BRT) or Light Rapid Transit (LRT) that is planned between Downtown Victoria and Langford. In the interim, Colwood will pursue an enhanced multi-modal road cross section.

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• 38,000 vpd between Wale and View Royal/Colwood boundary • 28,000 vpd between Wale and Goldstream
Vehicle Lanes	• 4 lane arterial
Parking	• No parking
Transit Services	• 2 bus stops to service routes 25, 52, 51, and 61 plus a transit exchange
Cycling Facilities	• Bicycle lanes on both sides of the street between View Royal/Colwood boundary and Galloping Goose Regional Trail; 80 m bike lane on eastside, south of Goldstream
Pedestrian Facilities	• Concrete sidewalk on both sides of the street transitioning to asphalt between Wale and Goldstream

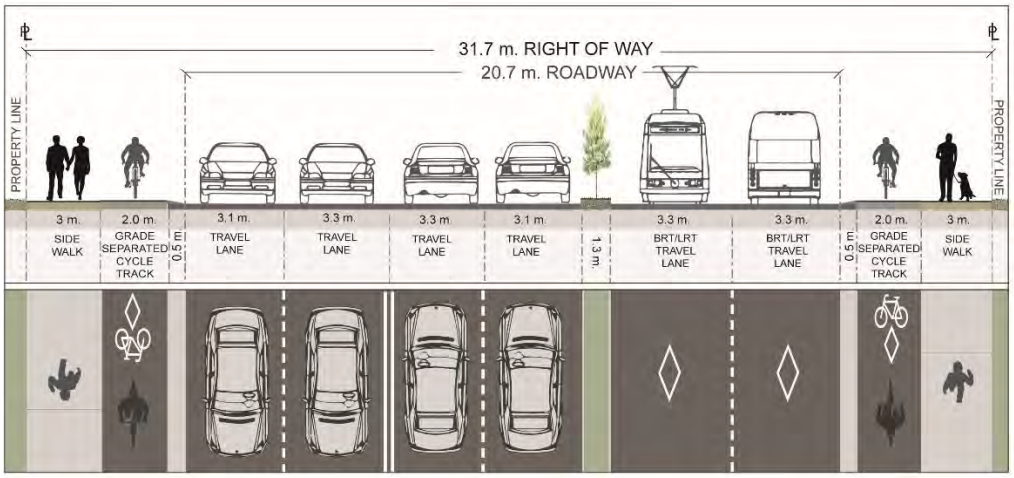
PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 4 lanes • Decrease left turn access to properties along the corridor
Parking	• No parking
Transit Services	• Priority for northbound frequent transit • Plan for Bus Rapid Transit/Light Rail Transit in coordination with CRD and BC Transit north of Goldstream
Cycling Facilities	• Provide buffered bike lanes on both sides of the street • Develop safe detour for Galloping Goose across Island Highway between Wale Road and Goldstream Avenue with a multi-use trail overpass
Pedestrian Facilities	• Complete concrete sidewalk treatment along east side of Island Highway between Juan de Fuca Recreation Centre and View Royal boundary • Expand pedestrian walkway to support urban design features (benches, public art, patios and terraces) and integrate with commercial services associated with Colwood City Centre commercial development

Recommended Cross Sections:

Interim:



Long term (North of Ocean Blvd; BRT or LRT with dedicated lane):



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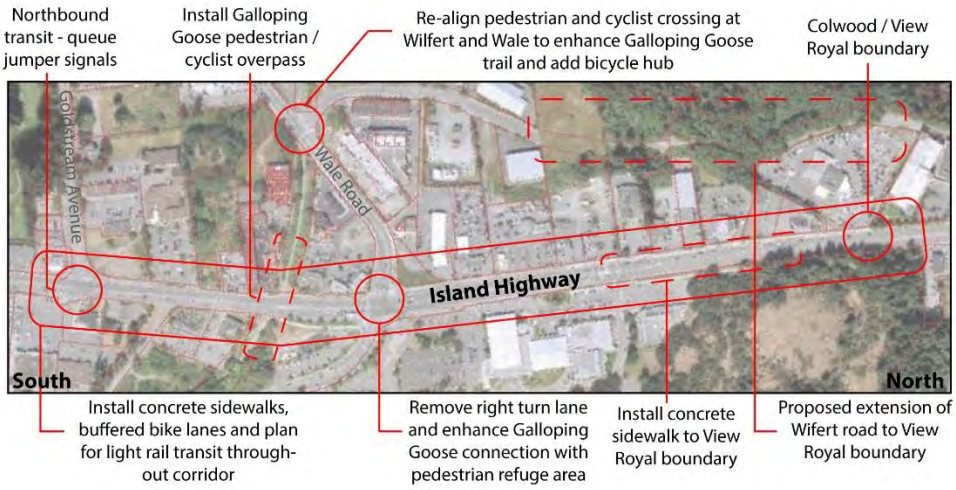

Northbound transit - queue jumper signals
Install Galloping Goose pedestrian / cyclist overpass
Re-align pedestrian and cyclist crossing at Wilfert and Wale to enhance Galloping Goose trail and add bicycle hub
Colwood / View Royal boundary
Goldstream Avenue
Wale Road
Island Highway
South
North
Install concrete sidewalks, buffered bike lanes and plan for light rail transit through-out corridor
Remove right turn lane and enhance Galloping Goose connection with pedestrian refuge area
Install concrete sidewalk to View Royal boundary
Proposed extension of Wifert road to View Royal boundary

1.3 Sooke Road

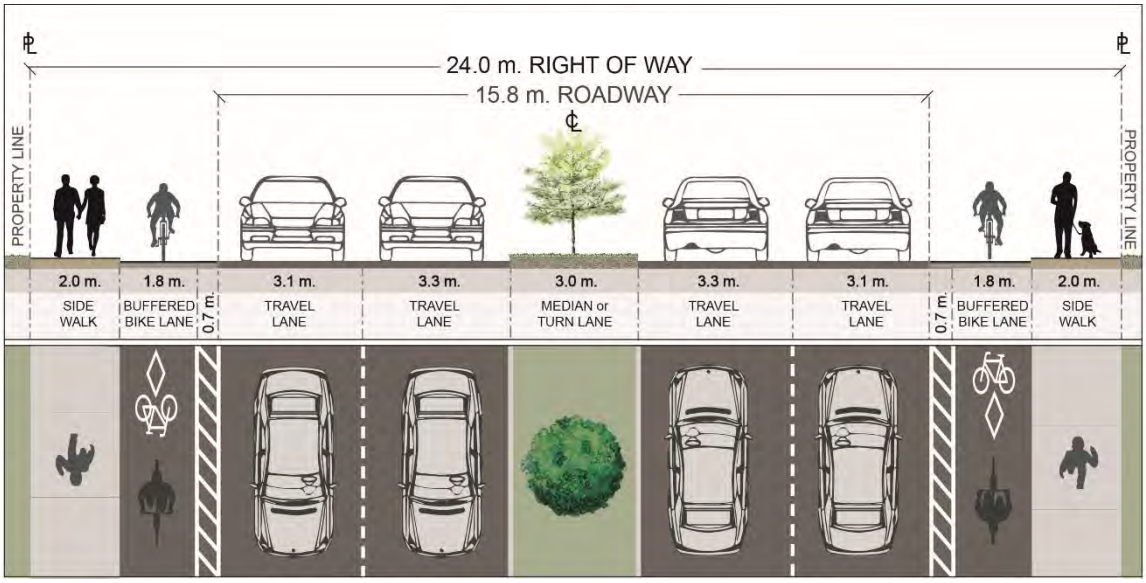
Sooke Road between Veterans Memorial Parkway and Jacklin Road is under the jurisdiction of the Ministry of Transportation and Infrastructure. Colwood has the ability to install sidewalks along the corridor.

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Goldstream to Aldeane- 28,000 • Aldeane to Kelly- 26,000 • Kelly to VMP- 16,500
Vehicle Lanes	• 4 lane arterial; 2 lanes between Kelly Rd and VMP
Parking	• No parking
Transit Services	• Routes: 39, 51, 52, 54, 55, 59, 60, 61
Cycling Facilities	• Ledsham to Kelly- Bicycle Lane, one side • Metchosin to Veterans Memorial Parkway- Paved shoulder
Pedestrian Facilities	• Goldstream Rd to Carran Rd– Majority is asphalt sidewalks both sides excluding south section between Metchosin Rd to west of Ridley and between Mount View and Kelly Rd

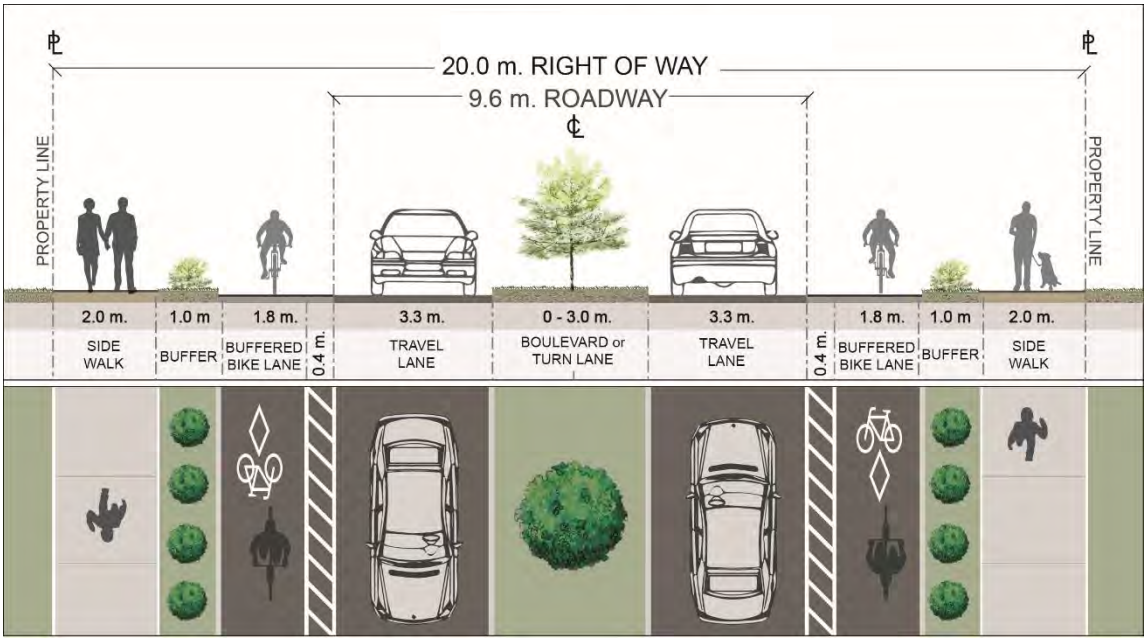
PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 4 lanes
Parking	• No parking
Transit Services	• Frequent Transit Network
Cycling Facilities	• Buffered bike lanes from Goldstream to Metchosin Rd • Multi-use pathway from Aldeane to Wishart on south side of road
Pedestrian Facilities	• Concrete sidewalks along both sides of street for full corridor (including provincial jurisdiction) • Install 3m wide sidewalks in the commercial areas

Recommended Cross Sections:

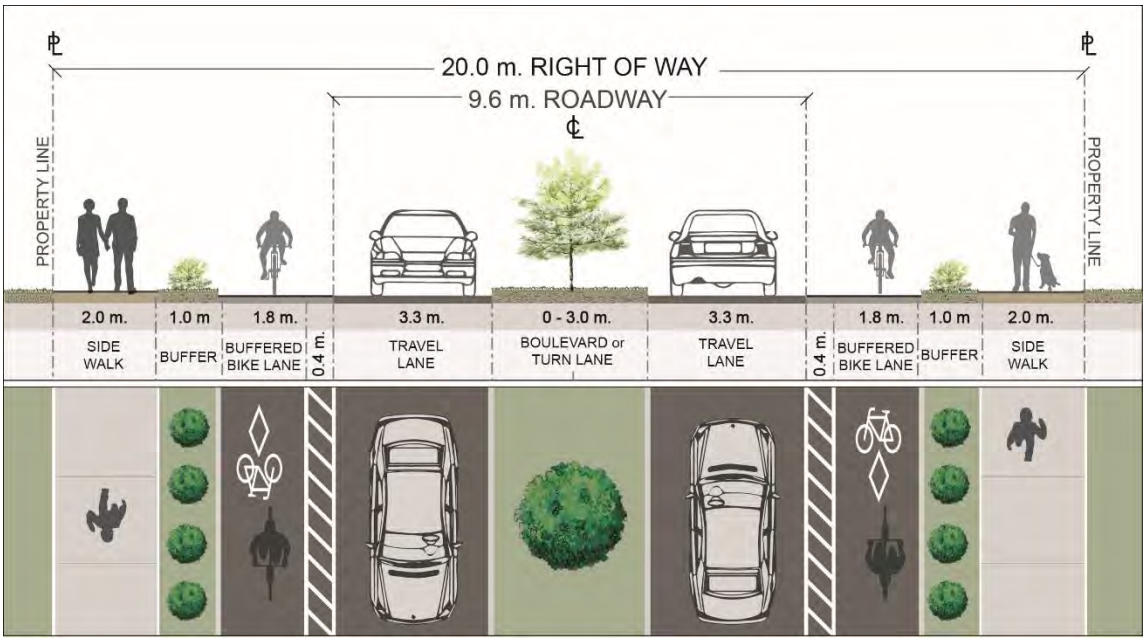
Goldstream Avenue to Carran Road (Section A and B):



Carran Road to Veterans Memorial Parkway (Section C):



Veterans Memorial Parkway to Jacklin Road: Ministry of Transportation and Infrastructure responsibility with influence from City of Colwood.



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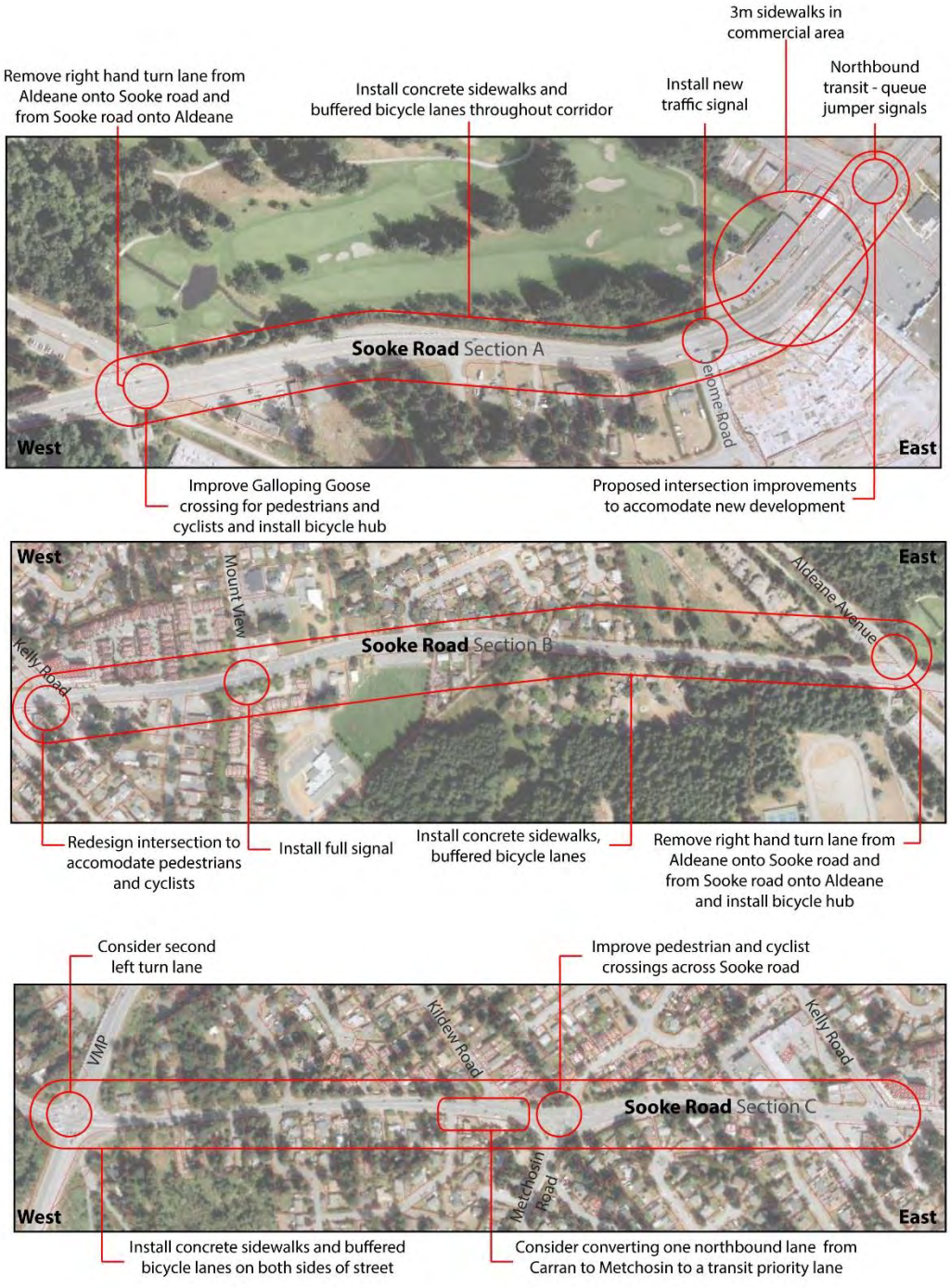
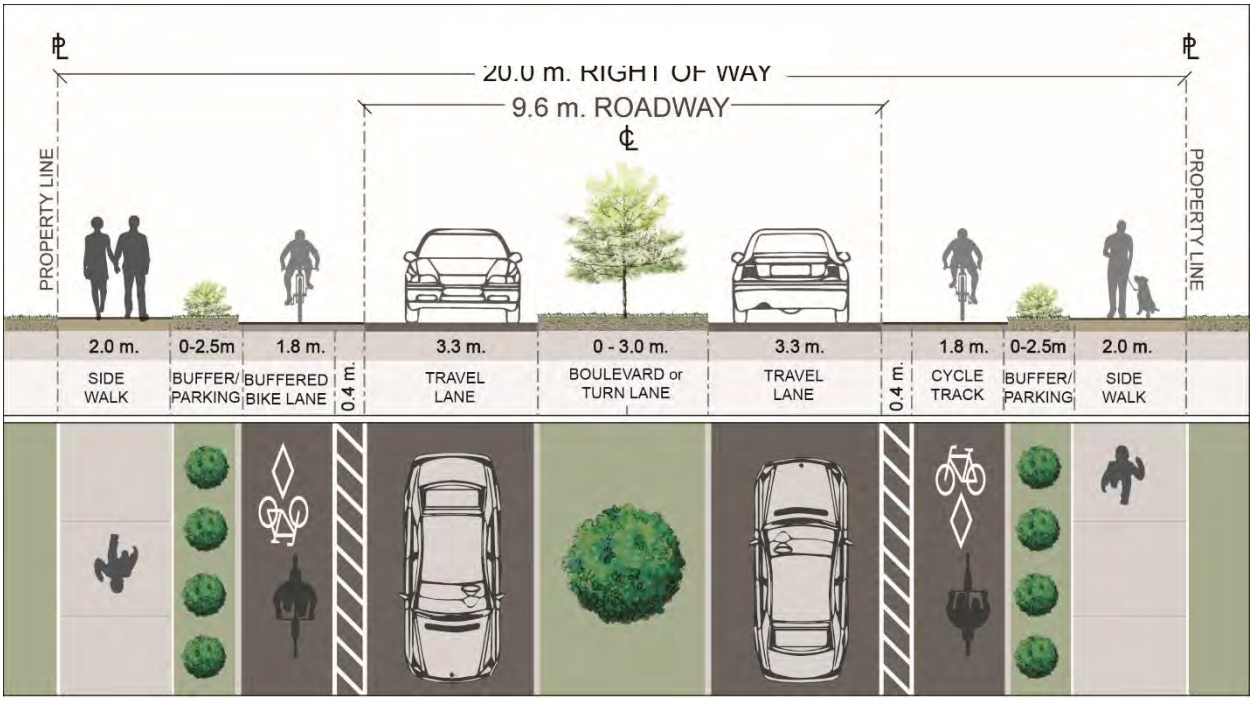

3m sidewalks in commercial area
Remove right hand turn lane from Aldeane onto Sooke road and from Sooke road onto Aldeane
Install concrete sidewalks and buffered bicycle lanes throughout corridor
Install new traffic signal
Northbound transit - queue jumper signals
Sooke Road Section A
Jerome Road
West
East
Improve Galloping Goose crossing for pedestrians and cyclists and install bicycle hub
Proposed intersection improvements to accomodate new development
West
East
Mount View
Aldeane Avenue
Kelly Road
Sooke Road Section B
Redesign intersection to accomodate pedestrians and cyclists
Install full signal
Install concrete sidewalks, buffered bicycle lanes
Remove right hand turn lane from Aldeane onto Sooke road and from Sooke road onto Aldeane and install bicycle hub
Consider second left turn lane
Improve pedestrian and cyclist crossings across Sooke road
VMP
Killdew Road
Kelly Road
Sooke Road Section C
Metchosin Road
West
East
Install concrete sidewalks and buffered bicycle lanes on both sides of street
Consider converting one northbound lane from Carran to Metchosin to a transit priority lane

1.4 Kelly Road

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Sooke Rd to Adye Rd- 10,000 • Adye Rd to Pickford Rd- 9,000 • Pickford Rd to Veterans Memorial Parkway - 12,000
Vehicle Lanes	• 2 lane arterial
Parking	• Informal parking on gravel shoulder
Transit Services	• Bus routes: 51, 59, 60
Cycling Facilities	• n/a
Pedestrian Facilities	• Asphalt sidewalk on north side

PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 2 lanes
Parking	• Pocket parking
Transit Services	• Core Transit Network
Cycling Facilities	• Buffered bike lane
Pedestrian Facilities	• Upgrade sidewalk to concrete

Recommended Cross Section:



Note: Right-of-Way does not allow for full boulevard/turn lane and full buffer/parking. The recommended cross section allows for customization throughout the corridor.

Summary:

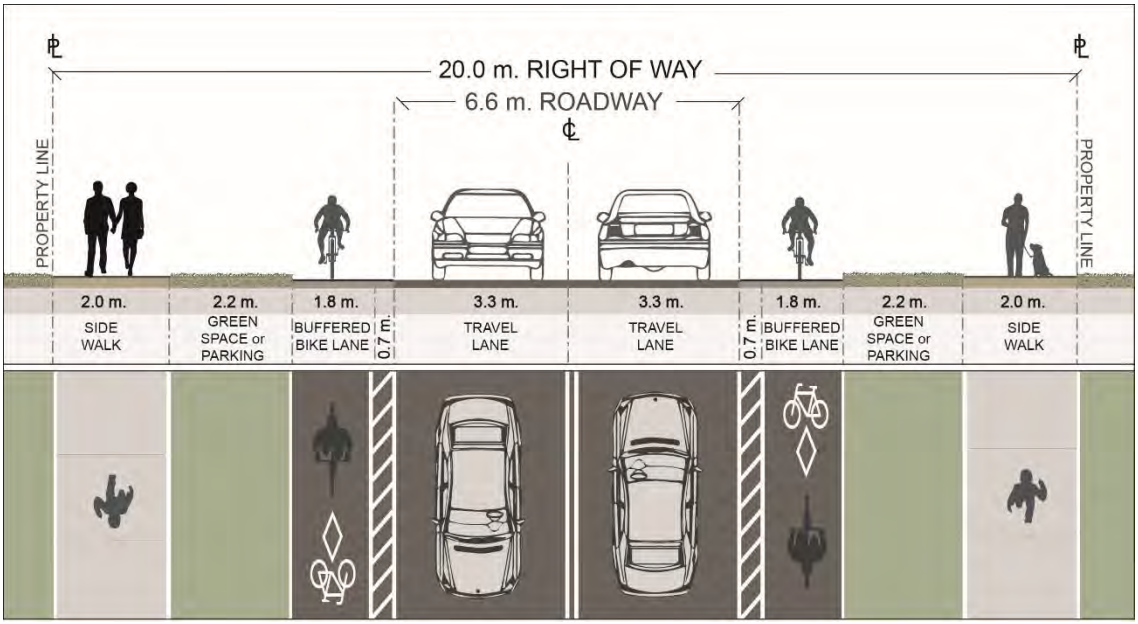
1.5 Metchosin Road

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Sooke Rd to Wishart Rd: 12,500 • Wishart Rd to Lagoon Rd: 9,500 • Lagoon Rd to Cotlow Rd: 6,500 • Cotlow Rd to Latoria Rd: 3,800 • Latoria Rd to boundary with Metchosin: 5,400
Vehicle Lanes	• 2 lane arterial
Parking	• Limited informal parking on gravel shoulder; east side by school
Transit Services	• Routes: 55, 59, 52, 54, 60
Cycling Facilities	• n/a
Pedestrian Facilities	• Asphalt sidewalk on west side from Sooke Rd to Wishart Rd • Painter Rd to Lagoon Rd: asphalt sidewalk both sides • Lagoon to Cotlow Rd: Asphalt sidewalk on one side • One signalized pedestrian crosswalks between Painter Rd and Cotlow Rd
Land Use	• Neighbourhood residential • Two schools • Commercial at Lagoon Rd and Metchosin Rd

PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 2 lanes • Install traffic signal at Lagoon and Metchosin and install left turn lane • Install traffic signal at Painter Rd
Parking	• No parking; consider limited parking pockets where demand warrants
Transit Services	• Frequent Transit Network
Cycling Facilities	• Buffered bicycle lane • Improve cycling and pedestrian signals at Wishart Rd and Metchosin Rd

PROPOSED ACTIONS	
Pedestrian Facilities	• Upgrade to /Install concrete sidewalk standard along corridor • Expand School Zone and implement traffic calming measures to reduce traffic speeds • Consider additional pedestrian signals at pedestrian crossings

Recommended Cross Section:



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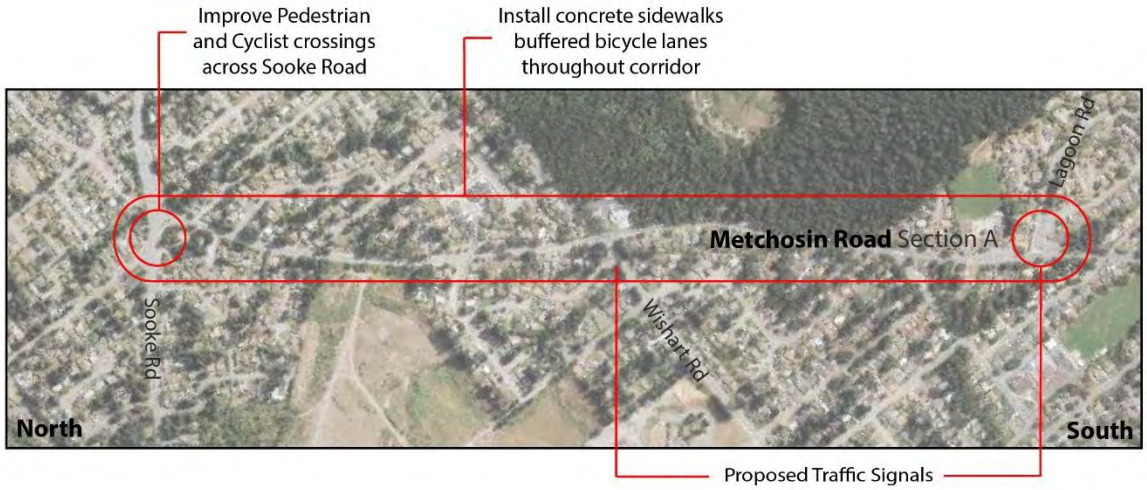

Improve Pedestrian and Cyclist crossings across Sooke Road
Install concrete sidewalks buffered bicycle lanes throughout corridor
Lagoon Rd
Metchosin Road Section A
Sooke Rd
Wishart Rd
North
South
Proposed Traffic Signals


Proposed traffic signal and realign Latoria Road
Install concrete sidewalks buffered bicycle lanes throughout corridor
Proposed Traffic Signal
Latoria Rd
Lagoon Rd
Metchosin Road Section B
North
South
Proposed Pedestrian Crossing
Consider Traffic Calming

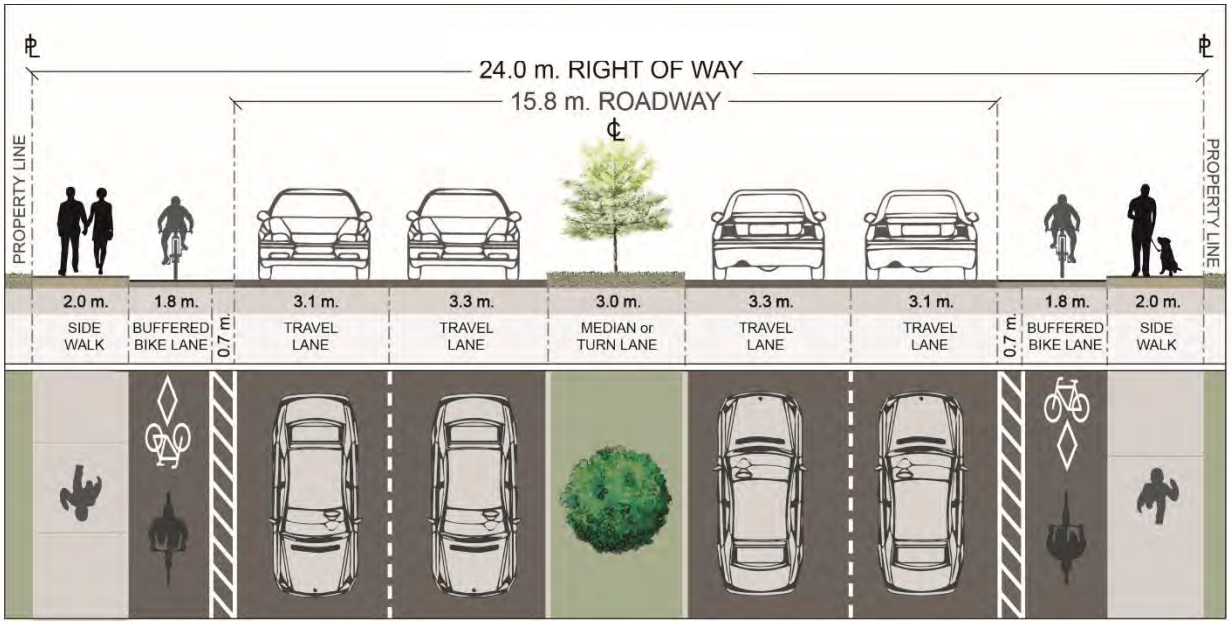
1.6 Veterans Memorial Parkway (VMP)

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Langford boundary to Sooke Rd: 30,000 • Sooke Rd to Cairndale Rd: 13,000 • Cairndale Rd to Latoria Rd: 8,300
Parking	• No parking, except at Havenwood Park
Vehicle Lanes	• 4 lanes arterial Trans-Canada Highway to Allandale Rd • 2 lanes arterial Allandale to Latoria Road
Transit Services	• Routes: 52, 61
Cycling Facilities	• Kelly Rd to Latoria Rd: Paved shoulders
Pedestrian Facilities	• Paved shoulders • Adjacent trail through Colwood Creek Park on west side from Sooke Rd to Langford boundary; trail from Donovan Ave to Langford boundary (Kelly Rd)

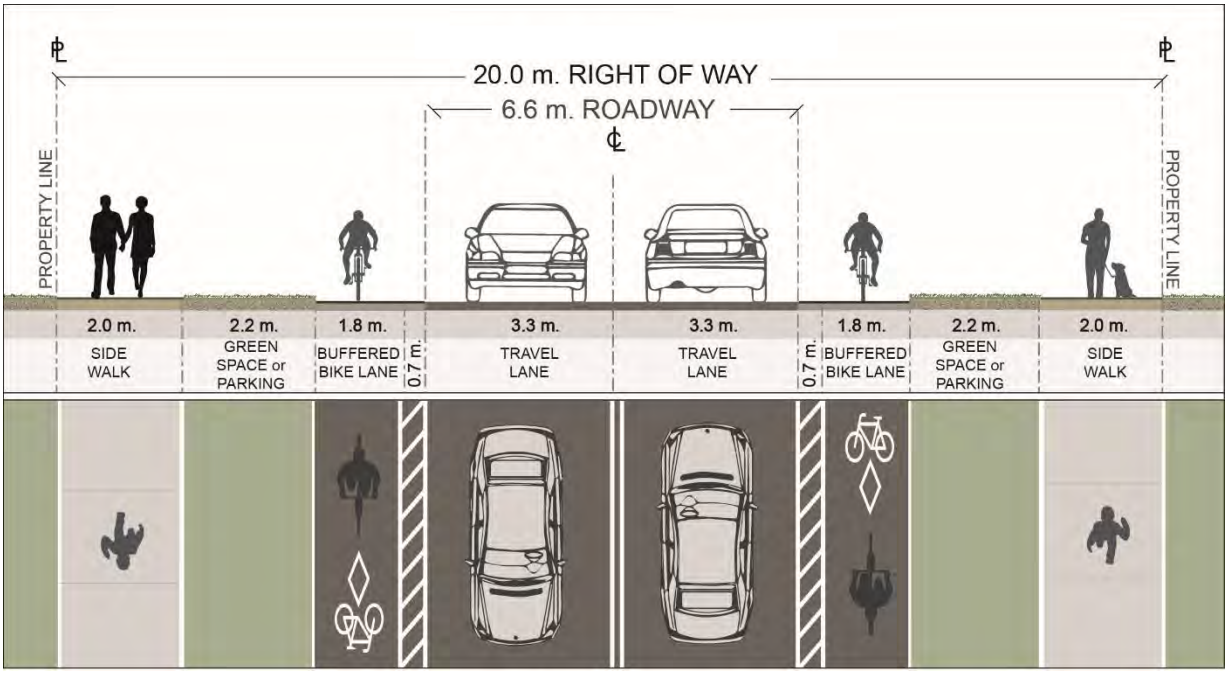
PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 4 lanes and 2 lanes • Install traffic signal at Latoria • Upgrade traffic signal at Cairndale to a full signal • Consider traffic signal at Brookside in the long term • Consider traffic signal at Allandale as Allandale Lands develop • Consider two lane left-hand turn lane at Sooke Rd
Parking	• No parking, except at Havenwood Park
Transit Services	• Frequent Transit Network
Cycling Facilities	• Upgrade paved shoulders to buffered bicycle lanes
Pedestrian Facilities	• New sidewalk, both sides from Langford boundary to Latoria

Recommended Cross Sections:

Kelly Road to Allandale Road (Section A):



Allandale Road to Latoria Rd (Section B):



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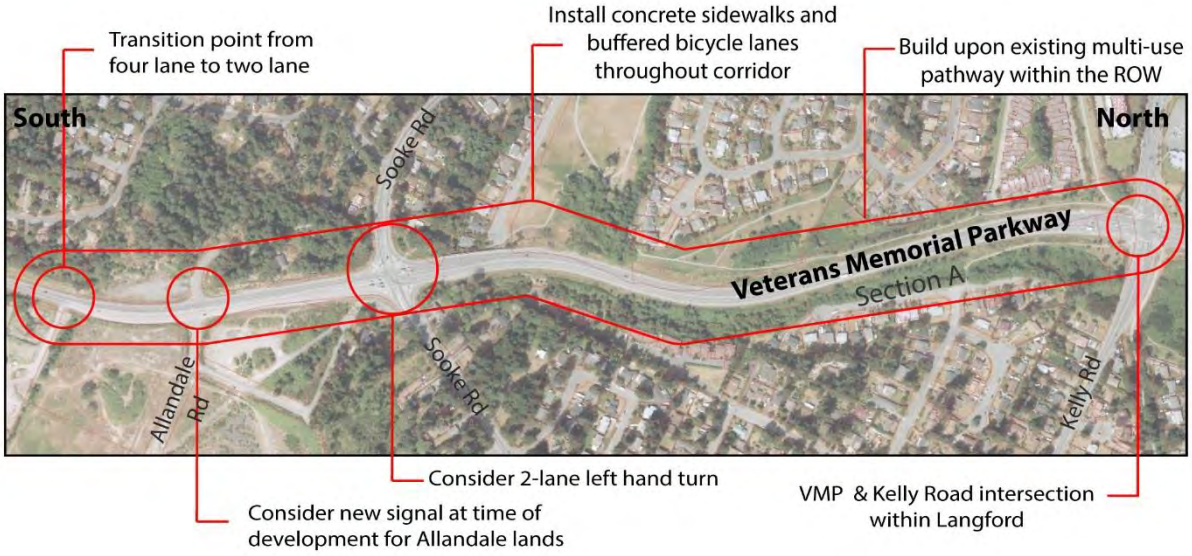

Transition point from four lane to two lane
Install concrete sidewalks and buffered bicycle lanes throughout corridor
Build upon existing multi-use pathway within the ROW
South
North
Sooke Rd
Veterans Memorial Parkway
Section A
Allandale Rd
Sooke Rd
Kelly Rd
Consider 2-lane left hand turn
Consider new signal at time of development for Allandale lands
VMP & Kelly Road intersection within Langford

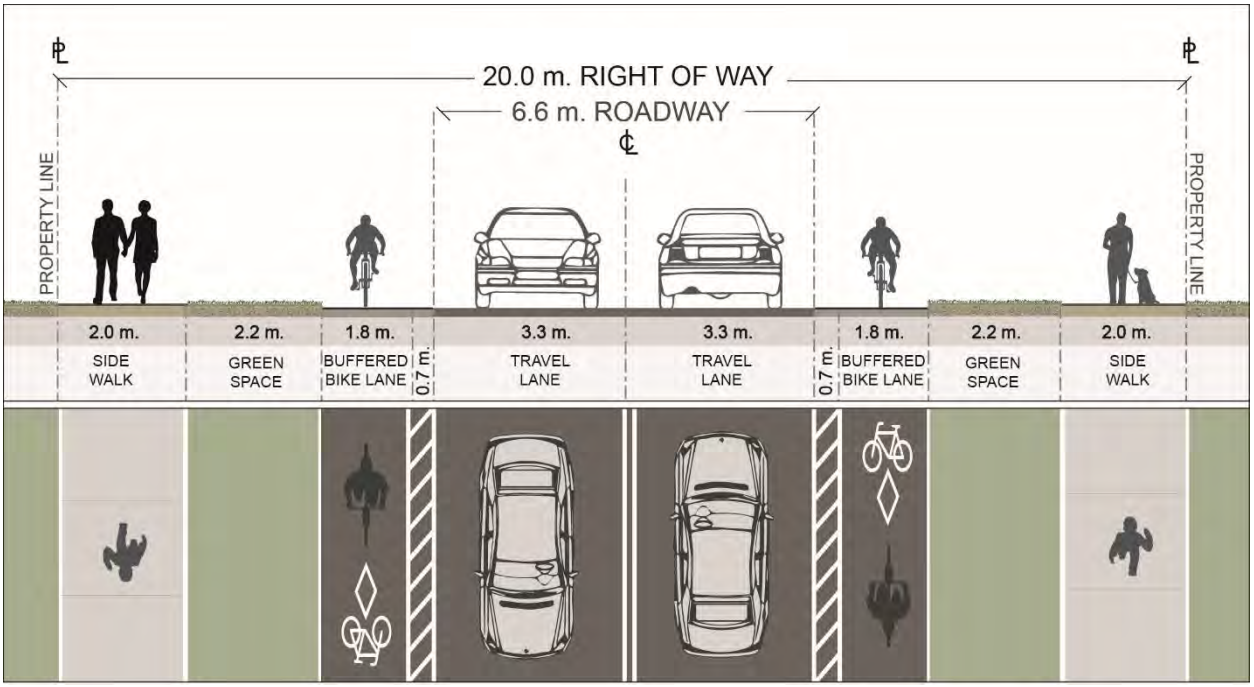

Install traffic signal as development occurs
Proposed new traffic signal
South
North
Veterans Memorial Parkway
Section B
Latoria Rd
Cairndale Rd
Allandale Rd
Explore feasibility for future road connections
Establish multi-use pathway to connect pedestrians and cyclists
Consider four laning where two lanes for future capacity needs
Install concrete sidewalks and buffered bicycle lanes throughout corridor

1.7 Latoria Road

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Metchosin Rd to Wishart Rd: 3,000 • Wishart to Veterans Memorial Parkway: 5,000 • Veterans Memorial Parkway to western boundary: 6,000
Vehicle Lanes	• 2 lane arterial (VMP to Metchosin) • 2 lane collector (VMP to Langford boundary)
Parking	• Limited parking
Transit Services	• Routes: 54, 55, 59, 60
Cycling Facilities	• n/a
Pedestrian Facilities	• Limited sidewalk

PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 2 lanes • New traffic signals at Veterans Memorial Parkway, Wishart, Castlewood and Metchosin Rd • Consider two left-hand turn lands from westbound Sooke Rd onto southbound Veterans Memorial Parkway, recognizing the signal is the responsibility of Ministry of Transportation and Infrastructure
Parking	• No parking
Transit Services	• Frequent Transit Network
Cycling Facilities	• Buffered bicycle lane
Pedestrian Facilities	• Metchosin Rd to Langford boundary: new sidewalks both sides as development occurs

Recommended Cross Section:



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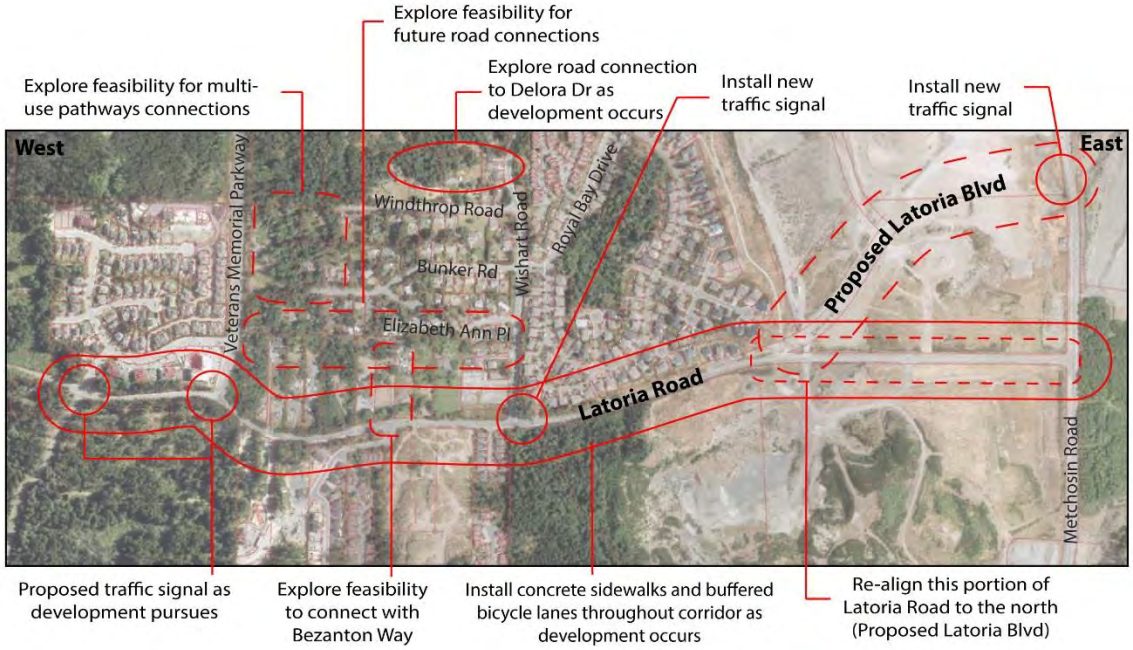


Collector Roads are intended to connect traffic from local roads to arterial roads and place equal importance on traffic movement and access to properties.

Collector roads identified for improvements are as follows:

- **Wishart Road**
- **Cairndale Road**
- **Lagoon Road**
- **Ocean Boulevard**

Recommended improvements to each of these are described in further detail below.

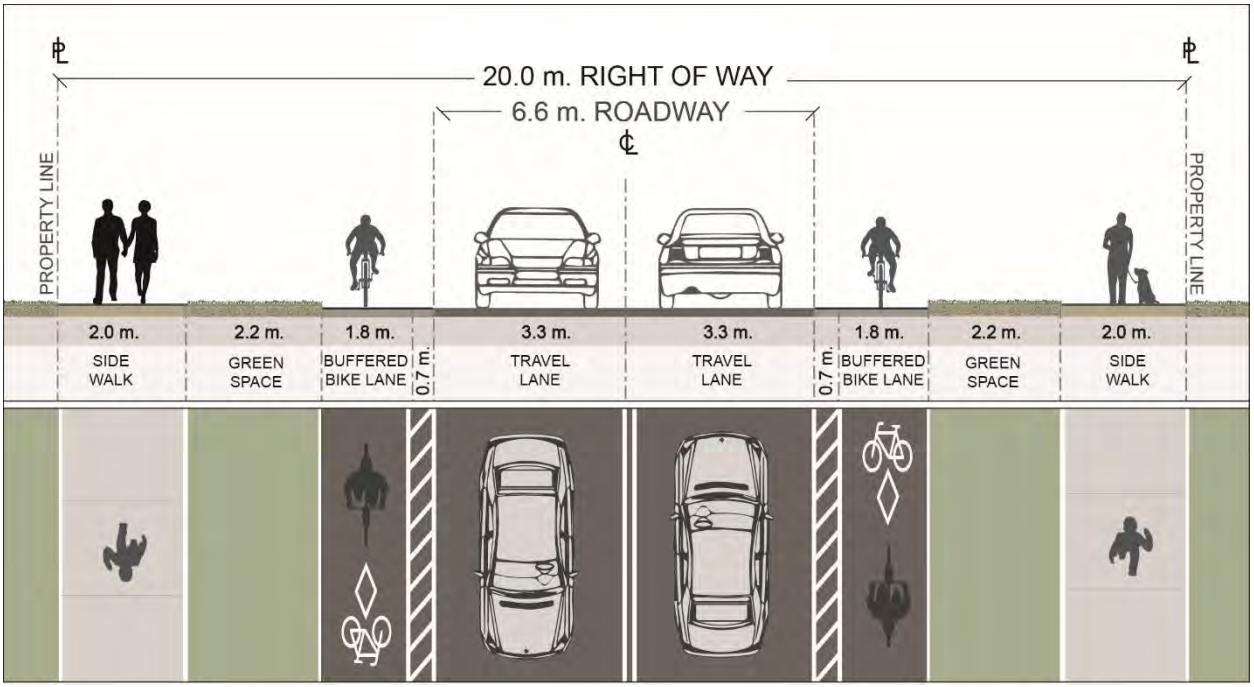
1.8 Wishart Road

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Metchosin Rd to Cairndale Rd: 3,400 • Cairndale Rd to Royal Bay Dr 2,800 • Royal Bay Dr to Latoria Rd: 1,200
Vehicle Lanes	• 2 lane collector
Parking	• Informal parking on gravel shoulder
Transit Services	• Routes: 52, 59, 60
Cycling Facilities	• Bike lane (one side) between Cairndale and Wishart Elementary
Pedestrian Facilities	• Fragmented sidewalk with gaps • Metchosin Rd to Acland Rd: asphalt sidewalk west side • Acland Rd to Cairndale Rd: concrete sidewalk west side • Cairndale Rd to Regency Pl (approx.): Asphalt sidewalk west side • Regency Pl to Latoria: concrete sidewalk one side • Five pedestrian crosswalks

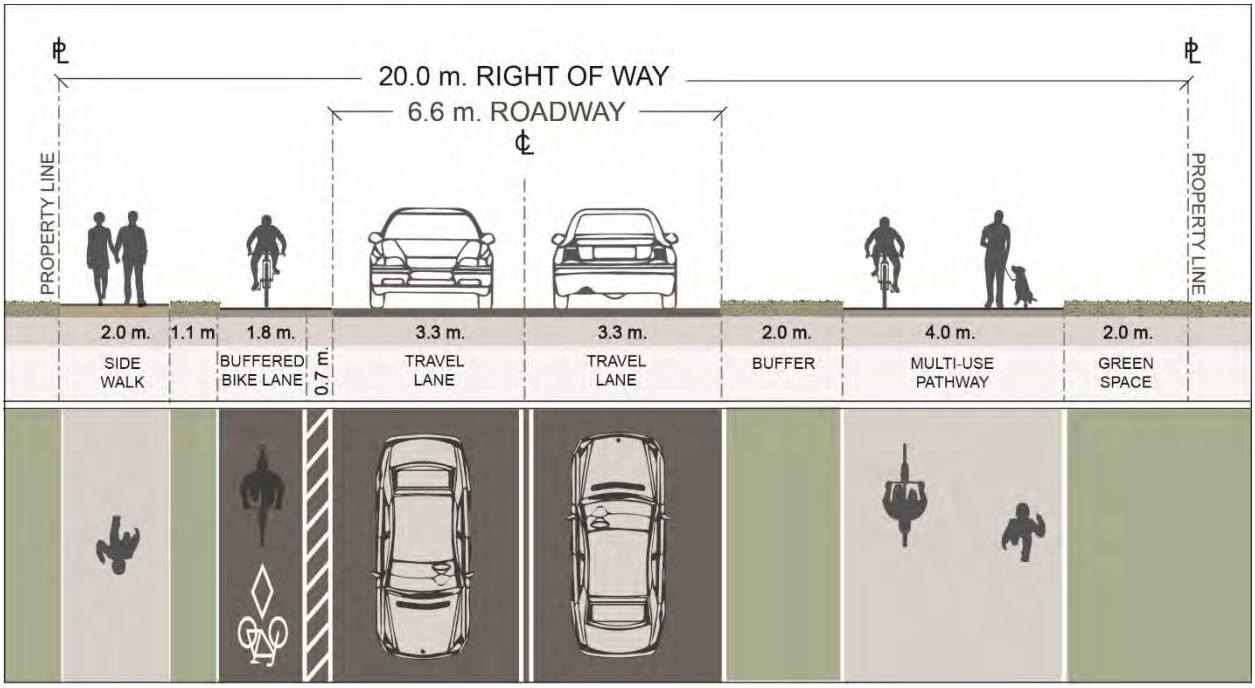
PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 2 lanes
Parking	• No parking
Transit Services	• Improve transit stops
Cycling Facilities	• Buffered bike lanes south of Metchosin Rd • Hard surface multi-use pathway north of Metchosin Rd
Pedestrian Facilities	• Concrete sidewalks south of Metchosin Rd • Hard surface multi-use pathway north of Metchosin Rd • Install wider sidewalk (3m minimum) in front of Wishart Elementary

Recommended Cross Sections:

South of Metchosin Road (Section A):



North of Metchosin Road (Section B):



Summary:

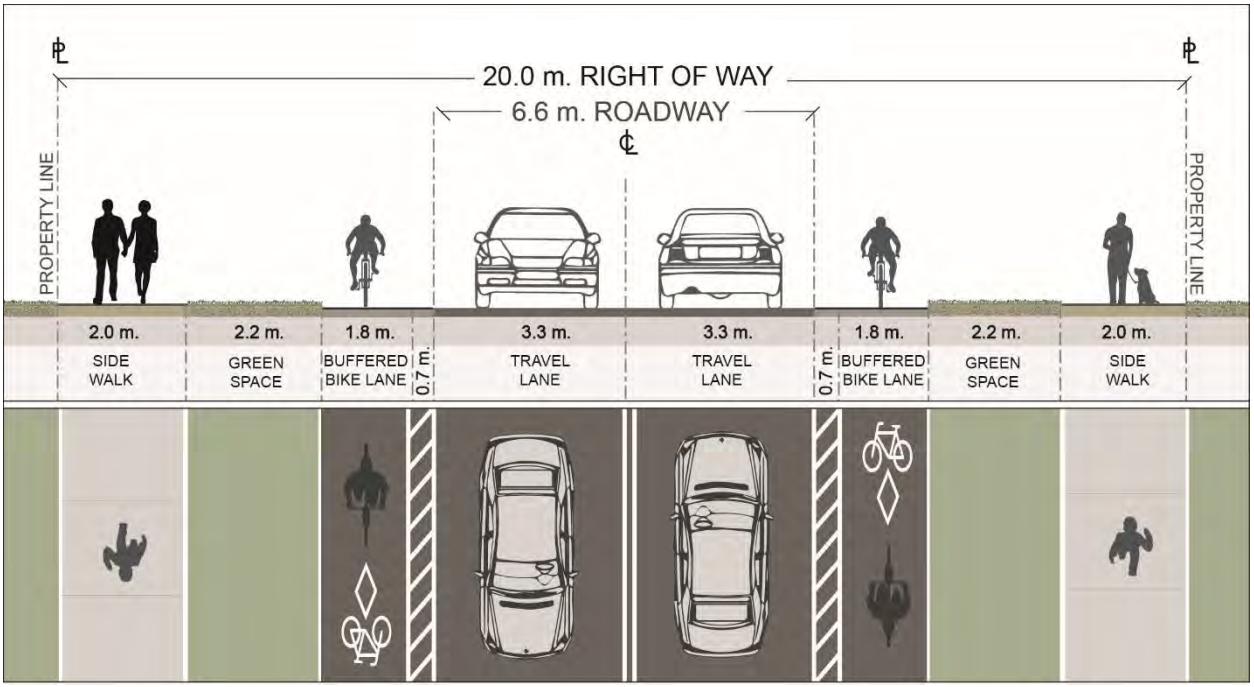

Install concrete sidewalks and buffered bicycle lanes throughout corridor
South
North
Wishart Road
Latoria Rd
Dressler Rd
Owens Rd
Metchosin Rd
Proposed traffic signal in association with Royal Bay development
Improve traffic signal and to support pedestrian and cyclists
Work with Royal Roads and Department of National Defense to improve existing trails
Install concrete sidewalks on west side of street, traffic calming features throughout corridor, and crosswalks where appropriate
South
North
Metchosin Road
Wishart Road
Langholme Rd
Halsor Rd
Ridley Dr
Leesham Rd
Install way-finding and signage
Develop multi-use pathway adjacent to Royal Roads
Replace speed humps with speed cushions
Install way finding and signage
Install crosswalk to connect multi-use pathway

1.9 Cairndale Road

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Wishart Rd to VMP: 2,600
Vehicle Lanes	• 2 lanes
Parking	• Informal parking
Transit Services	• Routes: 52
Cycling Facilities	• n/a
Pedestrian Facilities	• Wishart Rd to Brenda Lane: Asphalt sidewalks both side • Brenda Lane to Mary-Anne Cr: Asphalt sidewalk, north side • Mary-Anne Cr to VMP: Concrete sidewalk on north side • 2 pedestrian crossings

PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 2 lanes
Parking	• No parking
Transit Services	• Local transit network
Cycling Facilities	• Neighbourhood greenway with buffered bike lanes
Pedestrian Facilities	• Upgrade asphalt sidewalks to concrete

Recommended Cross Section:



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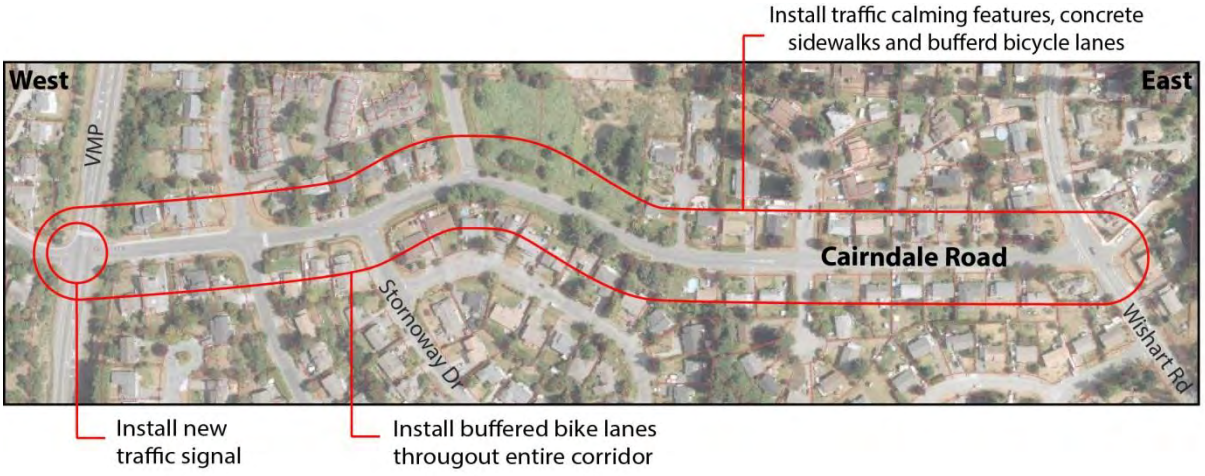


1.10 Lagoon Road

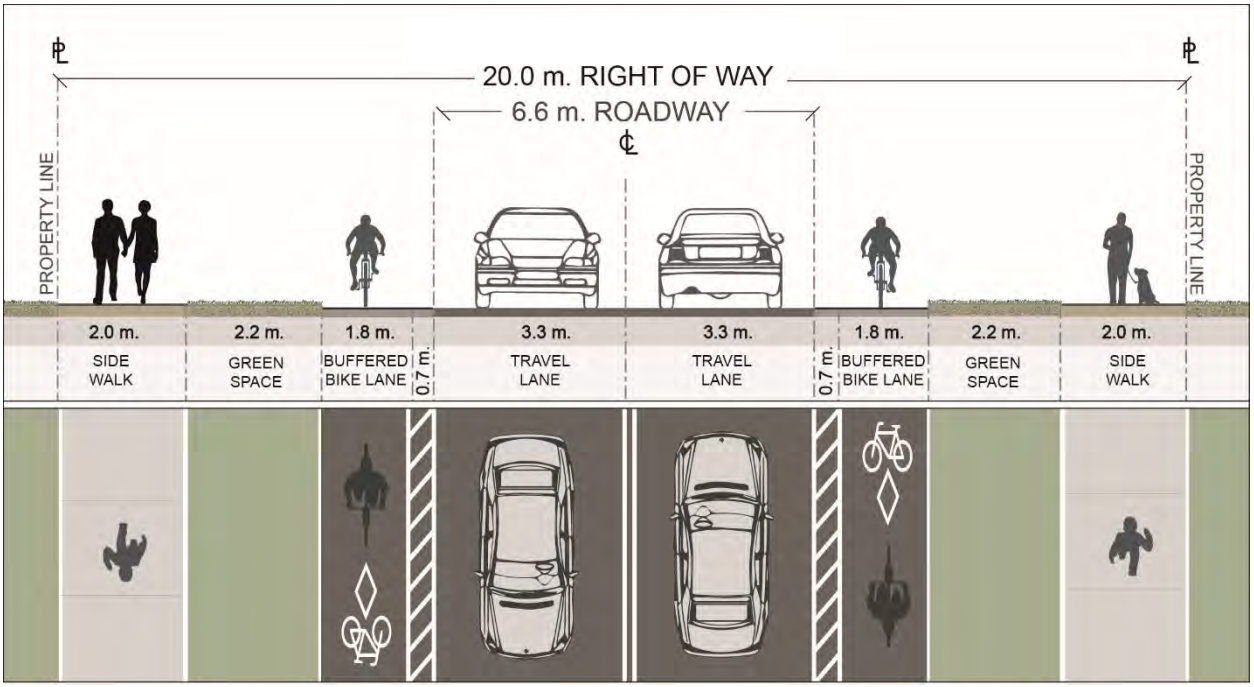
EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Metchosin Rd to Ocean Blvd: 3,500
Parking	• Informal parking on gravel shoulder; formal parking at east end of road
Vehicle Lanes	• 2 lane collector
Transit Services	• Route: 52
Cycling Facilities	• None
Pedestrian Facilities	• Metchosin to Heatherbell: concrete sidewalk (north), asphalt sidewalk (south) • Goldfinch Rd to Ocean Blvd: concrete sidewalk (north) • Aloha Rd to Anchorage Rd: concrete sidewalk (south) • 3 pedestrian crossings
Land Use	• Residential

PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 2 lanes
Parking	• No parking on west end of road; parking pockets east of Heatherbell Rd
Transit Services	• Core transit network

Cycling Facilities	• Metchosin Rd to Ocean Blvd:
	  ○ Interim: buffered bicycle lane upslope, sharrows downslope
	  ○ Long term: buffered bicycle lane both sides with acquisition of land

Pedestrian Facilities	• Heatherbell to Goldfinch: New concrete sidewalks
Land Use	• Residential

Recommended Cross Section:



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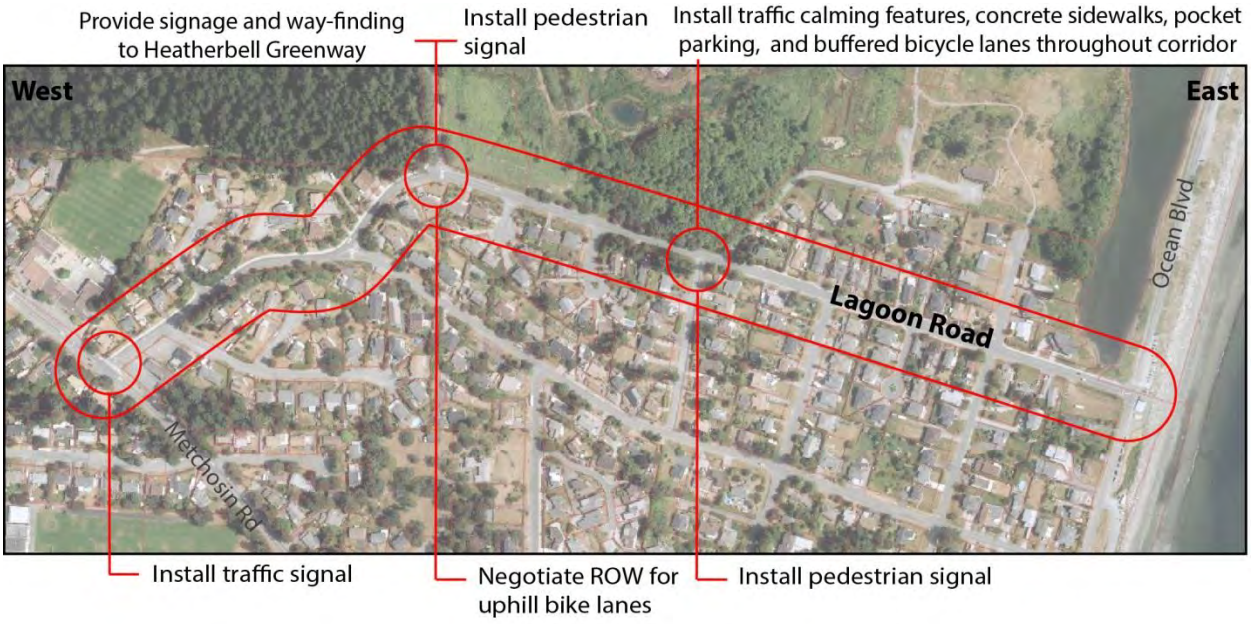


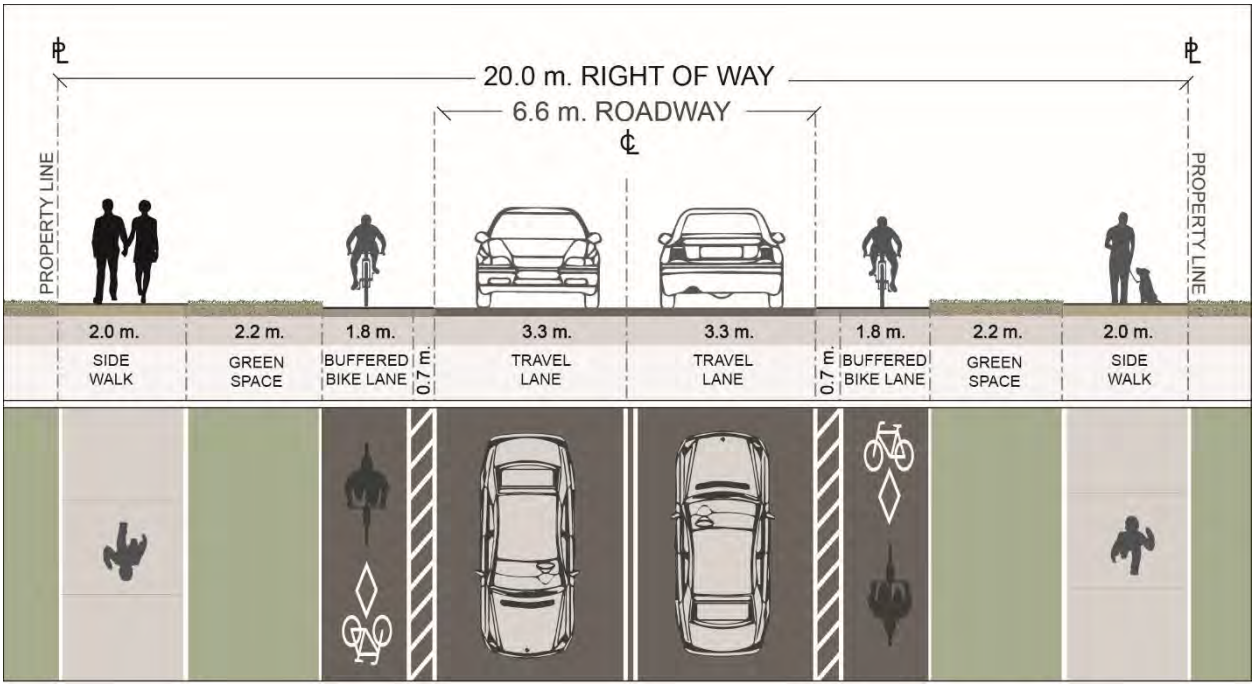
1.11 Ocean Boulevard

EXISTING CONDITIONS	
Current Traffic Volumes (vehicles per day - vpd)	• Not available
Parking	• Informal parking on gravel shoulder (especially during Fort Rodd Hill events); east side of Ocean Boulevard on the lagoon
Vehicle Lanes	• 2 lane collector to Fort Rod Hill
Transit Services	• Route: 39 and a transit exchange
Cycling Facilities	• None
Pedestrian Facilities	• Island Highway to Belmont: concrete sidewalk east side • 3 pedestrian crossings

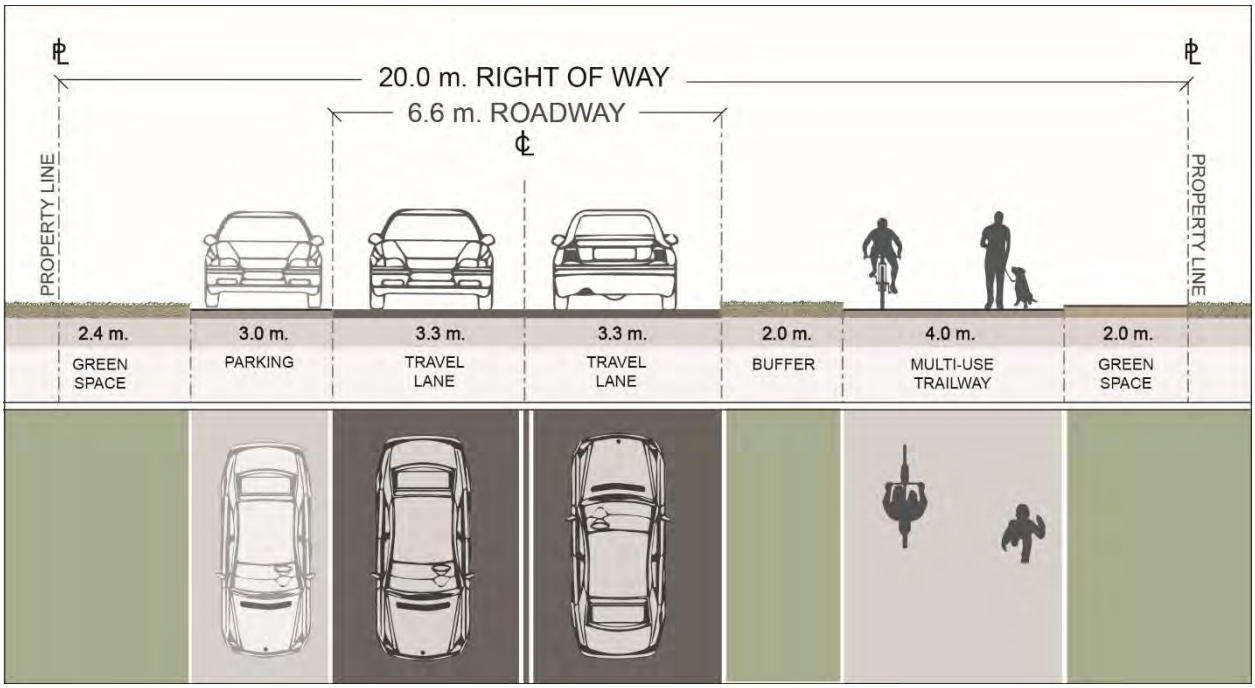
PROPOSED ACTIONS	
Vehicle Lanes	• Maintain 2 lanes (Belmont to lagoon) • Island Highway to Belmont dependant on 2015 addendum and consultation with Onni Group
Parking	• Provide parking for special events
Transit Services	• None
Cycling Facilities	• Install buffered bike lanes between Island Highway to Belmont in consultation with Onni Group • Multi-use trail
Pedestrian Facilities	• Install sidewalks between Island Highway to Belmont in consultation with Onni Group • Island Highway to the lagoon: Concrete sidewalk, one side

Recommended Cross Sections:

Juan de Fuca to Belmont Rd:



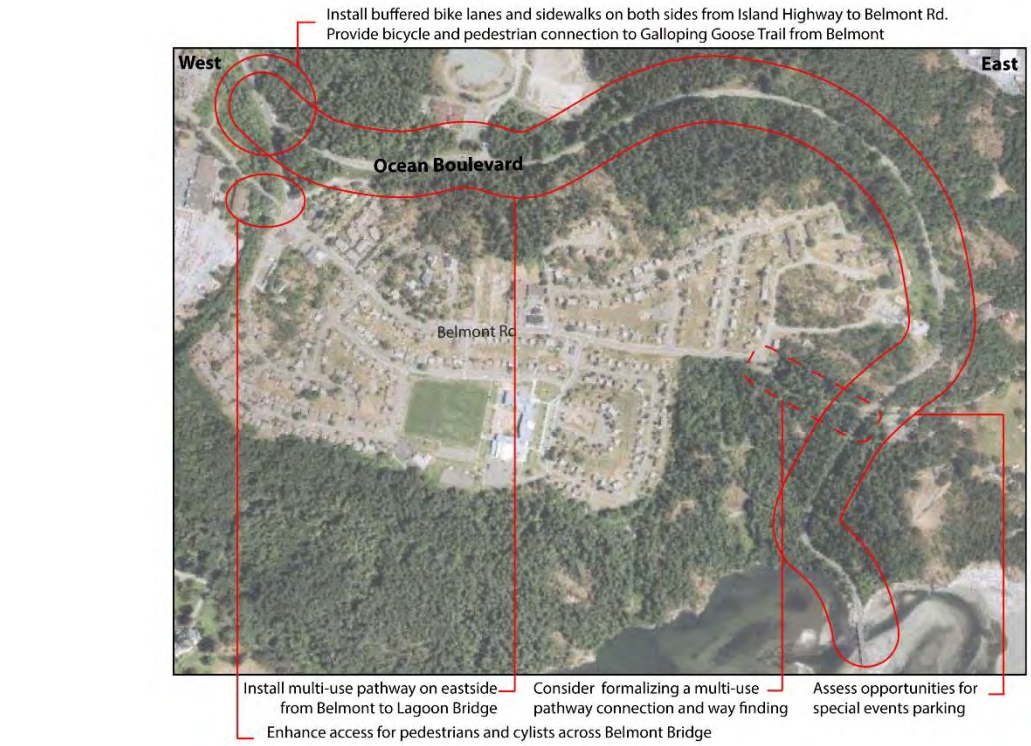
Belmont Rd to the lagoon:

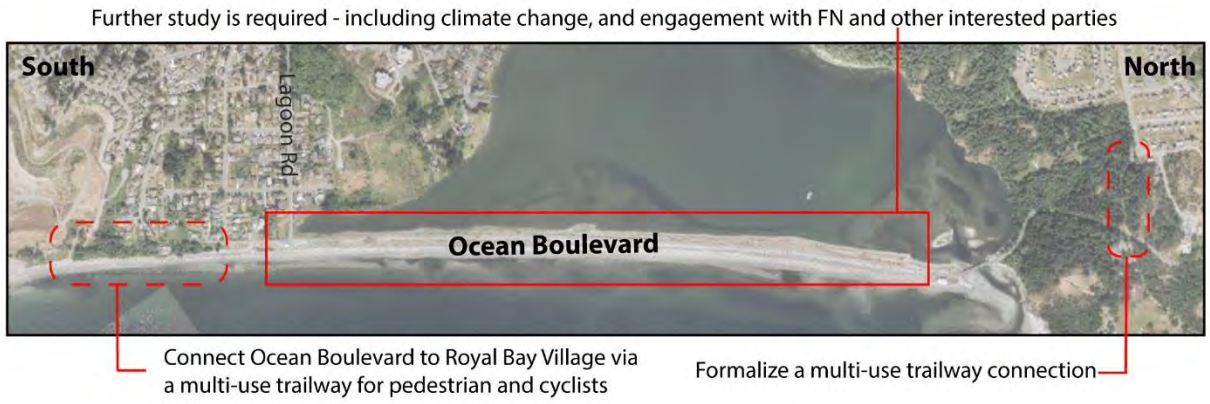


Along the lagoon:

Further study is required including engagement with First Nations and interested parties, and evaluation of impact of climate change.

Summary:





Local Roads are not intended for through travel and provide a high level of access to individual properties. The network of local roads throughout Colwood provides access to primarily single family residence neighbourhoods, where safety and accessibility have been recognized as priority improvement areas. This is especially applicable to areas identified as pedestrian priority zones which include schools, daycares, and other community amenities.

As discussed in the liveable neighbourhoods chapter, areas of improvement include the following:

- Enhancing traffic calming features (speed limits, chicanes, traffic circles, speed cushions, raised crosswalks, etc);
- Discourage non-local traffic vehicle cut-throughs; and,
- Strongly encourage walking and cycling as primary mode for meeting local needs.

Currently many of the local streets throughout Colwood do not have sidewalks or bicycle facilities. A broad gravel shoulder is often informally used to accommodate the needs of pedestrians, cyclists and the excess parking needs of the residents. The proposed improvements are intended to enhance the safety of residents and their children by slowing traffic speeds through traffic calming features and formalizing the road right of way to accommodate the different users. This includes the important addition of sidewalks, especially along school roads and busier local roads. Sidewalks, bike facilities and traffic calming will all add more value to the neighbourhood streets.

Through the Transportation Master Plan process a number of greenway corridors were identified as improvement areas throughout the local street network to support road design treatments which improve upon neighbourhood liveability. Greenways as identified in the Colwood OCP are intended to integrate and connect recreational opportunities and active transportation options. The identified greenways, or 'green streets' are listed below:

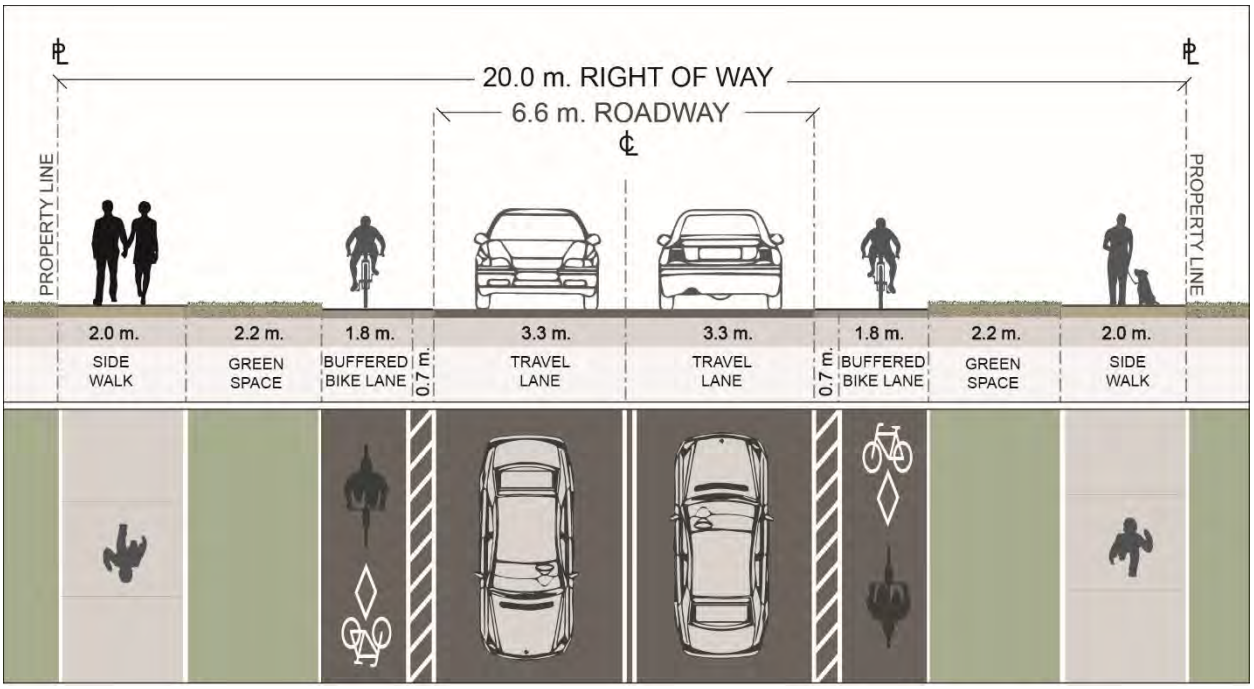
- **Painter Road**
- **Heatherbell Road**
- **Metchosin and Adye Roads**
- **Owens and Benhomer Roads**
- **Dressler and Cotlow Roads**

Recommended improvements to each of these streets are described in further detail below.

1.12 Painter Road

Painter Road from Dressler Road to Metchosin Road will provide a major cycling and walking connection to Royal Bay High School.

Recommended Cross Section:



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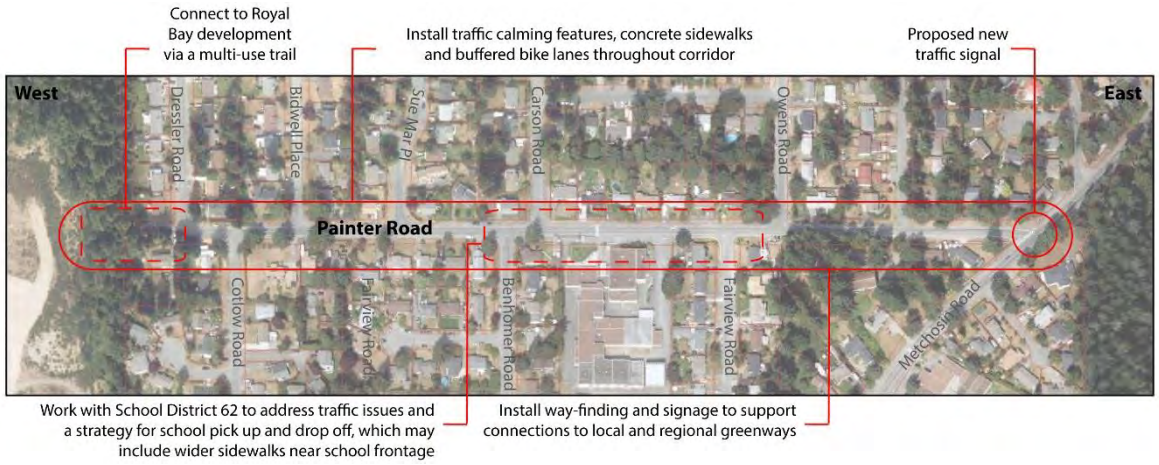
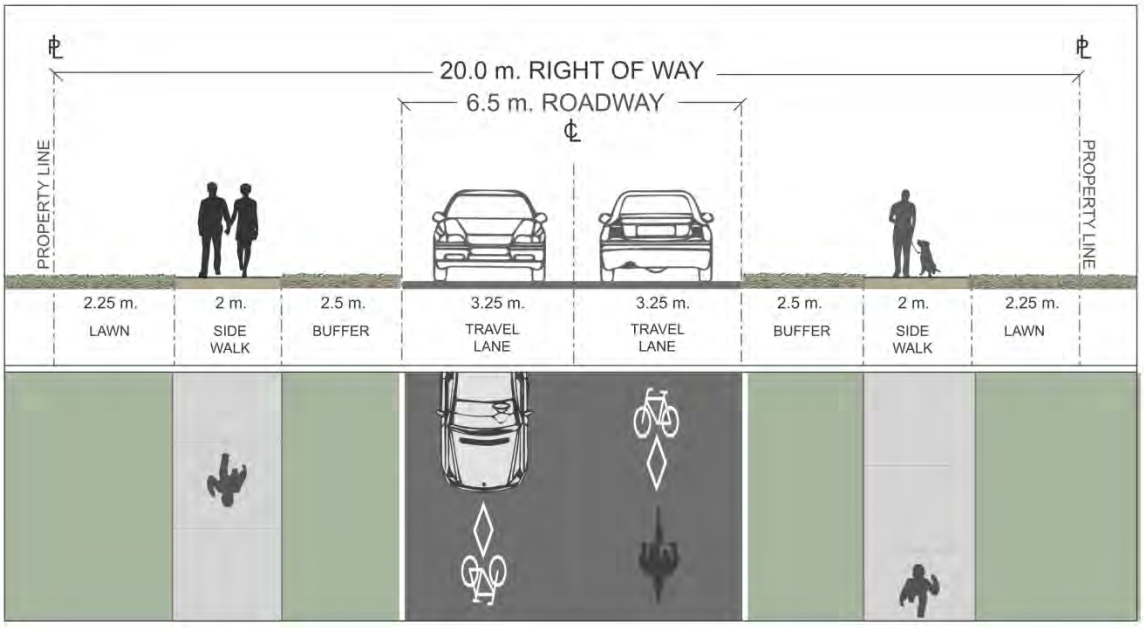


1.13 Heatherbell Road

From Lagoon Road to Ilott Place.

Recommended Cross Section:



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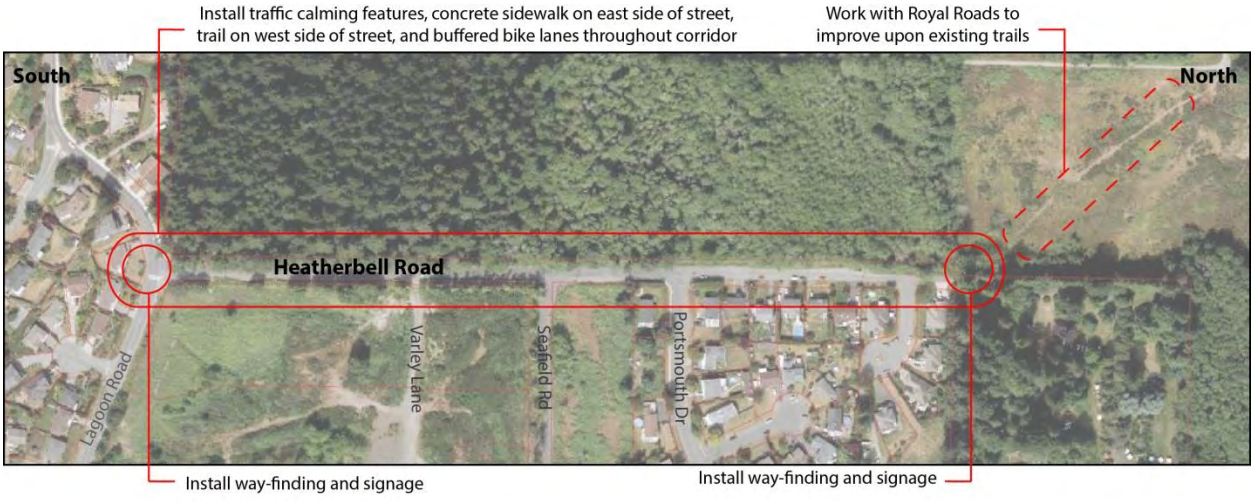
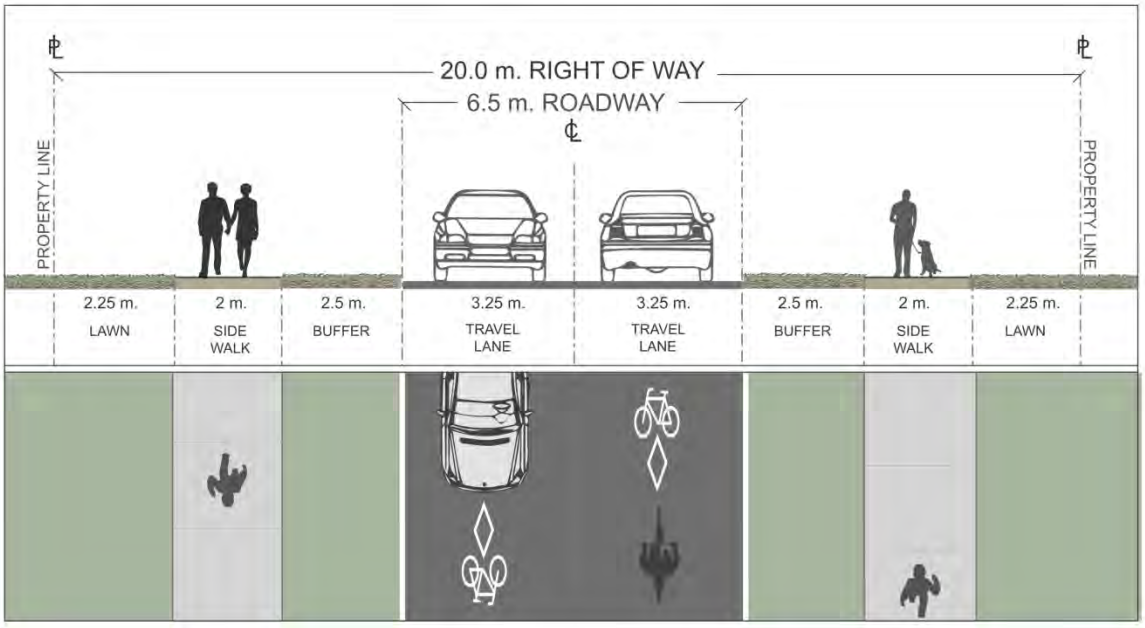


1.14 Metchosin & Adye Road

From Sooke Road to Galloping Goose Regional Trail.

Recommended Cross Section:



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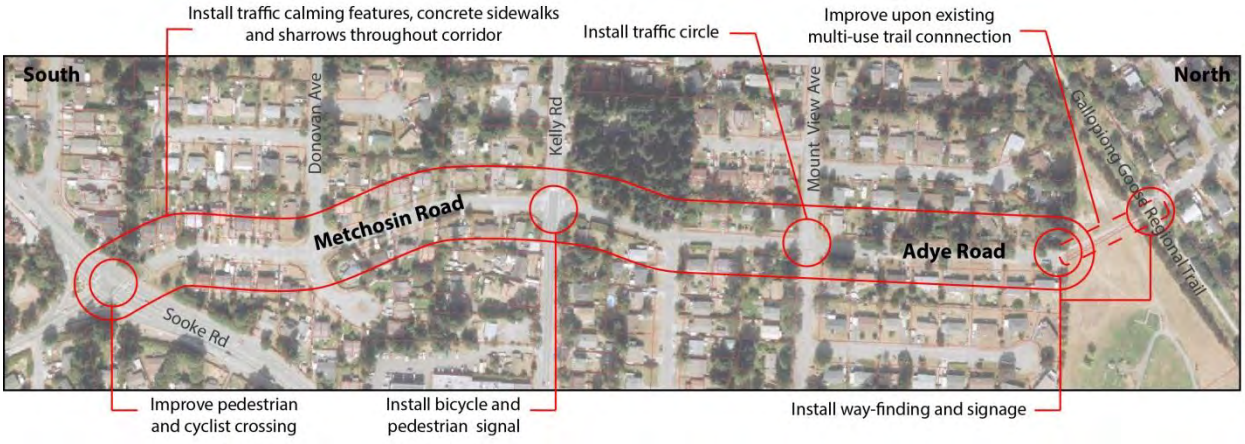
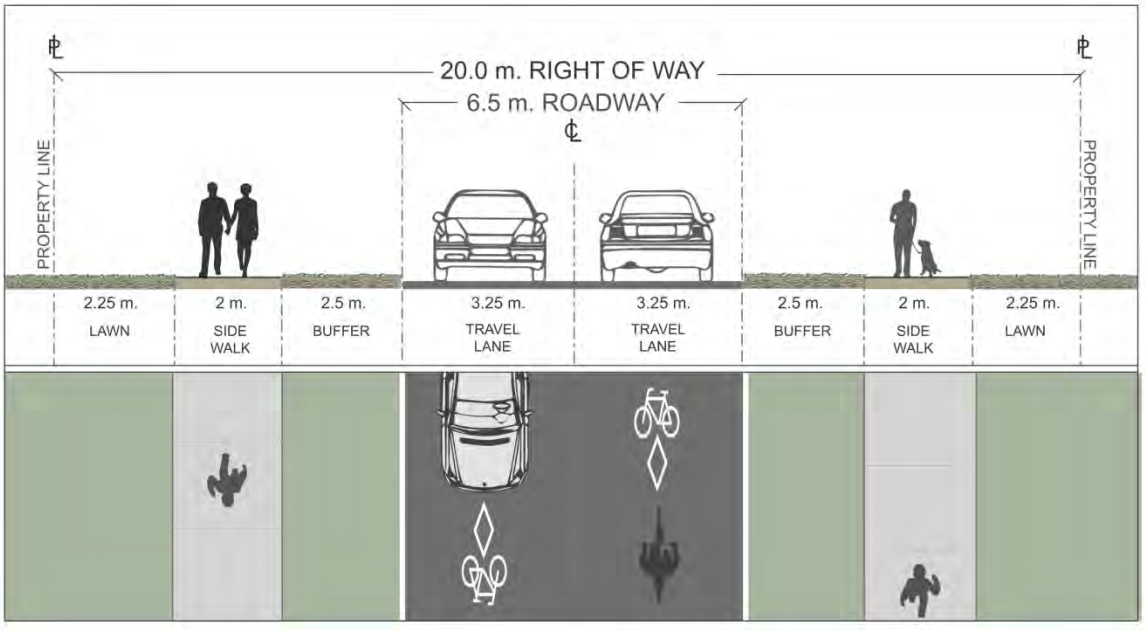


1.15 Owens and Benhomer Roads

From Wishart Road to Metchosin Road.

Recommended Cross Section:



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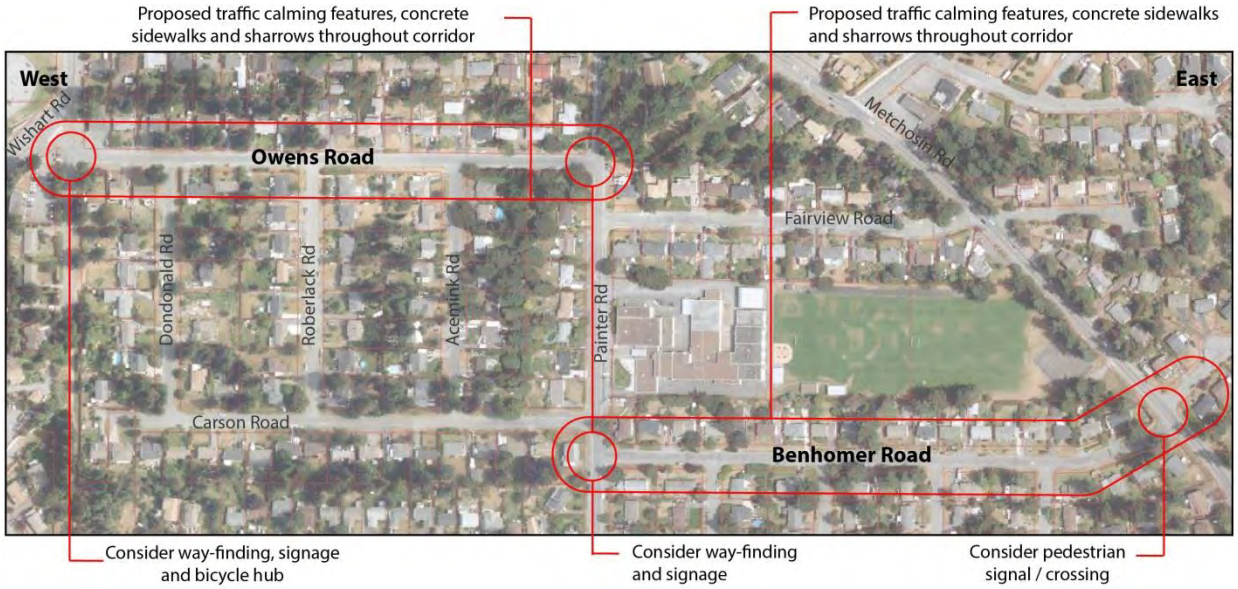
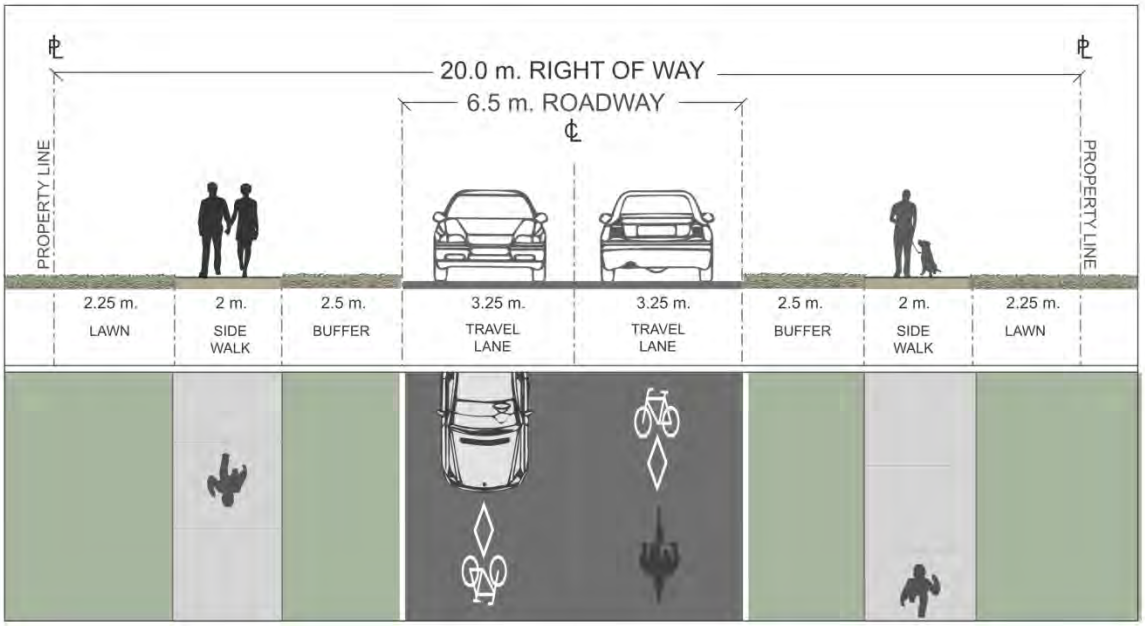


1.16 Dressler and Cotlow Roads

From Wishart to Metchosin Road

Recommended Cross Section:



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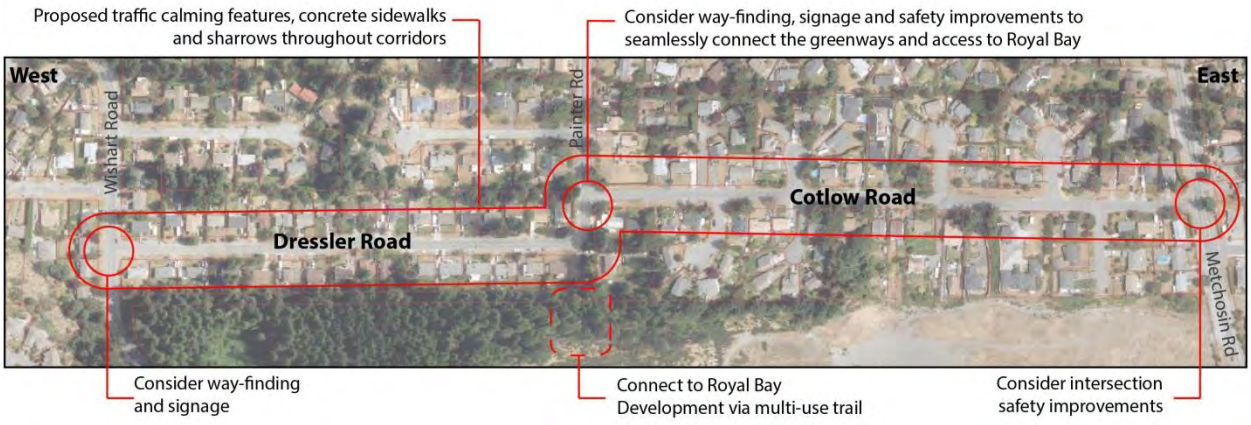
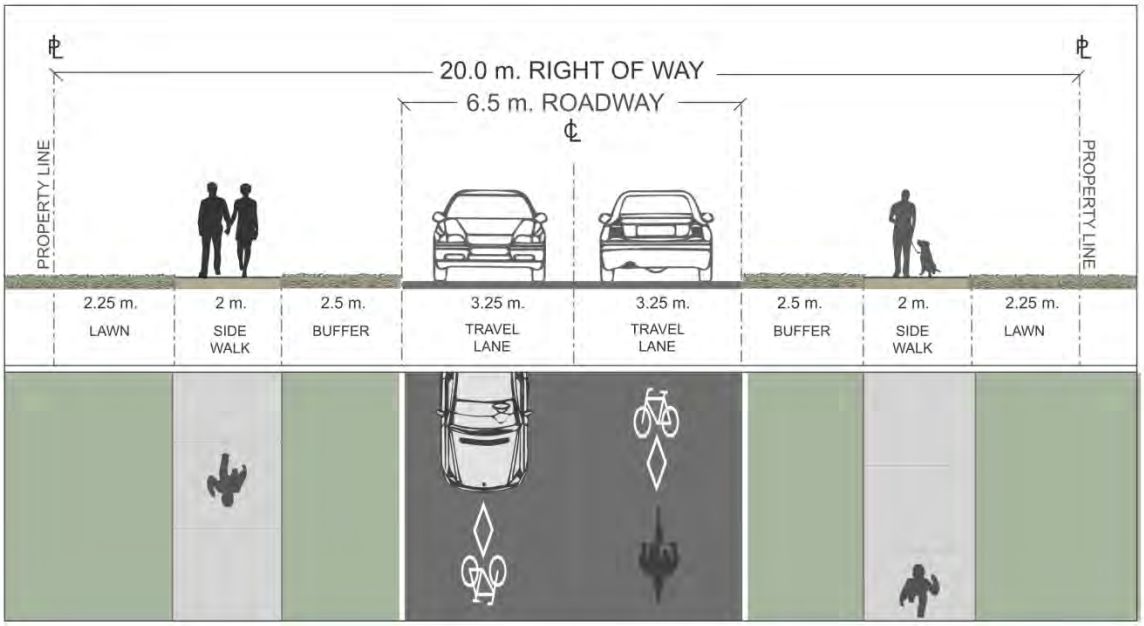


1.17 Sunridge Valley and Brittany Drives

Recommended Cross Section:



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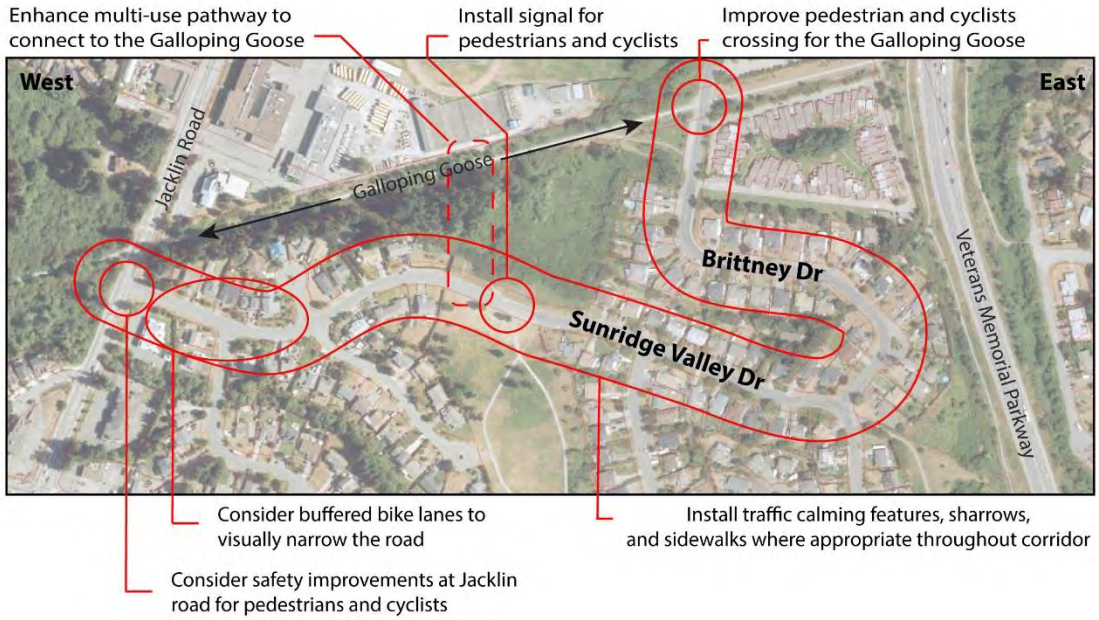
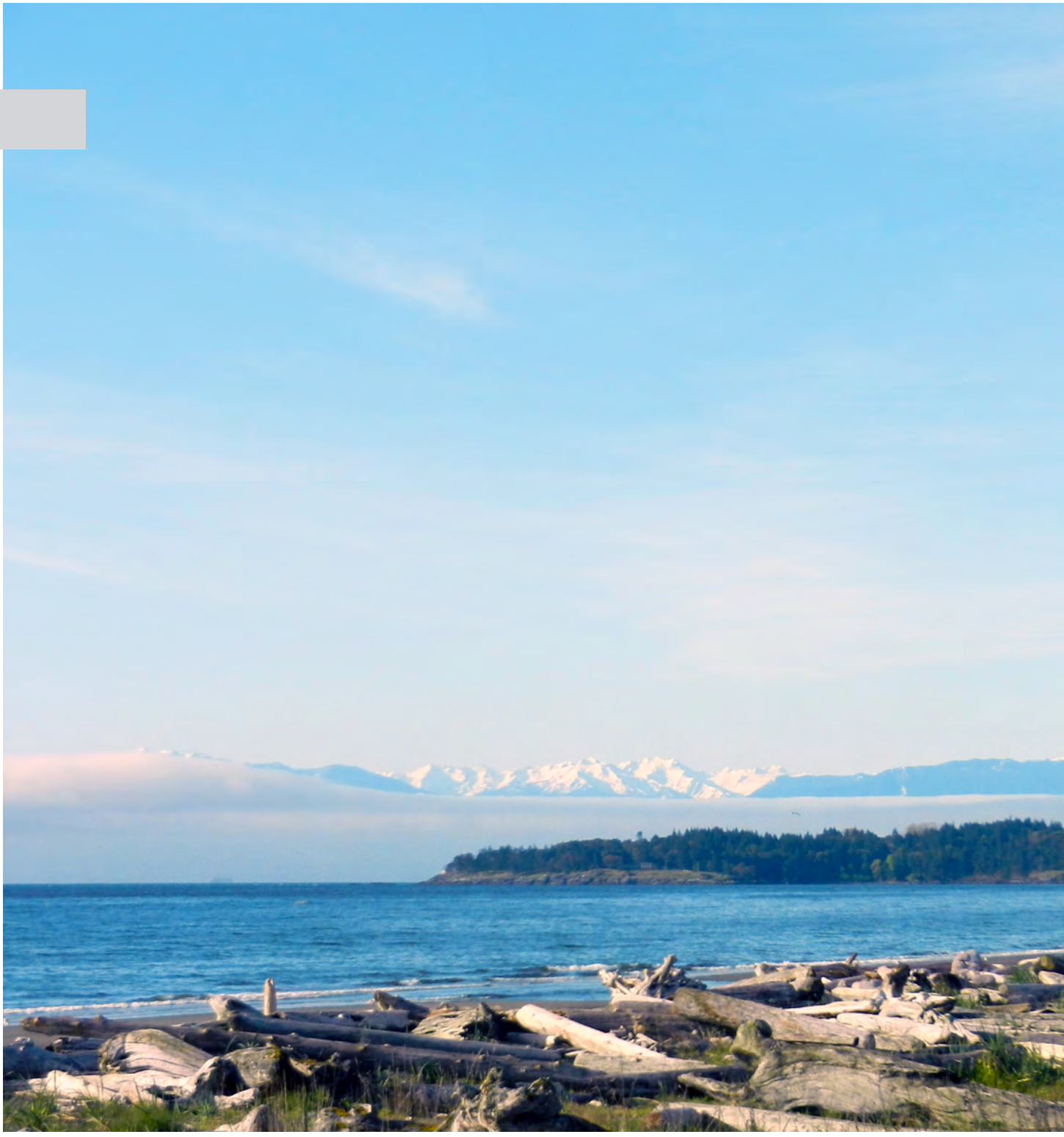




APPENDIX [B]

Adept Transportation Solutions
PLANNING AND ENGINEERING

City of Colwood Transportation Modelling

2014 Transportation Master Plan

Final Report

Prepared For: City of Colwood

Prepared By: Adept Transportation Solutions

March 2015

TABLE OF CONTENTS

BACKGROUND

As part of the 2014 City of Colwood Transportation Master Plan project undertaken by the City of Colwood and Urban Systems, Adept Transportation Solutions (Adept) was engaged by the City to develop operational traffic analysis models of the existing major road network intersections in order to assess the future traffic demands on the city road network according the Capital Regional District (CRD) Travel Demand Forecast model. The intent of the study was to identify any current traffic operational deficiencies as well as potential future road network improvements that may be required at build-out of the city lands according to the Official Community Plan (OCP).

According to the current OCP, significant infill development is anticipated within the City over the coming years. Population projections show an anticipated increase of approximately 16,000 new residents by 2030. Further, according the CRD Regional Transportation Plan (RTP), "between 2006 and 2038 there will be over 145,000 additional peak-period trips in the region if current travel patterns continue. Assuming current travel behaviour, over 70% of these additional trips are projected to be by car. In other words, there will be over 100,000 more automobile trips in the peak periods, further straining capacity on roadway infrastructure throughout the region".[1] The RTP outlines a number of strategies to maximize the efficiency of the existing transportation network in order to mitigate the impacts of the forecast growth and associated congestion.

While the TMP identifies local strategies to reduce dependence on the single occupant vehicle for daily trips, this analysis assumes a "Business As Usual" case, meaning no significant changes to the regional road network or higher capacity transit system would be in place and current travel behavior trends continue. The CRD travel demand forecast model was used to assess future traffic demands on the City road network under this assumption in order to identify potential issues within the city that may be experienced in the future without significant changes in travel patterns and travel mode choice.

PROJECT DEFINITION

The various aspects of this study, from definition of the Study Area to project assumptions are detailed in the following sections.

STUDY AREA

The Study Area was comprised of all major road intersections within the City of Colwood municipal boundary. Where adjacent traffic signals influence the traffic volume flows into the study area, those intersections were included in the modelling.

In October / November 2013, Adept staff undertook manual full movement vehicle and alternative mode intersection counts for AM and PM Peak Period traffic at the following locations:

[1] https://www.crd.bc.ca/docs/default-source/regional-planning-pdf/transportation/rtp-july2014.pdf

- Sooke Rd / Ocean Blvd / Wale Road
- Sooke Rd / Goldstream Ave
- Sooke Rd / Aldeane Ave / University Dry
- Sooke Rd / Mt View Ave
- Sooke Rd / Ledsham Rd
- Sooke Rd / Metchosin Rd
- Sooke Rd / Fulton Rd
- Sooke Rd / Jacklin Road
- Goldstream Ave / Wale Rd
- Kelly Rd / Pickford Rd
- Kelly Rd / Brittany Drv
- Lagoon / Metchosin Rd
- Metchosin Rd. / Painter Rd
- Veterans Memorial Parkway / Latoria Rd
- VMP / Cairndale Rd
- Wishart Rd / Cairndale Rd
- Wishart Rd / Metchosin Rd
- Jacklin Rd / Sunridge Valley Drv

Additional data was provided by the City of Colwood and MoTI and consisted of 24 hour traffic volume data from signal controllers for the following intersections within and immediately adjacent to the Study Area road network:

- Sooke Rd / Goldstream Ave
- Sooke Rd / Aldeane Ave
- Sooke Rd / Goldstream Rd
- Sooke Rd / Kelly Rd
- Sooke Rd / Wale Rd
- Sooke Road / VMP
- Sooke Rd / Metchosin Rd
- VMP / Kelly RD
- VMP / Meaford Ave
- VMP / Attree

The Study Area and all intersections where count data was obtained are shown in **FIGURE 1**. All existing traffic signal timing plans were also provided and input into the operational analysis model.

FIGURE 1: STUDY AREA INTERSECTION LOCATIONS

Appendix A provides details of the existing intersection turning movement traffic volumes for the AM and PM Peak Hours while **Appendix B** provides the existing laning geometrics at each of the study study intersections.

STUDY SCOPE AND METHODOLOGY

The major activities that Adept undertook to conduct the Transportation Modelling are described as follows:

- Met with appropriate City staff to acquire the identified reference materials and data including traffic volume data, recent (2013) orthophotography and any designs / plans for future network improvements within the Study Area;
- Conducted site reconnaissance to catalogue existing conditions including; geometrics, laning, infrastructure for alternative modes;
- Developed a Synchro / SimTraffic micro-simulation model of the major intersections and roads within the Study Area for existing conditions;
- Applied a 1.5% / annum growth rate to the existing traffic volumes to forecast traffic conditions at future Horizon Years 2019 (short-term) and 2025 (medium-term) to account for infill development and growth in external traffic through the city road network;
- Documented performance measures of Levels of Service, Volume / Capacity Ratios, Delay and Queue Lengths for all models and all study intersections to determine the impacts of the growth and respective improvements required to efficiently accommodate the anticipated future traffic volumes;
- Utilized the future "Horizon Year 2038" traffic loading data provided within the Capital Regional District's Travel Demand Forecast model (TransCAD) to predict future traffic volumes on the major road network;
- Reviewed potential road network modifications as noted in the Official Community Plan and the impact on the closure of Ocean Boulevard to vehicle traffic as a result of naturally occurring degradation; and,
- Provided conclusions and recommendations as well as identified potential future transportation network improvement requirements.

PERFORMANCE MEASUREMENT

VOLUME TO CAPACITY (v/c)

In the 2000 Highway Capacity Manual (HCM), capacity at intersections is defined for individual lane groups and for the intersection as a whole. A lane group may be a single movement, a group of movements, or an entire approach and is defined by the geometry of the intersection and the distribution of movements over the various lanes. Capacity of a lane group is calculated as the maximum rate of flow that may pass through the intersection under prevailing traffic, roadway, and signalization conditions. The rate of flow is generally measured or projected for a 15-minute period and capacity is stated in vehicles per hour. Capacity analysis of intersections involves the computation of volume-to-capacity (v/c) ratios for each lane group, from which an overall intersection v/c ratio may be derived. When the volume to capacity ratio is greater than 1.0, the traffic volumes have exceeded the intersection processing capacity.

LEVEL OF SERVICE (LOS)

The analysis results shown in this study were taken from the Synchro / SimTraffic analysis software which represents the standardized Highway Capacity Manual analysis results. The resultant indicator of performance is the Level-of-

Service (LOS) which assigns a letter grade for each of the delay ranges from LOS 'A' (representing unconstrained or free-flow operation) to LOS 'E/F' (the threshold of LOS 'E' being "at capacity" and LOS 'F' being "at failure").

The Highway Capacity Manual identifies operating conditions ranging from "A" to "F", briefly described below for signalized intersections:

LOS A Excellent traffic flow, favourable progression, most vehicles do not stop at all (no delay).

LOS B Very good traffic flow, short delays, more vehicles stop than under LOS A causing some delay.

LOS C Traffic flow is still good, but the number of vehicles stopping is significant. Many vehicles still proceed without stopping.

LOS D The influence of congestion becomes noticeable. Few vehicles advance through the intersection without stopping.

LOS E The limit of acceptable delay for many agencies. Virtually no vehicles proceed without stopping.

LOS F Traffic volume exceeds available capacity. All vehicles must stop at least once, and possibly must wait through several signal cycles before proceeding.

The Level of Service (LOS) for an unsignalized intersection is determined by the computed or measured control delay and is defined for each minor movement. The control delay threshold for any given LOS would be less for an unsignalized intersection than it would be for a signalized intersection for a variety of reasons including driver behaviour. Drivers expect different levels of performance from different types of traffic control facilities. The expectation is that a signalized intersection would be designed to carry higher traffic volumes than an unsignalized intersection. For example, drivers at signalized intersections are able to relax during the red interval, whereas at unsignalized intersections drivers on the minor approaches must remain attentive to the task of identifying acceptable gaps and vehicle conflicts. Also, there is often much more variability in the amount of delay experienced by individual drivers at an unsignalized intersection versus that at signalized intersections. LOS criteria are provided below in **Table 1**.

TABLE 1: LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level of Service	Control Delay (sec./vehicle)
A	≤ 10
B	> 10 and ≤15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

For signalized intersections, the LOS level is defined by the average controlled delay per vehicle, including starting, stopping, and slowing. For these intersections, the delay times for each LOS level are summarized in **Table 2**.

TABLE 2: LEVEL OF SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Control Delay (sec./vehicle)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

For this study, in keeping with standard local engineering policy, a V/C ratio of 0.85 and Level of Service E was used as the maximum desirable values for the overall intersection as well as a maximum V/C ratio of 0.90 for individual movements. Intersection movements exceeding this value have been highlighted.

STUDY ASSUMPTIONS

- Within the operational models, the existing intersection signal timings were optimized using Synchro where adjustments are shown to provide benefits in each scenario. The signal timings used in this analysis are theoretical only to identify potential issues based on the assumptions in this study. Additional analysis to provide optimal timing plans would be required as future development occurs and traffic patterns change in the future;
- Daily corridor link volumes were calculated at a rate of the PM Peak Hour traffic volumes representing 10% of the daily volumes. This is consistent with ITE recommended practice and was confirmed against the available 24 hour volume data from the intersection signal controllers;
- A background compounded growth rate of 1.5%/annum was applied to future intersection traffic volumes to represent internal and external growth;
- The Royal Bay "Meadows" development and the new Royal Bay High School traffic was overlaid through the road network above the 1.5%/annum background growth rate for the Horizon Year 2019 and 2025 analysis periods;
- The city lands are built out under the previous 2006 OCP land use bylaw by Horizon Year 2038;
- The future Horizon Year 2038 analysis references the CRD Travel Demand Forecast Model (TransCAD), which was based on 2006 census data and assumes a "Business as Usual" case in forecasting future traffic volumes along the regional major road network;
- For Horizon Year 2038 analysis, it is assumed that the proposed Royal Bay neighbourhood road network is in place.

ANALYSIS

The most current version of the Synchro analysis software was used to analyze the performance of the intersections for all road network scenarios including existing and forecast traffic conditions for two interim Horizon Year models (2019 and 2025) traffic models. The two future Horizon Year models were developed to provide the city with an estimated timeline of potential road network traffic congestion mitigation measures to allow for prioritized planning of any infrastructure improvements deemed appropriate or necessary.

For traditional traffic impact studies, a future forecast Horizon Year is typically limited to a 5 and 10 year period beyond the existing study period. The reason for this is that beyond an approximate 10 year horizon, it can be difficult to forecast significant changes to land uses and associated travel patterns and behaviours which can occur. For this study, both "Horizon Year" 2019 and 2025 models were developed and assume a background traffic growth rate of 1.5% / annum to account for moderate infill development within the City as well as external traffic impacting the road network within Colwood. Additionally, the horizon year models include the traffic anticipated to be generated by the first component of the proposed Royal Bay Master Plan development, consisting of the 425 single-family homes planned for "The Meadows" development project, which is assumed to be built out by 2019. The new Royal Bay High School traffic is also combined with this new traffic. The future Royal Bay Road Network Plan is shown in **Appendix C**.

As indicated in the RFP for this study, the city desires an understanding of projected traffic volumes to Horizon Year 2038, corresponding with Capital Regional District (CRD) Travel Demand model (TransCAD). Travel forecasting models are used to predict changes in travel patterns and the utilization of the transportation system in response to changes in regional development, demographics, and transportation supply. Modeling travel demand is a challenging task, but one that is required for rational planning and evaluation of transportation systems. For this study, the 2038 TransCAD model outputs are used to identify the impact of continued regional population growth and any road network alternatives.

The Regional Transportation Model (RTM) reflects the most current municipal Official Community Plan land use bylaw densities and assigns vehicle trips through the major road network at a regional scale. The model assumes the current and projected trends in employment and population and assigns trips based on information obtained through a household travel survey including household travel mode splits. The RTM used for this analysis was last updated and recalibrated in 2008 using 2006 Census data, information from a 2006 CRD Household Origin / Destination Survey as well as a 2006 CRD Employers Survey. It was used to assess the forecast traffic demands at full build-out of the city lands. A recalibration of the model using 2011 data is currently underway, but was not available at the time of this study.

The CRD model is noted to be regionally focused and does not necessarily account for detailed site specific growth. While the model is an effective long-range travel demand analysis tool, the level of calibration is not adequate to examine intersection capacities or the effect that traffic signal timings and associated delay have on driver behaviour and travel routing characteristics.

BACKGROUND (2014) TRAFFIC VOLUMES

Traffic flows within and external to Colwood are shown to be tidal in nature, with the AM Peak Hour of commuter traffic having destinations weighted heavily to the east toward Victoria and Saanich. Conversely, during the PM Peak Hour of commuter traffic, the reverse directional flows occur through Colwood and other Westshore destinations. This unbalanced flow is due to a concentration of regional employment centres and institutional destinations currently found to the east of the Westshore areas.

The Peak Traffic conditions coincide with the weekday commuter traffic periods and were found to occur between 8:00AM – 9:00AM and 4:00PM – 5:00PM periods respectively. The AM and PM Peak Hour traffic volumes were input into the most current version of Synchro analysis software for evaluation and the existing intersection performance measures are contained in **Appendix D.** A summary of the modelling results follows.

BACKGROUND (2014) TRAFFIC ANALYSIS SUMMARY

During the AM Peak Hour period, the only signalized study intersection showing less than desirable performance indicators is the Sooke Road / VMP intersection, where the volume to capacity ratio is at 0.93 for the eastbound through movement travel direction. At this intersection, traffic originating from areas west of Colwood diverges with slightly more than 65% of the approaching traffic continuing through the intersection along Sooke Road into Colwood and approximately 30% turning left to go northwards on VMP. For this movement, the level of service indicator is at "D", which is still acceptable during peak traffic periods; however, the delay at the intersection is notable. Additionally, the eastbound through movement at the Sooke Road / Aldeane Road intersection is shown to operate at a v/c of 0.90, which is the maximum desired value for an individual movement. This condition can be attributed to the westbound left turn volume into Royal Roads University competing for green time with the eastbound through movement. The Galloping Goose trail crossing activity also influences the intersection capacity with demand for pedestrian / cyclist crossing time causing additional delay for vehicular traffic.

During the PM peak commuter traffic periods, traffic flows toward Colwood and other communities to the west of Victoria and Saanich are metered to some degree by upstream signalized intersection capacity constraints, particularly at the Highway 1 / McKenzie Avenue / Admirals Road intersection, the Island Highway / Craigflower Road intersection and again at the Island Highway / Six Mile Road intersection. Given these upstream intersection capacity constraints, the signalized intersections within the Colwood boundary are shown to operate at acceptable levels and no mitigation is required at the existing intersections. During this analysis period, two study intersections showing less than desirable operating performance are the intersections of Sooke Road with VMP and Jacklin Road, where the westbound through movements are both at a v/c of 0.97 and the eastbound left movement on Sooke at Jacklin is 0.95. While there is still some reserve capacity, the delay is notable for these movements.

The capacity constraints described above and associated driver delay during the peak commuter periods is a short-term condition and generally all intersections within the study area operate well within desired capacity thresholds throughout the off-peak hours. As previously mentioned, the existing traffic signal timings were optimized within the Synchro software in an attempt to balance overall intersection delays. At this time, the city could consider reviewing the existing signal timing plans to optimize traffic operation. At some unsignalized intersections, the observed performance did not reflect the calculated HCM values. SimTraffic was used to confirm operations and only those intersections where concerns were noted are reported on.

During the traffic count and field observations, it was noted that the intersection of Mount View Avenue may benefit from improved intersection control. Although side street traffic volumes are quite low, improvements should be considered to enhance safety, particularly for left turning traffic from Mount View Avenue onto Sooke Road where

some aggressive driving was observed. Sight distance for this movement is limited and heavy traffic volumes on Sooke Road lead to undesirable delay and inherent risk for drivers making this maneuver.

BACKGROUND (HORIZON YEAR 2019) TRAFFIC ANALYSIS

For the Future Horizon Year 2019 analysis, a background compounded growth rate of 1.5%/annum was applied to the existing traffic volumes to account for continued infill traffic growth as well as external traffic growth. For this analysis, the traffic projections for "The Meadows" portion of the Royal Bay site as well as the new Royal Bay Secondary School were overlaid on top of the factored background traffic to Horizon Year 2019. The Royal Bay Transportation Impact Assessment identified the need for a new traffic signal at Ryder Hesjdal Way and Latoria Road. The detailed intersection performance measures for the existing signalized intersections are shown in **Appendix E** for the AM and PM Peak Hours.

BACKGROUND (HORIZON YEAR 2019) TRAFFIC ANALYSIS SUMMARY

2019 AM Peak Hour Traffic

The detailed analysis shows that during the future AM Peak Hour period, all signalized intersections will operate within desired performance levels, with the exception of the Sooke Road eastbound through movement at its intersection with VMP. At this time, external traffic flows will be metered to a certain degree by upstream traffic signals. That is, during the AM Peak Period, traffic volumes are limited by intersection capacity constraints particularly at the intersections of Sooke Road with VMP where the V/C ratio is shown at 0.99 and a LOS E as well as the intersection of Sooke Road with Aldeane Road, where the eastbound movement is approaching its capacity at a V/C of 0.96. At this time, the traffic signal control should be optimized to ensure a balanced delay. No other mitigation is necessary at any of the other existing signalized intersections.

2019 PM Peak Hour Traffic

During the PM Peak Hour, a number of signalized intersection movements are shown to reach or exceed their lane capacity. All of these movements are shown to occur along Sooke Road which is due to the heavy westbound traffic flows during the PM commuter peak period. Where the volumes are shown to exceed the lane capacity, additional delay will result and the duration of the Peak traffic period will be extended in order to process the traffic demand through the intersections. As there is limited opportunity to increase lane capacity at these intersections, these forecast levels of delay will continue for the foreseeable future beyond 2019. It is recommended that additional measures be explored to provide advantages for transit vehicles at signalized intersections to reduce travel times for this high capacity mode.

At some existing unsignalized intersections, if traffic volumes grow at the assumed rate, new intersection control in the form of traffic signals could be considered to allow balanced operation by assigning right of way to more minor movements that are experiencing delay attempting to enter the major road or where safety concerns are present, particularly for pedestrians and cyclists. An additional benefit related to traffic signals is improved pedestrian crossing safety. Within Colwood, any new traffic signals should be fitted with audible beaconing and pedestrian and countdown timers to accommodate users of all abilities.

As the analysis is based on an assumed linear growth pattern, the anticipated future traffic volumes should be closely monitored to assess actual growth patterns and intersection performance over time to determine when warrants are met or safety concerns become more evident. Localized development may trigger the need to implement signals at

an accelerated rate. All unsignalized intersections were reviewed and it was found that by Horizon Year 2019, the following intersections should be closely monitored and may benefit from new intersection control:

- Wishart Road / Latoria Road
- Latoria Road / VMP
- VMP / Cairndale Road
- Metchosin Road / Lagoon Road

BACKGROUND (HORIZON YEAR 2025) TRAFFIC ANALYSIS

As mentioned previously, and consistent with the 2019 forecast traffic volumes, a background growth rate of 1.5%/annum was applied to the existing traffic volumes to account for infill traffic growth as well as external traffic growth for the Future 2025 Horizon Year analysis. This equates to an overall growth in traffic volumes of approx. 18% over existing volumes. The analysis continues to represent a "Business As Usual" case and aside from optimizing the intersection signal timings, no other new roadway capacity improvements were considered. Additionally, no trip reductions for any improvements to transit service have been considered. The detailed intersection performance measurements are shown in **Appendix F.**

BACKGROUND (HORIZON YEAR 2025) TRAFFIC ANALYSIS SUMMARY

2025 AM Peak Hour Traffic

The detailed analysis shows that during the future 2025 AM Peak Hour period, all signalized intersections will operate at acceptable performance levels, with the exception of the Sooke Road eastbound through movements at its intersections with VMP, Aldeane Avenue / University Drive and Ocean Boulevard / Wale Road. At this time, the traffic signal control should again be optimized to ensure a balanced delay if traffic analysis shows additional benefit.

Drivers will look for alternate routes when faced with extended delays. As with previous analysis, the volumes forecast for these traffic movements were applied in a linear fashion and do not account for route choice options outside the study area boundary when faced with delay and congestion. For example, although the eastbound through movement is shown to slightly exceed the lane capacity, the eastbound left turn at the upstream intersection of Sooke Road with Jacklin Road is shown to have some spare capacity. Therefore, some drivers may choose to turn onto Jacklin Road and access VMP via Jenkins Road or continue to TCH via the new Leigh Road interchange.

2025 PM Peak Hour Traffic

As seen in performance measures table, several movements are anticipated to exceed the prescribed capacity thresholds. As with previous analysis scenarios, the capacity constraints are due to the heavy commuter traffic flows in the westbound direction. Some side street turning movements are also shown to be impacted as signal priority is given to the through movements. The intersections of Sooke Road with VMP and Jacklin Road are shown to exceed available capacity for individual movements while its intersection with Kelly Road, Ocean Boulevard / Wale Road and Aldeane Avenue / University Drive are approaching capacity on some movements. As there is limited ability to increase capacity to mitigate these conditions, it is evident that in order for the intersections to process the anticipated traffic volumes, the Peak commuter traffic period will continue to extend in duration and personal travel characteristics may change as result. Discretionary trips, such as pleasure and shopping will become less desirable during these periods and may occur outside the peak commuter, reducing overall traffic demands to some degree.

In addition to the candidate unsignalized intersections identified in the 2019 analysis, the following additional intersections should be monitored and considered for new traffic signal control:

- Metchosin Road / Latoria Road
- Wilfert Road / Wale Road

Alternate routing opportunities through neighbourhood collector and local residential roads should be identified and measures to limit the potential for short-cutting should be considered to mitigate the potential impact of this activity.

The analysis indicates that traffic to / from Fulton Road at Sooke Road will experience significant delay. Given the proximity to the signalized intersection of Sooke Road with VMP, a traffic signal at this intersection would not be possible. The city should monitor the intersection with a mind to install "Do Not Block Intersection" signage and associated paint markings on Sooke Road.

FUTURE HORIZON YEAR 2038 BUILD-OUT TRAFFIC ANALYSIS

The CRD TransCAD Travel Demand Forecast model was used to assess the forecast traffic demands at full build-out of the city lands (assumed Horizon Year 2038). The regional model reflects the most current municipal Official Community Plan land use bylaw densities at the time of the model development and assigns vehicle trips through the major road network at a regional scale. The 2006 background traffic volumes had been calibrated along the major corridors with traffic volume counts collected by CRD and do not consider future traffic volumes on all minor routes. The model also assumes the current and projected trends in employment and population and assigns trips based on the information obtained through a household travel survey including household travel mode splits at that time.

While the CRD model is an effective long-range travel demand analysis tool, the level of calibration is not adequate to examine intersection capacities or the effect that traffic signal timings and delay have on driver behaviour and travel routing characteristics. This model is noted to be regionally focused and does not necessarily account for detailed site specific growth. For significant development sites, a detailed transportation impact study would be required to assess mitigation strategies to maintain safe and efficient road network operations.

For this study, Adept worked with CRD staff to refine the model to better reflect conditions at a municipal scale. Most of the refinements were aimed at better aligning the Traffic Analysis Zone connectors with actual physical road network connections.

The current model outputs showing 2006 base condition traffic volumes and Horizon Year 2038 forecast volumes and the differences along the study area major road network are shown in **Appendix G**. Careful monitoring of intersection turning volumes will be required and additional traffic control measures may be required if and when warrants are met in the future.

2038 AM Peak Hour Traffic

The TransCAD travel demand forecast model analysis shows that unabated; during the future 2038 AM Peak Hour period, traffic volumes along the major road network will increase to a level that will result in significant congestion and associated delay without significant roadway capacity improvements or higher travel mode splits.

The VMP corridor traffic volumes are susceptible to significant traffic volume increase, with nearly 1,000 new vehicle trips projected in the northbound direction between Latoria Road and Sooke Road by 2038. In the southbound direction, the volumes are shown to increase by approximately 500 vehicles per hour during this same period. It is likely that the corridor will require additional travel lanes to efficiently handle the forecast traffic volumes, with dedicated left turn lanes at significant intersections. Traffic volumes on Cairndale Road between Wishart Road and VMP are also forecast to increase significantly. Much of this new traffic is attributed to Royal Bay development traffic and future development traffic in the Latori / VMP area. Similarly, traffic volumes are forecast to increase along

Ocean Boulevard by approximately 500% in the eastbound direction. This is due to a combination of Royal Bay traffic as well as new traffic generated by the build-out of the Ocean Grove development. While the traffic volumes are shown to increase significantly, Ocean Boulevard has ample capacity to handle this additional traffic. The increased traffic volumes along Sooke Road can be handled by the existing 4-lane configuration but capacity will be constrained by the major intersections with Jacklin Road, VMP, Aldeane Avenue / University Drive and Ocean Boulevard / Wale Road. Competition for green time by side street traffic may result in revised signal phasing and additional turn lanes. New development traffic associated with the Colwood Corners site will also add to the Sooke Road traffic volumes in the area. Increased vehicle delay at the Goldstream Avenue / Sooke Road intersection will result.

As discussed earlier, drivers will look for alternate routes when faced with extended delay. The volumes forecast for these traffic movements do not necessarily account for alternate route choice options outside the study area boundary. For example, eastbound through traffic at the Sooke Road / Jacklin Road intersection may divert to Jacklin Road if the City of Langford is successful in implementing a 4-lane cross-section in the future. If this is the case, some drivers may choose to turn onto Jacklin Road and access VMP via Jenkins Road or continue to TCH via the new Leigh Road interchange. Similarly, as delay increases, additional traffic may choose to divert away from Sooke Road at VMP. Some of these potential redirections in traffic volume will depend on traffic delays found downstream, outside the study area. Currently, the delay and queuing along TCH, originating at the Hwy 1 / McKenzie Avenue / Admirals Road intersection during the AM commuter period will influence this decision and it is expected that the traffic diversion will not alleviate the demand through Colwood along Sooke Road unless this is condition is mitigated in the future.

2038 PM Peak Hour Traffic

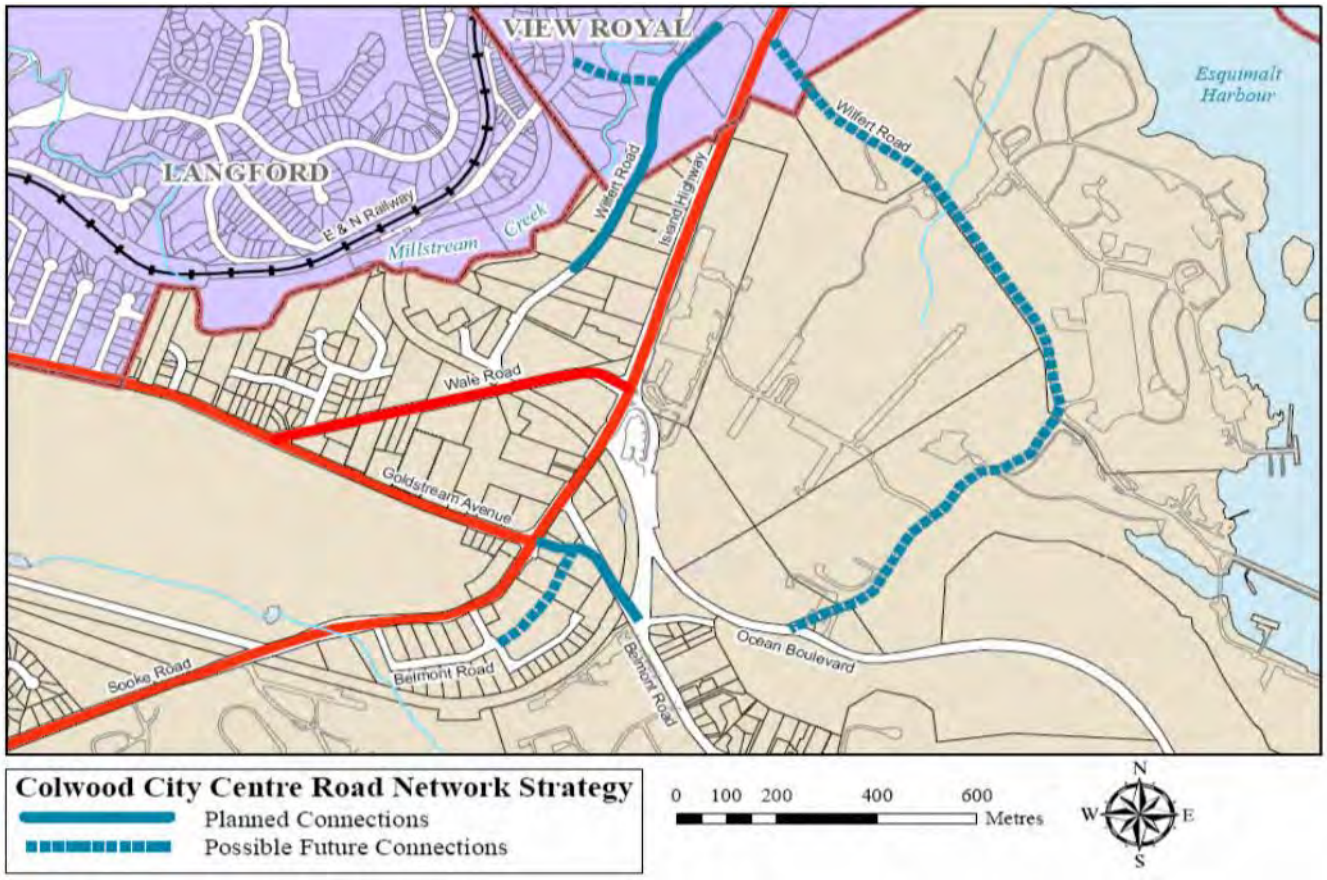
As with the AM Peak Hour period, given the anticipated growth in traffic volumes, several intersection movements are anticipated to exceed the prescribed capacity thresholds. As with previous analysis scenarios, the capacity constraints are due to the heavy commuter traffic flows in the westbound direction. Some side street turning movements will be unfavorably impacted as signal priority is given to the major road through movements. The westbound left turn movements at Sooke Road / Metchosin Road and / or Sooke Road / VMP intersections may require additional lane capacity. The intersections of Sooke Road with Ocean Boulevard / Wale Road, Aldeane Avenue VMP and Jacklin Road will exceed the available capacity. As there is limited ability to increase capacity to mitigate these conditions, it is evident that in order for the intersections to process the anticipated traffic volumes, the Peak commuter traffic period will continue to extend in duration and personal travel characteristics may change as result. Discretionary trips, such as pleasure and shopping will become less desirable during these periods and may occur outside the peak commuter, reducing overall traffic demands to some degree.

FUTURE OCP INDENTIFIED ROAD NETWORK OPTIONS

As identified in the OCP and shown if **Figure 2**, potential future road network links were assessed using the TransCAD model at horizon year 2038, and include the following alignments:

- An extension of Rosebank Road from Ocean Boulevard to the east behind Juan De Fuca Recreation Centre, connecting to Wilfert Road in View Royal;
- An extension of Goldstream Avenue through the Colwood Corners (Capital City Centre) site across a newly constructed Belmont bridge. A connection of Colwood Crescent through the City Centre site is also shown, but would be dependent on the future development plan for the site and adjacent parcels. At this time, the possible link would not provide any benefit unless required for site-generated traffic in the future and was therefore not tested at this time;
- An extension of Wilfert Road between Wale Road and Island Highway to the west of the existing View Royal Casino. While a possible connection from this link to Atkins Road is depicted, it was not evaluated as a bridge crossing would be cost prohibitive and would not provide significant benefit to Colwood residents.

FIGURE 2: OCP ROAD NETWORK OPTIONS



ROSEBANK / WILFERT ROAD EXTENSION

While this connection is currently shown in the OCP, it is our understanding that the intent of the connection was originally conceptualized to mitigate the potential traffic generated by previous plans for intensive redevelopment of the Capital City Centre Site. With current consideration of less intense development of the site, the need for this connection has been reviewed. While the additional road network option seems viable, it offers little benefit to the city in regard to serving additional development. During the AM Peak period, the traffic volume that could be expected along this link would mainly consist of the existing traffic that is currently travelling along Ocean Boulevard, which would likely continue along this proposed new link to the intersection of Island Highway / Wilfert Road to continue eastbound toward Victoria and Saanich.

During the PM Peak period, the amount of westbound traffic that could divert to this new road link would be limited by the intersection at Island Highway and westbound left turn capacity constraints. The modelling indicates there would be no significant benefit to general purpose traffic.

Additionally, if in the future Ocean Boulevard is no longer in commission, according the Regional model, any current and future benefit of this proposed link would be negated.

GOLDSTREAM AVENUE EXTENSION / BELMONT BRIDGE CONNECTION

Similar to the Rosebank Road / Wilfert Road connection, the concept of reinstating a connection between Capital City Centre and Ocean Boulevard was seen as necessary to mitigate the traffic anticipated to be generated by previous area development proposals. Another key consideration was the potential development of a new fire hall which was deemed necessary to serve the City Centre. Other potential benefits include improved circulation for transit busses and loading truck circulation through the development site. With a revised development plan been considered for the Capital City Centre site at this time, it would be prudent to reassess the requirement for this connection as future site development plans are brought forward.

WILFERT ROAD (NORTH) EXTENSION

This potential connection was analyzed previously and the development of the connection had been recommended. The connection identified an opportunity to service the existing and potential future land development, reducing access requirements on Sooke Road / Island Highway. It was found that short-cutting potential along the corridor was not significant and that through design alternatives, the connection would mainly benefit the existing and future commercial traffic to the area, improving safety and reducing friction along Sooke road at commercial driveway accesses. This would also be of benefit to the future transit service envisioned along the Island Highway corridor as part of the Transit Future Plan.

A new traffic signal should be considered at the intersection of Wale Road / Wilfert Road to serve traffic along this section of Wilfert Road as well as an enhanced pedestrian crossing of the Galloping Goose Regional Trail.

ADDITIONAL POTENTIAL FUTURE ROAD NETWORK OPTIONS

Along with the above noted planned or possible future connections, additional potential road network connections were considered and include the following:

- An extension of Painter Road to Ryder Hesjdal Way;
- A new connection from Wishart Road to VMP in the vicinity of Royal Bay Drive to evaluate potential reductions in the impact of Royal Bay community traffic on the neighbourhood road network, particularly Wishart Road and Cairndale Roads;
- A scenario where Royal Bay Drive would not connect to Ryder Hesjdal Way;
- A new connection from Elizabeth Ann Drive and VMP / Brookside Road – Bezanton Way could extend across Latoria Road to connect to this new road link;
- A reduction in eastbound travel lanes at the Sooke Road / Metchosin Road intersection; and,
- A scenario where Ocean Boulevard is no longer able to support vehicular through traffic.

Potential future road network modifications are presented in the following sections and are conceptual only (see **Figure 3**):

PAINTER ROAD EXTENSIONTO ROYAL BAY

As part of the Royal Bay development plan, a scenario where Painter Road would connect through to the new internal Ryder Hesjdal road link was evaluated. A review of potential traffic volume shifts from the Royal Bay neighbourhood and the resultant impact on the neighbourhood road network surrounding Dunsmuir Middle School resulted in consideration of an emergency vehicle and transit-only access to the Royal Bay neighbourhood. The connection would also provide pedestrian and cyclist access to the site. If implemented, this connection would require some measures to ensure the link is not utilized by regular vehicle traffic. BC Transit should be consulted further as the Royal Bay site meets their criterion for improved transit service to the development area.

NEW CONNECTION BETWEEN WISHART ROAD / VMP

A new road connection from Wishart Road to VMP via Bunker Road was tested to evaluate potential reductions in the impact of Royal Bay commuter traffic on the broader neighbourhood road network, particularly Wishart Road and Cairndale Roads. Without a new connection, the CRD model shows that a significant amount of Royal Bay traffic will travel along the Wishart Road corridor to Cairndale Road to continue along VMP to external regional destinations. A new collector road in this general location could also provide access to future local development sites. Alternatively, the implementation of traffic calming devices along Wishart Road, between Cairndale and Royal Bay Drive could be considered in an attempt to reduce travel speeds and increase travel times along the route, which could help shift some Royal Bay site-generated traffic to VMP.

NEW CONNECTION BETWEEN BROOKSIDE ROAD / ELIZABETH ANN DRIVE

With the increased traffic volumes projected along Latoria Road between Royal Bay and VMP in the future, it is essential that the number of direct access driveways onto Latoria Road be minimized to ensure safe and efficient traffic flows. With the re-development potential along the north side of Latoria Road in this area, it is recommended that the city explore an option to develop a parallel road between Elizabeth Ann Drive and Brookside Road / VMP to provide access to these parcels. If successful, further consideration should be given to connecting this road link to Latoria Road at Bezanton Way to create a north / south connection, linking the neighbourhoods on both sides of Latoria Road. The link may or may not provide a connection with Elizabeth Ann for vehicle traffic, but should provide pedestrian and cycling connectivity.

ROYAL BAY DRIVE WITHOUT A CONNECTION TO RYDER HESJDAL WAY

As discussed previously, the city has expressed a desire to limit the amount future Royal Bay and adjacent development traffic short-cutting along Wishart Road (south) to access VMP via Cairndale Road. An alternative road network scenario was tested in the CRD TransCAD model which indicates no connection of Royal Bay Drive to Ryder Hesjdal Way for regular vehicle traffic. Under this scenario, some Royal Bay site-generated traffic is shown to divert to VMP and to Metchosin Road via Latoria Road, reducing some traffic along Wishart Road during the AM Peak Hour, but does not appear to influence the routing choice to Cairndale Road.

LANE REDUCTION AT SOOKE ROAD / METCHOSIN ROAD

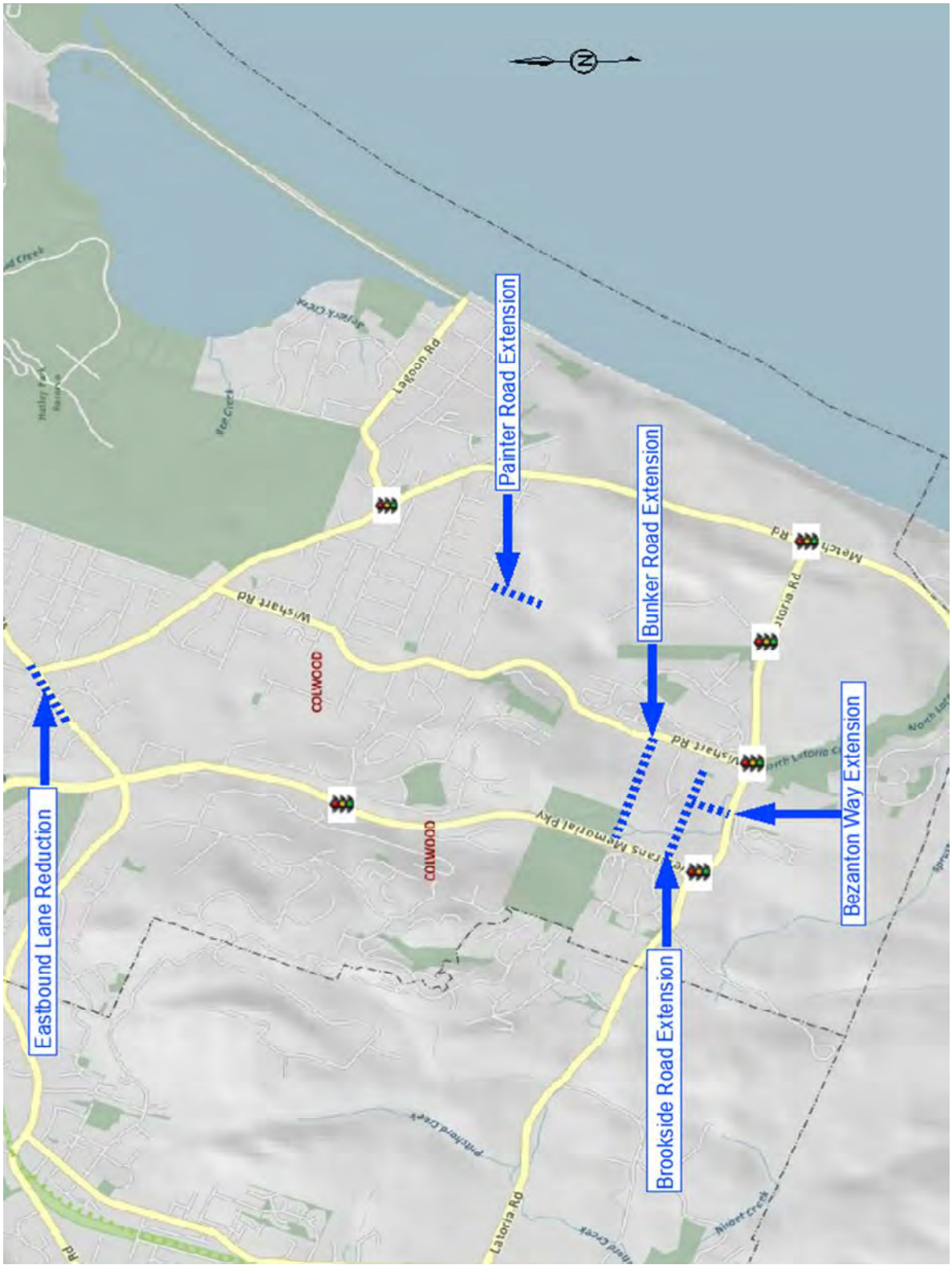
A scenario was reviewed to determine the impact of reducing the Sooke Road eastbound approach laning at the intersection with Metchosin Road to single lane from two existing lanes between Carran Road and the intersection. When tested in the TransCAD model, it showed a diversion of some eastbound through traffic to VMP during the AM Peak Hour period; however, some of that same traffic was shown to re-enter the Sooke Road traffic stream via Kelly Road which would not be practical. A review of the AM Peak Hour operational model confirms that under this laning configuration, the EB through lane capacity would be exceeded and further shifts in traffic to Jacklin Road and VMP would likely result. The scenario was tested in order to assess the opportunity to accommodate transit bus priority at the intersection, which would help to further achieve the objective of making transit a more attractive alternative to the private automobile and further review of this option is warranted.

OCEAN BOULEVARD DECOMMISIONED

With a potential loss of connectivity of Ocean Boulevard in the future due to erosion, the transfer of considerable traffic volumes from this route found in the future forecast 2038 TransCAD model will increase pressure on all intersections between the Wale Road / Sooke Road intersection and Metchosin Road / Lagoon Road as well as the broader regional road network, as indicated in the model output seen in **Appendix G**. The Sooke Road / Metchosin Road left turn lane and Sooke Road / VPM intersections would likely require an additional left turn lane for this movement. At Sooke Road / Metchosin Road, this would result in a requirement for a second receiving lane for this movement.

With limited potential to develop a new east/west road connection through the city at this time, Sooke Road would be the only major east / west arterial route through the city. This will create significant challenges not only in moving traffic through the city, but could also have negative impacts in the event of any unforeseen incidents that could cause temporary disruptions to traffic flows along the Sooke Road corridor.

FIGURE 3 – ADDITIONAL ROAD NETWORK OPTIONS



CONCLUSIONS

The transportation analysis contained within this study is consistent with standard procedures followed by most jurisdictional authorities. Historically, these traditional analysis procedures and resultant performance indicators have been used by Highway Engineers to establish criteria for expanding roadway capacity to ensure traffic demand would be accommodated as growth and development occurs. As an example, certain thresholds were developed to examine the impact of development projects and set out criteria which would place an obligation on a developer to ensure a high level of roadway capacity through capacity building measures. What has been learned over time is that chasing this capacity results in environmental and social impacts that are not as easily mitigated. A change in philosophy is aimed at balancing land use and transportation infrastructure. Rather than simply adding vehicle travel lanes to maintain a high level of service for automobile drivers, assuming traditional vehicle trip generation rates, cities are looking at more cost-effective solutions such as developing infrastructure to support higher travel mode splits to walking, cycling and transit. A focus on improved facilities for alternative mode choices proves less costly to construct and maintain as well as being more environmentally and socially responsible.

Although standard traditional analysis criteria thresholds have been highlighted in this analysis, it is our opinion that values exceeding the noted thresholds should be reviewed and examined to prioritize infrastructure investments where modal split choices could be influenced with specific infrastructure supporting transit, cycling and walking.

Traffic safety issues will certainly increase as vehicular volumes along corridors grow over time. Additionally, with increased traffic throughput on major roads, stop sign controlled side-street traffic will experience increased delay entering the major road. With fewer gaps available to safely maneuver into the major road traffic stream, particularly for left turn movements, drivers tend to accept increased risk in making turning movements. Where traffic volumes warrant and opportunities arise, incorporating left turn lanes and centre refuge lanes along the major route can significantly increase safety for these movements and should be considered in new construction projects.

From the analysis contained in this report, it is apparent that if full build-out of the City lands under the zoning and land use bylaw densities contained in the CRD TransCAD model occurs at the predicted rate, several road network improvements will be required to efficiently handle the forecast traffic volumes. Without a strong regionally focused transit system and efficient, safe alternatives to the automobile through and within Colwood, traffic congestion will reach levels that are less than desirable into the future. This condition is not limited to Colwood, but is a regional concern. The recent CRD Regional Transportation Plan supports this conclusion with defined strategies to focus land use decisions and create development of well-connected alternate mode facilities playing a key role in mitigating the forecast congestion levels.

RECOMMENDATIONS

- The City continue to work with BC Transit to ensure a robust transit system throughout the City;
- New commercial and institutional developments should provide TDM plans for employees, including but not limited to staggered work shifts, provision of transit incentives and parking supply management strategies;
- Increased infrastructure for alternative modes should be considered a priority for both capital work programs as well as through developer contributions;
- Through rezoning and development, direct access to arterial roads should be discouraged. Where feasible, access should be from the lower classified road to maintain maximum capacity for arterials;
- Continue to explore opportunities for transit priority through traffic signal priority and lane exclusivity for busses;
- Work with CRD to enhance the Galloping Goose Regional Trail within the city boundaries with a continuous paved surface and improved road intersection crossings;
- The city could consider reducing existing off-street parking bylaw rates, particularly for new residential developments, contingent on a fee contribution toward alternate mode infrastructure construction; and,
- The City and BC Transit could consider expanding and/ or relocating the existing Juan de Fuca Park and Ride to provide a convenient connection to the planned future Frequent Transit Network routes that would serve the community. With free or affordable parking available, along with the new service routes identified in the TMP, residents could find transit use an attractive alternative to single occupant vehicles.

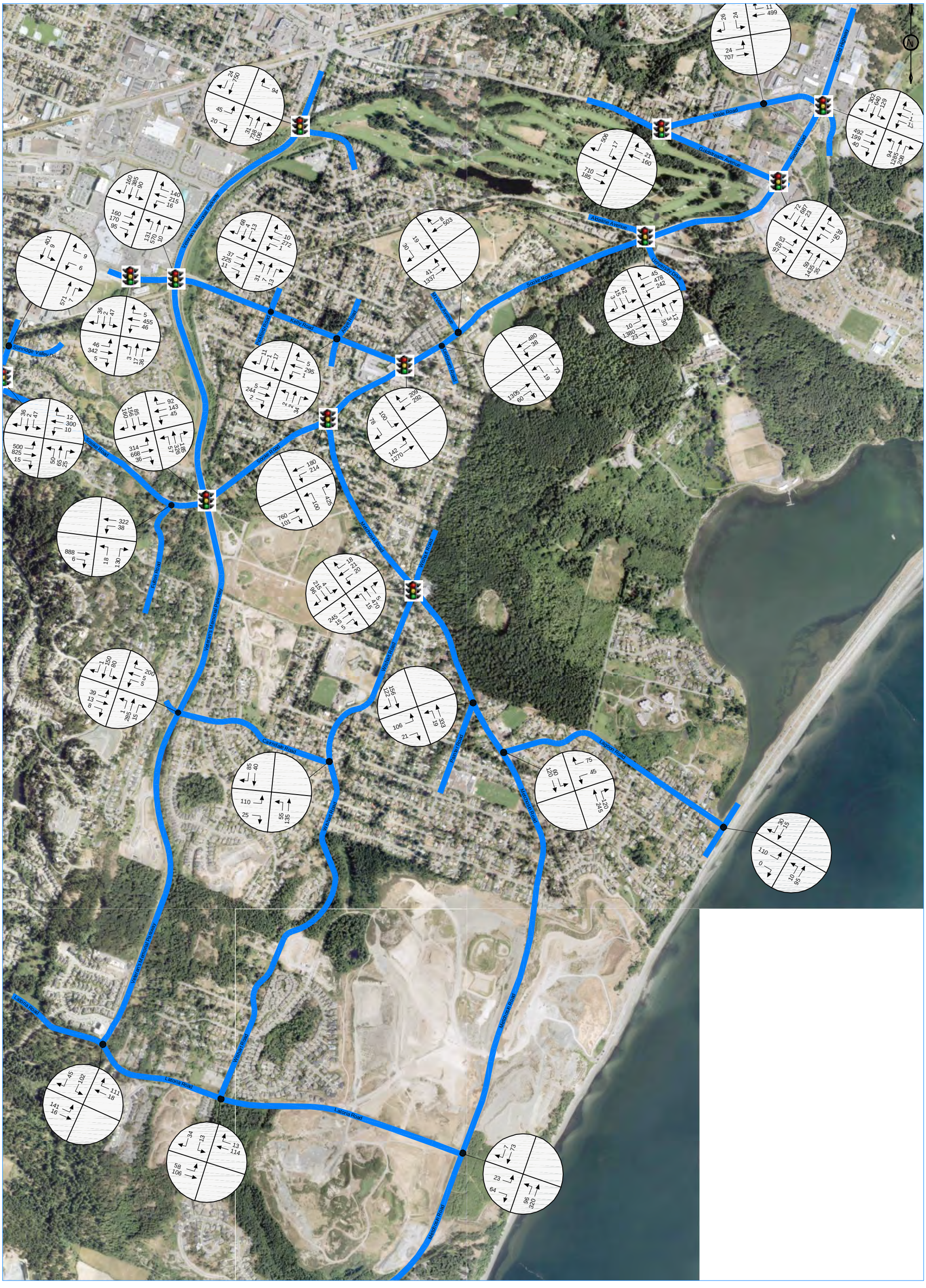
<u>Specific Road Network Improvements</u>

- Consider a full vehicle actuated traffic signal at the intersection of Sooke Road / Mt View Avenue;
- Monitor traffic volumes at major intersections annually and adjust signal timings to balance vehicle delay as deemed appropriate;
- Review traffic volumes and plan for future traffic signals at the identified unsignalized intersections corresponding with the horizon years noted within the report;
- Continue to explore opportunities to develop the proposed Wilfert Road extension to the View Royal border;
- Liaise with BC Transit on further plans to eliminate one eastbound through travel on Sooke Road, between Carran Road and Metchosin Road in favour of a transit bus priority lane;
- Continue to work with BC Transit and emergency services on further plans to provide transit bus and emergency vehicle access to Royal Bay via Painter Road;
- Continue to work with BC Transit and developers of the Colwood Corners site to examine the potential benefit of relocating the Juan de Fuca Park & Ride and reinstating a road extension of Goldstream Avenue through the site to Ocean Boulevard;
- Continue to explore opportunities to maintain vehicular access along Ocean Boulevard and Lagoon Bridge;

- Ensure sufficient right of way along VMP to expand capacity along the corridor and at major accesses / intersections;
- Along major collector roads, explore options to consolidate accesses and develop centre medians / left turn lanes to accommodate future development traffic and enhance safety;
- Continue to explore opportunities to develop a new road network link between Wishart Road (south) and VMP to encourage Royal Bay and other future local development traffic to divert from the Cairndale Road routing option to VMP;
- Continue to explore opportunities to develop a new road between Brookside / VMP and Elizabeth Ann Drive to provide access to the land parcels along the north side of Latoria Road. A connection of Bezanton Way to this new road should also be explored further.

APPENDIX A

EXISTING AM AND PM PEAK HOUR TRAFFIC VOLUMES



APPENDIX A - Existing AM Peak Hour Traffic Volumes

APPENDIX A - Existing PM Peak Hour Traffic Volumes

APPENDIX B

Existing Intersection Laning / Geometrics

Wale Road/Island Highway/Ocean Boulevard

The easternmost signalized intersection in the city's road network. The intersection processes traffic to/from Colwood and City of Langford and destiantions further west of the city.

Sooke Road	Ocean Blvd
EBL – 55m storage	NBL – dual lanes with 40m storage
EBT – 2 thru lanes	NBT – 1 thru lane
EBR – 30m storage	NBR – 40m storage
Sooke Road	**Wale Road**
WBL – 75m storage	SBL - dual lanes with 40m storage
WBT – 2 thru lanes	SBT – 1 thru lane
WBR – 40m storage	SBR - 25m storage

Wale Road/Goldstream Avenue

Goldstream Avenue

NBT – 1 thru lane

NBR – 10m storage

Goldstream Avenue

SBT / R – shared

Wale Road

WBL - 15m storage

WBT – 1 thru lane

Sooke Road/Goldstream Avenue

Sooke Road	Goldstream Avenue
EBL – 50m storage	NBL - 25m storage
EBT – 2 thru lanes	NBT/R – 1 shared lane
EBR – channelized with 20m storage	SBL - 60m storage
WBL - 25m storage	SBL/T – 1 left turn + shared thru Left lane
WBT – 2 thru lanes	SBR – channelized with 30m storage
WBR – channelized with 40m storage	

Sooke Road/Aldeane Road

Sooke Road

EBL – 25m storage

EBT – 2 thru lanes

EBR – 20m storage

WBL - 45m storage

WBT – 2 thru lanes

WBR – channelized

Aldeane Road / University Drive

NBT/L – 1 shared lane

NBR – 30m storage

SBL - 60m storage

SBL/T – 1 shared lane

SBR – channelized with 15m storage

Sooke Road/Mt View Avenue

Pedestrian Actuated

Sooke Road

EBL – 20m storage

EBT – 2 thru lanes

WBT/R – 2 thru lanes

Mt View Avenue

SBL/R – 1 shared lane with 15m storage

Sooke Road/Kelly Road

Sooke Road

EBL – 20m storage

EBT – 2 thru lanes

WBT/R – 2 thru lanes

WBL – 40m storage

Kelly Road

SBT/L– 1 shared lane

SBR – channelized with 40m storage

Sooke Road/Metchosin Road

Sooke Road

EBT – 2 thru lanes

EBR – channelized

WBT– 2 thru lanes

WBL – 100m storage

Metchosin Road

NBL– 1 lane

NBR – channelized with 20m storage

Sooke Road/VMP (MOTI Jurisdiction)

Sooke Road	VMP
EBL – dual lanes with 55m storage	NBL – 80m storage
EBT – 1 thru lane	NBT – 2 thru lanes
EBR – channelized	NBR - channelized with 35m storage
WBL - 55m storage	SBL– 75m storage
WBT – 1 thru lans	SBT – 2 thru lanes
WBR – channelized with 40m storage	SBR - channelized with 50m storage

Sooke Road/Jacklin Road (MOTI Jurisdiction)

Sooke Road

EBL – 35m storage

EBT/R – 1 shared lane

WBL - 30m storage

WBT/R – 1 thru lane

WBR – channelized with 40m storage

Jacklin Road

NBL/T – wide shared lane

NBR - channelized with 10m storage

SBL/T – 1 shared lanes

SBR - 50m storage

Kelly Road/VMP (MOTI Jurisdiction)

Kelly Road	VMP
EBL – 90m storage	NBL – 125m storage
EBT – 2 thru lanes	NBT – 2 thru lanes
EBR – channelized with 35m storage	NBR - channelized with 50m storage
WBL - 50m storage	SBL– 175m storage
WBT – 2 thru lanes	SBT – 2 thru lanes
WBR – channelized with 50m storage	SBR - channelized with 100m storage

Kelly Road/Brittany/Phipps (Langford Jurisdiction)

Kelly Road

EBL – 40m storage

EBT/R – 1 shared lane

WBL - 30m storage

WBT – 2 thru lanes

WBR – channelized

Brittany Drv

NBL/T/R – 1 shared lane

SBT/L– 1 shared lane

SBR - channelized with 20m storage

Wishart Road / Metchosin Road

Metchosin Road	Wishart Road
EBL – 15m storage	NBL/T – 1 shared lane
EBT/R – 1 shared lane	NBR – 25m storage
WBL - 25m storage	SBT/L– 1 shared lane
WBT/R – 1 shared lane	SBR - 25m storage

Wale Road/Wilfert Road

Wale Road

EBL – 20m storage

EBT – 1 thru lane

WBT – 1 thru lane

WBR – channelized

Wilfert Road

SBL – 1 lane

SBR – channelized with 20m storage

Metchosin Road/Painter Road

Metchosin Road

EBT/R – 1 shared lane

WBT/L – 1 shared lane

Painter Road

NBL/R – 1 shared lane

Metchosin Road/Lagoon Road

Metchosin Road	Lagoon Road
EBT/R – 1 shared lane	NBL– 20m storage
WBT/L– 1 shared lane	NBR – single lane

Metchosin Road/Latoria Road

Metchosin Road

EBT/L – 1 shared lane

WBT/R– 1 shared lane

Latoria Road

SBL/R – 201 shared lane

Wishart Road/Latoria Road

Latoria Road

SBT/L – 1 shared lane

NBT/R– 1 shared lane

Wishard Road

SBL/R – 201 shared lane

APPENDIX C Future Royal Bay Road Network


ROYAL BAY MASTER TRANSPORTATION PLAN
City of Colwood
Exhibit 1
STREET HIERARCHY PLAN
April 23rd, 2014
LEGEND
City of Colwood Boundary
Royal Bay Plan Boundary
Development Areas
Parks, School & Greenways
Arterial Road - Transition
Arterial Road - Urban Boulevard
Collector Road - Approved Ryder Hesjedal Way
Collector Road
Minor Collector Road
Local Road
Strata Road
Residential Lane
Emergency Connector
Future On-Street Transit Exchange Location
RIDGE
MEADOW
QUARRY
TERRACE
COMMONS
BLUFF
LANDING
HEADLANDS
Colwood
Metchosin
Strait of Juan de Fuca
EKISTICS

APPENDIX D

Existing (2014) Performance Measures

EXISTING AM PEAK HOUR INTERSECTION PERFORMANCE

		Sooke Road			Sooke Road			Ocean Blvd			Wale Road		
Overall LOS	**C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		94	1285	208	129	640	302	131	114	261	492	199	40
V/C		0.25	0.85	0.28	0.61	0.41	0.35	0.32	0.51	0.02	0.72	0.53	0.13
LOS		B	C	A	C	C	A	D	E	A	D	D	A

		Sooke Road			Sooke Road			Colwood Plaza			Goldstream Ave		
Overall LOS	**B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		59	1435	35	23	687	72	7	50	39	53	65	97
V/C		0.12	0.66	0.04	0.1	0.33	0.09	0.04	0.47		0.33	0.38	0.46
LOS		A	B	A	A	A	A	D	D		E	E	B

		N/A			Wale Road			Goldstream Ave			Goldstream		
Overall LOS	**A**				**WBL**		**WBR**		**NBT**	**NBR**	**SBL**	**SBT**	
Volume					160		21		710	185	17	506	
V/C					0.45		0.06		0.55	0.16	0.05	0.39	
LOS					B		A		A	A	A	A	

		Sooke Road			Sooke Road			University Drv			Aldeane		
Overall LOS	**C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		10	1380	23	242	478	45	30	3	11	62	15	3
V/C		0.03	0.90		0.72	0.26		0.08		0.02	0.18		0.01
LOS		B	D		C	A		C		A	C		A

		Sooke Road			Sooke Road			N/A			Kelly Road		
Overall LOS	**A**	**EBL**	**EBT**			**WBT**	**WBR**				**SBL**		**SBR**
Volume		142	1270			292	209				100		78
V/C		0.27	0.75			0.3					0.22		0.17
LOS		A	A			A					C		A

		Sooke Road			Sooke Road			Metchosin Road			N/A		
Overall LOS	**B**		**EBT**	**EBR**	**WBL**	**WBT**		**NBL**		**NBR**			
Volume			887	101	214	180		100		525			
V/C			0.72		0.61	0.09		0.18		0.35			
LOS			C		B	A		C		A			

		Sooke Road			Sooke Road			VMP			VMP		
Overall LOS	**D**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		314	668	36	45	143	92	57	326	185	85	156	160
V/C		0.24	0.93	0.05	0.18	0.56	0.27	0.21	0.45	0.39	0.6	0.18	0.31
LOS		B	D	A	C	D	A	C	C	A	C	B	A

		Sooke Road			Sooke Road			Jacklin Road			Jacklin Road		
Overall LOS	**B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		500	825	15	10	300	12	50	65	25	45	20	350
V/C		0.71	0.71		0.05	0.5		0.37		0.07	0.24		0.6
LOS		B	B		C	C		D		A	C		A

		Kelly Road			Kelly Road			VMP			VMP		
Overall LOS	**B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		160	170	95	16	215	140	131	570	10	90	385	160
V/C		0.42	0.15	0.16	0.08	0.35	0.35	0.5	0.39	0.01	0.44	0.3	0.24
LOS		B	B	A	C	C	A	D	B	A	D	C	A

		Jenkins Ave			Kelly Road			Brittany Drv			Phipps Road		
Overall LOS	**C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		46	342	5	46	455	5	3	17	36	47	2	36
V/C		0.2	0.48		0.16	0.79		0.08			0.07	0.05	
LOS		B	B		C	D		B			B	A	

		Wishart Road			Wishart Road			Metchosin Road			Metchosin Road		
Overall LOS	**B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		245	15	5	20	21	18	15	470	5	4	215	96
V/C		0.59	0.04		0.05	0.07		0.41	0.01		0.16	2.6	
LOS		C	A		B	A		A	B		A	A	

EXISTING PM PEAK HOUR INTERSECTION PERFORMANCE

	Sooke Road			Sooke Road			Ocean Blvd			Wale Road		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	68	790	121	243	1305	415	173	154	78	375	122	3
V/C	0.43	0.71	0.19	0.3	0.82	0.53	0.47	0.83	0.06	0.54	0.3	0.01
LOS	C	D	B	C	C	B	D	E	A	C	C	A
	Sooke Road			**Sooke Road**			**Colwood Plaza**			**Goldstream Ave**		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	99	810	55	83	1265	117	29	50	44	74	95	120
V/C	0.45	0.47	0.12	0.25	0.7	0.19	0.16	0.5		0.37	0.44	0.46
LOS	B	B	A	B	B	A	D	D		D	D	B
	N/A			**Wale Road**			**Goldstream Ave**			**Goldstream**		
Overall LOS **A**				**WBL**		**WBR**		**NBT**	**NBR**	**SBL**	**SBT**	
Volume				225		30		600	182	15	500	
V/C				0.67		0.12		0.16	0.46	0.42	0.04	
LOS				D		B		A	A	A	A	
	Sooke Road			**Sooke Road**			**University Drv**			**Aldeane**		
Overall LOS **B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	16	760	13	32	1360	67	103	27	188	24	2	8
V/C	0.21	0.59		0.12	0.84		0.35		0.38	0.07		0.02
LOS	C	B		A	B		B		A	B		A
	Sooke Road			**Sooke Road**			**N/A**			**Kelly Road**		
Overall LOS **C**	**EBL**	**EBT**			**WBT**	**WBR**				**SBL**		**SBR**
Volume	166	524			1123	307				270		124
V/C	0.89	0.34			0.89					0.59		0.26
LOS	D	B			C					C		A
	Sooke Road			**Sooke Road**			**Metchosin Road**			**N/A**		
Overall LOS **B**		**EBT**	**EBR**	**WBL**	**WBT**		**NBL**		**NBR**			
Volume		340	136	445	800		113		360			
V/C		0.39		0.69	0.36		0.27		0.24			
LOS		B		B	A		C		A			
	Sooke Road			**Sooke Road**			**VMP**			**VMP**		
Overall LOS **D**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	265	287	39	186	625	102	37	290	83	134	570	351
V/C	0.5	0.88	0.14	0.33	0.97	0.17	0.33	0.46	0.19	0.58	0.83	0.54
LOS	D	E	A	C	E	A	D	D	A	D	D	C
	Sooke Road			**Sooke Road**			**Jacklin Road**			**Jacklin Road**		
Overall LOS **D**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	385	323	15	12	834	14	12	25	15	16	10	518
V/C	0.95	0.27		0.03	0.97		0.04		0.1	0.07		0.82
LOS	E	A		B	D		C		C	C		C
	Kelly Road			**Kelly Road**			**VMP**			**VMP**		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	164	258	350	20	353	171	130	550	14	215	685	208
V/C	0.73	0.23	0.65	0.12	0.58	0.35	0.73	0.53	0.03	0.74	0.54	0.35
LOS	C	B	A	C	C	A	D	C	A	D	C	A
	Jenkins Ave			**Kelly Road**			**Brittany Drv**			**Phipps Road**		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	68	322	18	38	332	309	8	9	24	323	25	215
V/C	0.63	0.47		0.1	0.72		0.3			0.64	0.35	
LOS	D	B		A	B		C			C	A	
	Wishart Road			**Wishart Road**			**Metchosin Road**			**Metchosin Road**		
Overall LOS **A**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	15	471	95	16	320	14	117	16	6	27	34	19
V/C	0.02	0.47		0.04	0.27		0.41		0.01	0.16		2.6
LOS	A	A		A	A		B		A	B		A

APPENDIX E

Future (2019) Performance Measures

HORIZON YEAR 2019 AM PEAK HOUR INTERSECTION PERFORMANCE

	Sooke Road			Sooke Road			Ocean Blvd			Wale Road		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	99	1432	218	135	697	317	138	120	274	517	209	42
V/C	0.26	0.84	0.31	0.69	0.4	0.34	0.43	0.69	0.19	0.81	0.6	0.18
LOS	B	C	A	D	B	A	E	E	A	D	D	A

	Sooke Road			Sooke Road			Colwood Plaza			Goldstream Ave		
Overall LOS **A**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	62	1590	37	24	742	76	7	53	41	56	68	106
V/C	0.14	0.73	0.04	0.13	0.35	0.09	0.04	0.5		0.34	0.39	0.46
LOS	A	A	A	A	A	A	D	D		E	E	B

	N/A			Wale Road			Goldstream Ave			Goldstream		
Overall LOS **A**				**WBL**		**WBR**		**NBT**	**NBR**	**SBL**	**SBT**	
Volume				168		22		746	194	18	531	
V/C				0.46		0.07		0.62	0.18	0.06	0.44	
LOS				B		A		A	A	A	A	

	Sooke Road			Sooke Road			University Drv			Aldeane		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	11	1532	24	254	527	47	32	3	12	65	16	3
V/C	0.03	0.85		0.8	0.24		0.12		0.04	0.28		0.01
LOS	B	C		E	A		D		A	D		A

	Sooke Road			Sooke Road			N/A			Kelly Road		
Overall LOS **B**	**EBL**	**EBT**			**WBT**	**WBR**				**SBL**		**SBR**
Volume	158	1417			332	219				105		89
V/C	0.31	0.74			0.29					0.27		0.22
LOS	A	B			A					C		A

	Sooke Road			Sooke Road			Metchosin Road			N/A		
Overall LOS **B**		**EBT**	**EBR**	**WBL**	**WBT**		**NBL**		**NBR**			
Volume		931	138	293	189		120		643			
V/C		0.7		0.7	0.08		0.29		0.43			
LOS		C		C	A		C		A			

	Sooke Road			Sooke Road			VMP			VMP		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	330	728	38	47	150	97	60	342	194	97	164	168
V/C	0.25	0.99	0.05	0.19	0.57	0.28	0.23	0.5	0.42	0.47	0.19	0.33
LOS	B	E	A	C	D	A	C	C	A	C	B	A

	Sooke Road			Sooke Road			Jacklin Road			Jacklin Road		
Overall LOS **B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	525	866	16	11	315	13	53	68	26	47	21	368
V/C	0.76	0.75		0.06	0.52		0.38		0.07	0.25		0.62
LOS	B	B		C	C		D		A	C		A

	Kelly Road			Kelly Road			VMP			VMP		
Overall LOS **B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	168	179	100	17	226	147	138	599	11	95	404	168
V/C	0.44	0.15	0.17	0.08	0.36	0.37	0.51	0.4	0.02	0.45	0.32	0.26
LOS	B	B	A	C	C	A	D	B	A	D	C	A

	Jenkins Ave			Kelly Road			Brittany Drv			Phipps Road		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	48	359	5	48	478	5	3	18	38	49	2	38
V/C	0.21	0.49		0.16	0.8		0.08			0.07	0.05	
LOS	B	B		C	D		B			B	A	

	Wishart Road			Wishart Road			Metchosin Road			Metchosin Road		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	305	15	5	20	21	18	15	605	5	5	295	130
V/C	0.74		0.01	0.08		0.04	0.03	0.65		0.02	0.47	
LOS	C		A	B		A	A	B		A	A	

HORIZON YEAR 2019 PM PEAK HOUR INTERSECTION PERFORMANCE

	Sooke Road			Sooke Road			Ocean Blvd			Wale Road		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	73	900	131	262	1500	448	187	166	85	405	132	3
V/C	0.43	0.75	0.20	0.77	0.97	0.58	0.57	1.00	0.07	0.57	0.32	0.01
LOS	C	C	A	D	D	B	D	F	A	C	C	A

	Sooke Road			Sooke Road			Colwood Plaza			Goldstream Ave		
Overall LOS **B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	107	925	59	90	1455	126	31	54	48	80	103	130
V/C	0.57	0.51	0.12	0.32	0.77	0.20	0.23	0.66		0.38	0.44	0.47
LOS	D	B	A	B	C	A	D	D		D	D	A

	N/A			Wale Road			Goldstream Ave			Goldstream		
Overall LOS **B**				**WBL**		**WBR**		**NBT**	**NBR**	**SBL**	**SBT**	
Volume				243		32		540	197	16	653	
V/C				0.66		0.12		0.61	0.21	0.09	0.66	
LOS				D		A		A	A	A	A	

	Sooke Road			Sooke Road			University Drv			Aldeane		
Overall LOS **B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	17	865	14	35	1560	72	117	29	203	26	2	9
V/C	0.3	0.52		0.13	0.81		0.49		0.5	0.1		0.02
LOS	C	B		A	B		C		B	C		A

	Sooke Road			Sooke Road			N/A			Kelly Road		
Overall LOS **C**	**EBL**	**EBT**			**WBT**	**WBR**				**SBL**		**SBR**
Volume	205	660			1300	332				292		150
V/C	0.92	0.4			0.94					0.8		0.35
LOS	E	A			D					D		A

	Sooke Road			Sooke Road			Metchosin Road			N/A		
Overall LOS **B**		**EBT**	**EBR**	**WBL**	**WBT**		**NBL**		**NBR**			
Volume		367	174	585	864		140		440			
V/C		0.54		0.83	0.38		0.3		0.29			
LOS		C		C	A		C		A			

	Sooke Road			Sooke Road			VMP			VMP		
Overall LOS **D**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	286	340	42	201	680	120	50	375	105	145	616	379
V/C	0.51	1.06	0.17	0.36	1.05	0.2	0.43	0.58	0.25	0.76	0.92	0.59
LOS	D	F	A	C	E	A	D	D	A	D	D	A

	Sooke Road			Sooke Road			Jacklin Road			Jacklin Road		
Overall LOS **B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	416	349	16	13	900	15	13	27	16	17	11	559
V/C	1.01	0.27		0.03	1.04		0.06		0.13	0.1		0.92
LOS	F	A		B	E		D		C	D		D

	Kelly Road			Kelly Road			VMP			VMP		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	177	290	378	22	390	190	160	635	15	240	740	225
V/C	0.71	0.25	0.65	0.14	0.69	0.42	0.7	0.63	0.03	0.78	0.66	0.4
LOS	D	C	B	C	D	A	D	D	A	D	C	A

	Jenkins Ave			Kelly Road			Brittany Drv			Phipps Road		
Overall LOS **C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	73	350	19	41	359	364	9	10	26	355	27	232
V/C	0.79	0.47		0.13	0.77		0.4			0.73	0.39	
LOS	E	B		A	C		D			D	A	

	Wishart Road			Wishart Road			Metchosin Road			Metchosin Road		
Overall LOS **B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume	16	600	145	17	455	15	150	17	6	29	37	21
V/C	0.03	0.62		0.06	0.39		0.5		0.01	0.18		0.05
LOS	A	B		A	A		C		A	B		A

APPENDIX F

Future (2025) Performance Measures

HORIZON YEAR 2025 AM PEAK HOUR INTERSECTION PERFORMANCE

		Sooke Road			Sooke Road			Ocean Blvd			Wale Road		
Overall LOS	C	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume		105	1539	233	144	717	338	147	128	292	551	223	45
V/C		0.26	0.91	0.28	0.7	0.42	0.37	0.51	0.81	0.2	0.86	0.64	0.1
LOS		A	B	A	D	B	A	D	F	A	D	D	A

		Sooke Road			Sooke Road			Colwood Plaza			Goldstream Ave		
Overall LOS	B	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume		66	1707	39	26	769	81	8	56	44	59	73	109
V/C		0.16	0.78	0.04	0.14	0.37	0.1	0.06	0.64		0.33	0.39	0.37
LOS		A	B	A	B	A	A	D	D		D	D	A

		N/A			Wale Road			Goldstream Ave			Goldstream		
Overall LOS	A				WBL		WBR		NBT	NBR	SBL	SBT	
Volume					179		24		795	207	19	567	
V/C					0.64		0.09		0.58	0.17	0.05	0.41	
LOS					D		B		A	A	A	A	

		Sooke Road			Sooke Road			University Drv			Aldeane		
Overall LOS	C	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume		11	1646	26	271	535	50	34	3	12	69	17	3
V/C		0.03	0.95		0.87	0.25		0.12		0.03	0.28		0.01
LOS		B	D		E	A		C		A	D		A

		Sooke Road			Sooke Road			N/A			Kelly Road		
Overall LOS	A	EBL	EBT			WBT	WBR				SBL		SBR
Volume		159	1522			397	234				112		98
V/C		0.34	0.79			0.33					0.29		0.39
LOS		A	B			A					C		A

		Sooke Road			Sooke Road			Metchosin Road			N/A		
Overall LOS	B		EBT	EBR	WBL	WBT		NBL		NBR			
Volume			993	113	240	340		112		667			
V/C			0.69		0.63	0.15		0.27		0.11			
LOS			C		B	A		C		A			

		Sooke Road			Sooke Road			VMP			VMP		
Overall LOS	C	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume		352	748	75	50	190	128	64	365	207	151	225	179
V/C		0.25	1.00	0.1	0.18	0.67	0.35	0.27	0.57	0.46	0.72	0.29	0.37
LOS		B	E	A	C	D	A	D	D	A	D	B	A

		Sooke Road			Sooke Road			Jacklin Road			Jacklin Road		
Overall LOS	C	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume		560	924	17	11	371	13	56	73	28	50	22	392
V/C		0.79	0.78		0.07	0.73		0.46		0.08	0.30		0.66
LOS		C	B		C	D		D		A	D		A

		Kelly Road			Kelly Road			VMP			VMP		
Overall LOS	B	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume		179	190	106	18	241	157	147	638	11	101	431	179
V/C		0.52	0.17	0.19	0.09	0.38	0.38	0.56	0.42	0.01	0.46	0.32	0.26
LOS		B	B	A	C	C	A	D	B	A	D	C	A

		Jenkins Ave			Kelly Road			Brittany Drv			Phipps Road		
Overall LOS	C	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume		52	383	6	52	510	6	3	19	40	53	2	40
V/C		0.26	0.49		0.17	0.77		0.1			0.09	0.06	
LOS		B	B		B	D		B			B	A	

		Wishart Road			Wishart Road			Metchosin Road			Metchosin Road		
Overall LOS	B	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume		319	17	6	22	24	20	17	636	6	4	311	138
V/C		0.75		0.01	0.09		0.04	0.05	0.71		0.02	0.5	
LOS		C		A	B		A	A	B		A	B	

HORIZON YEAR 2025 PM PEAK HOUR INTERSECTION PERFORMANCE

		Sooke Road			Sooke Road			Ocean Blvd			Wale Road		
Overall LOS	**C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		79	956	140	282	1614	481	201	179	90	435	142	3
V/C		0.51	0.71	0.21	0.74	0.93	0.59	0.49	0.88	0.07	0.67	0.38	0.01
LOS		C	C	A	D	D	B	D	E	A	D	D	A

		Sooke Road			Sooke Road			Colwood Plaza			Goldstream Ave		
Overall LOS	**B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		115	980	64	96	1567	136	34	58	51	86	110	139
V/C		0.57	0.49	0.12	0.36	0.74	0.2	0.24	0.7		0.41	0.47	0.46
LOS		D	B	A	A	A	A	D	E		D	D	A

		N/A			Wale Road			Goldstream Ave			Goldstream		
Overall LOS	**B**				**WBL**		**WBR**		**NBT**	**NBR**	**SBL**	**SBT**	
Volume					303		41		580	211	17	702	
V/C					0.71		0.13		0.48	0.18	0.06	0.52	
LOS					D		B		A	A	A	A	

		Sooke Road			Sooke Road			University Drv			Aldeane		
Overall LOS	**C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		19	920	15	37	1675	78	119	31	218	28	2	9
V/C		0.25	0.65		0.14	0.93		0.4		0.44	0.09		0.02
LOS		C	B		A	C		B		A	B		A

		Sooke Road			Sooke Road			N/A			Kelly Road		
Overall LOS	**D**	**EBL**	**EBT**			**WBT**	**WBR**				**SBL**		**SBR**
Volume		193	650			1400	356				313		144
V/C		0.95	0.35			0.93					0.78		0.32
LOS		E	A			C					D		A

		Sooke Road			Sooke Road			Metchosin Road			N/A		
Overall LOS	**B**		**EBT**	**EBR**	**WBL**	**WBT**		**NBL**		**NBR**			
Volume			394	180	620	928		131		470			
V/C			0.46		0.75	0.41		0.32		0.27			
LOS			C		B	A		C		A			

		Sooke Road			Sooke Road			VMP			VMP		
Overall LOS	**E**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		307	350	45	216	725	118	51	396	115	160	661	407
V/C		0.57	1.07	0.25	0.39	1.05	0.19	0.5	0.66	0.22	0.74	1.01	0.62
LOS		D	F	A	C	F	A	D	D	A	E	E	B

		Sooke Road			Sooke Road			Jacklin Road			Jacklin Road		
Overall LOS	**C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		447	385	17	14	935	16	14	29	17	19	12	601
V/C		1.07	0.31		0.03	1.11		0.05		0.12	0.09		0.97
LOS		F	A		B	F		C		C	C		D

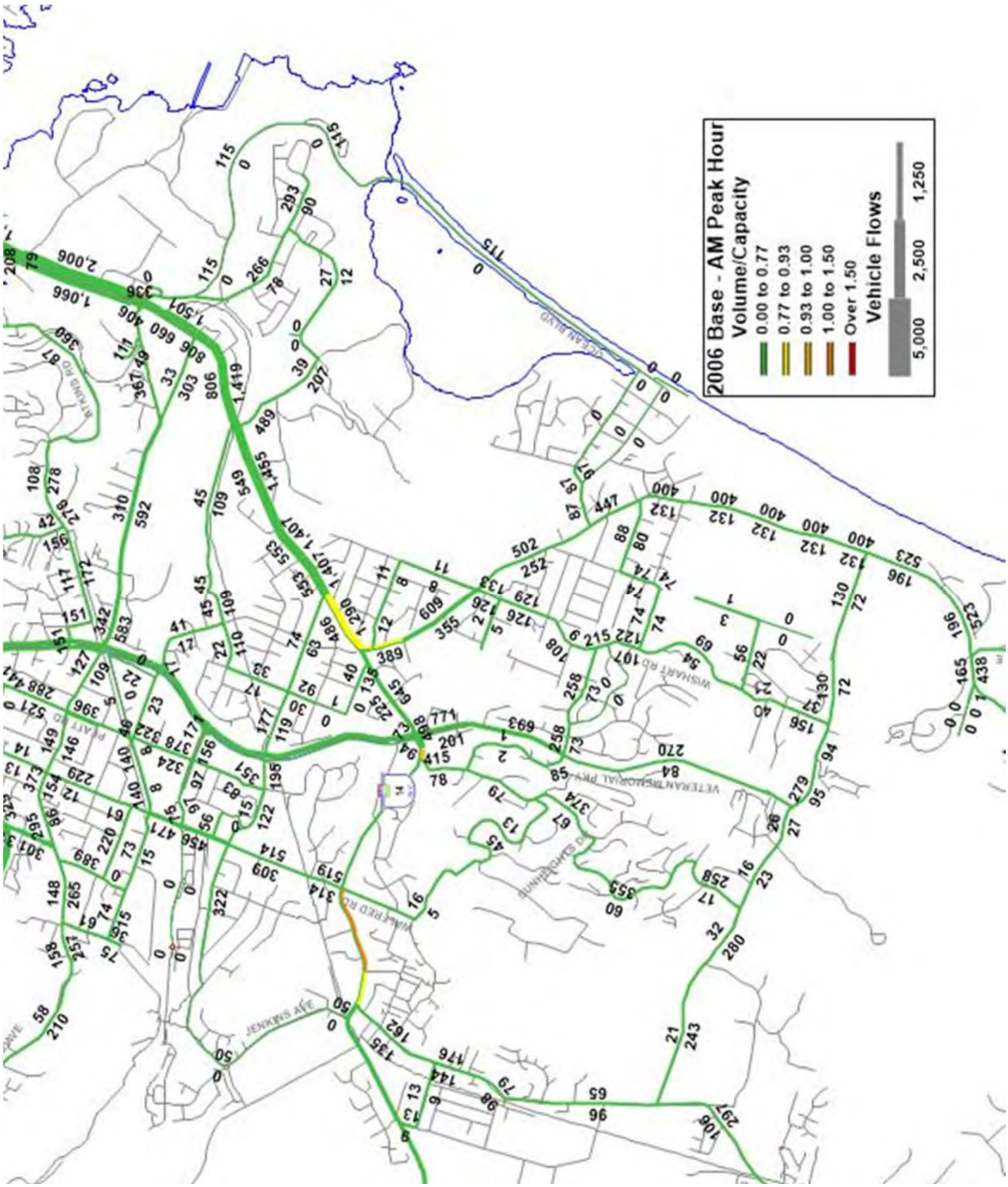
		Kelly Road			Kelly Road			VMP			VMP		
Overall LOS	**C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		190	299	406	23	425	198	151	700	16	249	795	241
V/C		0.85	0.25	0.73	0.13	0.62	0.39	0.82	0.63	0.03	0.79	0.72	0.4
LOS		D	B	B	C	C	A	E	C	A	D	C	A

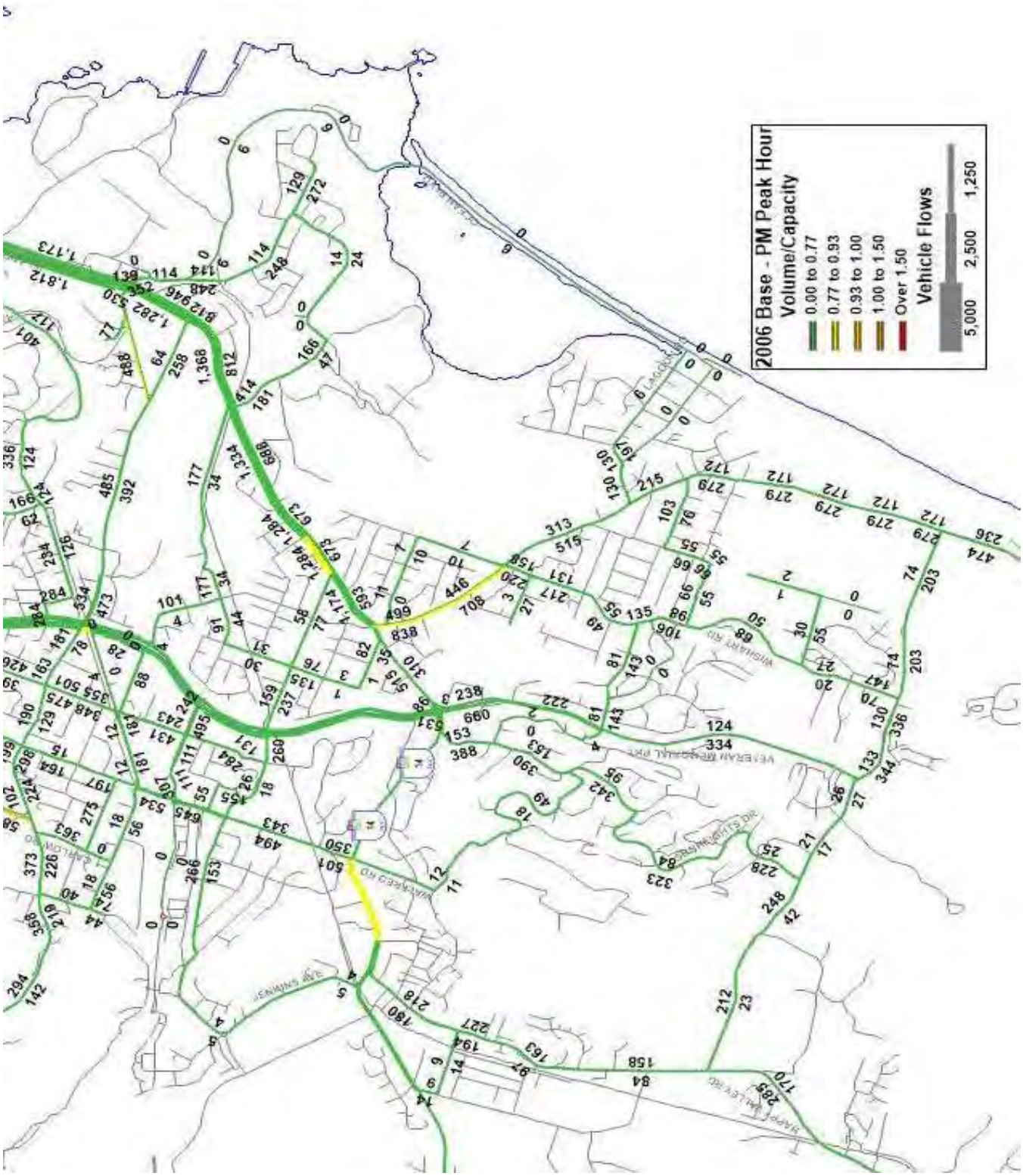
		Jenkins Ave			Kelly Road			Brittany Drv			Phipps Road		
Overall LOS	**C**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		79	374	212	44	395	365	9	10	28	375	29	249
V/C		0.78	0.49		0.13	0.76		0.35			0.82	0.41	
LOS		E	B		A	B		C			D	A	

		Wishart Road			Wishart Road			Metchosin Road			Metchosin Road		
Overall LOS	**B**	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Volume		17	640	150	19	425	16	160	19	7	31	39	22
V/C		0.03		0.33	0.07		0.36	0.49	0.01		0.16	0.05	
LOS		A		B	A		A	B	A		B	A	

APPENDIX G

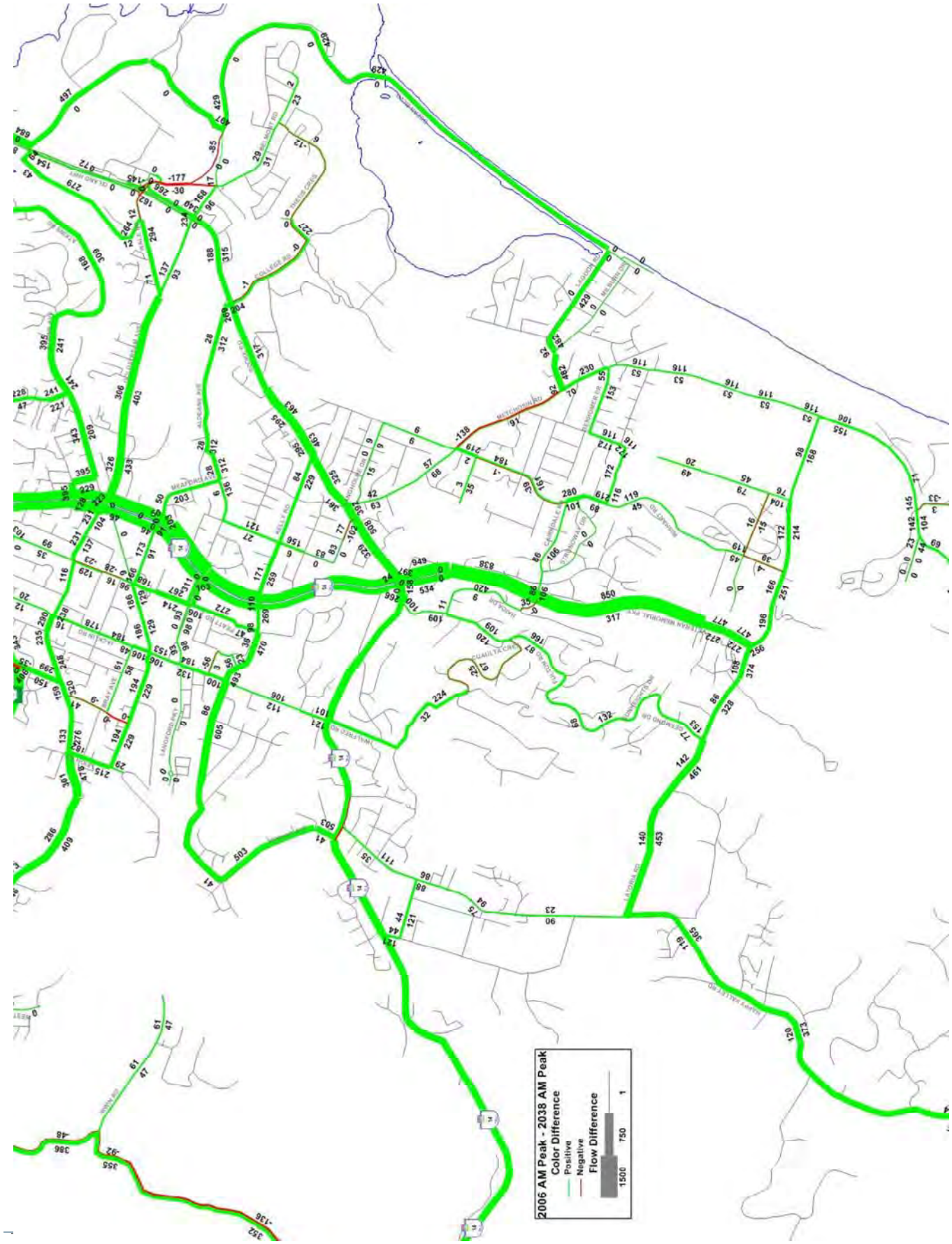
TransCAD Outputs

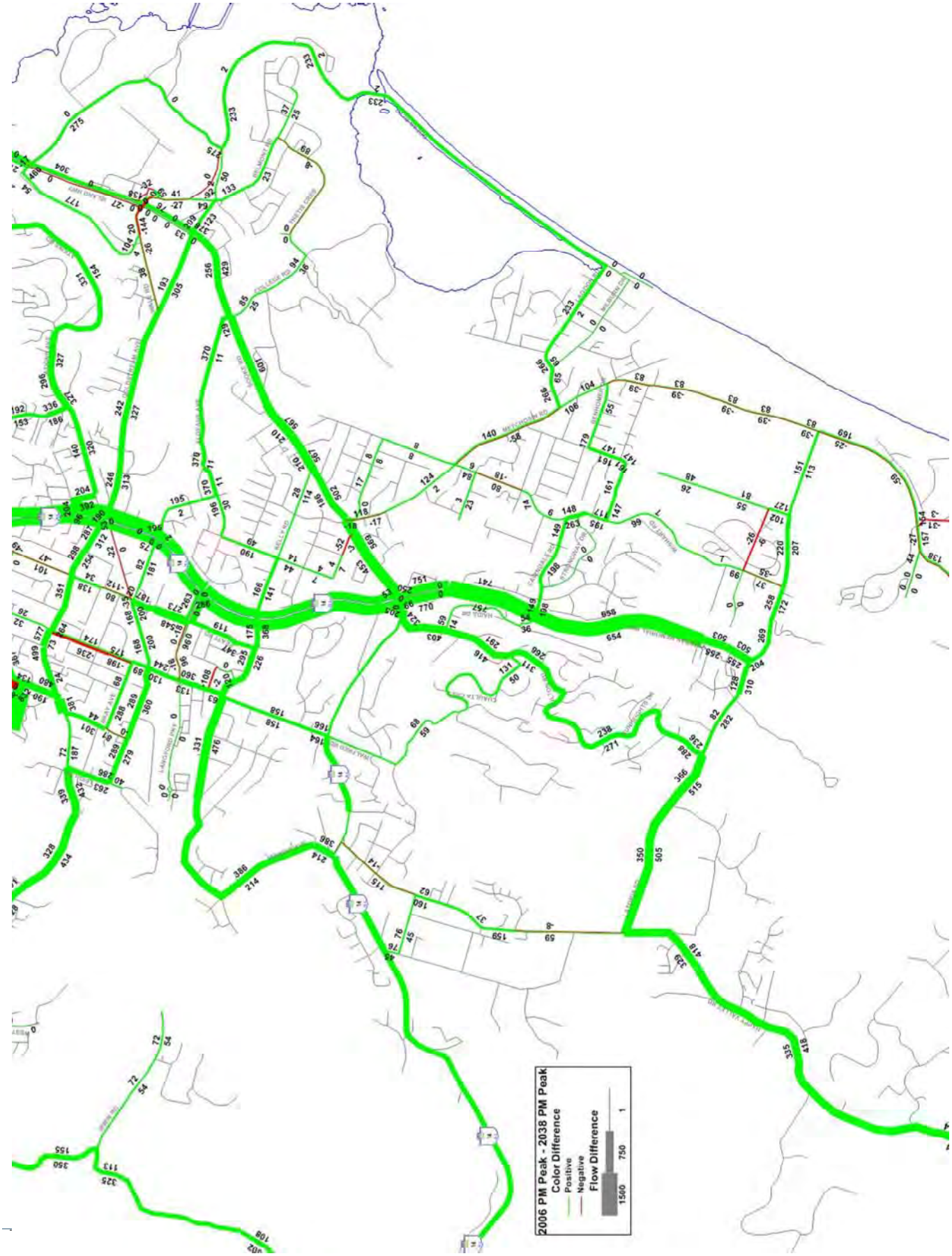

2006 Base - AM Peak Hour
Volume/Capacity
0.00 to 0.77
0.77 to 0.93
0.93 to 1.00
1.00 to 1.50
Over 1.50
Vehicle Flows
5,000
2,500
1,250

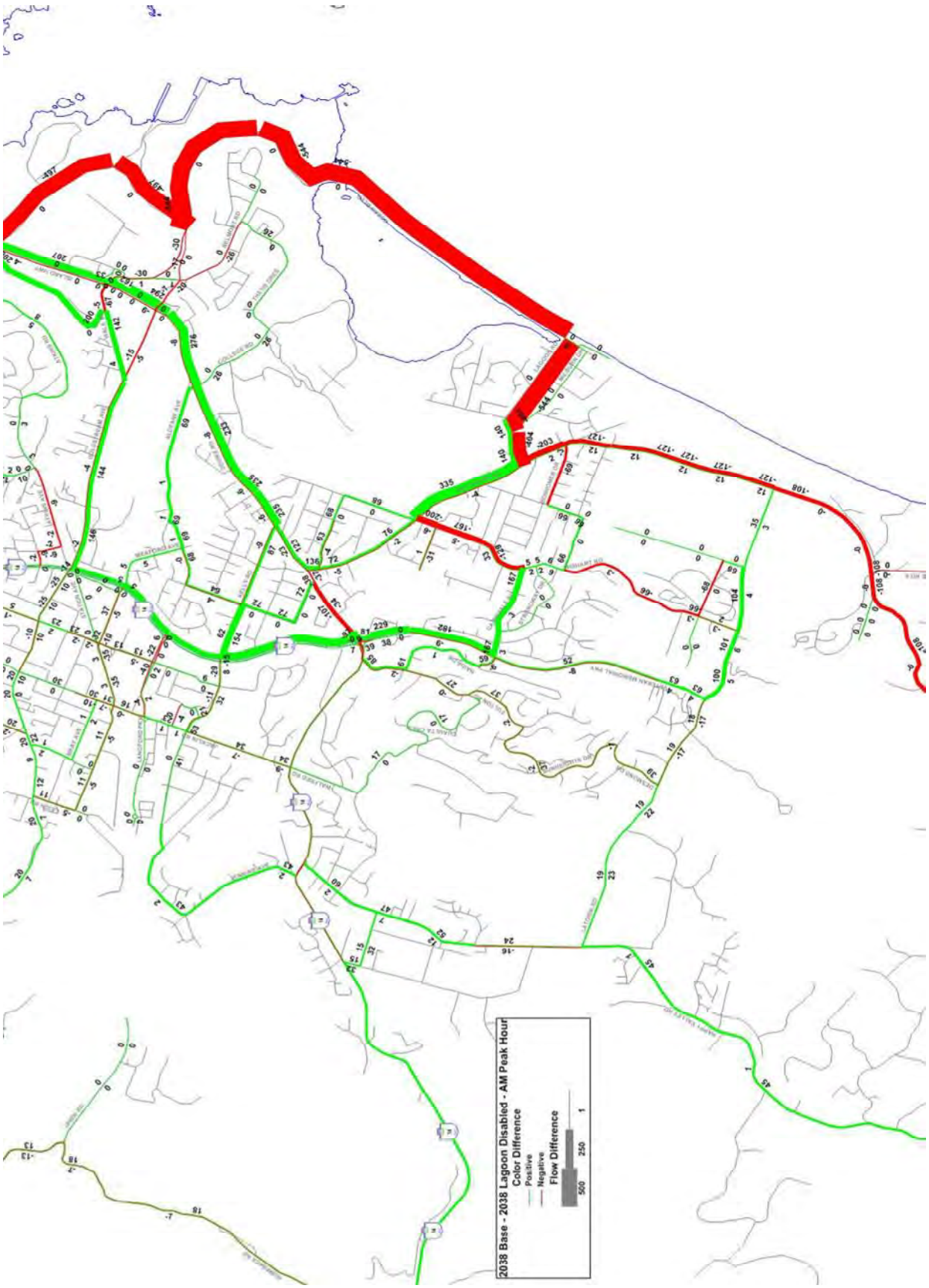

2006 Base - PM Peak Hour
Volume/Capacity
0.00 to 0.77
0.77 to 0.93
0.93 to 1.00
1.00 to 1.50
Over 1.50
Vehicle Flows
5,000
2,500
1,250

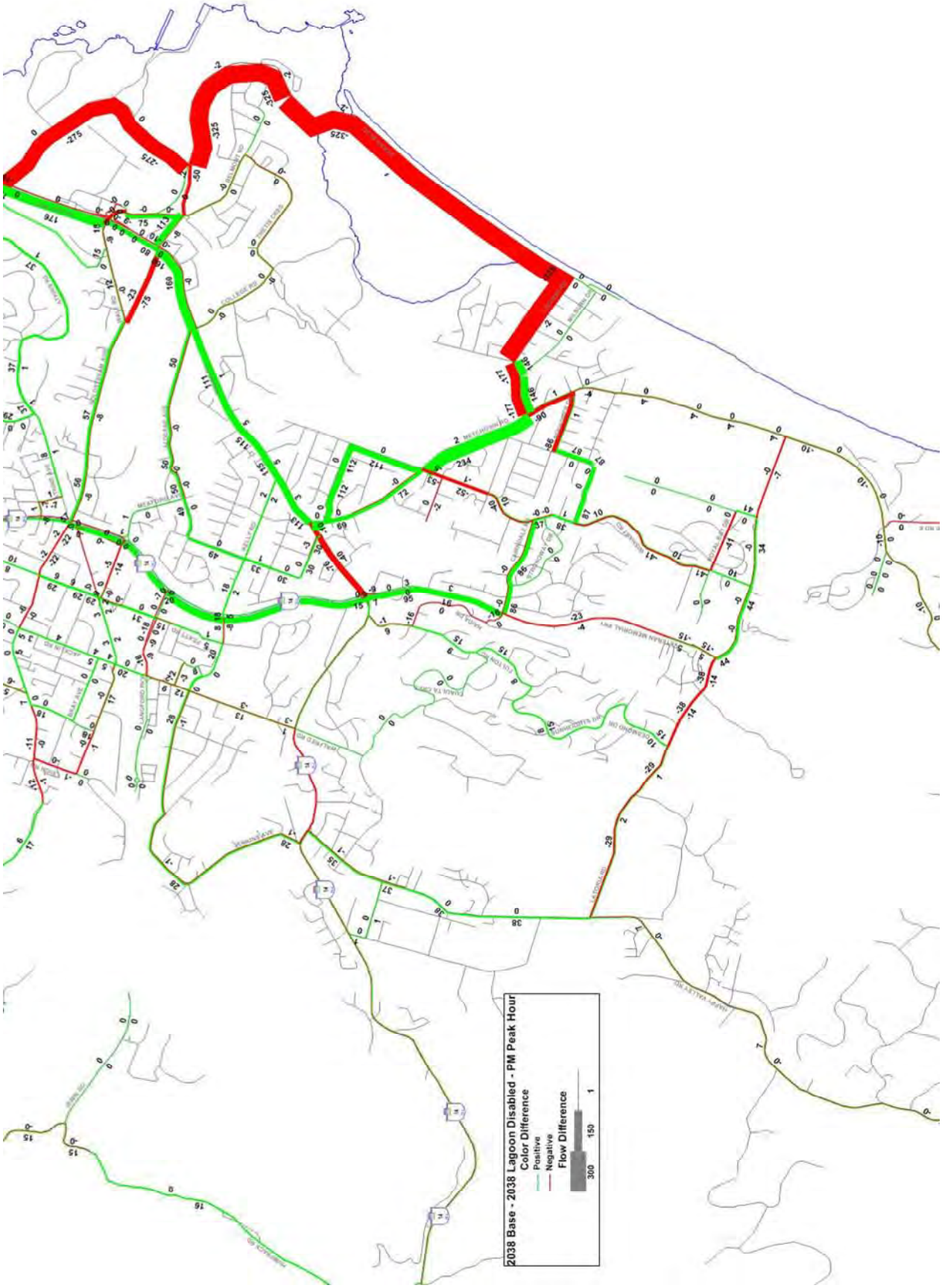

2038 Base - AM Peak Hour
Volume/Capacity
0.00 to 0.77
0.77 to 0.93
0.93 to 1.00
1.00 to 1.50
Over 1.50
Vehicle Flows
5,000
2,500
1,250


2038 Base - PM Peak Hour
Volume/Capacity
0.00 to 0.77
0.77 to 0.93
0.93 to 1.00
1.00 to 1.50
Over 1.50
Vehicle Flows
5,000
2,500
1,250


2006 AM Peak - 2038 AM Peak
Color Difference
Positive
Negative
Flow Difference
1500
750
1


2006 PM Peak - 2038 PM Peak
Color Difference
Positive
Negative
Flow Difference
1
750
1500


2038 Base - 2038 Lagoon Disabled - AM Peak Hour
Color Difference
Positive
Negative
Flow Difference
1
250
500


2038 Base - 2038 Lagoon Disabled - PM Peak Hour
Color Difference
Positive
Negative
Flow Difference
1
150
300