TOWN OF VIEW ROYAL

TRANSPORTATION MASTER PLAN
2016 TECHNICAL UPDATE

Prepared For: Town of View Royal

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TRANSPORTATION MASTER PLAN TECHNICAL UPDATE
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TABLE OF CONTENTS

EXECUTIVE SUMMARY 2
BACKGROUND 2
STUDY SCOPE AND METHODOLOGY 2
ANALYSIS 2
CONCLUSIONS 2
RECOMMENDATIONS 2
INTRODUCTION / BACKGROUND 3
PROJECT DEFINITION 5
SCOPE 5
STUDY AREA 5
WORK PLAN / METHODOLOGY 7
EXISTING CONDITIONS 8
GENERAL 8
VIEW ROYAL NEIGHBOURHOODS 8
PEDESTRIANS: SIDEWALKS / TRAILS / PATHS 9
CYCLING 13
TRANSIT SERVICE 14
VEHICULAR TRAFFIC VOLUMES 16
COMPARISON TO ORIGINAL TRANSPORTATION MASTER PLAN 18
FUTURE CONDITIONS 20
PEDESTRIAN 20
CYCLING 23
TRANSIT SERVICE 24
HORIZON YEAR 2038 VEHICULAR TRAFFIC 28
OTHER TRANSPORTATION CONSIDERATIONS – LIGHT RAPID TRANSIT 29
FUTURE TRAFFIC VOLUMES ANALYSIS 31
TRAFFIC ZONES / CHANGE AREAS 34

NEIGHBOURHOOD / CHANGE AREA TRIP GENERATION 37
TRIP DISTRIBUTION / ASSIGNMENT / CROSS-SECTIONS 59
NEIGHBOURHOOD CROSS-SECTIONS SUMMARY 70
PEDESTRIAN AND BICYCLE NETWORK IMPROVEMENTS 72
TRANSPORTATION PLANNING AND SUSTAINABILITY 76
SMART GROWTH 78
TRANSIT-ORIENTED DEVELOPMENT / TRANSIT-ORIENTED COMMUNITIES 80
TRANSIT SUPPORTIVE LAND USE 81
TRANSPORTATION DEMAND MANAGEMENT 82
FUNDING SOURCES FOR INFRASTRUCTURE 84
FEDERAL GOVERNMENT / NATIONAL ORGANIZATIONS 84
PROVINCIAL GOVERNMENT / ORGANIZATIONS 89
SUMMARY / CONCLUSIONS 90
RECOMMENDATIONS 92
GLOSSARY OF TERMINOLOGY 95
APPENDIX A: Change Areas and Current Modal Infrastructure 97

Exhibit A-1: Change Areas from the Official Community Plan

Exhibit A-2: E & N Rail Trail Project Overview

Exhibit A-3: Parks and Trails Map

Exhibit A-4: Pedestrian Infrastructure

Exhibit A-5: Cycling Infrastructure

Exhibit A-6: Official Community Plan Major Road Network

APPENDIX B: Future Plans and Traffic Volumes

Exhibit B-1: Future Plans of BC Transit for service in CRD

Exhibit B-2: Horizon Year 2038 AM Peak Hour Traffic Volumes

Exhibit B-3: Differences between 2018 and 2038 AM Peak Hour Traffic Volumes

Exhibit B-4: Horizon Year 2038 PM Peak Hour Traffic Volumes

Exhibit B-5: Differences between 2018 and 2038 PM Peak Hour Traffic Volumes

Exhibit B-6: CRD Traffic Analysis Zones in Town of View Royal

Exhibit B-7: Official Community Plan Land Use Designations

Exhibit B-8: Zoning Map for Bylaw #900

APPENDIX C: Road Cross-Sections by Classification

Exhibit C-1: Local 14m RoW - Rural

Exhibit C-2: Local 14m RoW - Urban

Exhibit C-3: Local 18m RoW - Rural

Exhibit C-4: Local 10m RoW – Urban Class A

Exhibit C-5: Local 10m RoW – Urban Class B

Exhibit C-6: Collector 20m RoW – Rural

Exhibit C-7: Collector 20m RoW – Urban Class A

Exhibit C-8: Collector 20m RoW – Urban Class B

Exhibit C-9: Major Road 20m RoW – Urban

Exhibit C-10: Major Road 30m RoW – Urban

FIGURES

Figure 1: Study Area for Transportation Master Plan Update 6
Figure 2: View Royal Neighbourhoods 9
Figure 3: Connection to E & N Rail Trail on north side of Island Highway 10
Figure 4: Connection to Portage Park between Municipal Hall and Four Mile Pub 10
Figure 5: Shoreline Trail from Shoreline Drive to Island Highway 11
Figure 6: Existing BC Transit bus routes in the Town of View Royal 14
Figure 7: Route 33 – Colwood / Langford via Atkins Road 15
Figure 8: E & N Rail Trail on Four Mile Overpass 22
Figure 9: Local access connection to the E & N Rail Trail 22
Figure 10: CRD Regional Pedestrian and Cycling Master Plan 24
Figure 11: Transit Future Plan - Full RTN and FTN Implementation 25
Figure 12: Strategic Direction of BC Transit in Town of View Royal 26
Figure 13: Conceptual design for Park and Ride 27
Figure 14: Atkins Neighbourhood and Change Areas 39
Figure 15: Burnside Neighbourhood and Change Areas 42
Figure 16: Craigflower Neighbourhood and Change Areas 44
Figure 17: Harbour Neighbourhood and Change Areas 47
Figure 18: Helmcken Neighbourhood and Change Areas 49
Figure 19: Hospital Neighbourhood and Change Areas 52
Figure 20: Thetis Neighbourhood and Change Areas 56
Figure 21: Wilfert Neighbourhood and Change Areas 58
Figure 22: Infrastructure Canada – a transformational infrastructure plan 84
Figure 23: New Building Canada Plan and funding 86
Figure 24: Program streams for renewed Gas Tax Agreement 87

TABLES

Table 1: Origin – Destination data for the CRD and the Town of View Royal 31
Table 2: Primary travel mode for trips from / to / within the Town of View Royal 32
Table 3: Trips by trip purpose from / to / within the Town of View Royal 33
Table 4: Areas in Atkins Neighbourhood by land use category for current zoning and 2012 Official Community Plan 39
Table 5: Types of land uses and number of units or areas in Lakeside Vilage development 40
Table 6: Average Weekday AM and PM peak hour vehicular trips generated by lakeside Village development currently and at completion 40
Table 7: Type of land use and number of units in Mill Hill development 40
Table 8: Average Weekday AM and PM peak hour vehicular trips generated by Mill Hill development 40
Table 9: Total Average Weekday AM and PM peak hour vehicular trips generated by Atkins Neighbourhood land uses 41
Table 1O: Areas in Burnside Neighbourhood by land use category for current zoning and 2012 Official Community Plan 43
Table 11: Types of Land Uses and number of units or area in Burnside Corner development 43
Table 12: Average Weekday AM and PM peak hour vehicular trips generated by Burnside Corner development currently and at completion 43
Table 13: Total Average Weekday AM and PM peak hour vehicular trips generated by Burnside Neighbourhood land uses 44
Table 14: Areas in Craigflower Neighbourhood by land use category for current zoning and 2012 Official Community Plan 45
Table 15: Type of land uses and number of units or area in Thetis Cove development 45
Table 16: Average Weekday AM and PM peak hour vehicular trips generated by Thetis Cove development currently and at completion 45
Table 17: Total Average Weekday AM and PM peak hour vehicular trips generated by Craigflower Neighbourhood land uses 46
Table 18: Areas in Harbour Neighbourhood by land use category for current zoning and 2012 Official Community Plan 48
Table 19: Total Average Weekday AM and PM peak hour vehicular trips generated by Harbour Neighbourhood land uses 48
Table 20: Areas in Helmcken Neighbourhood by land use category for current zoning and 2012 Official Community Plan 49
Table 21: Type of land uses and areas for Town Centre development 50

Table 22: Average Weekday AM and PM peak hour vehicular trips generated by Town Centre development currently and at completion 50

Table 23: Total Average Weekday AM and PM peak hour vehicular trips generated by Helmcken Neighbourhood land uses 51

Table 24: Areas in Hospital Neighbourhood by land use category for current zoning and 2012 Official Community Plan 53

Table 25: Type of land uses and number of units or area in Hospital Intensive Mixed Use development 53

Table 26: Type of land uses and number of units or area in Eagle Creek development 53

Table 27: Average Weekday AM and PM peak hour vehicular trips generated by Hospital IMU development currently and at completion 54

Table 28: Average Weekday AM and PM peak hour vehicular trips generated by Eagle Creek development currently and at completion 54

Table 29: Total Average Weekday AM and PM peak hour vehicular trips generated by Hospital Neighbourhood land uses 55

Table 30: Areas in Thetis Neighbourhood by land use category for current zoning and 2012 Official Community Plan 57

Table 31: Total Average Weekday AM and PM peak hour vehicular trips generated by Thetis Neighbourhood land uses 57

Table 32: Areas in Wilfert Neighbourhood by land use category for current zoning and 2012 Official Community Plan 58

Table 33: Total Average Weekday AM and PM peak hour vehicular trips generated by Wilfert Neighbourhood land uses 59

Table 34: Collector and Local road cross-sections for neighbourhood roads 71

Table 35: Gaps in pedestrian and bicycle infrastructure on Major roads 73

Table 36: Gaps in pedestrian and bicycle infrastructure on Collector roads 74

Table 37: Gas Tax Agreement funding for British Columbia up to 2018-19 (in 1,000S) 87

Table 38: Community Works Fund Allocation for the Town of View Royal up to 2018-19 88

Table 39: Locations for intersection traffic count program 93

EXECUTIVE SUMMARY

BACKGROUND

TO BE COMPLETED AFTER RECEIPT OF COMMENTS FROM REVIEW OF DRAFT REPORT

STUDY SCOPE AND METHODOLOGY

ANALYSIS

CONCLUSIONS

RECOMMENDATIONS

INTRODUCTION / BACKGROUND

The current Transportation Master Plan (TMP) was adopted by the Town of View Royal in 2008. At that time, the Official Community Plan (OCP) had been in effect since 1999. The 2008 TMP was based on the land use bylaw of the time which, in combination with the OCP, was used to identify the development potential within View Royal and the associated potential vehicle trips in order to establish the impact of the full build-out of Town land. As part of the TMP, a micro-simulation model was developed for the Major road network within the Town and the projected traffic volumes were analyzed to identify what future road network improvement would be required to Horizon Year 2038, coinciding with the full build-out scenario. Since that initial development of a TMP, the OCP was updated in 2011 and new Land-Use bylaw adopted in 2014. In order to support the current OCP and ensure that the TMP is consistent with the long term vision for View Royal outlined therein, a technical update of the TMP is required.

The 2008 TMP outlined various goals and objectives related to mobility, transportation performance, non-motorized travel, community development, environmental protection, integration with OCP, inter-agency coordination, financial feasibility and implementation. However this was within the context of the 1999 OCP, which has subsequently been updated, and the current OCP has refined and articulated the Town's vision in the following goals[1]:

1. Promote a strong sense of community in all areas and neighbourhoods of the Town, and create an enhanced sense of place and identity, which draws on the Town's array of parks, trails and recreational activities, as well as its unique waterfront setting.
2. Create an inclusive community that provides housing, transportation and healthy living options, and services and facilities for families and individuals of diverse backgrounds, culture, age and economic means.
3. As the community grows, recognize the unique relationship between the highly valued natural and residential characteristics of View Royal, and maintain these values.
4. Confirm View Royal as an environmentally responsible community committed to becoming a more sustainable place and planning for global climate change.
5. Recognize, preserve and protect the sustainable historical and cultural resources in View Royal.
6. Ensure that community services and amenities can be provided within the financial means of the municipality, and strengthen partnerships with regional service providers to increase local opportunities.
7. Identify suitable land areas and development incentives for commercial, institutional and mixed-use activities as a means of supplying local employment opportunities, broadening the municipal tax base, and promoting View Royal as a business-friendly community.

1 "View Royal Official Community Plan," CitySpaces Consulting Ltd., et al, April, 2011. P. 4

8. Recognize the regional role of the community as a link in major transportation and environmental systems, and cooperate with other municipalities and governments to address regional issues, while also protecting local values and promoting long-term sustainability.
9. Ensure that all citizens of View Royal have opportunities to be informed and meaningfully involved in planning and decision-making processes.

This vision is formulated as an internally generated future for the Town as well as an external perspective from its role as a member of the Capital Regional District. It is further delineated and reinforced in a series of descriptive objectives, policies and implementing actions which provide an incremental process for moving forward towards this long term vision for the Town.

The OCP also provides a framework for updating the TMP as the OCP defines eight neighbourhoods or planning areas which in turn have roles as gateways to the community, locations for identified neighbourhood centres, residential areas, a town centre, significant community facilities and transportation infrastructure.

This information in conjunction with the Town's current zoning information, existing land uses and plans for all types of active and vehicular transportation modes were used in the process to update the TMP as described in the following sections.

PROJECT DEFINITION

This TMP Update is a technical update of the 2008 TMP that considers the transportation network improvements completed since 2008 and the 2011 OCP in order to update existing infrastructure mapping and to set new priorities for the Town of View Royal in anticipation of future internal growth based on the updated 2011 OCP.

SCOPE

The Community Development Framework within the OCP identifies areas where land use and design character change is desirable and where it should be encouraged. These areas are designated as Change Areas, which "make up a small amount of the total land in the Town, and are mostly characterized by underutilized land located along or near Major roads.[2]" There were ten such Change Areas identified within the Town, as listed below:

A Mill Hill;

B Lakeside Village;

C Western Gateway Corridor;

D View Royal Transit Exchange (Atkins Neighbourhood Centre);

E Burnside Corner;

F Town Centre (Fort Victoria);

G Harbour-Helmcken Corridor;

H Hospital;

I Northern Gateway Corridor; and

J Thetis Cove

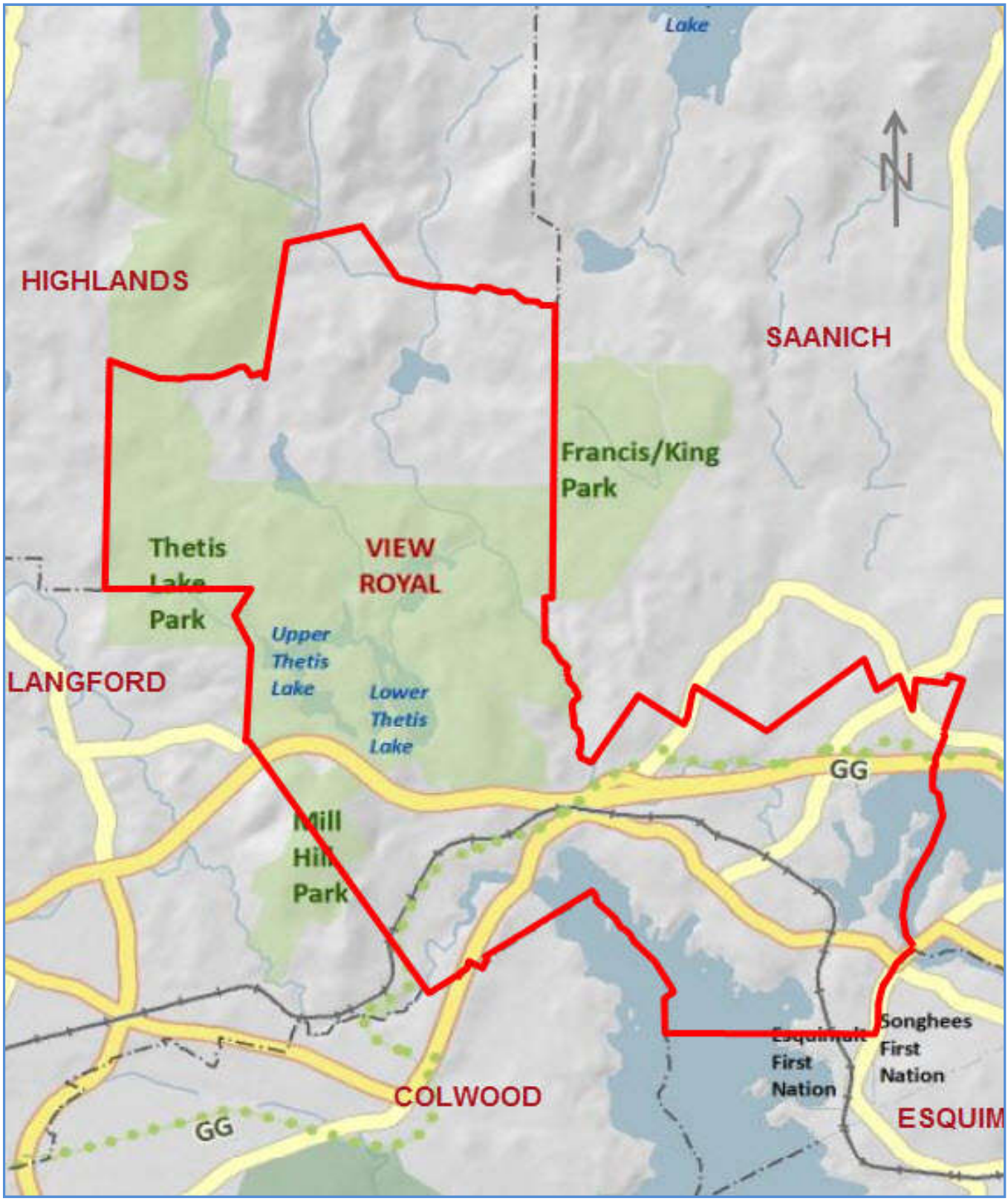
The scope of the TMP update project is to examine the proposed developments / land uses in the Change Areas to ensure that the future transportation networks are sufficiently robust to accommodate future traffic demand for all modes. The analysis of future road corridor capacity requirements will be focused on how the collector roads that connect the Changes Areas, and their respective neighbourhoods, will accommodate the forecast increases of multi-modal traffic and provide access to the major road network.

STUDY AREA

The Study Area is the Town of View Royal, as illustrated in **Figure 1,** but the focus is on the ten Change Areas that are listed in the previous section and are illustrated **Exhibit A-1** in **Appendix A**.

2 Ibidem, p. 34

FIGURE 1: STUDY AREA FOR TRANSPORTATION MASTER PLAN UPDATE



WORK PLAN / METHODOLOGY

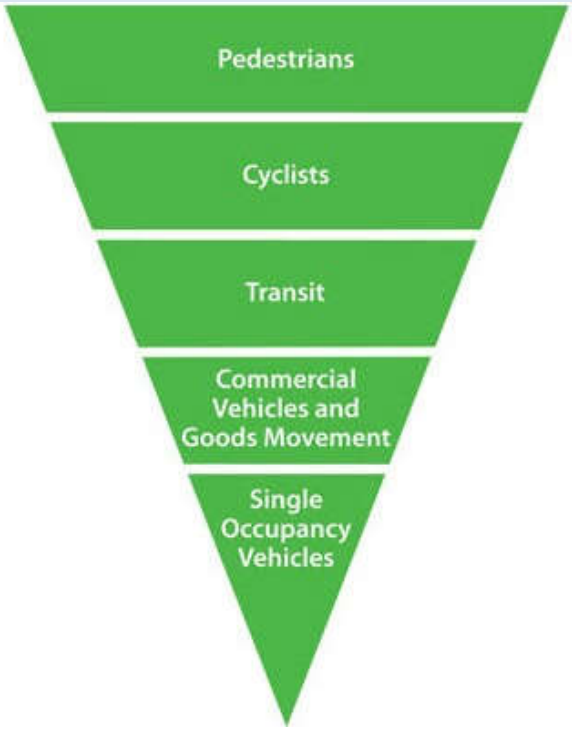
The major activities to conduct the TMP Technical Update are described in more detail in the following tasks:

- Met with appropriate Town staff to acquire the identified reference materials and data including relevant plans for development, traffic volume data, and any designs / plans for future network improvements within the Study Area;
- Met with other local stakeholder groups such as the Town's Transportation Advisory Committee (TAC), Capital Regional District (CRD) and BC Transit;
- Inventoried existing infrastructure for alternative modes of transportation including improved transit service within the Study Area. Opportunities to either enhance existing infrastructure or develop new facilities were also incorporated into the update.
- Forecasted trips generated to and from the Traffic Zones in the Town based on land use zoning contained in Zoning Bylaw #900, land use designations from the OCP, and what has actually been developed to date in order to derive current and full build-out trip generation. Trip generation related to Changes Areas for Average Weekday Peak Hours were highlighted;
- Utilized the future "Horizon Year 2038" traffic data provided within the Capital Regional District's Travel Demand Forecast Model (TransCAD) to establish context for future traffic volumes on the Major road network;
- Distributed the forecasted trip generation traffic volumes according to existing distribution patterns in conjunction with available known origin-destination patterns and assign the trips to the collector road network;
- Determined pressure points for vehicular traffic moving to and from the Change Areas in order to identify, evaluate and prioritize road cross-section options;
- Similarly, existing infrastructure for active transportation modes was evaluated to indentify gaps in the modal networks in order to evaluate and prioritize options to address these areas. This includes transit service levels and opportunities for increased services as development in the Change Areas matures; and
- Other transportation related issues such as commuter rail and under the heading of Sustainable Transportation Planning: Smart Growth, Transit-Oriented Development, Transit Supportive Land Use, Transportation Demand Management (TDM) / Transportation Supply Management (TSM) opportunities and funding sources for TDM initiatives are all discussed and relevant information provided.

EXISTING CONDITIONS

GENERAL

There has been a significant societal shift in how people view their communities and the role of transportation in their lives. As articulated by the Town of View Royal and reflected in the current TMP, the traditional hierarchy of transportation and mobility priorities has been inverted as shown. No longer focusing primarily on the vehicular movement of goods and people, current priorities are more concerned with quality of life through reducing automotive dependency and associated greenhouse gas emissions and promoting alternative modes resulting in livable compact communities, increased public safety and healthier life styles. These alternative modes include transit and increasingly encourage active transportation modes such as walking, jogging, rollerblading and cycling. In some instances these are captured in separate Active Transportation Plans (ATPs) or incorporated into TMPs such as was done in View Royal.



VIEW ROYAL NEIGHBOURHOODS

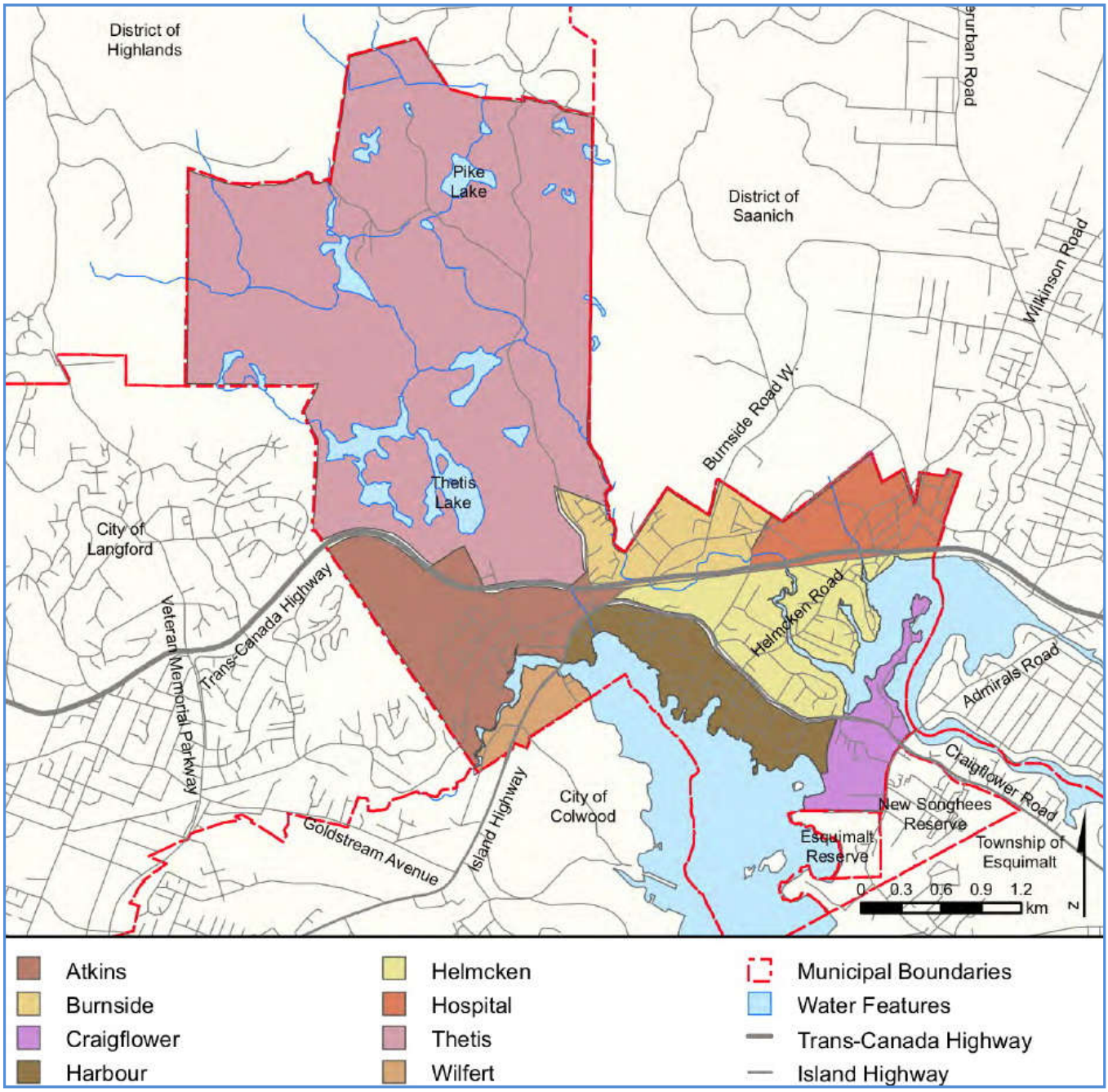
As seen in **Figure 2**, the Town of View Royal contains eight (8) distinct neighbourhoods[3] as listed below:

- Atkins;
- Burnside;
- Craigflower;
- Harbour;
- Helmcken;
- Hospital;
- Thetis; and,
- Wilfert.

For transportation planning purposes, the boundaries of the neighbourhoods correspond quite closely with the Traffic Analysis Zones (TAZ) found within the CRD Regional Travel Demand Forecast Model which will be discussed in more detail in the Analysis section of this report. The analysis will be undertaken at the TAZ level and the results aggregated to the neighbourhood level for inclusion in this report.

3 Ibidem, p. 17

FIGURE 2: VIEW ROYAL NEIGHBOURHOODS



PEDESTRIANS: SIDEWALKS / TRAILS / PATHS

Since the adoption of the 2008 TMP, several pedestrian facility improvements have been implemented throughout the Town. Most notably, the Island Highway Improvement Project (IHIP), which resulted in the addition of new dedicated bike lanes and concrete sidewalks on both sides of the roadway, between Beaumont Avenue and slightly beyond the 4-Mile E & N Rail corridor overpass to the east, a distance of approximately 650m. Other related pedestrian improvement features included a new traffic signal controlled crosswalk on Island

Highway at View Royal Avenue and new pathways to Portage Park and the E & N Rail Trail within the project area as shown in Figures 3 and 4.

FIGURE 3: CONNECTION TO E & N RAIL TRAIL ON NORTH SIDE OF ISLAND HIGHWAY

FIGURE 4: CONNECTION TO PORTAGE PARK BETWEEN MUNICIPAL HALL AND FOUR MILE PUB

The Casino Highway Improvement Project (CHIP) extended from the Town's western border with the City of Colwood to Parson's Bridge. The project was based on the roadway design concept that was developed for the 2008 TMP and construction was completed in 2011. Key features of this upgrade project included:

- New concrete sidewalk, street lighting and road surface improvements on the south side of Island Highway;
- New bike lane on the south side of Island Highway;
- Landscaped and treed boulevards on the south side, to provide buffers between pedestrians and traffic on this very busy roadway; and,
- Rain gardens, bio-retention devices and bio-swales in the boulevards to provide treatment of stormwater and road run-off.

Opened June 12, 2015, the Shoreline Trail runs from the rear of the Shoreline school building off Shoreline Drive and connects to Island Highway at the new Capital Regional District pump station, just east of the E & N Rail Trail as shown in Figure 5.

A joint project of the Town of View Royal, School District 61 and the CRD, it not only provides a jogging circuit for the school's physical education classes and a safe route to school for students using the E & N Rail Trail, it re-establishes a historic portage between Esquimalt Harbour and the Gorge Waterway.

FIGURE 5: SHORELINE TRAIL FROM SHORELINE DRIVE TO ISLAND HIGHWAY

Other initiatives completed since 2008 include the following:

- Cantilevered pathway across the north side of Parson's Bridge;
- New traffic signal at the intersection of Island Highway / Hart Road to provide safe access for Hart Road residents along with new crosswalks at the intersection and a concrete sidewalk along the east side of Hart Road;
- New sidewalk along the west side of Atkins Road;
- New crosswalk at Watkiss Way / Marler Drive;
- Section of Chilco Road was decommissioned and transformed to pedestrian / cycling route;
- New sidewalk constructed along the Shoreline Drive school frontage;
- Reconstruction of the Craigflower Bridge, including new sidewalks, bike lanes, improvements to street lighting, installation of stormwater treatment facilities and rain gardens, boulevard landscaping improvements, a refurbished traffic signal at the intersection of Admirals Road and Gorge Road West and replacement of the sanitary sewer, storm drain and water mains on Admirals Road.

Other projects or programs which are in progress and will also add to the pedestrian network infrastructure are:

- The E & N Rail Trail[4], which is currently under construction largely within the existing railway right-of way, will add approximately 17 kilometres to the regional trail network when complete. It is shown in **Exhibit A-2** in **Appendix A;** and
- The Town of View Royal Draft Parks Master Plan[5] is currently being reviewed and comments solicited. The Town's Parks and Trails Map is shown in **Exhibit A-3** of **Appendix A.**

At the present time, the gamut of pedestrian facilities, including sidewalks, mid-block and intersection crosswalks, and regional trails, is summarized in **Exhibit A-4** of **Appendix A**. One other aspect of pedestrian facilities is the provision of links to provide connectivity between neighbourhoods which in turn promote walkability and livability of the residential areas of the community and thus the accessibility to other land uses.

The trails within the Town have been identified in the Parks and Trails Map and include regional facilities such as the existing Galloping Goose Regional Trail and the E & N Rail Trail which is under construction and will provide another major regional multi-use trail which connects to the regional trail systems and provides capability for employees to commute between the Westshore area and areas to the east including Victoria, Esquimalt and regional educational or medical centres. Major trails within View Royal include Duffus Trail, MacLennan Trail and Thetis Lake Regional Park Trails.

This type of infrastructure is critical for the ongoing development of active transportation facilities which is also highly correlated to more livable communities and healthier life styles. This is also consistent with previous

4 E & N Rail Trail, https://www.crd.bc.ca/project/capital-projects/e-n-rail-trail

5 "Draft View Royal Parks and Trails Master Plan", Master of Community Planning Program, Vancouver Island University, August 2016

direction from the Town in terms of giving a higher priority to alternative modes of transportation for the same reasons.

One additional consideration to be incorporated into design of pedestrian facilities is the users who may require mobility assistance in the form or walkers or scooters. They need to not only be considered in terms of the width and grade of the pedestrian facilities but also how these mobility scooters are accommodated at trip origins and destinations. The current Zoning Bylaw provides direction in terms of providing parking adjacent to entrances of building or land uses and requirements for location when the scooter parking space is on a sidewalk.

CYCLING

Since the previous 2008 TMP, several projects have been undertaken to provide additional transportation infrastructure with the two most significant projects being the Casino Highway Improvement Project (CHIP) and the Island Highway Improvement Project (IHIP).

The CHIP project provided significant community amenity contributions to road improvements which resulted in the installation of bike lanes along Island Highway between the City of Colwood's municipal border and Six Mile Road. The required rezoning for expansion of the casino was approved in 2008 but the expansion did not proceed with the exception of a new on-site parking structure.

The IHIP project added bike lanes through what once was a hostile cycling environment on Island Highway between Beaumont Avenue to just east of the Four Mile E & N underpass. Wider bike lanes of 2.0m were developed specifically with consideration of the topographical challenges associated with this road section. These bike lanes were intended to accommodate uphill movements, particularly related to weaving while expending significant effort on grades, and more fluid movement of cyclists travelling at higher speeds on downhill grades.

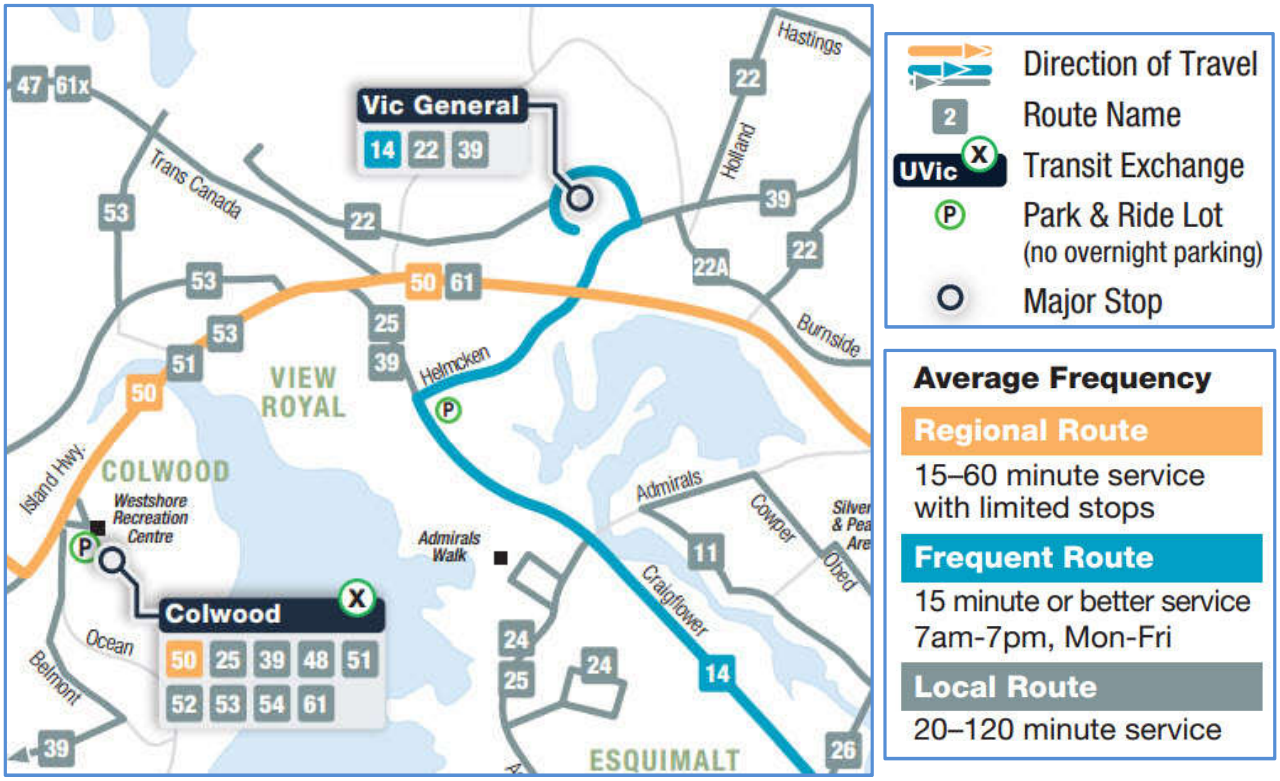
The cycling infrastructure within the Town is illustrated in Exhibit A-5 in Appendix A in terms of the regional trails, bike lanes and paved shoulders. It should also be noted that the CRD has undertaken significant work in this area with the Regional Pedestrian and Cycling Master Plan (PCMP) from 2011, which will be discussed in the following section.

In the Town's previous Zoning Bylaw (#35), there was no specific requirement for bicycle parking for any land uses. Typically the requirements have focused on residential bicycle parking in terms of number and type of spaces for multi-family developments, but now bicycle requirements related to trip origins and destinations are being addressed as outlined in current Zoning Bylaw (#900) which has specific requirements for residential, commercial, industrial as well as public and institutional land uses in terms of specifying the type and number of bicycle spaces for the various land uses.

TRANSIT SERVICE

The existing bus routes that serve the residents of View Royal are shown in **Figure 6**, while the individual bus stop locations are illustrated in Exhibit A–4 of Appendix A. It should be noted that individual bus stop locations are now being shown on the individual route maps on BC Transit's web site. To ensure adequate service coverage, a goal of BC Transit is to ensure that transit stops are spaced along a transit corridor at appropriate intervals between 300m – 500m. As seen in Exhibit A-4, the existing transit stops provide excellent coverage based on these parameters.

FIGURE 6: EXISTING BC TRANSIT BUS ROUTES IN THE TOWN OF VIEW ROYAL



Changes in the summer of 2014 to transit service within the CRD focused on three goals to:

- increase service to summer and tourism destinations;
- implement new infrastructure to improve system reliability, including Douglas Street Transit Priority Lanes and changes to the Downtown Legislature and Blanshard terminus points; and
- seasonally reduce post-secondary and secondary school services to conserve resources for higher ridership periods in the fall and winter.

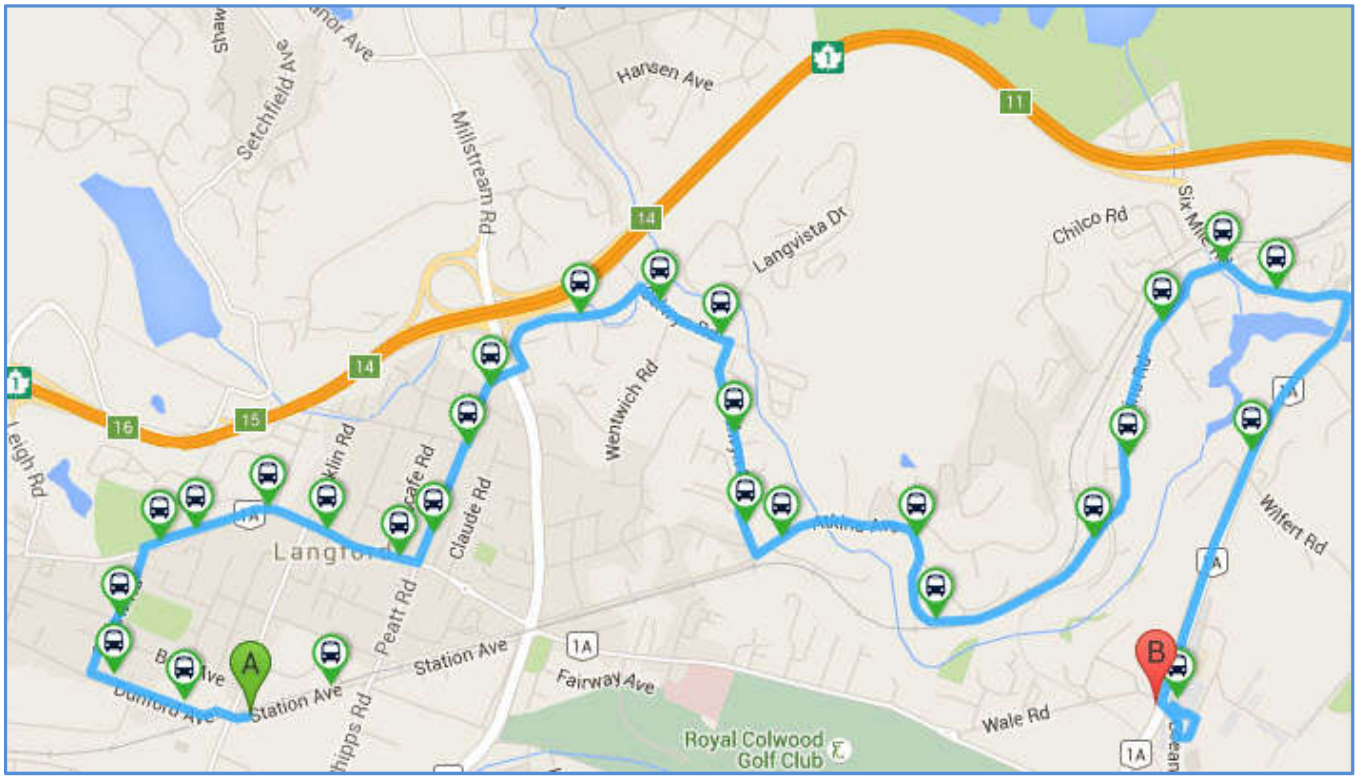
These changes were based on BC Transit's long-term Transit Future Plan; a Victoria Regional Service Review and approved 2014/15 Annual Service Plan; recent feedback from customers, front line staff, major employers and area local governments; detailed route analysis to best match service to customer demand; and no additional

expansion hours or vehicles. Changes are to be accomplished by reallocating services within the summer period, with any hours saved through seasonal reductions used to augment services in the upcoming Fall period.

One route in the Town which was changed significantly was Route 53 – Colwood / Langford via Atkins Road which is illustrated in Figure 7. It has a seasonal component as during the summer period, the route extends to Thetis Lake Regional Park on trips after 9:00am. The main aspects of this change are: extending Route 53 to the main parking area of Thetis Lake Park to provide seasonal service to this popular destination; allowing passengers travelling from local areas within the Westshore to connect to Route 53 at the Langford Exchange; and allowing passengers travelling to Thetis Lake from other areas in the region to take Route 50 (Downtown / Langford via Goldstream Avenue) to connect to Route 53 at the Western Exchange.

This change was made to respond to a common request from passengers. While Routes 50 and 22 (Vic General / Hillside Mall) provide service year round to bus stops near the park boundary, this new service gives riders direct access to the Park's main entrance during summer months. The service will be focused on trips after 9:00am so that existing commuters will not be impacted and will operate at all other times from late June to early September. This change was a recommendation from the Victoria Regional Transit System Service Review and was supported by the general public during the consultation process.

FIGURE 7: ROUTE 33 – COLWOOD / LANGFORD VIA ATKINS ROAD



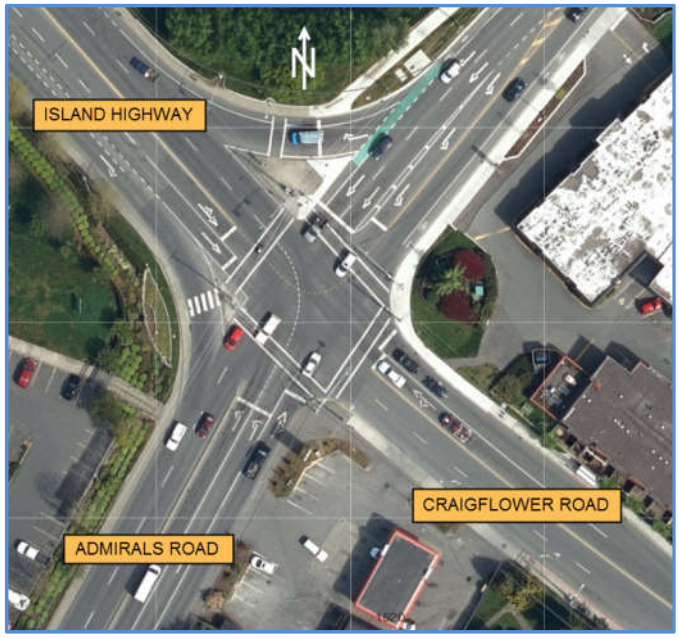
One other aspect of the transit service within the Town is the existing Park and Ride facility which is located in the south east quadrant of the Helmcken Road / TCH intersection and accessed via St. Giles Street. This facility has been operating above its capacity and is in need of expansion.

VEHICULAR TRAFFIC VOLUMES

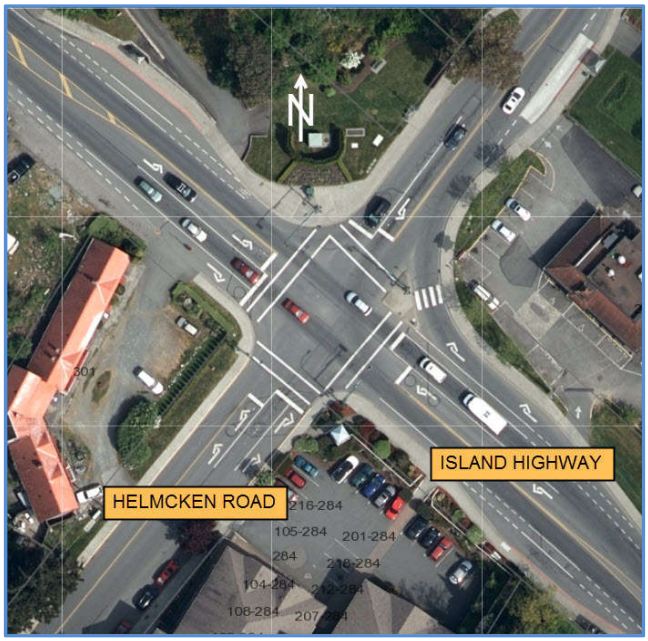
At the onset of this study, with the construction of the new Craigflower Bridge underway, it was not feasible to obtain current traffic volume data on the road network. The closure of the bridge and upgrades to Admirals Road started the second week of April 2013, with the bridge re-opening to vehicle traffic in May 2014. Admirals Road from Island Highway/Craigflower Road to Cowper Street was also closed to vehicle traffic for the duration of the project. Using historic traffic data from previous studies and various sources, current (2015) Average Weekday Traffic (AWT) was sourced for current traffic volumes on the major road network. Analysis of available information concludes that traffic volumes on the major road network have seen little growth trends since the previous 2008 TMP analysis. Based on the future forecast traffic volumes, Study Area intersections are expected to perform within acceptable V/C and LOS values with the exception of the following intersections:

- Island Highway / Craigflower Road / Admirals Road – PM Peak
- Island Highway / Helmcken Road – AM Peak
- Island Highway / Burnside Road West (Colwood I / C) – AM and PM Peaks
- Island Highway / Six Mile Road – AM and PM Peaks
- Watkiss Way / Helmcken Road which is recently redesigned as part of the new Eagle Creek development project

The major intersections shown below are not anticipated to have significantly improved performance measures in the near future without some significant modal shifts from single-occupant vehicles to higher-occupancy modes.



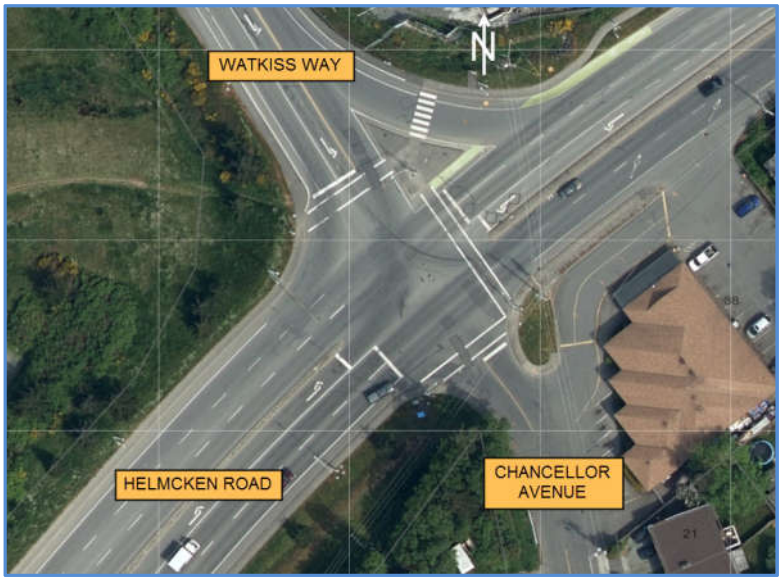
Intersection of Admirals Road / Island Highway / Craigflower Road



Intersection of Helmcken Road / Island Highway

Intersection of Island Highway / Burnside Road West at Colwood Interchange

Intersection of Six Mile Road / Island Highway



Intersection of Watkiss Way / Helmcken Road

Rather, the intersections will change in terms of how they accommodate active modes of transportation. These intersections are starting to show some of these improvements with better pavement markings to delineate pedestrian crossings, separate bicycle lanes and using coloured pavement to highlight potential conflict zones between cyclists and vehicular traffic. These changes are often difficult to implement as they are frequently retrofitted into existing transportation corridors without any increase in right-of-way width. Vehicular traffic has had a historical priority and narrowing travel lanes to create separate bicycle lanes slows vehicular traffic and increases trip times which is typically not popular when the vehicular drivers who are looking for increased capacity to reduce congestion and travel times. However, these benefits for vehicular traffic are consistently short-term as latent or diverted demand will consume any capacity improvements as the network adjusts to a new equilibrium.

Therefore, the emphasis of this technical update has been on identifying the source and volume of increased vehicular traffic associated with the potential development of various land uses in the Town's neighbourhoods and evaluating recommended road cross-sections of the access roads to accommodate this traffic.

COMPARISON TO ORIGINAL TRANSPORTATION MASTER PLAN

As with the previous OCP and original TMP, the Major Road network in the current OCP (Exhibit A-6 in Appendix A) contains the provincial arterial Trans Canada Highway as well as the municipal facilities of:

- Admirals Road
- Burnside Road West (east of Helmcken Road)
- Helmcken Road (from Island Highway north to municipal border)
- Island Highway
- Six Mile Road
- Watkiss Way (between Burnside Road West and Helmcken Road)

It does not however specifically identify other complementary facilities such as Collector roads, which is the primary focus of this TMP technical update, and Local roads. The previous TMP identified the following facilities as Collector roads:

- Atkins Road
- Burnside Road West (from Watkiss Way to municipal border)
- Helmcken Road (south of Island Highway to View Royal Avenue)
- Highland Road
- View Royal Avenue
- Watkiss Way (from Highland Road to Burnside Road West)

This distinction is important as these road classes have different functions and characteristics. For example the arterial routes or highways are designed for vehicular mobility with restricted direct access to lands and design

parameters such as lane widths, sight distance, superelevation, plus horizontal and vertical curvature to achieve higher speeds. They will carry in excess of 25,000 vehicles per day (vpd) with design speeds of 80 to 120 km/h.

Major routes' primary function is mobility but a secondary function is access to lands. The access is typically by crosswalks and traffic signals and direct access to land is limited and discouraged. They may carry up to 25,000 vpd with design speeds from 50 to 100 km/h. Collector roads balance the need for mobility and access to lands and have a capacity range from 1,000 to 12,000 vpd, although the more typical range is 3,000 to 5,000 vpd. Design speeds range from 50 to 80 km/h.

The current OCP is less prescriptive with respect to identifying specific transportation routes and their function, but contains the framework of objectives and policies for progress towards the realization of the Town of View Royal's vision for their community.

FUTURE CONDITIONS

The previous section highlighted the current status of various modal infrastructure networks within the Town of View Royal as well as mentioning some projects / programs which are underway and will significantly change these networks. An overview of these initiatives is provided in the following pages.

PEDESTRIAN

The most significant project that will add to the active transportation network within the CRD is the E & N Rail Trail, as shown in Figures 8 and 9. It is a new pedestrian and cycling regional trail that is being constructed largely within the E & N rail corridor right-of-way. Once complete, this newest addition to the regional trail system will provide an important non-motorized transportation and recreation link between Victoria and the Westshore. The only Rail Trail in the Region, it will form a key part of the regional trail network managed by the Capital Regional District, which also includes the popular Galloping Goose and Lochside regional trails.

The E & N Rail Trail is being built in five phases as shown in Exhibit A-2. At this point, Phases 1 and 2 are largely complete and the following three sections are open for public use:

- Jacklin School to Savory School
- Atkins Avenue to Hallowell Road
- Maplebank Road to Wilson Street

The gaps in the Rail Trail are being addressed and the status of the work is summarized on the CRD web site as:

- Maplebank Road to Hallowell Road

  Discussions have been ongoing with Ministry of Transportation and Infrastructure, Town of View Royal, Esquimalt Nation, Songhees First Nation and Island Corridor Foundation (ICF) and together a route for the regional trail connection has been established. With the recent announcement of BikeBC grant funding and the existing UBCM Gas Tax funding, construction of this section will begin in 2016.

- Atkins Avenue to Savory School

  The construction of the 1 km section of trail from the railway crossing on Atkins Road to Savory School will be initiated as soon as the necessary grant funding is confirmed.

- Future Sections: Esquimalt Road to Johnson Street Bridge, Jacklin Road to Humpback Road.

  Approximately 1.3 km of trail in the City of Victoria is needed to link Esquimalt Road to the Johnson Street Bridge. The CRD will construct a portion of the route and area developments, such as the Roundhouse development, will also construct portions of the route.

  A 3.6 km section of trail from Jacklin Road to Humpback Road in the City of Langford is also slated for future development.

  No funding or time frame has been approved for these phases as yet.

To date 10 kilometres of the 17-kilometre route have been completed which includes paving of 2.5 kilometres of the Galloping Goose (a section that also serves as part of the E & N Rail Trail route). Until future phases of the E & N Rail Trail are complete, existing cycling lanes and sections of municipal roads in Victoria, View Royal, Colwood and Langford will connect the trail. Eventually, this trail will stretch from the Johnson Street Bridge in Victoria to Humpback Road in Langford.

As well as the two additional future phases mentioned above, it is also intended to establish a link from Humpback Road to the Humpback Reservoir in Sooke Hills Wilderness Regional Park Reserve, where the E & N Rail Trail will link to a proposed trail to the Cowichan Valley Regional District (CVRD).

As part of the Rail Trail project, sections of the Galloping Goose were paved to invite commuters to shift to cycling as a transportation choice, and included a length of the regional trail not directly parallel to the rail, but serving many trail users while the project proceeded in phases.

Initial construction of the Rail Trail project focused on completion of trestle bridges along the route where existing rail bridges spanned major roads or above grade crossings. The trail span was paired with a new trail bridge at 4 Mile Hill, over Island Highway near the eastern reaches of View Royal, and another crossing was built over Helmcken, just north of the View Royal Elementary school.

The completed trail section through View Royal, particularly that connecting with Portage Park and other links to the Town's road network, are seeing regular use by some regional commuters and many local residents who use the trail for neighbourhood recreational activities or to connect south to the shopping areas at Admirals Walk, Nelson Square and Canadian Tire.

Other links between the trail and adjacent roads or paths have not yet emerged, though historic informal use along the corridor suggest that links between the Rail Trail and Helmcken Road, View Royal Elementary School and other spots where parks or dead end streets interface with the rail corridor will all be popular.

FIGURE 8: E & N RAIL TRAIL ON FOUR MILE OVERPASS

FIGURE 9: LOCAL ACCESS CONNECTION TO THE E & N RAIL TRAIL

CYCLING

In addition to the E & N Rail Trail, an important facility for cyclists as described in the previous section, the CRD adopted the Regional Pedestrian & Cycling Master Plan (PCMP) in March of 2011[6]. The Executive Summary of the PCMP provides an overview of the report as describing a strategic approach for achieving a significant modal shift in transportation throughout the Region and promotes the feasibility of making this approach a reality since the CRD and every municipality has an acknowledged commitment to multi-modal accommodation.

The Master Plan continues on from where the 2005 CRD Travel Choices Strategy left off. It uses this starting point, in combination with global factors such as the climate change imperative, in combination with local issues such as looming infrastructure expenses facing municipalities and increasing public concerns about livable communities, as impetus to achieve more ambitious mode share goals than the existing 5% for cycling and 10% for walking targets.

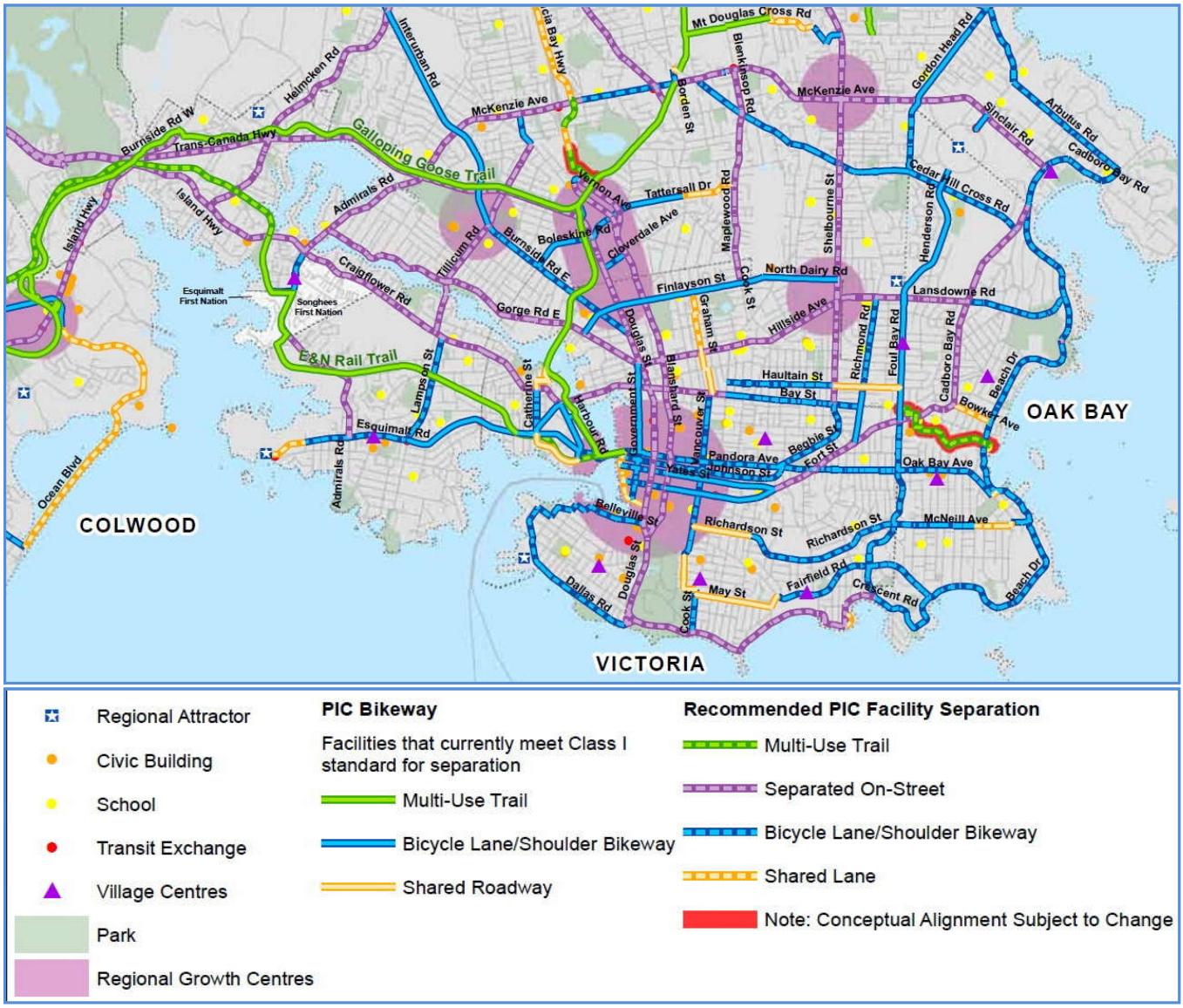
The somewhat unique location of the CRD is manifested in a healthy walking community (10% walk) and some of the highest cycling numbers in the country (9% in some areas and 3.2% overall). By upgrading pedestrian facilities in priority locations and building cycling facilities with the average person in mind, the report forecasts that the CRD could achieve a 15% pedestrian mode share and a 25% cycling mode share in densely populated areas, with a 15% cycling share region wide.

The key to making these significant modal shifts a reality is to provide modal infrastructure for walkway and bikeway networks that are comfortable and accessible for all users. This highlights the need for the CRD to work collaboratively with stakeholders to design and develop such facilities. Alta Planning + Design has years of experience and best practices knowledge behind their PCMP guidelines, policies, and standards for providing universal pedestrian accessibility as well as bicycle and pedestrian trip enhancement facilities such as bicycle parking and integration with transit. The Master Plan recommends developing Encouragement, Education, and Enforcement programs to support the culture shift as well as an Evaluation system to measure progress and refine as needed.

Within View Royal, the PCMP, as shown in **Figure 10**, recommends Island Highway, Helmcken Road, TCH and Admirals Road as having separated on-street facilities. Admirals Road is further identified as a Priority Bikeway Project. The report establishes the project as 0.6km at an estimated cost of approx. $101,000.00 and further recommends an On-Street – Bicycle Lane / Shoulder Bikeway facility through View Royal. Currently, there are dedicated bike facilities along Admirals Road between the border with the District of Saanich and Island Highway – Craigflower Road. These facilities are a result of the Craigflower Bridge replacement project. Between Island Highway and Hallowell Road, there are no dedicated bicycle facilities at this time.

6 "Regional Pedestrian and Cycling Master Plan", Alta Planning + Design for the Capital Regional District, March 2011, p. 1

FIGURE 10: CRD REGIONAL PEDESTRIAN AND CYCLING MASTER PLAN



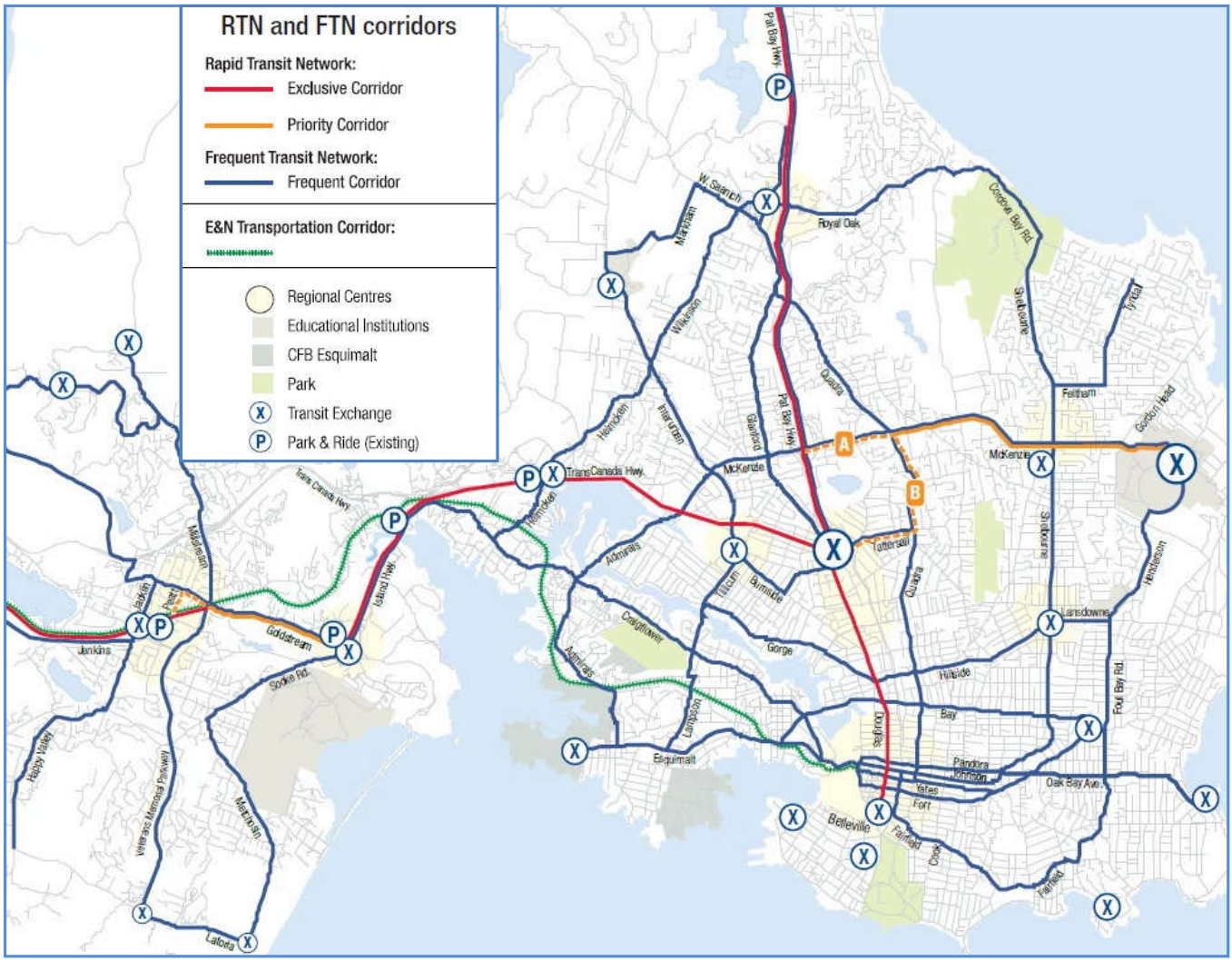
It should be noted that the Ministry of Transportation & Infrastructure (MoT&I) has conducted a study for the section of Admirals Road fronting the Esquimalt Nation and Songhees First Nation lands. The study recommended wide vehicle travel lanes (4.3m), to be shared be vehicular and cycling traffic. Further south, the Township of Esquimalt is currently in the process of reconstructing the section of Admirals Road through the municipality and dedicated bike lanes will be constructed as part of that project.

TRANSIT SERVICE

In May 2011, BC Transit revealed their Transit Future Plan and the proposed regional plan is shown in Figure 11. The plan identifies that by Horizon Year 2038, the population of the Victoria Region is anticipated to grow from a current estimated population of 350,000 residents to 453,000. This population growth is estimated to create a 40% increase in daily trips. As increasing roadway capacity to accommodate traffic growth has limited success

and has negative environmental, social and economic impacts to communities, the Transit Future Plan identifies strategies to increase the mode split of transit, cycling and walking above today's values.

FIGURE 11: TRANSIT FUTURE PLAN - FULL RTN AND FTN IMPLEMENTATION



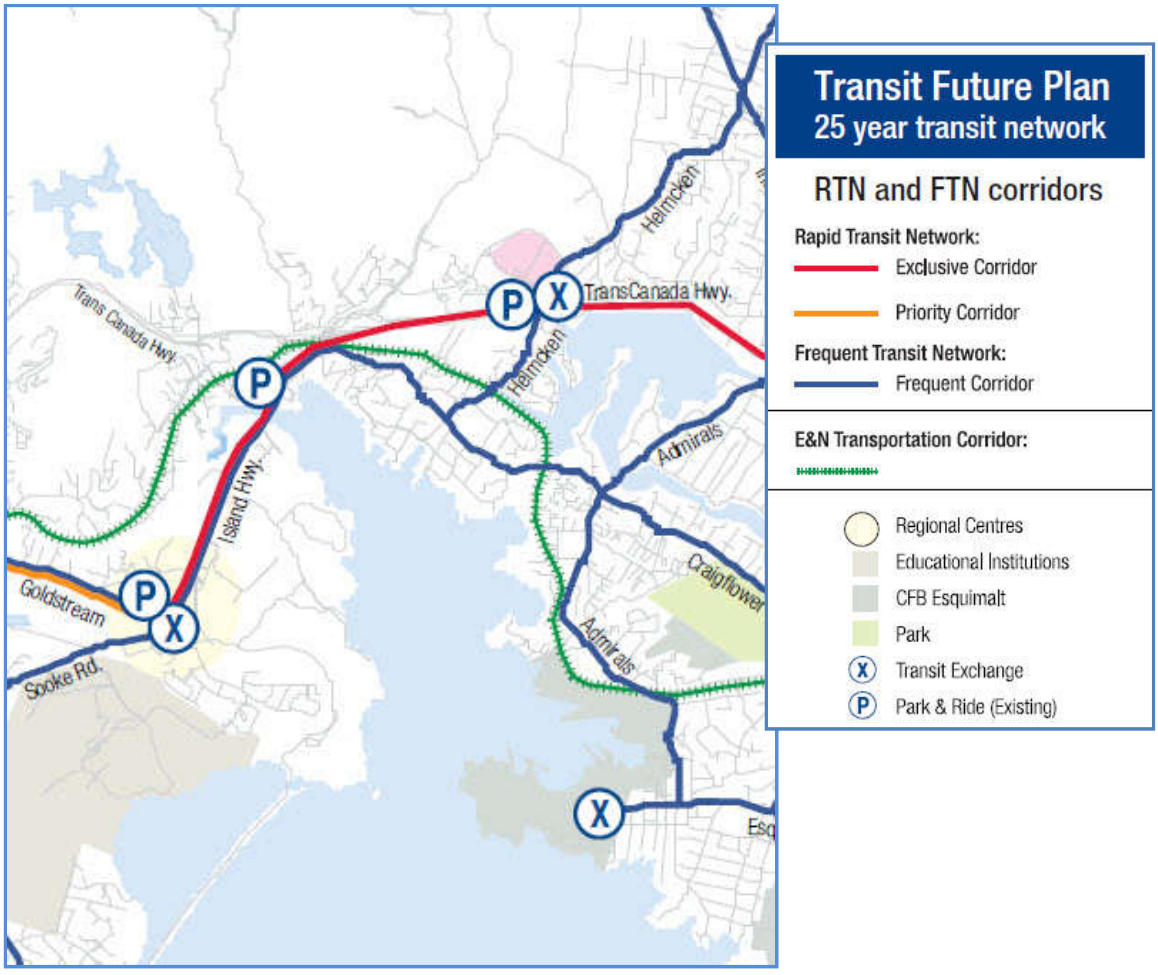
The graphic shows a hierarchy of networks similar to road hierarchies with the following components:

- **Rapid Transit Network (RTN)** is focused on high rider volumes between major regional destinations along key transportation corridors. Service headways are 15 minutes or better between 0700 – 2200 hours seven days a week utilizing exclusive or semi-exclusive rights-of-way to improve travel time and reliability and eliminate or significantly reduce the impact of general traffic on transit vehicles;
- **Frequent Transit Network (FTN)** provides medium to high density mixed land use corridors with service headways of 15 minutes or better between 0700 – 2200 hours seven days a week. The intent is to allow customers to travel at will without having to consult a transit schedule and this network would carry a large share of the regional ridership.

- **Local Transit Network (LTN)** is designed to connect neighbourhoods to local destinations and to the RTN and FTN serving various trip purposes. The service levels / vehicle types on such networks are based on demand.
- **Targeted Services (TS)** are complementary transit services not covered in the network services such as: interregional services, handyDART services, express service and rural para-transit.

The Transit Future Plan as it applies to the Town of View Royal is summarized in **Figure 12** for the RTN and FTN. With the development planned for the western portion of the community, any LTN components would be developed to connect to the FTN and RTN routes. Additionally, for transit to be viable in new neighbourhoods, it is important that new suburban developments are closely linked to transit planning principles. Neighbourhoods should include strong pedestrian connections, transit vehicle friendly road network design, bus stop and terminus considerations and high land use densities.

FIGURE 12: STRATEGIC DIRECTION OF BC TRANSIT IN TOWN OF VIEW ROYAL

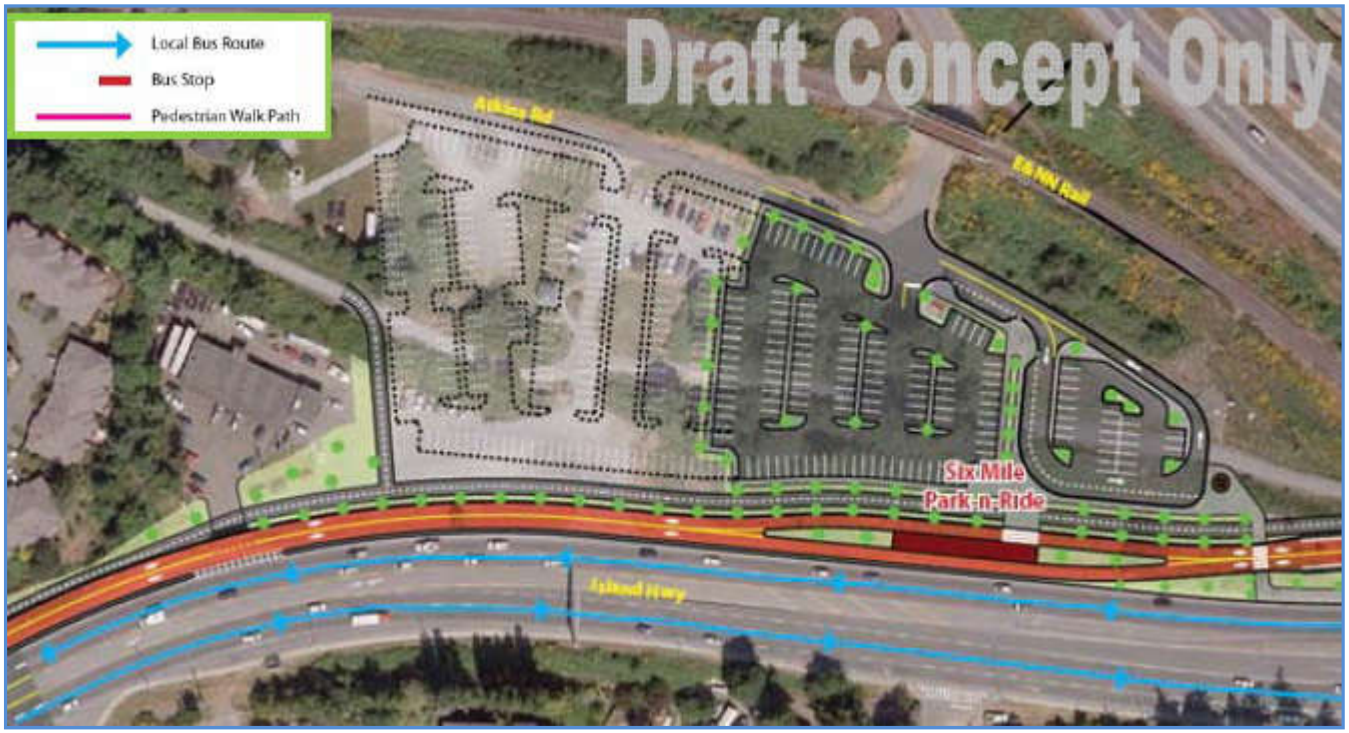


Within View Royal, some of the key recommendations in the Transit Future Plan are identified as priorities that are first steps to realize the vision for an improved transit system as listed below:

Priority #1 – Existing initiatives and network efficiencies (1–2 years)

- Identify and implement opportunities to expand Park & Ride capacity on the Westshore such as the conceptual design shown in Figure 13;
- Establish limited stop service on RTN corridors;
- Identify and implement transit priority opportunities with short implementation timelines;
- Invest in on-street amenities throughout the transit network; and
- Servicing new neighbourhoods by transit.

FIGURE 13: CONCEPTUAL DESIGN FOR PARK AND ROUTE



The potential development density changes in the Change Areas could alter the aforementioned transit routes / frequency. For example the need for new FTN corridors not shown in Figure 12 would be based on demand warrants considering the performance of the existing bus routes and by existing and emerging land uses. The future plans of BC Transit for service within the Town and in the Region are indicated in Exhibit B-1 of Appendix B. As such, it is recommended that the Victoria Regional Transit System (VRTS) be consulted with respect to future transit stop locations related to any road network changes and future high density development. It should also be noted that the Transit Future Plan supports the preservation of the E & N corridor for transportation purposes given that it's one of few transportation corridors directly connecting the Westshore, DND and Downtown.

The Admirals Road Transportation Study discussed in the previous section on cycling also could address transit considerations. Admirals Road is identified as a FTN corridor in the Transit Future Plan and will be used to provide key transit connections to McKenzie Avenue, University of Victoria (UVic), DND and the Westshore. The proposed FTN corridor has been identified as a high priority by the Township of Esquimalt.

HORIZON YEAR 2038 VEHICULAR TRAFFIC

The CRD TransCAD Travel Demand Forecast model was used to assess the forecast traffic demands at full build-out of the town lands. 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.

The regional model has recently been recalibrated and updated to reflect 2011 data, demographics, land use and transportation networks. A 2015 base model was developed using Traffic Analysis Zone (TAZ) population and employment figures prorated based on the 2011 demographics to forecast the demographics for the 2038 model and the transportation networks were updated. The model was run to generate AM and PM Peak Hour assignments and the results compared to the most recent CRD traffic counts.

The planned McKenzie interchange was coded into the road network consistent with the MoT&I design and 2018 demographics calculated for post-construction conditions using the 2011 base data and 2038 forecast demographics based on municipal OCP's and development expectations. The Horizon Year 2018 post-construction scenarios were run for Average Weekday AM and PM Peak Hours, the Horizon Year 2038 models were run for the same time periods, and the differences between the two Horizon Years were documented. The 2038 AM Peak Hour volumes and differences from the 2018 AM Peak Hour volumes are shown in Exhibits B-2 and B-3 of Appendix B. The same graphics for the PM Peak Hours are shown in Exhibits B-4 and B-5 respectively.

The TransCAD travel demand forecast model analysis shows that with full buildout; 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 in Exhibits B-2 and B-4 with the PM Peak Hour having significant sections of the TCH having a V/C ration over 1.25 as well as sections of Island Highway, Burnside Road West and Helmcken Road.

An examination of the differences in Exhibits B-3 and B-4 indicate historical trends of growth on Island Highway through View Royal south of the Colwood interchange are forecast to continue with two-way increases of 775 – to over 1,000 vehicles in the AM and PM Peak Hours respectively over the 20 year span from 2018 to 2038. 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.

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.

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 due to the heavy commuter traffic flows in the westbound direction. Some side street turning movements will be adversely impacted as signal priority is given to the major road through movements. The intersections of Island Highway – Craigflower Road / Admirals Road, Island Highway / Helmcken Road and Island Highway / Six-Mile Road will exceed their 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.

OTHER TRANSPORTATION CONSIDERATIONS – LIGHT RAPID TRANSIT

In 2011, due to the disrepair of the railroad, Via Rail and Southern Railway indefinitely suspended the Dayliner passenger service. An inspection of the tracks and structures owned by the Island Corridor Foundation (ICF) between Victoria and Nanaimo was conducted jointly in early April 2011 by Southern Railway of Vancouver Island (SRVI), who operates the line on behalf of the ICF, the BC Safety Authority, the BC MoT&I, and VIA. Following that inspection, SRVI informed VIA of its decision that significant infrastructure improvement would be required before passenger rail service could resume on this route.

A deal was signed in 2014 to resume E & N Rail service but the required rail repairs were put on hold in early 2015 by the provincial government who wanted to review the project in order to ensure that sufficient funding was available to cover repair costs. In June of 2015, CFAX radio station obtained a confidential report[7] using a Freedom of Information (FOI) request which states that the $15 M allocated for track improvements is not enough funding to "support the intended rail operation . . . in a safe manner." This is consistent with the article published by the Alberni Valley Times[8] on the costs of restoring the line to Port Alberni and cited a cost estimate for the main line of $124.7M contained in an assessment done by MoT&I in 2010. However, MoT&I did affirm $7M in funding to the ICF to support the E & N rail line in July of this year.

The E & N Rail corridor was considered as an option for the Rapid Transit Network (RTN) corridor from the West Shore to Downtown Victoria. During the alignment options analysis, it was excluded from further consideration primarily because it doesn't directly serve the significant all day travel movements occurring between the Westshore and destinations in Saanich. The selected Highway 1 alignment creates a convenient exchange point

7 "Government report into E & N Rail Line", CFAX Exclusive by Ryan Price, June 8, 2015

8 "Rail popular, but looks unlikely", Alberni Valley Times, by Eric Plummer, January 24, 2014

for transit services at Uptown Shopping Centre for those travelling to destination other than Downtown Victoria (Swartz Bay, UVic, etc.).

The E & N corridor, in addition to serving Victoria's Downtown, serves Department of National Defence (DND) a major employer in the Region and beyond. The employment destinations along this corridor better lend themselves to a commuter style service with demand heavily focused at peak times, rather than a RTN service that caters to an all-day every-day demand.

In July 2010, an assessment of a commuter rail service on the E & N corridor was released by the province and reported that significant investment is required to update the existing rail infrastructure and that the existing density and travel movements may not justify a commuter rail service. The report also identified that commuter rail could supplement RTN service but that investment in transit would still be required regardless of a commuter service on the E & N materializing. Some of the report findings were:

- Estimated base ridership scenario of 1,050 daily passengers by 2026. This could be higher under a Transit Oriented Design scenario where significant residential and employment densities are located near the stations. This is challenging in many areas where the corridor travels alongside and through water bodies and regional parks and lower density residential areas;
- The annualized value of capital costs and operations over a 25 year period would be $50–60 per passenger trip, where the operating cost portion would be $20–23 per passenger trip;
- The future success of the E & N corridor is dependent on increased population growth, Transit Oriented Development, other developments near the E & N corridor and an increase in the freight market.

While many recognize the advantages of an LRT line for the southern island, primarily for Westshore traffic commuting to DND, Esquimalt Graving Dock (EGD), UVic or the government precinct, it is difficult to justify the expenditure at this time for the reasons above.

It can be viewed as a more long-term option but to reach a point where this transportation mode is seen as a viable choice, much ground work needs to be done. Not only do corridor options need to be identified, but land use planning policies and land use / zoning bylaws which lead to transit-oriented design and transit-oriented communities also need to be developed and implemented. The continuation of present trends of single family dwellings being developed further and further from core employment centres reinforces the current context of not being able to justify light rapid transit while increasing commute costs and transportation-related pollutants.

FUTURE TRAFFIC VOLUMES ANALYSIS

The most recent 2011 CRD Household Origin – Destination Survey provided an overview of the general and trip making characteristics of the population of View Royal over the course of a 24 hour working weekday, which is summarized in the following Table 1 along with the same information for the Capital Regional District as a whole excluding the Gulf Island data.

TABLE 1: ORIGIN – DESTINATION DATA FOR THE CRD AND THE TOWN OF VIEW ROYAL[9]

CAPITAL REGION		CHARACTERISTICS	VIEW ROYAL	
	Number	**General**	**Number**	**% of CRD**
	344,889	Population	11,069	3.21%
	183,284	Employed	6,152	3.36%
	153,441	Households	4,787	3.12%
	175,631	Jobs in district	5,167	2.94%
	291,940	Actively travelled	9,685	3.32%
	240,474	Number of vehicles	8,070	3.36%
	200,111	Area (ha)	1,499	0.75%
	Ratio		**Ratio**	
	3.00	Daily trips / person	3.04	
	0.70	Vehicles / person	0.73	
	2.25	Number of people / household	2.31	
	6.74	Daily trips / household	7.03	
	1.57	Vehicles / household	1.69	
	1.19	Workers / household	1.29	
	1.72	Population density	7.38	
	0.88	Employment density	3.45	
	0.51	Jobs / person	0.47	
Per Cent	**Number**	**Household Size (# of persons)**	**Number**	**Per Cent**
32.8%	50,353	1 person	1,289	26.9%
36.7%	56,272	2 persons	1,889	39.5%
13.6%	20,866	3 persons	735	15.4%
16.9%	25,950	4 or more persons	874	18.3%
100.0%	153,441	Totals	4,787	100.0%
Per Cent	**Number**	**Households by Vehicle Availability**	**Number**	**Per Cent**
11.1%	17,095	0 vehicles	325	6.8%
43.3%	66,378	1 vehicle	1,727	36.1%
31.6%	48,481	2 vehicles	2,043	42.7%
14.0%	21,486	3 or more vehicles%	692	14.5%
100.0%	153,441	Totals	4,787	100.0%
Per Cent	**Number**	**Licensed Drivers**	**Number**	**Per Cent**
48.2%	123,822	Male	3,910	47.9%
51.8%	133,291	Female	4,257	52.1%
100.0%	257,113	Totals	8,167	100.0%
Per Cent	**Number**	**Trips To / From / Within District**	**Number**	**Per Cent**
1.3%	13,206	From District	21,066	45.2%
1.3%	13,483	To District	20,829	44.7%
97.5%	1,020,103	Within District	4,723	10.1%
100.0%	1,046,792	Total	46,618	100.0%
	1,033,922	**Trips made by residents**	33,658	3.3%

9 "2011 CRD Origin-Destination Household Travel Survey Daily Travel Characteristics Report", CRD by R. A. Malatest & Associates Ltd, Sept. 2012

While occupying less than 1 percent of the Region's area, most of the statistics relating to population, households, employment and travel are consistently in the range of 3 to 3.5 percent of regional totals although not surprisingly population and employment densities are significantly higher than regional values. There are some indications of higher values per person in terms of trips and vehicle ownership which is also evident in household data related to number of people or vehicles. One of the more prominent differences is in vehicles / household as 46.7% of the households in the Region have 2 or more vehicles while 67.2 % of the Town's households have this level of vehicle ownership.

To delve into trip-making patterns of the community, Table 2 shows the distribution of trips originating in View Royal, destined for View Royal or made completely within View Royal. These trips are presented by their primary mode of transportation as well as for the day and for peak AM and PM travel periods. What is not shown is the volume of trips that traverse the Town with origins and destinations in other parts of the Region.

TABLE 2: PRIMARY TRAVEL MODE FOR TRIPS FROM / TO / WITHIN THE TOWN OF VIEW ROYAL

Time Period	Primary Travel Mode	From District		To District		Within District		District Totals	
		Vols.	%	Vols.	%	Vols.	%	Vols.	%
24 Hours	Auto Driver	15,602	74.1%	15,359	73.7%	2,527	53.5%	33,488	71.8%
	Auto Passenger	3,660	17.4%	3,313	15.9%	595	12.6%	7,568	16.2%
	Transit	1,190	5.6%	1,288	6.2%	36	0.8%	2,514	5.4%
	Bicycle	203	1.0%	218	1.0%	30	0.6%	451	1.0%
	Walk	244	1.2%	364	1.7%	1,473	31.2%	2,081	4.5%
	Other	167	0.8%	288	1.4%	62	1.3%	517	1.1%
	Totals	21,066	100.0%	20,829	100.0%	4,723	100.0%	46,618	100.0%
AM Peak (6:00 to 8:59)	Auto Driver	3,240	68.5%	2,584	86.4%	516	54.5%	6,340	73.1%
	Auto Passenger	652	13.8%	73	2.4%	183	19.3%	908	10.5%
	Transit	569	12.0%	161	5.4%	0	0.0%	730	8.4%
	Bicycle	110	2.3%	62	2.1%	0	0.0%	172	2.0%
	Walk	58	1.2%	112	3.7%	248	26.2%	418	4.8%
	Other	100	2.1%	0	0.0%	0	0.0%	100	1.2%
	Totals	4,730	100.0%	2,992	100.0%	947	100.0%	8,669	100.0%
PM Peak (3:00 to 5:59)	Auto Driver	3,816	78.3%	4,668	67.5%	696	43.8%	9,180	68.6%
	Auto Passenger	783	16.1%	1,088	15.7%	186	11.7%	2,057	15.4%
	Transit	142	2.9%	679	9.8%	0	0.0%	821	6.1%
	Bicycle	93	1.9%	125	1.8%	30	1.9%	248	1.9%
	Walk	24	0.5%	221	3.2%	646	40.7%	891	6.7%
	Other	17	0.3%	131	1.9%	31	2.0%	179	1.3%
	Totals	4,875	100.0%	6,913	100.0%	1,589	100.0%	13,377	100.0%

Over the day, up to 97% of the trips to and from the Town are made by automobiles or transit. While non-motorized travel may increase slightly during peak travel periods and vehicle mode share may shift, motorized travel dominates trips from external origins and destinations. This is in sharp contrast to modal splits for trips within the Town where automobiles may account for the majority of trips, but the second highest mode is walking and by a large margin. Walking accounts for over 31 percent of internal trips over the day and at 40.7 percent in the PM period is not far behind the auto driver at 43.8 percent as the primary travel mode during that period. This is significantly higher than the regional average which ranges between 10 – 13 percent for the same time periods and comparable to other established areas within the Region such as Victoria, Sidney, Oak Bay and Esquimalt.

Trip purposes over the day and during the AM and PM peak periods for trips originating in or destined to the Town, as well as those occurring within the Town, are all shown in Table 3. The primary trip purposes for all three time periods are similar for the Town and the Region with 'Return Home', 'Work', 'Shopping' and 'Recreation / Social' being the top four trip purposes over the day. During the AM peak period, the main trip purposes are 'Work', 'Pick-up / Drop-off' and 'Other School' while they were 'Return Home', 'Shopping' and 'Recreation / Social' for the PM peak period. These peak period changes reflect the impact of the trips to work and returning home as well as more discretionary trips purposes such as shopping, recreational or personal business, which can be scheduled to occur outside peak traffic periods.

TABLE 3: TRIPS BY TRIP PURPOSE FROM / TO / WITHIN THE TOWN OF VIEW ROYAL

Time Period	Trip Purpose	From District		To District		Within District		District Totals	
		Vols.	%	Vols.	%	Vols.	%	Vols.	%
24 Hours	Work	4,280	20.3%	3,395	16.3%	496	10.5%	8,171	17.5%
	Post-Secondary School	241	1.1%	65	0.3%	0	0.0%	306	0.7%
	Other School	666	3.2%	170	0.8%	117	2.5%	953	2.0%
	Personal Business	1,854	8.8%	1,942	9.3%	224	4.7%	4,020	8.6%
	Recreation / Social	2,445	11.6%	1,858	8.9%	329	7.0%	4,632	9.9%
	Dining / Restaurant	715	3.4%	432	2.1%	143	3.0%	1,290	2.8%
	Shopping	2,402	11.4%	1,917	9.2%	783	16.6%	5,102	10.9%
	Pick-up / Drop-off	1,681	8.0%	667	3.2%	751	15.9%	3,099	6.6%
	Return Home	6,672	31.7%	10,274	49.3%	1,880	39.8%	18,826	40.4%
	Other	110	0.5%	110	0.5%	0	0.0%	220	0.5%
	Totals	21,066	100.0%	20,829	100.0%	4,723	100.0%	46,618	100.0%
AM Peak (6:00 to 8:59)	Work	2,459	52.0%	2,057	68.8%	214	22.6%	4,730	54.6%
	Post-Secondary School	84	1.8%	65	2.2%	0	0.0%	149	1.7%
	Other School	648	13.7%	170	5.7%	117	12.4%	935	10.8%
	Personal Business	169	3.6%	199	6.7%	59	6.2%	427	4.9%
	Recreation / Social	285	6.0%	153	5.1%	0	0.0%	438	5.1%
	Dining / Restaurant	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Shopping	80	1.7%	33	1.1%	69	7.3%	182	2.1%
	Pick-up / Drop-off	721	15.2%	105	3.5%	358	37.8%	1,184	13.7%
	Return Home	261	5.5%	196	6.6%	130	13.7%	587	6.8%
	Other	23	0.5%	15	0.5%	0	0.0%	38	0.4%
	Totals	4,730	100.0%	2,992	100.0%	947	100.0%	8,669	100.0%
PM Peak (3:00 to 5:59)	Work	296	6.1%	167	2.4%	59	3.7%	522	3.9%
	Post-Secondary School	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Other School	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Personal Business	267	5.5%	276	4.0%	15	0.9%	558	4.2%
	Recreation / Social	436	8.9%	322	4.7%	209	13.2%	967	7.2%
	Dining / Restaurant	25	0.5%	72	1.0%	73	4.6%	170	1.3%
	Shopping	762	15.6%	746	10.8%	278	17.5%	1,786	13.4%
	Pick-up / Drop-off	349	7.2%	200	2.9%	96	6.0%	645	4.8%
	Return Home	2,740	56.2%	5,130	74.2%	859	54.1%	8,729	65.3%
	Other	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	Totals	4,875	100.0%	6,913	100.0%	1,589	100.0%	13,377	100.0%

In summary, the household statistics of the Town tend to be a bit higher than Regional figures for number of people, vehicles, daily trips and workers while the travel patterns of the Town of View Royal residents are comparable to those of the Region as a whole. However, the issues the Town face related to traffic volumes are with the trips that have origins and destinations external to the Town as View Royal residents only account for

3.26 per cent of the trips made by residents of the CRD. This is why the focus is on the regional model for an overview of the regional trips and the neighbourhoods and Change Areas of the Town to identify localized pressure on the collector level road facilities in the road network.

TRAFFIC ZONES / CHANGE AREAS

As noted earlier, the current OCP focuses on the eight neighbourhoods or planning areas that make up their community as illustrated in Figure 2. These neighbourhoods have various roles within the community as gateways, locations for identified neighbourhood centres, residential areas, a town centre, significant community facilities or transportation infrastructure. They articulate a long term vision for the neighbourhoods and community and also highlight sub-areas where significant changes were forecast to occur. While the zoning represents a more current view of the community, both the OCP and zoning can be contrasted to previous versions to highlight these forecast changes in the direction of the community with regard to types and densities of land uses within the neighbourhood sub-areas of the Town and translate these changes into impacts on the local transportation infrastructure.

However, the initial Transportation Master Plan (TMP) was based on fourteen Traffic Analysis Zones (TAZs) developed by the Capital Regional Districts as part of their transportation modeling function which are illustrated in Exhibit B-6 of Appendix B. Fortunately, the TAZs and neighbourhoods share common boundaries and as such the TAZ-based data can be aggregated to the neighbourhood level.

While the neighbourhoods are described in greater detail in following sections, the focus of this technical update of the TMP is on the Change Areas which are summarized below and highlighted in Exhibit A-1.

- Mill Hill

  The Mill Hill Residential Area is a unique Change Area in View Royal. Unlike the other Change Areas that support mixed-use development, Mill Hill is envisioned as a mixed-density residential enclave, well connected to surrounding residential streets and parkland. Development in this area is characterized by new residential development, and will continue to accommodate a variety of housing forms, including detached residential and townhomes. Development should continue to be clustered and significant parkland dedication pursued to ensure the protection of the exquisite natural setting. Public space and transportation connections should be planned to ensure the safety and comfort of families and small children.

- Lakeside Village

  The Lakeside Village Neighbourhood Centre is located on the east side of Six Mile Road between Nursery Hill Drive and the Trans-Canada Highway. Uses at Lakeside Village include apartment dwellings and ground-level commercial. The Lakeside Village incorporates a small, walkable activity hub and provides amenities for the newer residential developments across Six Mile Road and Chilco Road, as well as visitors to Thetis Lake Regional Park.

- Western Gateway Corridor

  The Western Gateway Community Corridor includes all of the land fronting the Island Highway in the Wilfert Neighbourhood, and stretches from the City of Colwood boundary to Parsons Bridge. This is

the western gateway to View Royal and a well-traveled section of the Island Highway. The vision for the Western Gateway Community Corridor includes intensive commercial of a scale appropriate to a major arterial roadway, and designed to create an attractive activity hub. Commercial uses may include high tech, research and development, light manufacturing uses and offices. Buildings should be planned to relate to and enhance the street-level environment, and connect with surrounding residential areas, trails, bike routes and transit.

- View Royal Transit Exchange / Atkins Neighbourhood Centre

The Atkins Neighbourhood Centre is planned for the area between the Trans Canada Highway and Island Highway where the E & N Rail corridor and Galloping Goose Regional Trail cross. A regional rapid transit exchange is planned for this area and would be the stimulus for the neighbourhood centres. More than just a park and ride facility, it would be a place to live and work and land uses may include commercial and attached housing designed to be a transit oriented development as it would be oriented to the Island Highway, E&N and the Galloping Goose.

- Burnside Corner

The Burnside Corner Neighbourhood Centre is planned and zoned for the area north east of the Burnside Road-Watkiss Way intersection in the Burnside Neighbourhood. The site is close to the hospital, the Trans-Canada Highway and the Galloping Goose Regional Trail, and has good visibility from both Watkiss Way and Burnside Road. The Neighbourhood Centre is envisioned to include a park; small format, ground level commercial; and a mix of attached housing forms, including townhouses, apartments and assisted living units.

- Town Centre (Fort Victoria)

The visioning process for the OCP revealed a strong desire to plan for a central community gathering place to be the civic and cultural heart of View Royal. More specific discussion of this idea demonstrated the Town's support for the development of a new Town Centre to serve the entire community and potentially create a regional draw.

The Fort Victoria RV Park site is identified in the OCP as the preferred location for the View Royal Town Centre. This site was selected by the community for its large land area; central location; and excellent proximity to transportation infrastructure, including the planned regional rapid transit corridor, two regional highways, two regional trails, and the E & N Rail corridor. In articulating a vision for this site, the community has consistently described compact, high-density, transit-oriented development with a diverse mix of residential, commercial, civic and cultural uses. The community has also expressed the need for the Town Centre to include a great public gathering space, a transit station or exchange, connections to the neighbourhoods in north and south View Royal, and a strong link with View Royal Park.

The OCP goals and policies support the development of the Fort Victoria RV Park as the View Royal Town Centre if and when the land becomes available for this use. It is understood that current conditions do not allow for immediate planning, but that Town planning decisions will recognize the Community Vision and not preclude the eventual development of the Town Centre.

- Harbour-Helmcken Corridor

The Harbour-Helmcken Community Corridor is located along the Island Highway between the Helmcken and Harbour neighbourhoods. This section of the Island Highway has historically supported small-format commercial uses combined with a mix of housing. New housing and limited mixed-use development will be encouraged to concentrate around the intersection of Island Highway and Helmcken Road and will be restricted to lots fronting the Island Highway. The area around the intersection is envisioned to be a small, walkable activity hub with supporting residential land uses extending east and west. The character and scale of the Harbour-Helmcken Community Corridor will need to respond to shallow lot sizes, limited parking and the valued character of adjacent residential areas. This Plan envisages the remainder of the properties outside the Helmcken/Island Highway intersection as a mix of residential types, including townhouses and low-rise apartments.

- Hospital

The Hospital Neighbourhood Centre is planned for the vacant land immediately west of the Victoria General Hospital. New development on this site is intended to create and support synergies between the hospital, planned rapid transit stop, Galloping Goose trail, and existing and future housing. Uses may include attached housing and hospital-related commercial such as offices, accommodations and restaurants. Improving connections to trails and transit will take precedent over providing facilities for cars. As is the case with the Atkins Centre, this area is planned to be a vibrant and appealing activity hub rather than a park and ride.

- Northern Gateway Corridor

The Northern Gateway Community Corridor includes the lots fronting Helmcken Road between Burnside Road and the Trans-Canada Highway, and a few lots on Watkiss Way on the east side of the Helmcken intersection. The corridor has experienced incremental infill development in the form of higher density housing. A continuation of residential infill that will bring more housing closer to the hospital and revitalize underutilized land is envisioned for the Northern Gateway Community Corridor. Ancillary commercial and hospital-related uses will also be encouraged as part of mixed-use projects closer to the Trans-Canada Highway and the larger parcels near Watkiss Way.

- Thetis Cove

The Thetis Cove Neighbourhood Centre is planned and zoned for the largest undeveloped waterfront site in View Royal, at the end of Hallowell Road in the Craigflower Neighbourhood. Development at Thetis Cove is intended to take advantage of waterfront views, shoreline access and adjacencies to Portage Park and the E & N Rail Trail. New attached housing and supporting commercial uses will complement and support the Admirals Walk Neighbourhood Centre. Importantly, the development of the Thetis Cove Neighbourhood Centre will create new publicly accessible park and waterfront areas for walking, sitting and gathering.

- Eastern Gateway Corridor

The Eastern Gateway Community Corridor Neighbourhood Centre encompasses the existing Admirals Walk, Nelson Square and Canadian Tire shopping centres. The area is already a busy activity hub in the community, and is envisioned to continue as such into the future.

Although the land use pattern is planned to remain the same, there are many opportunities to improve this area. These include enhancing its presence as a gateway; public space and streetscape upgrades that improve the area's aesthetic appeal and street-level comfort; stronger and safer pedestrian and cycling connections; and new connections to Thetis Cove. Over time, there may be additional opportunities to redevelop surface parking, intensify commercial uses and add residential uses.

While the initial focus was on the above areas, due to the time difference between the development of the OCP and the technical update of the OCP, some of the above Change Areas have been largely completed and others have surfaced. As such the transportation impact of the Change Areas is calculated along with the forecast change for the neighbourhood as a whole.

NEIGHBOURHOOD / CHANGE AREA TRIP GENERATION

In order to develop forecasts for present and future vehicular trips generated by the land uses in the Town, it is necessary to determine the current land uses and their degree of utilization as well as the vision for future land uses. Current land uses were detailed in the Zoning Map of Land Use Bylaw #35 (Schedule 1) when this project commenced but Zoning Bylaw #900 was adopted in 2014 which was subsequently used for defining current land uses and development potential. The built environment for the various land use designations within the various traffic zones and neighbourhoods was documented to establish a baseline of existing utilization and the longer term vision for the community is articulated in the OCP and the associated land uses as shown in the OCP Land Use Designations Map (Schedule L of Official Community Plan Bylaw #811).

The methodology utilized for the initial TMP was replicated for this update. The areas of all the current land uses in the Zoning Map were measured for each of the fourteen Traffic Area Zones (TAZs). Information from Land Use Bylaw #900 with respect to zoning details such as whether the land is serviced, number of stories, minimum lot size, allowable densities, minimum floor areas / unit and maximum lot coverage or Floor Space Ratio (FSR) was used to calculate either the potential number of residential units, Gross Floor Area (GFA) or Gross Leasable Area (GLA) for each land use in each TAZ.

With the number of residential units, GLA or GFA for each TAZ, Average Weekday AM and PM peak hour trips rates from the Institute of Transportation Engineers (ITE) "Trip Generation: An ITE Informational Report" (9th Edition, 2012) were used for each land use category and total entering and exiting trips for both peak hours calculated. This was done for all the land uses shown in the Zoning Map of Land Use Bylaw #900, which assumes full build-out of Town lands. However in order to determine the current traffic volumes, the level or intensity of existing land uses must be documented which in most cases meant using visual inspections of existing development either in the field or using online street view applications or using aerial photography to forecast current vehicular traffic volumes for each TAZ. The differences in these two TAZ trip calculations provides an overview of how close the Town is to full build-out based on the land uses detailed in Land Use Bylaw #900.

The OCP land use designations were then used to forecast trip volumes associated with this long-term vision of the community as it is the Town's vision for land uses in 2038 – a view some 25 years into the future – and it assumes full build-out. The differences from the OCP trip generation and the current trip generation was then

derived to highlight the changes in trip generation and resulting traffic volumes anticipated over the next 20+ years.

While the methodology is similar to what was used previously there was one difference in terms of how the trips forecast to be generated by the OCP land use designations. In the prior OCP, land uses tended to be defined in terms of recommended densities whereas the current OCP uses Floor Space Ratios. This provides Council some flexibility in analyzing future proposed developments to ensure that it is consistent in character and form for the Town's neighbourhoods as development progresses over time.

One significant change is the Town, recognizing the need for affordable housing to support residents at various stages of life, has approved secondary suites in six land uses. These land uses are:

R-1	One family residential (large lot)	R-2	Duplex Residential (Detached Only)
R-1A	One family residential	A-1	Rural
R-1B	One family residential	A-2	Pike Lake Rural Residential

While the secondary suites can be factored into the trips generated by the land uses in the current Zoning or OCP land uses, it is difficult to estimate the number of existing secondary suites. It is known that there are currently 400 permitted suites but the amount of secondary suites without permits is unknown. Not knowing the distribution of the 400 permitted suites, or having an estimate of the number without permits, meant that this aspect could not be incorporated into the analysis at this time.

Detailed descriptions of the Town of View Royal's neighbourhoods are provided in the following sections and should be viewed in the context of the current OCP Land Use designations and Zoning Map which are provided as Exhibits B-7 and B-8 in Appendix B respectively.

ATKINS NEIGHBOURHOOD

The Atkins Neighbourhood as shown in Figure 14 is bounded by Millstream Creek and Highway 14 to the south and east, the Trans Canada Highway (TCH) and Thetis Park to the north, and View Royal's municipal border with Langford to the west. This neighbourhood is primarily residential as shown in Table 4.

While the overall areas for the various land uses show little change, in fact there is proposed to be significant changes in the Rural and Residential land uses in this neighbourhood. These changes include the A-1 land southwest of the proposed CD-19 development being rezoned to R as well as the A-1 lands on each side of Atkins Road east of Six Mile Road being rezoned to Mixed – Residential which would be a combination of small lot detached homes, town houses and low-rise apartments. Additionally, the land south of Atkins Road between Swordfern Road and Anya Lane are proposed to be rezoned from R-1 to Rural with a density of 1 dwelling unit per 10 hectares which is lower than current densities for agricultural or rural lands.

The Change Areas which were identified in this neighbourhood in the OCP were Lakeside Village, Mill Hill residential and the Atkins Neighbourhood Centre. A more detailed description of the proposed developments and their current status are provided below.

FIGURE 14: ATKINS NEIGHBOURHOOD AND CHANGE AREAS

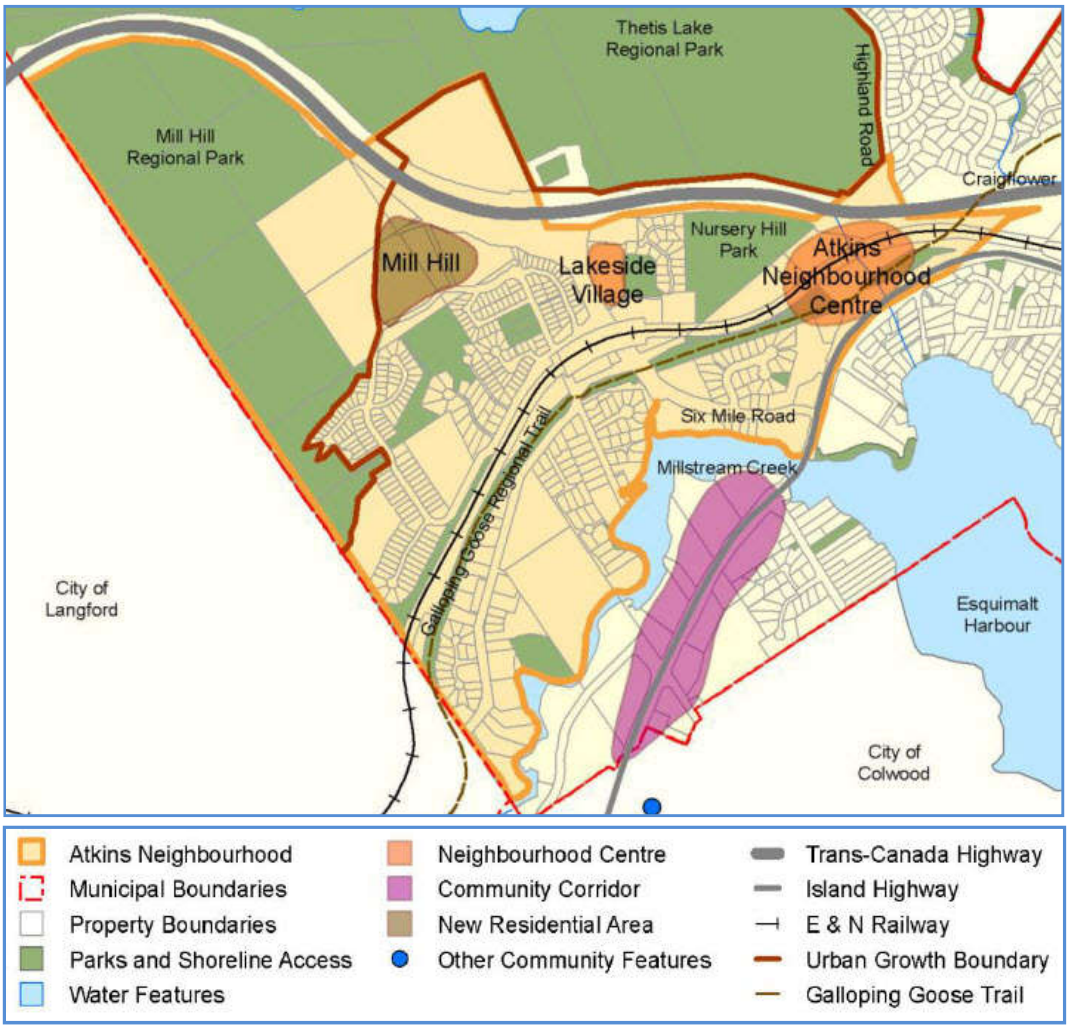


TABLE 4: AREAS IN ATKINS NEIGHBOURHOOD BY LAND USE CATEGORY FOR CURRENT ZONING AND 2012 OFFICIAL COMMUNITY PLAN

Major Land Use Types	AREAS (m2)		
	Current Development / Zoning	Current Official Community Plan	Difference
Agricultural / Rural	83,861	191,558	107,697
Residential	390,277	335,791	-54,486
Commercial	14,093	14,093	0
Comprehensive Developments	162,046	188,947	26,901
Industrial	0	0	0
Public Use	363,523	283,411	-80,112
Atkins Totals	1,013,800	1,013,800	0

Lakeside Village was proposed as a mixed use development with a total of 250 residential units and 1532.9 m^2 (16,500 ft^2) of commercial land uses as shown in Table 5. Sixteen of the single family dwelling units have been zoned to permit secondary suites. At this time the commercial component has been completed but approximately 100 of the residential units have not been constructed. As a result there will be an increase in traffic in this area as quantified in Table 6.

TABLE 5: TYPES OF LAND USES AND NUMBER OF UNITS OR AREAS IN LAKESIDE VILLAGE DEVELOPMENT

CODE	ITE LAND USE	SIZE (m2)	SIZE (ft2)	# of UNITS
210	Single Family Dwelling Unit			23
220	Secondary suites (apartment)			16
230	Residential Condominium / Townhouse			75
231	Low-Rise Townhouses			152
820	Shopping Centre	1,532.9	16,500	

TABLE 6: AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY LAKESIDE VILLAGE DEVELOPMENT CURRENTLY AND AT COMPLETION

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	29	77	106	98	72	170
OCP Trips	47	129	176	145	107	252
Difference	18	52	70	47	35	82

The Mill Hill development indentified in the OCP was proposed as an initial 64 unit residential development with a second phase of 37 units and each parcel being permitted to have one secondary suite as shown in Table 7. The ability to have a secondary suite was incorporated into the transportation impact by increasing peak hour trip rates by 50% to reflect the additional unit and associated incremental travel demand. At this time the development has been completed and the traffic associated with this development is illustrated in Table 8.

TABLE 7: TYPE OF LAND USE AND NUMBER OF UNITS IN MILL HILL DEVELOPMENT

CODE	ITE LAND USE	SIZE (m2)	SIZE (ft2)	# of UNITS
210	Single Family Dwelling Unit			101

TABLE 8: AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY MILL HILL DEVELOPMENT

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	12	37	49	41	24	65
OCP Trips	19	57	76	64	37	101
Difference	7	20	27	23	13	36

The third Change Area identified in this neighbourhood is the Atkins Neighbourhood Centre located to the southwest of the intersection of the Trans Canada Highway, Highway 1A, the E & N Trail / Rail and Galloping Goose Regional Trail. It is this proximity to such a major node of transportation utilities which has also seen this node identified as a potential station for future LRT use in the initial Transportation Master Plan for the Town of View Royal and as a potential Park & Ride facility by BC Transit. The current OCP recognizes that this transportation infrastructure can facilitate the creation of a transit-oriented Neighbourhood Centre including commercial and attached housing designed to complement and support transit and trail use.

At this time, there is no integrated approach describing how this Neighbourhood Centre can be matured with the consultation and cooperation of many stakeholders. Details as to the amount and types of land uses and their associated transportation impacts are not available at this time to allow for the estimation of such a Centre's impact on the local transportation infrastructure or determine the requirements for incremental or new facilities.

Of the total trips forecast to be generated by the land uses in the Atkins Neighbourhood shown in Table 9, there is a significant difference between what is being generated now and what would be generated by the land uses delineated in the current OCP. The major land uses that will generate this additional traffic include:

- Completion of Lakeside Village;
- Completion of the Mill Hill residential development;
- Construction of the proposed mixed residential Comprehensive Development north of Chilco Road at Cheam Road; and
- Build-out of the additional lands currently zoned as R-1A, RM-1 and R-U.

TABLE 9: TOTAL AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY ATKINS NEIGHBOURHOOD LAND USES

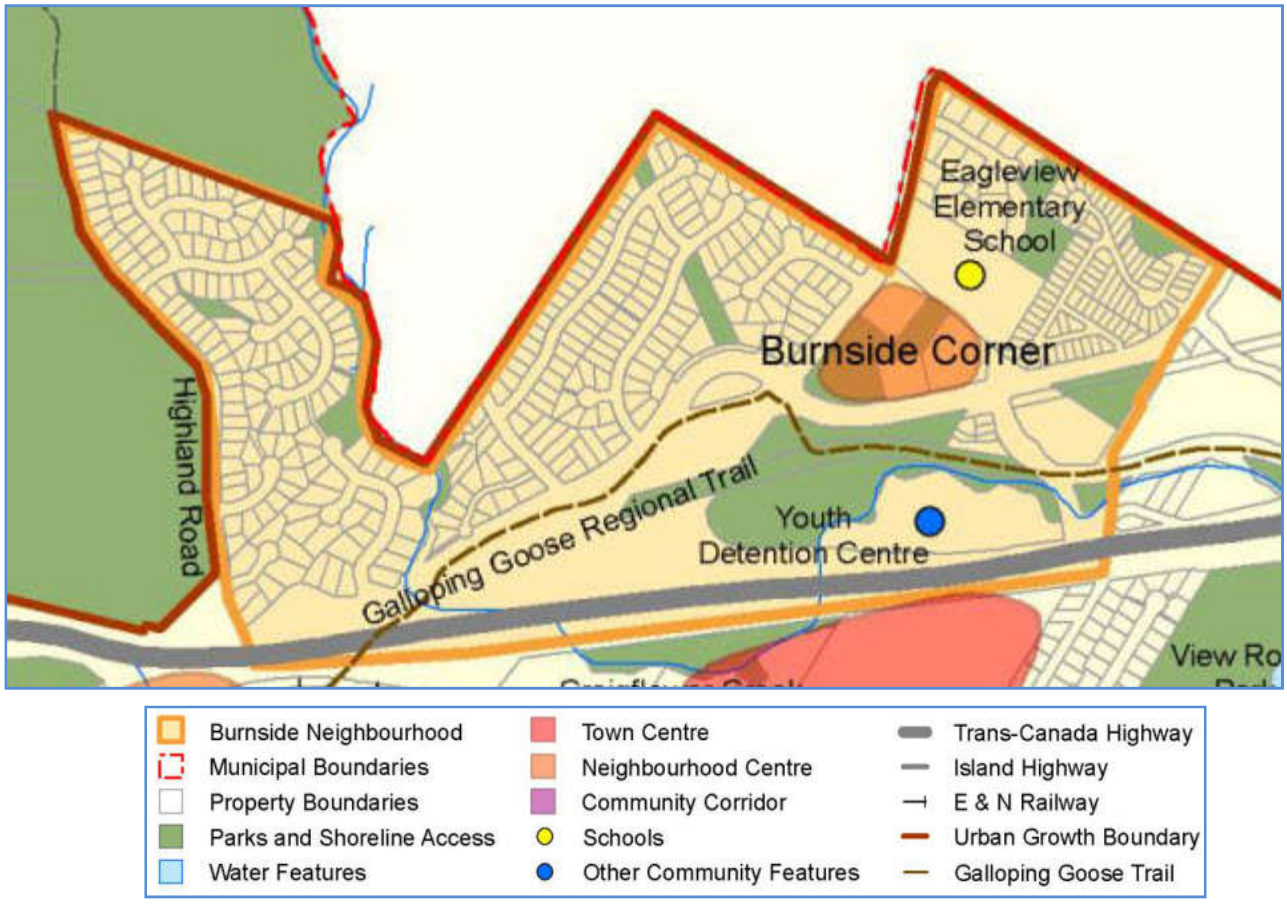
NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	363	604	967	735	580	1,315
OCP Trips	432	842	1,274	973	720	1,693
Difference	69	238	307	238	140	378

It should also be noted that the methodology applied to calculate trips generated by various land use categories uses the minimum lot size specified in the Land Use bylaw. This produces a maximum number of lots and associated traffic generated, but it will also be a conservative number as the existing larger lot sizes in stable neighbourhoods means that these maximums are not likely to ever occur and certainly not in the foreseeable future. The primary land use category where this could occur would be R-1 which currently represents 26% of the land uses in this neighbourhood. In the OCP, this percentage would drop to 21% which is still the largest land use in the area except for public parks.

BURNSIDE NEIGHBOURHOOD

The Burnside Neighbourhood is bounded by the District of Saanich to the north, Watkiss Way / Talcott Road / Game Road to the east, Trans Canada Highway to the south and Thetis Lake Regional Park to the west as shown in Figure 15.

FIGURE 15: BURNSIDE NEIGHBOURHOOD AND CHANGE AREAS



The predominant land uses are residential, public use and comprehensive developments as shown in Table 10. The majority of the existing residential land use is in single family dwelling units with a small amount of low-density attached residential. There are also some residential units in the Comprehensive Development of Burnside Corner but to date only the 79 townhouse / condominiums have been constructed while the assisted living units and retail space is pending.

The major land use in Public Use category is Parks / Recreation but it also includes the Eagle View Elementary School plus the Victoria Youth Custody Services facility.

TABLE 10: AREAS IN BURNSIDE NEIGHBOURHOOD BY LAND USE CATEGORY FOR CURRENT ZONING AND 2012 OFFICIAL COMMUNITY PLAN

Major Land Use Types	AREAS (m2)		
	Current Development / Zoning	Current Official Community Plan	Difference
Agricultural / Rural	1,061	0	-1,061
Residential	257,333	258,394	1,061
Commercial	2,620	2,620	0
Comprehensive Developments	63,098	60,944	-2,154
Industrial	0	0	0
Public Use	118,312	120,466	2,154
Burnside Totals	442,424	442,424	0

The single Change Area for this neighbourhood identified in the current OCP was Burnside Corner. Details of this Comprehensive Development are provided in Table 11. To date only the 79 Residential Condominium / Townhouses has been built and the impact of the current trips as well as those trips forecast for the complete build-out of this development are shown in Table 12.

TABLE 11: TYPES OF LAND USES AND NUMBER OF UNITS OR AREA IN BURNSIDE CORNER DEVELOPMENT

CODE	ITE LAND USE	SIZE (m2)	SIZE (ft2)	# of UNITS
230	Residential Condominium / Townhouse			21
230	Residential Condominium / Townhouse			58
254	Assistend Living			106
820	Commercial / Retail	400.0	4,306	

TABLE 12: AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY BURNSIDE CORNER DEVELOPMENT CURRENTLY AND AT COMPLETION

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	6	29	35	28	14	42
OCP Trips	23	39	62	60	49	109
Difference	17	10	27	32	35	67

This increase in trips is the main component of the increase vehicular trips forecast for the Burnside neighbourhood as illustrated in Table 13 as the neighbourhood is quite stable with no large scale changes planned.

TABLE 13: TOTAL AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY BURNSIDE NEIGHBOURHOOD LAND USES

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	143	310	453	307	188	495
OCP Trips	215	529	744	554	340	894
Difference	72	219	291	247	152	399

CRAIGFLOWER NEIGHBOURHOOD

The Craigflower Neighbourhood is bounded by Portage Inlet to the north, Admirals Road to the east, Hallowell Road to the south and the E & N Rail corridor / Thetis Cove to the west as shown in Figure16.

FIGURE 16: CRAIGFLOWER NEIGHBOURHOOD AND CHANGE AREAS

There is a variety of land uses in this neighbourhood ranging from single-family to townhouse and medium density apartments to extensive retail / commercial development. As well, there are significant institutional / public uses land uses with Shoreline School, Craigflower Manor and park / recreation areas as summarized in Table 14.

TABLE 14: AREAS IN CRAIGFLOWER NEIGHBOURHOOD BY LAND USE CATEGORY FOR CURRENT ZONING AND 2012 OFFICIAL COMMUNITY PLAN

Major Land Use Types	AREAS (m2)		
	Current Development / Zoning	Current Official Community Plan	Difference
Agricultural / Rural	0	0	0
Residential	217,721	217,721	0
Commercial	21,508	21,508	0
Comprehensive Developments	106,089	106,089	0
Industrial	0	0	0
Public Use	65,917	65,917	0
Craigflower Totals	411,235	411,235	0

The main Change Area in this neighbourhood identified in the OCP is the proposed Thetis Cove development which is to have the land uses shown in Table 15. At present, time none of these land uses have been developed so it does not currently generate any vehicular trips but at full build-out the forecast trips associated with this development are summarized in Table 16.

TABLE 15: TYPE OF LAND USES AND NUMBER OF UNITS OR AREA IN THETIS COVE DEVELOPMENT

CODE	ITE LAND USE	SIZE (m2)	SIZE (ft2)	# of UNITS
210	Single Family Dwelling Unit			20
230	Residential Condominium / Townhouse			215
231	Low-Rise Townhouses			15
820	Shopping Centre	2,787.1	30,000	

TABLE 16: AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY THETIS COVE DEVELOPMENT CURRENTLY AND AT COMPLETION

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	0	0	0	0	0	0
OCP Trips	41	108	149	147	107	254
Difference	41	108	149	147	107	254

Table 17 compares the total number of vehicular trips being generated by current land uses and the vehicular volumes forecast to be generated at full build-out of the neighbourhood. This neighbourhood is quite stable and as such the trips associated with the Thetis Cove development represent the majority of the incremental trips that could be generated by this neighbourhood.

TABLE 17: TOTAL AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY CRAIGFLOWER NEIGHBOURHOOD LAND USES

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	402	407	809	795	733	1,528
OCP Trips	467	624	1,091	1,048	893	1,941
Difference	65	217	282	253	160	413

As noted earlier, some of this potential increase in trips is due to calculating vehicular trips based on minimum lot sizes for various land uses. Using this approach for the existing residential land uses north of Shoreline School on Christie Point indicates that the zoning allows for a higher number of units than currently exist and as such forecast additional traffic for these incremental units. While there are indications that there may be some redevelopment of this area, no information on a development was available at the time of this analysis to forecast any changes in the trip generation but that could be done when information is provided. Therefore any incremental traffic from this neighbourhood will be due to the use of minimum lots sizes and the Thetis Cove development. At the same time it is noted that there is increased development activity in the Esquimalt Lands south of Hallowell Road which can also affect capacity of the Admirals Road and Hallowell Road corridors.

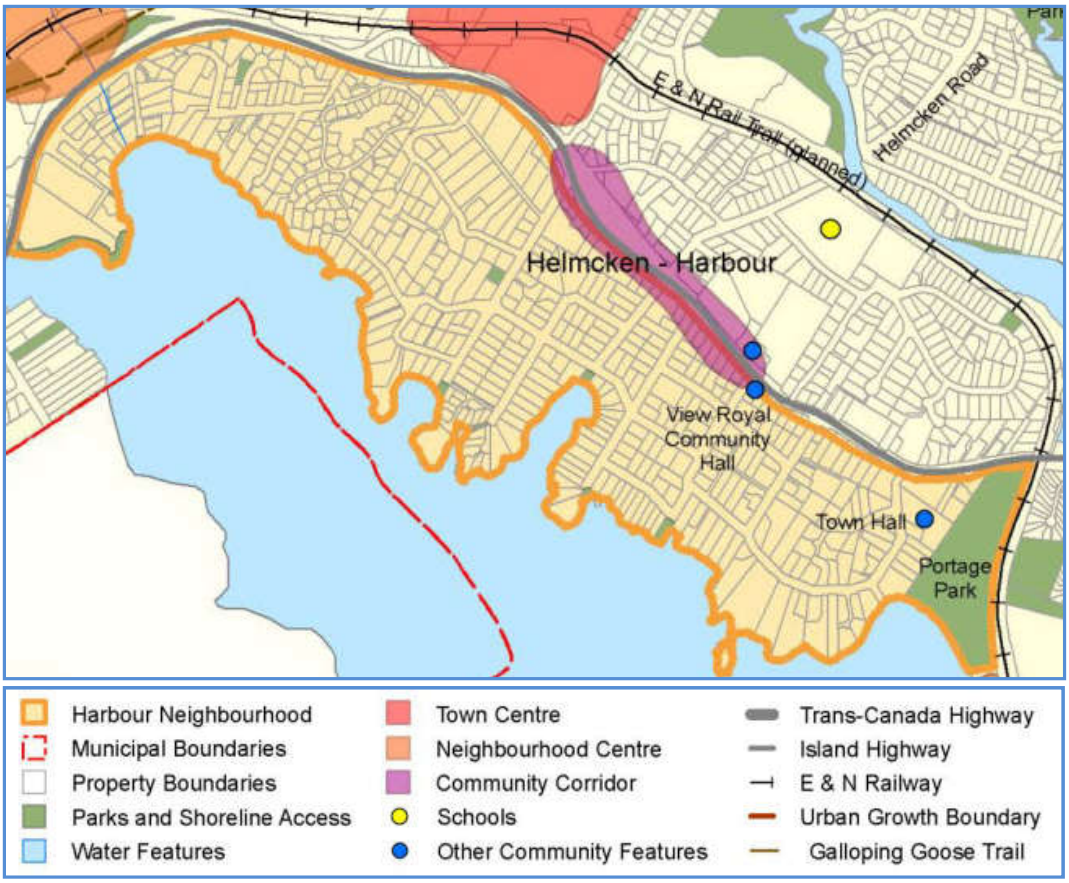
As mentioned in the OCP, the Craigflower Neighbourhood does have the Thetis Cove Change Area as well as the Eastern Gateway Community Corridor. While this neighbourhood can be considered stable in terms of changing land uses, it is also a primary access to the community and a significant commuter route for residents of the Westshore communities to the Department of National Defence and Esquimalt Graving Dock land uses to the south in Esquimalt.

The Admiral Road Corridor has been analyzed numerous times over the years in response to various land use proposals or in the interest of trying to identify a long term vision for this transportation corridor. However it still has a variable cross section of 2 lanes south of Hallowell Road to a five-lane cross-section at its intersection with Craigflower Road / Island Highway. It does not have designated bicycle lanes or consistent pedestrian facilities on the east side of Admirals Road. While progress on the E & N Rail Trail will provide increased cycling capacity along portions of this corridor, there remains a need to improve pedestrian and cycling infrastructure as well as the streetscape in this gateway.

HARBOUR NEIGHBOURHOOD

The Harbour Neighbourhood, as shown in **Figure 17**, is bounded by the Island Highway to the north and west, the E & N Rail corridor to the east and Esquimalt Harbour to the south. The primary land use is residential with some commercial / retail land uses fronting on Island Highway and the primary Public Use areas are the municipal hall and Portage Park in the eastern portion of the neighbourhood and the CRD Water Services in the western portion.

FIGURE 17: HARBOUR NEIGHBOURHOOD AND CHANGE AREAS



The land use areas for this neighbourhood are shown in **Table 18**. Of the commercial land uses, all of which are fronting on the south side of Island Highway, many are located adjacent to the Island Highway / Helmcken Road intersection which is consistent with the OCP which shows this area as being designated for Neighbourhood Mixed Use (NMU). The OCP defies NMU as commercial uses with town houses and low-rise apartments up to four storeys with a maximum Floor Spaces Ratio (FSR) of 1.5.

There are other commercial land uses east of Prince Robert Drive, west of Stormont Drive as well as east of View Royal Avenue. The vision outlined in the OCP is for the commercial land use east of View Royal Avenue to remain, but the other locations are designated as Mixed Residential which is defined in the OCP as detached homes on small lots, townhouses or low-rise apartments. Limits on the residential units are up to 3 storeys and a maximum FSR of 1.25 for townhouses and four storeys and a maximum FSR of 1.5 for apartments.

TABLE 18: AREAS IN HARBOUR NEIGHBOURHOOD BY LAND USE CATEGORY FOR CURRENT ZONING AND 2012 OFFICIAL COMMUNITY PLAN

Major Land Use Types	AREAS (m2)		
	Current Development / Zoning	Current Official Community Plan	Difference
Agricultural / Rural	0	0	0
Residential	521,461	534,515	13,054
Commercial	30,084	18,739	-11,345
Comprehensive Developments	67,583	67,583	0
Industrial	0	0	0
Public Use	82,845	83,371	526
Harbour Totals	701,973	704,208	2,235

The total trips generated by the current zoning and forecast to be generated by the OCP land uses are shown in Table 19. It is anticipated that there would be a decrease in trips to and from the Harbour Neighbourhood as the commercial land uses change to Mixed Residential over time. However, some of the land uses zoned for commercial use are being under-utilized in particular the parcels to the east of Prince Robert Drive. As such, the trips currently being generated by this parcel would be lower than what the zoning permits. However the commercial land uses being changed to mixed residential uses will decrease overall traffic to some extent as part of the forecast increase is related to using minimum lot sizes to calculate future potential trip generation.

TABLE 19: TOTAL AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY HARBOUR NEIGHBOURHOOD LAND USES

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	286	357	643	754	634	1,388
OCP Trips	360	774	1,134	1,102	769	1,871
Difference	74	417	491	348	135	483

HELMCKEN NEIGHBOURHOOD

The Helmcken Neighbourhood is bounded by Portage Inlet to the east, Island Highway to the south and southwest and the Trans Canada Highway to the north and northwest as shown in Figure 18. It is one of the larger neighbourhoods in View Royal and one that is envisioned as undergoing some of the most significant changes as well.

The distribution of land uses is summarized in Table 20 and show reductions in Agricultural, Residential, Industrial and Public Use lands and a significant increase in Commercial land area. However this is an overview and does not highlight what is envisioned for this neighbourhood.

FIGURE 18: HELMCKEN NEIGHBOURHOOD AND CHANGE AREAS

TABLE 20: AREAS IN HELMCKEN NEIGHBOURHOOD BY LAND USE CATEGORY FOR CURRENT ZONING AND 2012 OFFICIAL COMMUNITY PLAN

Major Land Use Types	AREAS (m2)		
	Current Development / Zoning	Current Official Community Plan	Difference
Agricultural / Rural	18,199	0	-18,199
Residential	635,484	632,351	-3,133
Commercial	91,625	129,541	37,916
Comprehensive Developments	610	0	-610
Industrial	15,014	0	-15,014
Public Use	151,947	150,987	-960
Helmcken Totals	912,879	912,879	0

When developing the current OCP, the existing land uses and their spatial relationships were examined. There are many commercial uses along the Island Highway and Admirals Road which are often located adjacent to major intersections. They tend to be accessed by vehicular traffic and typically are not very intensive land uses characterized by single storey buildings and large parking areas. Previously these commercial land uses were all

located south of the Trans Canada Highway (TCH), but with the start of Eagle Creek and other smaller developments north of the TCH, additional nodes of commercial land uses are being developed and more are proposed specifically in the Hospital Neighbourhood as described in the following section. However, one of the missing elements is the lack of an identifiable centre or core. This would be a Town Centre consisting of commercial, residential and public spaces and one that would be accessible by all modes of transportation.

A potential area in the Helmcken Neighbourhood was identified as a preferred location for the View Royal Town Centre with many positive attributes such as its central location, large land area and proximity to existing transportation infrastructure as well as a planned rapid transit corridor. Most of this area is currently an RV park (Fort Victoria), with 300 fully serviced sites and there is no time frame for maturing the proposed town centre although it has been identified as a long-term Change Area.

As well as no specific time frame, there is a corresponding lack of detail as to the form and function of a town centre and consequentially no data to forecast transportation impacts associated this proposed development. When doing the trip generation calculations for the various neighbourhoods, the shopping centre land use category was used for the town centre as shown in Tables 21 and 22. This was done to create a placeholder for this land use for additional analysis as more details about the land uses and intensity of use are provided. The existing trips are those forecast for the existing Fort Victoria and Adams Storage lands while the Town Centre uses are based on shopping centre and office park trip generation rates. The forecast vehicular trips are quite large and in all likelihood would never be realized as the Town Centre would not be developed as a shopping centre, but rather with a variety of land uses to achieve a focal point for the community as a place for public gatherings and the amenities and land uses to support this goal.

TABLE 21: TYPE OF LAND USES AND AREAS FOR TOWN CENTRE DEVELOPMENT

CODE	ITE LAND USE	SIZE (m2)	SIZE (ft2)	# of UNITS
750	Office Park	15,014	161,610	
820	Shopping Centre	104,007	1,116,518	

Supporting this vision of a Town Centre in this location, the OCP identifies the currently zoned A-1 lands as becoming part of the Intensive Mixed Use (IMU) for the Town Centre. IMU is defined in the OCP as commercial uses with townhouses and low-rise apartments up to five storeys with a maximum FSR of 2.5. Additionally, the currently zoned M-1 lands to the west of the proposed Town Centre are designated to become commercial and support land uses in the Town Centre. These commercial lands would include a range of uses such as retail, office, technology and services up to four stores with a maximum FSR of 2.5.

TABLE 22: AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY TOWN CENTRE DEVELOPMENT CURRENTLY AND AT COMPLETION

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	188	64	252	79	201	280
OCP Trips	645	274	919	1,227	1,499	2,726
Difference	457	210	667	1148	1298	2,446

The creation of Neighbourhood Centres is a more immediate priority and as was detailed in the section on the Harbour Neighbourhood, existing commercial land uses are to be consolidated into nodes of Neighbourhood Mixed Use. The existing commercial land uses fronting on the north side of Island Highway as well as the lands on the north side of Eltham Road off Helmcken Road are all designated to be rezoned as Mixed Residential. The existing NMU at the Island Highway / Helmcken Road intersection to be enlarged and developed as the shared NMU area for the Harbour and Helmcken Neighbourhoods.

The total vehicular trips now and those trips forecast for the land uses as contained in the OCP are contained in Table 23 and as expected the Town Centre is the dominant factor in the increased trip levels. The other factor is a recurring theme of the analysis in that current minimum lot sizes for residential development are less than what is typical for existing residential lots or developments in the Town.

TABLE 23: TOTAL AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY HELMCKEN NEIGHBOURHOOD LAND USES

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	441	602	1,043	712	637	1,349
OCP Trips	1,034	1,406	2,440	2,407	2,195	4,602
Difference	593	804	1,397	1,695	1,558	3,253

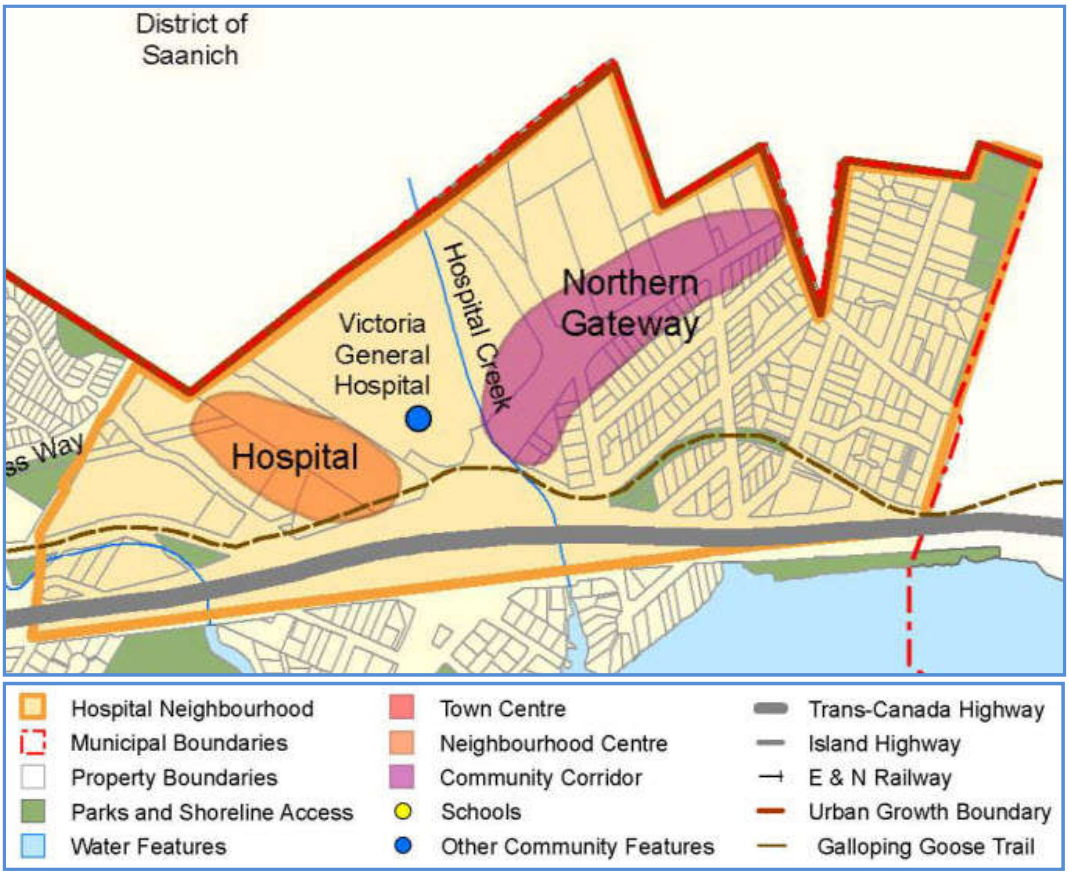
An additional transportation impact associated with the potential Town Centre is the Island Highway which is referenced as the Helmcken – Harbour Community Corridor. This is a primary transportation corridor for the community and was the subject of much discussion during the development of the earlier Transportation Master Plan for View Royal. At that time, the direction from Council was for the emphasis to be placed on providing infrastructure for alternative modes of transportation and to not continue to develop another multi-lane corridor which would further bisect their community. A three-lane cross-section was developed to eliminate the delays associated with left-turning vehicles and if additional right-of way is acquired it is not to develop a 5 lane cross-section for Island Highway in this corridor. Rather additional right-of-way is to be acquired for future use such as dedicated bus lanes, or other forms of public transit.

If a Town Centre is to be developed at the proposed location, it would have a significant impact on all modal transportation infrastructure within and accessing the site. To facilitate this proposed development it would be prudent to acquire additional right-of-way along Island Highway with a particular focus on the frontages near the proposed site.

HOSPITAL NEIGHBOURHOOD

The Hospital Neighbourhood is bounded by the District of Saanich to the north and east, the Trans Canada Highway to the south and Watkiss Way / Game Road / Talcott Road to the west as illustrated in Figure 19.

FIGURE 19: HOSPITAL NEIGHBOURHOOD AND CHANGE AREAS



The major land use categories for the neighbourhood currently and proposed in the OCP are shown in Table 24 which highlight some proposed changes from the current zoning to land use designations in the OCP. In Agricultural / Rural lands: the parcel in the southeast corner of Talcott Road and the Galloping Goose Trail is designated to be Park land; the A-1 parcel fronting on Erskine Lane is to be Mixed Residential and the A-3 parcel abutting the A-1 parcel is to be Intensive Mixed Use. Additionally, Public Use lands decrease as the P-2 parcel north of the Galloping Goose Trail is to be part of the Intensive Mixed Use area and the P-3 land north of the Eagle Creek (CD-20) development is to be split between an addition to the NMU in this area as well as an addition to Victoria General Hospital lands. The primary increase is in Commercial lands with smaller increases in Comprehensive Developments (NMU) and Residential.

TABLE 24: AREAS IN HOSPITAL NEIGHBOURHOOD BY LAND USE CATEGORY FOR CURRENT ZONING AND 2012 OFFICIAL COMMUNITY PLAN

Major Land Use Types	AREAS (m2)		
	Current Development / Zoning	Current Official Community Plan	Difference
Agricultural / Rural	53,785	17,648	-36,137
Residential	235,083	237,864	2,781
Commercial	19,303	64,659	45,356
Comprehensive Developments	51,920	59,782	7,862
Industrial	0	0	0
Public Use	175,051	155,189	-19,862
Hospital Totals	535,142	535,142	0

The Hospital area was highlighted as a Change Area in the OCP as a new IMU area. One development in this neighbourhood not specifically identified in the OCP is the Eagle Creek development, a part of the NMU on Watkiss Way which has been constructed and is operational. Both will significantly change this neighbourhood and both areas are described in more detail in Tables 25 and 26. The proposed IMU area was analyzed using a similar mix of land uses as were detailed in the Eagle Creek development but with a slightly higher utilization as it is to be a more intensive blend of land uses than those in the NMU area.

TABLE 25: TYPE OF LAND USES AND NUMBER OF UNITS OR AREA IN HOSPITAL INTENSIVE MIXED USE DEVELOPMENT

CODE	ITE LAND USE	SIZE (m2)	SIZE (ft2)	# of UNITS
IMU	Intensive Mixed Use	21,321.2	229,500	

TABLE 26: TYPE OF LAND USES AND NUMBER OF UNITS OR AREA IN EAGLE CREEK DEVELOPMENT

CODE	ITE LAND USE	SIZE (m2)	SIZE (ft2)	# of UNITS
230	Residential Condominiums / Townhouses			138
710	General Office Building	3,234	34,810	
720	Medical / Dental Building	3,234	34,810	
826	Specialty Retail Centre	4,111	46,480	
850	Supermarket	4,645	50,000	
880	Drugstore without Drive-Through	929	10,000	
911	Walk-In Bank	371.6	4,000	
932	High Turnover Restaurant	325.2	3,500	
Totals		16,849.8	183,600	

The vehicular traffic forecast to be generated by both the Hospital IMU area as well as the Eagle Creek development are summarized in Tables 27 and 28 with both areas expected to generate similar levels of vehicular traffic. While the IMU area is not built, Eagle Creek is operational although it is not clear if it is fully developed and generating as many trips as forecast.

TABLE 27: AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY HOSPITAL IMU DEVELOPMENT CURRENTLY AND AT COMPLETION

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	0	0	0	0	0	0
OCP Trips	162	99	261	485	525	1,010
Difference	162	99	261	485	525	1,010

TABLE 28: AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY EAGLE CREEK DEVELOPMENT CURRENTLY AND AT COMPLETION

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	0	0	0	0	0	0
OCP Trips	269	166	435	471	542	1,013
Difference	269	166	435	471	542	1,013

While this is significant growth, one mitigating factor is where this growth will be occurring. The Victoria General Hospital (VGH) is a major employment centre and provides a regional service so there is considerable traffic generated by this land use. The plans for this neighbourhood are to complement this major employment centre with supporting land uses both in terms of increased number and density of residential units as well as a major increase in commercial land uses.

One component of this change is the proposed IMU area just to the southwest of VGH, which is slightly smaller than the combined areas of Admirals Walk and Nelson Square. As noted previously, IMU is described in the OCP as commercial uses with townhouses and low-rise apartments up to five storeys with a maximum FSR of 2.5 A second component is the very large NMU area in three of the four corners of the Helmcken Road / Watkiss Way / Chancellor Avenue intersection. This NMU is double the size of the IMU area in this neighbourhood and as noted previously the Eagle Creek portion of the NMU is already operational. NMUs are described in the OCP in a similar manner as IMUs but with low-rise apartments up to four storeys and a lower maximum FSR of 1.5.

With these land uses being complementary to the major employment centre in the Hospital Neighbourhood, it is anticipated that there will be opportunities to develop infrastructure for active modes of transportation within the neighbourhood that could obviate the need for short distance vehicular trips for employees to and from work, and residents making trips to or from commercial or medical/dental land uses.

This type of consideration will be needed when looking at the trips forecast to be generated by the neighbourhood as a whole, as shown in Table 29. This neighbourhood is bisected by Helmcken Road and the portion to the southeast is relatively stable with the major changes being a larger area for NMU land uses and more mixed residential development along the Helmcken Road frontage.

TABLE 29: TOTAL AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY HOSPITAL NEIGHBOURHOOD LAND USES

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	441	603	1,044	712	637	1,349
OCP Trips	1,034	1,405	2,439	2,408	2,194	4,602
Difference	593	802	1,395	1,696	1,557	3,253

Therefore, the majority of this vehicular activity will be occurring to the northwest of Helmcken Road. Prior experience in the development of the original TMP indicated that the desire of the community is to minimize expansion of road cross-sections and place increased priority on the development of active transportation such as walking and cycling. Residential neighbourhoods are to be connected with walking / cycling infrastructure and similar infrastructure is needed to connect these neighbourhoods to the major nodes providing commercial and personal services such as the IMU and NMU areas.

One additional characteristic of this neighbourhood is Helmcken Road which is identified as View Royal's Northern Gateway Community Corridor. The frontage of this route through the neighbourhood is envisioned in the OCP as containing Mixed Residential, Neighbourhood Mixed Use and the Victoria General Hospital which is representative of the development mix desired, and being developed, for this area.

THETIS NEIGHBOURHOOD

The Thetis Neighbourhood is bounded by the District of Saanich to the north and east, the Trans Canada Highway to the south and the City of Langford and District of Highlands to the west as shown in Figure 20. The primary land use is the Thetis Lake Regional Park.

There is one parcel on the south side of the Thetis Neighbourhood adjacent to the Trans Canada Highway which is inside the Urban Containment Boundary and is shown as being part of the Atkins Neighbourhood. However this parcel is in fact severed from the Atkins Neighbourhood by the Trans Canada Highway and is proposed to be part of the regional park in the OCP so it has been considered for this analysis as being part of the Thetis Neighbourhood as shown in Table 30.

This parcel is currently zoned as tourist commercial and for the original TMP the Town indicated their intent to only develop 1/3 of the site. Additional development has not occurred in the intervening years as the Thetis Lake Campground has remained at 150 sites. The vehicular trips for the current land use and what is proposed in the OCP are contained in Table 31. This land use does not currently generate large traffic volumes and when it is a part of the overall park as proposed in the OCP, there would be no trips associated with this parcel of land.

FIGURE 20: THETIS NEIGHBOURHOOD AND CHANGE AREAS

TABLE 30: AREAS IN THETIS NEIGHBOURHOOD BY LAND USE CATEGORY FOR CURRENT ZONING AND 2012 OFFICIAL COMMUNITY PLAN

Major Land Use Types	AREAS (m2)		
	Current Development / Zoning	Current Official Community Plan	Difference
Agricultural / Rural			0
Residential			0
Commercial	53,000	0	-53,000
Comprehensive Developments			0
Industrial			0
Public Use	0	53,000	53,000
Thetis Totals	53,000	53,000	0

TABLE 31: TOTAL AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY THETIS NEIGHBOURHOOD LAND USES

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	11	20	31	26	14	40
OCP Trips	0	0	0	0	0	0
Difference	(11)	(20)	(31)	(26)	(14)	(40)

Since the vehicular traffic is calculated for Average Weekday AM and PM Peak Hour time frames, the traffic generated by the recreational activity associated with the Thetis Lake Regional Park are not presented as a part of this analysis.

WILFERT NEIGHBOURHOOD

The Wilfert Neighbourhood is bounded by Millstream Creek to the north and west, Esquimalt Harbour to the east, Department of National Defence to the southeast and the City of Colwood to the south as shown in Figure 21.

The distribution of current land uses and how they are designated in the OCP are illustrated in Table 32. The land uses are not envisioned to change significantly within this neighbourhood from the current zoning and the OCP. The portion of the current Business Park Commercial (C-7) zoned lands north of Wilfert Park between Millstream Creek and Wilfert Road is designated in the OCP to become a Neighbourhood Mixed Use area which is still included in the commercial category. North of this NMU along the shoreline to Parsons Bridge, the OCP designates a linear park which is equivalent in area to the decrease in Commercial and increase in Public Use lands. It should be noted that this linear park was also shown in the previous OCP but is not reflected in the current zoning.

FIGURE 21: WILFERT NEIGHBOURHOOD AND CHANGE AREAS

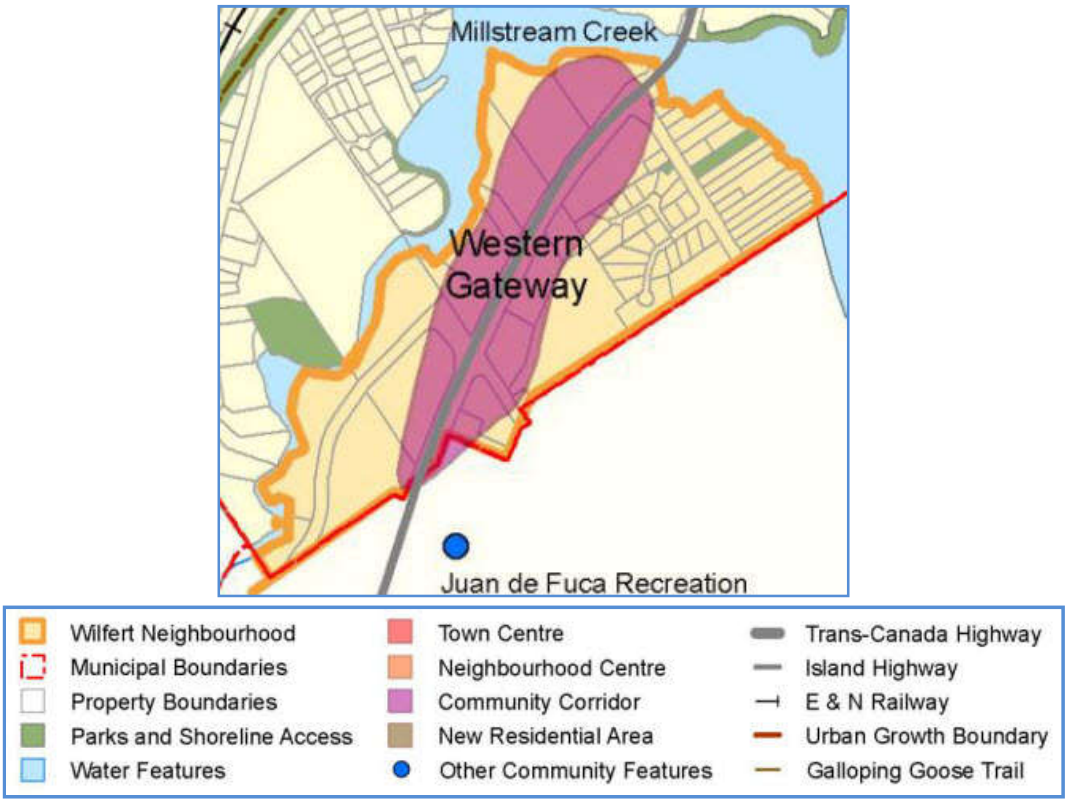


TABLE 32: AREAS IN WILFERT NEIGHBOURHOOD BY LAND USE CATEGORY FOR CURRENT ZONING AND 2012 OFFICIAL COMMUNITY PLAN

Major Land Use Types	AREAS (m2)		
	Current Development / Zoning	Current Official Community Plan	Difference
Agricultural / Rural	0	0	0
Residential	57,255	57,255	0
Commercial	110,680	98,466	-12,214
Comprehensive Developments	55,290	57,058	1,768
Industrial	0	0	0
Public Use	7,946	18,392	10,446
Wilfert Totals	231,171	231,171	0

There are no specific Change Areas identified within the Wilfert Neighbourhood and as can be seen in Table 33, there is not a large change in the vehicular traffic volumes from the current conditions and those forecast for the land uses designated in the current OCP.

TABLE 33: TOTAL AVERAGE WEEKDAY AM AND PM PEAK HOUR VEHICULAR TRIPS GENERATED BY WILFERT NEIGHBOURHOOD LAND USES

NUMBER OF TRIPS	AM PEAK HOUR TRIIPS			PM PEAK HOUR TRIPS		
	IN	OUT	TOTAL	IN	OUT	TOTAL
Current Trips	859	283	1,142	1,131	1,324	2,455
OCP Trips	1,207	342	1,549	1,225	1,596	2,821
Difference	348	59	407	94	272	366

This neighbourhood is also the location for the Western Gateway Community Corridor to the Town, which is the Island Highway. It is the source of consistent congestion from commuting traffic during the week as well as recreational weekend traffic during the warmer months of the year accessing Thetis Lake Regional Park and additional outdoor recreation destinations further west.

As described in the OCP, the Western Gateway Community Corridor stretches from the municipal boundary with the City of Colwood to Parsons Bridge. With the exception of Wilfert Park, all the lands fronting on Island Highway are zoned as Commercial (C-7, C-7A) or Comprehensive Developments (CD-6, CD-7). The OCP shows these lands as Commercial as well.

The intent is to maintain and expand / intensify the commercial land uses to a scale appropriate for a major arterial route and create an Activity Node for such land uses as high tech, research and development, light manufacturing and offices. It should be enhanced to create an attractive destination for not only local residents but regional residents as well, which means that there needs to be stronger transportation links for active and vehicular modes of travel.

As referenced above, this corridor has exhibited significant congestion for some time and as congestion builds, the ability to permit full-movement accesses to abutting land uses decreases. Alternative access via roads intersecting Island Highway or developing parallel facilities such as Hart Road to an extension of Wilfert Road may be required in order to achieve better utilization of lands abutting this corridor.

This route is also a primary connection to the Transit Exchange at Juan de Fuca Recreation Centre and would serve a similar role when the View Royal Transit Exchange is developed. Presently, the transit buses are constrained by the existing congestion and do not have near-side bus bays with signal pre-emption to facilitate maintaining timely service in this and other connecting corridors. BC Transit prefers far-side stops under these circumstances.

TRIP DISTRIBUTION / ASSIGNMENT / CROSS-SECTIONS

As mentioned in the Scope statement, this TMP update is to examine the proposed developments / land use potential in the Change Areas to ensure that the future transportation networks are sufficiently robust to accommodate future traffic demand for all modes. The capacity requirements are focussed on how Collector roads that connect the Changes Areas, and their respective neighbourhoods, will accommodate the increases of multi-modal traffic and provide access to the Major road network.

After the calculation of the potential increase in trips for the neighbourhoods in View Royal, the next step is to assign the trips to the roads within the neighbourhoods, recommend an appropriate cross-section for the Collector roads and identify the intersections with the Major road network and potential improvements that may be required. For reference, the neighbourhoods are shown in Figure 2 while current OCP Land Use designations and Zoning are contained in Exhibits B-7 and B-8 in Appendix B.

Earlier in this report, in the comparison to the original 2006 TMP, the functional classification of roads was summarized along with typical ranges of traffic volumes for Major, Collector and Local roads. As part of the proposed Subdivision and Development Servicing Bylaw, cross-sections for these classes of roads for various widths of right-of-way were developed and are shown in Exhibits C-1 to C-10 in Appendix C. While these are the preferred cross-sections, it should be noted that for existing roads it can be difficult to achieve these standards in established and stable neighbourhoods for the foreseeable future.

ATKINS NEIGHBOURHOOD

Six Mile Road is the Major road for access to and from the Atkins Neighbourhood, which in turn connects to Island Highway and TCH. It quarters the neighbourhood in the N/S direction in conjunction with the E & N Rail / Galloping Goose Regional Trail in the E/W direction. Of the land uses to the north of the rail line, on the west side there is a mix of various types of residential units while Lakeside Village on the east side has a mixture of housing units as well as 1,533m^2 (16,500ft^2) of retail/commercial space. While the retail traffic will access Six Mile Road from Presley Place across from the exit ramp of the TCH, the majority of the traffic from Lakeside Village will get access from Nursery Hill Drive. It forms a four-legged intersection with Six Mile Road and Chilco Road, which is the access route for the residential units to the west.

To the south of the rail line, the lands to the west of Six Mile Road are all residential, with the exception of the commercial land use which is the Six Mile Pub at the corner of Six Mile Road and Island Highway. Lands to the east are residential, commercial (gas station), Neighbourhood Mixed Use and a community facility (CRD Integrated Water Services). While many of these lands access directly onto either Six Mile Road or Island Highway, the residential lands to the west in this area all access Six Mile Road via Atkins Road. The eastern leg of this four-legged intersection is a more minor road, although it does provide a connection to Brydon Road.

In this neighbourhood, the portions of both Chilco Road and Atkins Road to the west of Six Mile Road are designated as Collectors, while the sections to the east have a more minor function with limited catchment areas. Chilco Road has a constrained catchment area of 350 – 400 residential units while Atkins Road has a variety of residential units but most are single-family with some large lots. It also has continuity to the City of Langford, albeit through some difficult terrain as horizontal and vertical curvatures necessitate a posted speed limit of 30 km/h at the municipal border.

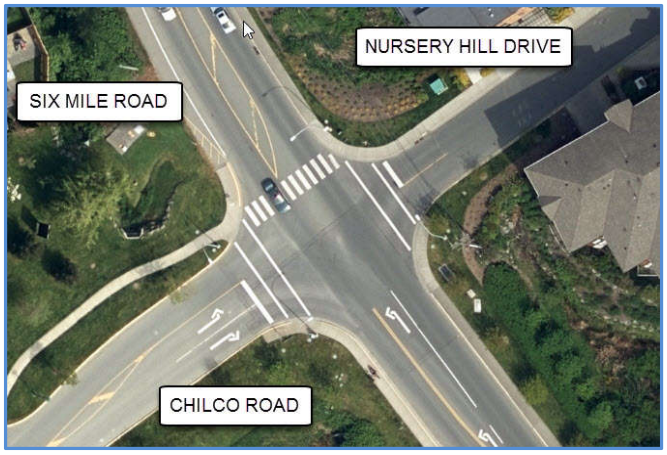
Chilco Road has been built as a two-lane road with no bicycle lanes on either side and pedestrian facilities on the north side only which are adjacent to the vehicle travel surface, except for the first two blocks from Six Mile Road which has a boulevard between the travel lane and sidewalk. Atkins Road has sidewalks on both sides for the first 135m west of Six Mile Road and for the first 350m on the south side of the road. The sidewalk on the south side of Atkins road is also separated by a boulevard from the roadway. Beyond the sidewalks, there are minimal shoulders outside of the painted edge of pavement in each travel direction.

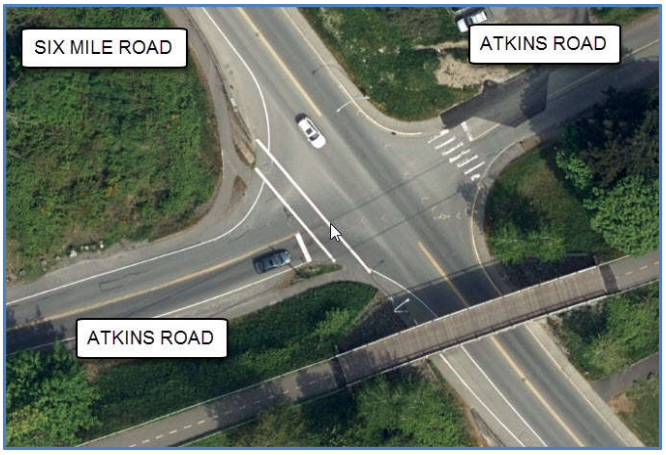
In the cross-sections for Collector roads, all of which are designed for a 20m right-of-way, there are designs for Rural, Urban Class A and Urban Class B. All cross-sections show bicycle lanes in both directions and the Urban Class A and B show sidewalks on each side as well. In this instance there have been sidewalks already built on portions of Atkins Road and Chilco Road but no facilities for bicycles so the long term cross-section design standard to work towards would be Collector – Urban Class B (Exhibit C-8).

However, for each of the roads there may not be a requirement for sidewalks along the side of the road closest to the E & N Rail line as there is no development on that side of Chilco Road and intermittent residential units on the rail side of Atkins Road. As such, there is no need for a sidewalk on the rail side of Chilco road and a sidewalk will only be needed on portions of the rail side of Atkins Road as development or redevelopment proceeds. There may be a requirement to supplement these sidewalk segments on Atkins Road with crossing opportunities to the contiguous sidewalk that should be developed on the south side of the road.

In addition to the cross-sections of the Collector roads, it is also important to consider their intersection with the Major road network. In most cases these roads start off as two lane roads with their access to the Major road controlled by a stop sign. As traffic volumes on the minor leg(s) increase, changes start with separate lanes for specific movements, typically Left Turns (LTs) as they can inhibit all other movements, as well as separate right turn lanes and sometimes channelization of these turning lanes. As traffic movements on the major route increase, similar changes may be needed on the major route and a separate LT lane is usually the initial change and can dramatically improve operational performance. As traffic volumes continue to grow on both the major and collector routes, acceptable gaps on the major route become limited to the extent that there is considerable delay to all the vehicles on the collector route, which would necessitate changing the access control from stop signs to various types of signalization or different intersection configurations including roundabouts.

The Collector / Major road intersections in the Atkins Neighbourhood are illustrated below and are in the initial stages of their development with separate turn lanes on the west leg at the Chilco Road / Six Mile Road intersection along with a separate northbound (NB) LT lane on Six Mile Road. The intersection of Atkins Road / Six Mile Road is relatively unchanged at this time.





Increased traffic volumes on all legs of these intersections need to be monitored on a consistent basis to determine what type of improvements may be required and when. Traffic volume counts of vehicular traffic including volumes of trucks, pedestrians and cyclists are typically collected during AM and PM Peak Periods of

Average Weekdays to determine the performance measurements for the intersection in terms of volume / capacity ratios, Level of Service, delay / vehicle, average queues and 95th percentile queues. When established performance criteria are exceeded, capacity improvements should be implemented, where and when feasible.

BURNSIDE NEIGHBOURHOOD

Watkiss Way traverses the Burnside Neighbourhood in an E / W direction. The majority of the lands north of Watkiss Way are various types of residential units with the only exception being the Eagle Ridge Elementary School on Talcott Road and the mixed use development on the south side of Watkiss Way, just west of Burnside Road although a small retail component of the Burnside Corner development has yet to be constructed. South of Watkiss Way there are 24 townhouse units, parkland and the former Youth Detention Centre which is now being repurposed to provide 50 units of shelter for homeless people.

There are two Major roads in the Burnside Neighbourhood which are Watkiss Way from Burnside Road West to the municipal boundary with Saanich, and Burnside Road West between Island Highway and Watkiss Way. There are three Collector roads in the neighbourhood: Burnside Road West between Watkiss Way north to the municipal boundary with the District of Saanich, Watkiss Way west of its intersection with Burnside Road West, and Highland Road.

Burnside Road West, north of Watkiss Way, has bicycle lanes and sidewalks on both sides of the road as far as Kami Court and the concrete sidewalk on the east side extends a little further northwards to the back entrance to the Eagle Ridge school property. As part of the new development on the east side of this road, there are also on-street parking pockets with spaces for 16 vehicles.

The existing Burnside Road West cross-section changes north of the point where the concrete sidewalk ends. The road has dual jurisdiction, with the east side in the Town of View Royal and the west side in the District of Saanich which is part of their Rural Saanich Local Area Plan and zoned as Agricultural. There is a travel lane in each direction with no bicycle facilities and no sidewalk on the west side of the road. There is a narrow asphalt sidewalk on the east side of the road that extends from the back entrance to Eagle Ridge School to Meadow Park Lane.

The southern portion of this collector is already largely constructed to Collector – Urban Class B standards with the only exception being the lack of a boulevard between the road surface / bicycle lane and the sidewalk on the west side of the road.

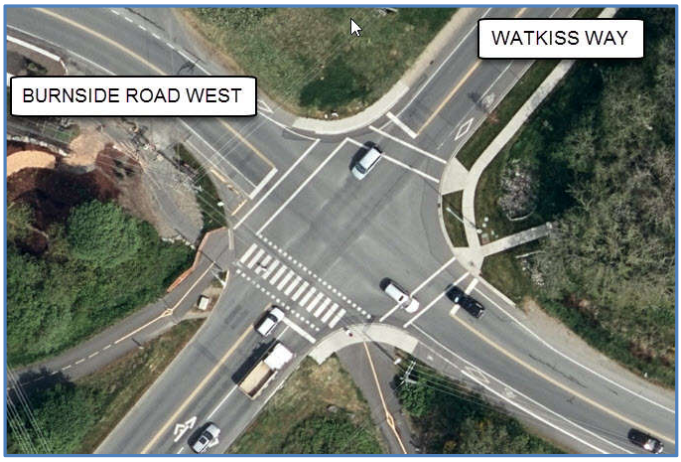
The northern portion where the road is shared with the District of Saanich is more problematic. The vehicle travel surface is estimated to be 6.5m in width with trees and utility poles within a metre of the edge of pavement in some locations. Although the right-of-way is approximately 22m in width, the existing vegetation constrains expanding the cross-section without a significant loss of mature trees. However, in the Rural Saanich Local Area Plan (LAP), this road is proposed to be reclassified from a Major road to a Collector and the Collector specification is: pavement width of 11.0m, design speed of 50 km/h, minimum right-of-way width of 20m, water control by curb & gutter, and shoulders and boulevard of 2.5m. The LAP recognizes that few roads within Rural Saanich are constructed to the standards outlined in the road classification but note that these standards would typically be implemented when road upgrading occurs. This is comparable to the Collector 20 ROW – Urban Class B standard

in Exhibit C-8 where part of the pavement width is designated as bicycle lanes and since curb & gutter would be used, the shoulder / boulevard used for sidewalks as needed.

Watkiss Way, west of Burnside Road West, is a Collector road providing access to residential units, a small retail / commercial area and to the Highlands Pacific Golf Course, which is located in Saanich, but the road access is via Creed Road. The Watkiss Way cross-section is one travel lane in each direction with paved shoulders intended for bicycle use. In conjunction with the mixed-use development on the south side of Watkiss Way west of Burnside Road West, a sidewalk has been built from Burnside Road West and subsequently was extended to the bus stop at Creed Road. At Creed Road there is also a connection south to the Galloping Goose Regional Trail and a cross-walk to access the Community Mail box on the north side of the road. Just east of where Watkiss Way turns to the north and becomes Highland Road, roadside barriers have been installed on the inside of the curve which constrains any westbound pedestrian or bicycle traffic.

This segment of Watkiss Way is in transition as the eastern portion has been improved to Collector – Urban Class B on the south side, while the rest of the segment is representative of a Collector – Rural cross-section although the paved shoulders are not 3.0m wide as specified in Exhibit C-6. Additionally, the lands to the south will not support development so the existing sidewalks and crosswalks are likely sufficient to provide access to facilities such as bus stops, the Community Mail box, and access to the Galloping Goose Regional Trail. As such, a Collector – Urban Class B standard would be appropriate, but not required on the southern side of Watkiss Way west of the existing bus stop at Creed Road.

The remaining Collector road in this neighbourhood is Highland Road which provides access to a large number of single-family houses to the east of the road, as well as being a secondary access for Thetis Lake Regional Park. Its current cross-section is one travel lane in each direction with no paved shoulders and a sidewalk on the east side of the road separated from the travel lane by a boulevard within a right-of-way which appears to vary between 14m and 20m. There are no bicycle lanes on this road. It appears on the northern portion of this road that the edge of the roadway is on the park's property line, while on the southern portion, there is sufficient right-of-way to the west of the road surface that bicycle lanes could be developed although cars are using this area for parking. With the constrained catchment area of approximately 120 residential units in an established and stable neighbourhood, any upgrading of this cross-section would require significant redevelopment of the neighbourhood which is a very long term prospect. With the existing curb & gutter and sidewalk on the east side of the road, the cross-section for this road should be Collector – Urban Class B but the current lack of any bicycle lanes and limited options for creating them within the existing right-of-way, especially on the northern portion of this road, is noted.



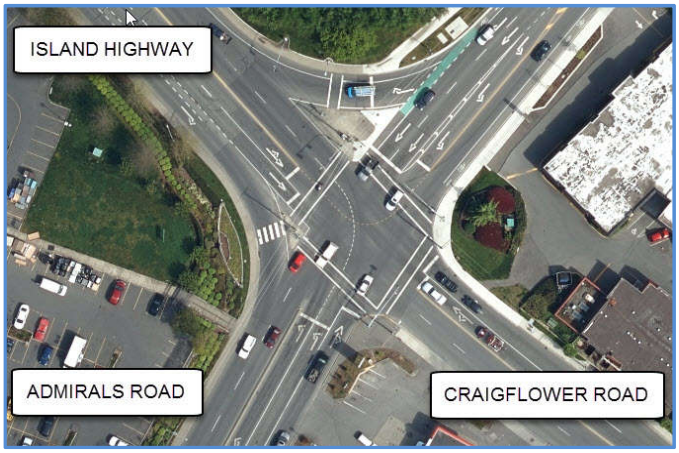
The intersection of the Collector roads is Burnside Road West / Watkiss Way which has had its geometrics tightened up reccently and had a signal warrant analysis conducted a number of years ago. It is currently a four-legged intersection with stop sign access control on all legs and the only separate lanes are the Thru / LT and RT lanes on the south approach of Burnside Road West.

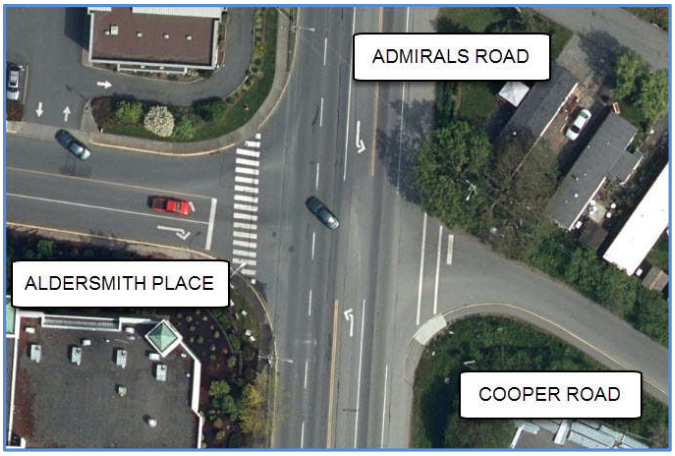
CRAIGFLOWER NEIGHBOURHOOD

The Craigflower Neighbourhood consists of the lands between the E & N Rail / Trail and Admirals Road, on both sides of Island Highway. The lands to the north of Island Highway consist of approximately 185 residential units, Shoreline School and the Craigflower Manor historic site. South of Island Highway is a combination of residential units as well as extensive retail / commercial land uses including Canadian Tire, Nelson Square and Admirals Walk plus manufacturing at Reliable Controls.

This neighbourhood contains the Major roads of Island Highway and Admirals Road but there are no designated Collector roads. There is some potential for the Shoreline Drive / Craigowan Road route to be designated as a Collector as there is a current proposal to redevelop Christie Point by replacing the existing 161 rental residential units and adding 359 new units for a total of 520 residential units. If this proposal is approved it is recommended that the road have a cross-section consistent with the Collector – Urban Class B.

The lack of a robust hierarchy of roads in this neighbourhood contributes to the congestion and delay in the Admirals Road corridor, south of Island Highway / Craigflower Road. There are no collector routes to present options for accessing the Major road network or to spread the point loadings of various land uses across a Collector network. This means that the Local roads of Glentana Road, Aldersmith Place and Hallowell Road, as well Canadian Tire, all directly access the Admirals Road corridor. Local road cross-section standards do not accommodate bicycle traffic in designated lanes. This is not an issue on Hallowell Road as the E & N Rail / Trail will be constructed to the south of the road surface. It has a cross-section between 16m and 21 m with a sidewalk on the north side of the road, and on-street parking permitted on the south side of the street away from the intersection with Admirals Road.





Aldersmith Place has a right-of-way of approximately 18m, sidewalks on both sides of the road, no bicycle lanes and permits on-street parking on the western portion of the road. Glentana Road has a right-of-way of approximately 20m west of its intersection with Admirals Road, sidewalks primarily on the northern side of the

street, no bicycle lanes and on-street parking is permitted in some areas. The appropriate cross-section for these roads is Local – Urban Class B.

All of the intersections on Admirals Road, as well as Shoreline Drive on Island Highway should be part of the aforementioned intersection monitoring program to track intersection performance.

HARBOUR NEIGHBOURHOOD

A comparison of the OCP Land Use Designations map (Exhibit B-7) with the current Zoning map (Exhibit B-8) highlights the long-term direction of the Town for this neighbourhood. At this time, there are several commercially zoned land parcels on the south side of Island Highway but the intent is to move those types of land uses to either a Neighbourhood Mixed Use area around the intersection of Island Highway / Helmcken Road or to the proposed location of a new Town Centre, which is a combination of the current land parcels of Fort Victoria as well as I-1, A-1 and R-2 land uses.

The lands are still primarily residential in this neighbourhood ranging from R-1, R-1B, R-2, RM-1, RT-1 as well as Comprehensive Developments 5 (Gibraltar Bay) and 13. The commercial land uses include the Four Mile Pub, a medical building, parcels at the Helmcken Road / Island Highway intersection, and some underutilized lands to the west of the new Public Safety Building which are currently listed for sale.

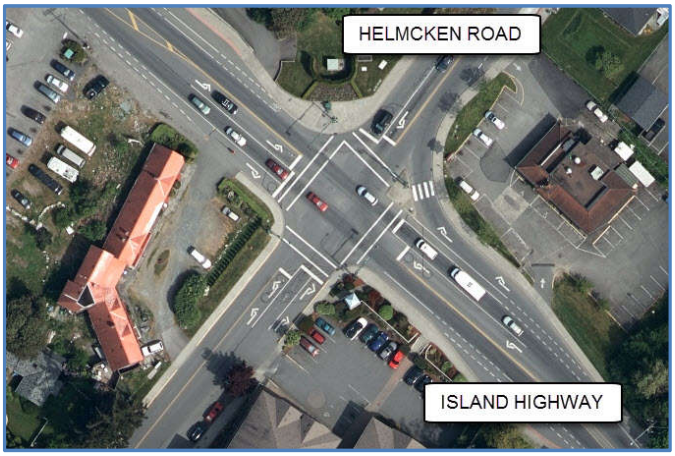
Island Highway is the only Major road of the neighbourhood and forms the northern boundary of the Harbour Neighbourhood. There are two roads designated as Collectors which are View Royal Avenue and Helmcken Road.

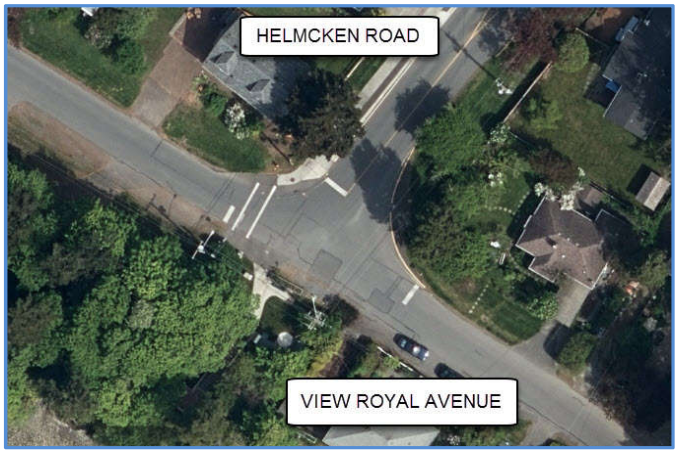
Helmcken Road south of Island Highway is only 215m in length, but provides access to Island Highway which is the major intersection for this neighbourhood. It has a vehicle travel lane in each direction with sidewalks on both sides south of Island Highway as far as the raised crosswalk on the north side of its intersection with Bessborough Avenue. South of this point there is a sidewalk separated from the paved road surface by a boulevard on the west side of the road only and there are no bicycle lanes on this portion of Helmcken Road, although the right-of-way width is approximately 20m. The recommended cross-section for this road is Collector – Urban Class B.

View Royal Avenue is approximately 1.66 km from its intersection with Island Highway near the municipal hall, through the Harbour Neighbourhood, to its terminus at Gibraltar Bay. It has one vehicle travel lane in each direction, with no bicycle lanes on either side, typically no painted centreline except in blind corners and the only

sidewalks are a few metres long on each side of View Royal Avenue south of its intersection with Island Highway. The width of the right-of-way varies over the length of the road from approximately 15m up to 20m. The paved surface also varies significantly from under 5m up to approximately 6.7m, except at its intersection with Island Highway where it widens to a three-lane cross-section width to accommodate one lane southbound and separate LT and RT lanes accessing Island Highway. As such, although it performs a Collector function, it is difficult to ever see this route being constructed to any of the proposed Collector cross-section standards illustrated in Exhibits C-6 to C-8 due to right-of-way and topography constraints. It would be more pragmatic to designate this road as Local and work towards a consistent cross-section whether it is comparable to Local 14m – Rural (C-1) or Local 18m – Rural (C-3) as all the other Local Road standards have curb & gutter treatments as part of their cross-section elements.

The two roads performing as Collectors are similar in design where they intersect Island Highway as there are separate lanes for each NB movement with a single SB lane.





Where the two Collectors meet, there are single vehicle travel lanes in all directions. There is a centreline on Helmcken Road and a sidewalk on the west side but no centreline or sidewalks on View Royal Avenue and no bicycle lanes on either road. There is a crosswalk on View Royal Avenue west of Helmcken Road.

The intersections with Island Highway are mature in that they are both signalized and have separate turning lanes for individual movements. They should be included in the intersection monitoring program to track their performance as traffic volumes increase.

HELMCKEN NEIGHBOURHOOD

Other than the Thetis Neighbourhood, the Helmcken Neighbourhood is the largest and certainly one of the most diverse in View Royal. It contains two of the largest municipal parks, mixed types of residential units including R-

1, R-1B, R-2, RM-1, RM-2 and RM-3, View Royal Elementary School, A-1 and I-1 parcels as well as a large commercial area proposed to be the location of a Town Centre at some point in the future.

There are two Major roads: Island Highway forming the southern boundary of the neighbourhood; and, Helmcken Road which divides the neighbourhood in half in the N/S direction

At this time there are no roads designated as Collector within the neighbourhood as existing roads function as Local roads accessing relatively small catchment areas and the Major roads. This would change however when the Town Centre area is redeveloped, which would likely result in Burnett Road as well as another access road from Island Highway both being classified as Collectors due to the concentration of land uses and trip demand. For such routes it is recommended that they be constructed consistent with the Collector – Urban Class A (C-7) cross-section. It is possible that one of the access roads could be classified as a Major road and the cross-section would be either Major 20m - Urban (C-9) or Major 30m – Urban (C-10).

The Helmcken Road / Island Highway intersection was already referenced as being a location to be monitored in the section on the Harbour Neighbourhood and the Stormont Road / Island Highway and Helmcken Road / Rudyard Road intersections should be included in this program as well to monitor a persistent short-cutting issue.

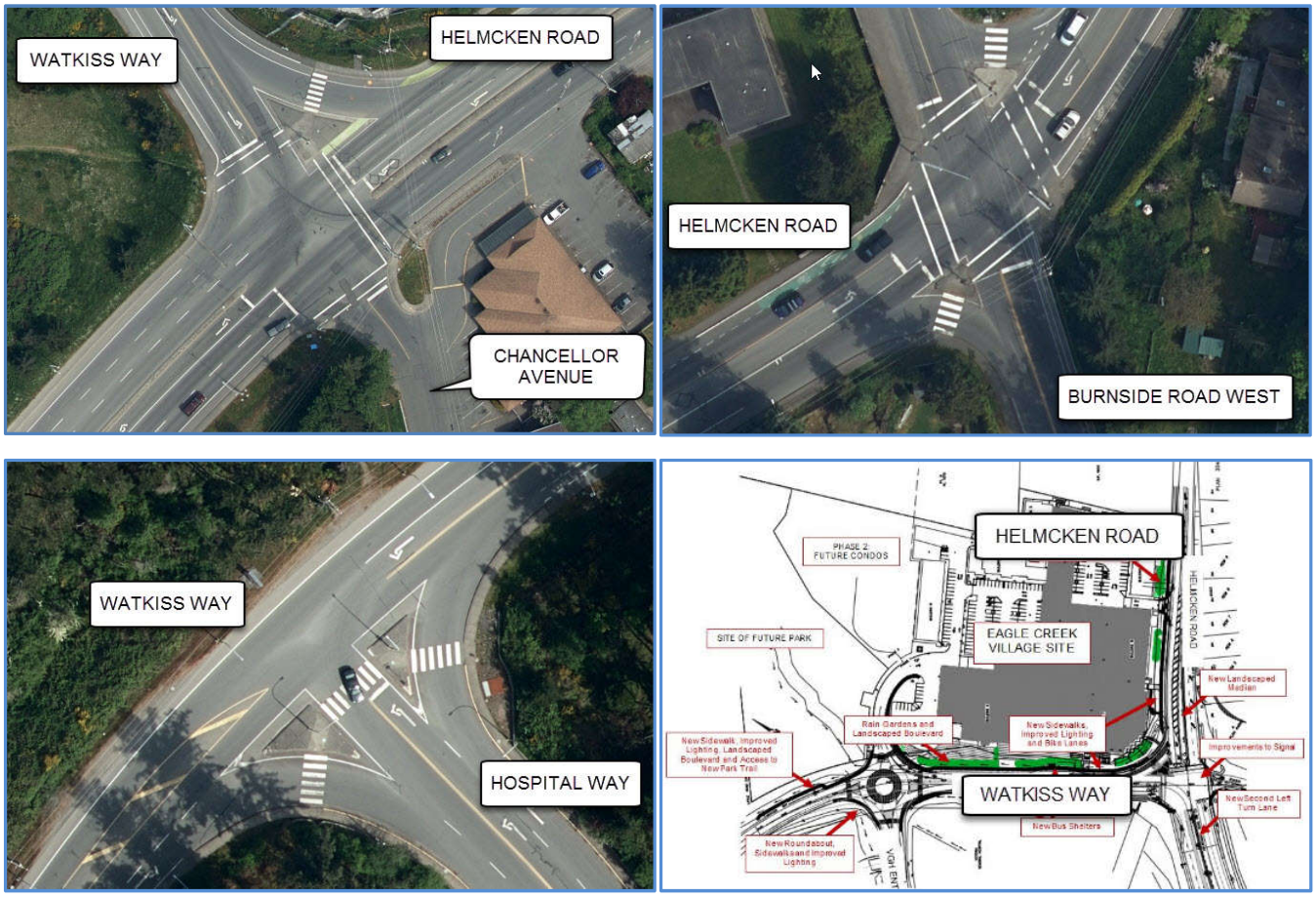
HOSPITAL NEIGHBOURHOOD

The Hospital Neighbourhood is north of the Trans Canada Highway and divided by Helmcken Road which is a Major road. To the west and northwest is Victoria General Hospital (VGH), Comprehensive Development 20 or Eagle Creek, a proposed Intensive Mixed Use area, which now consists of C-1, P-2, A-1 and A-3 land parcels, as well as various types of residential units including R-1, R-1B, and RM-1 lands. The lands to the east are currently primarily residential with a small commercial area at the junction of Chancellor Avenue and Helmcken Road. In the longer term this intersection is intended to be a Neighbourhood Mixed Use area and complement the newly opened Eagle Creek development on the other side of Helmcken Road, and the frontages on Helmcken Road are to become higher density residential.

The Major roads in this neighbourhood are Helmcken Road, Watkiss Way and Burnside Road West from Helmcken Road east to the municipal border with Saanich. Helmcken Road within this neighbourhood has sidewalks and bicycle lanes on both sides. North of its intersection with Watkiss Way / Chancellor Avenue it has a three-lane cross-section with a travel lane in each direction and a centre two-way turn lane and further north

separate LT lanes at Camden Avenue and Burnside Road West. South of this intersection, there are basically two travel lanes in each direction but with the exit and entrance ramps to the Trans Canada Highway the cross-section is considerably wider than the primary travel lanes.

Watkiss Way has one travel lane in each direction, but with the opening of Eagle Creek across from the access to the Emergency Department of VGH, a new roundabout has been constructed with additional laning for access to and from Eagle Creek. There is a sidewalk and bicycle lane on the Eagle Creek side of the road from Helmcken Road west to the municipal border of Saanich, as well as on the other side of the road from the Emergency Room Department access to Helmcken Road. On the other side of the access to VGH there is a marked bicycle lane on the south side of the road and paved shoulders on both sides. Burnside Road West has a travel lane in each direction with no bicycle lanes on either side and a paved shoulder on the south side of the road separated from the vehicle travel surface by an extruded asphalt curb.



There were no roads in this neighbourhood designated as Collectors. While Chancellor Avenue may become more important as the NMU land uses mature around its intersection with Helmcken Road, there are other options to access the residential neighbourhood including Camden Avenue, Quincy Street and Eaton Avenue. However, Chancellor Avenue has already been constructed to a standard consistent with a Collector Road on the east side of the road with a sidewalk, curb & gutter, separate bicycle lane, crosswalks on Quincy and Conard Streets and one vehicle travel lane NB from the access to the Galloping Goose Regional Trail. The western side of the road has one SB travel lane, no sidewalk or bicycle lane and gravel shoulders.

When the IMU area to the west of VGH is developed, it is probable that access to and from that area would, at a minimum, include an upgraded Hospital Way and it may be prudent to upgrade Erskine Lane to provide a second access point for this development. Under those circumstances, one or both of the access roads may be designated as Collectors, much in the same way as the accesses to the proposed Town Centre, and a cross-section of Collector – Urban Class A or B would be required depending on the level of development.

Watkiss Way, as is the case with Burnside Road West, has shared jurisdiction, as the portion from approximately 90m west of Erskine Lane to 115m northwest of the new traffic circle, is in the District of Saanich. In the Saanich Rural Local Area Plan this road is classified as a Collector as is the portion of Hospital Way that is in Saanich. The Collector roads in Saanich are comparable to the Collector – Urban Class B standard proposed for the Town.

As with the other neighbourhoods, these key intersections should be included in the proposed count program to monitor their operation performance on a consistent basis.

THETIS NEIGHBOURHOOD

This neighbourhood includes Thetis Lake Regional Park which at the present time has a large area zoned as C-6 which the OCP indicates will convert to parkland at some point in the future. The primary road access is via Six Mile Road and a secondary access is provided by Highland Road in the Burnside Neighbourhood which are designated as Major and Collector roads respectively. The park has numerous recreational opportunities and is a popular destination year round with traffic peaking over the summer months.

There is a campground and trailer park which generates a small amount of traffic, but the trips generated from this land use is not analyzed as part of the study which focuses on the Average Weekday AM and PM Peak Hours.

WILFERT NEIGHBOURHOOD

The Wilfert Neighbourhood has the largest amount of commercially zoned land of all the neighbourhoods in View Royal. It is on both sides Island Highway at the southwestern entrance into the Town which is referred to as the Western Gateway Community Corridor in the OCP and a significant portion of the lands abutting the Island Highway are presently underutilized. They consist of the casino, multiple car dealerships, a mini-storage facility as well as some small retail and restaurant locations. The residential developments are all on the southeast side of the corridor behind the commercial developments and accessed from Hart and Wilfert Roads. There is a NMU development proposed off Wilfert Road in the OCP but at this time Wilfert Road does not connect through to the City of Colwood, so all the roads in this neighbourhood are Local roads except for the Major road Island Highway at this time.

The right-of-way on Hart and Wilfert Roads are approximately 20m on the south-east side of Island Highway but Wilfert Road accessing the casino appears to narrow down to approximately 10 – 11m on the northwest side of Island Highway. Hart Road has a sidewalk on the south side of the road from Island Highway to Lloyd Place and there is a paved shoulder on the other side with a painted edge of travel lane. There are sidewalks on each side of Wilfert Road southeast of Island Highway with a boulevard between them and the vehicle travel lanes but no bicycle lanes which is a Local – Urban Class A cross-section standard although there are no parking pockets on Wilfert Road. It changes to a rural cross-section with no shoulders, open ditches and a paved surface of 6.5 – 7m in width outside of the municipal boundary. An appropriate cross-section would be Local – Urban Class B or Local

– Urban depending on available right-of-way and Local – Rural (C-1, C-13) if there is no requirement for parking again depending upon available right-of-way.

These intersections in the Wilfert Neighbourhood should be included in the intersection count program proposed for the Town.

NEIGHBOURHOOD CROSS-SECTIONS SUMMARY

After calculating the incremental passenger vehicle trips predicted to be generated by fully developed lands in the various neighbourhoods as described in the current zoning and OCP, the previous section examined the roads that connect the neighbourhoods to the Major road network and distributed / assigned the generated trips to the local road network.

Traditionally there is a hierarchy of roads in a mature community with Arterial roads such as the Trans Canada Highway which are designed to provide mobility; Major roads such as Helmcken Road which are still primarily dedicated to provide mobility, Collector roads which balance mobility and access to land uses such as Chilco Road and Local roads which provide access to lands such as View Royal Avenue, Burnett Road and Chancellor Avenue. They form a multi-dimensional road network and provide alternative routings to travel from your trip origin to a destination. However, View Royal is somewhat unique in terms of location and topography as water bodies and mature communities bound the Town on all sides. In addition to this, four major transportation facilities also traverse the community and in effect constrain the Town's ability to have continuity, not only in its community development, but also its transportation infrastructure as demonstrated in the previous section. It is difficult to connect a community when a four lane highway cuts through it in an E/W direction and as an Arterial facility also requires significant structures to provide access to and from its travel lanes. On a slightly smaller scale, the E & N Rail Trail has a similar effect as it is elevated in some areas, as is the highway, and presents a physical barrier as well as visual one. As well the Island Highway and to a certain extent the Galloping Goose are two routes which have benefits, costs and impacts as they provide access for residents of the community but they also provide critical links for commuters. During peak commuting periods, most of the users of the Island Highway are not residents of the Town and residents often experience significant delay in merging into Island Highway traffic.

These and other factors prevent the development of a complementary network of Collector roads which would typically connect to Local and Major roads. In the Town, Collector roads are relatively rare as six roads were

identified as Collector routes as shown in Table 34. With the lack of depth from the Major roads to abutting lands, it is quite difficult to develop a Collector and Local road network with the primary example being Admirals Road corridor and the connections to Glentana Road, Aldersmith Place and Hallowell Road. All of these roads would be considered as Local roads yet they connect to a Major road as there is no viable alternative to develop a Collector road between Admirals Road and the E & N Rail Trail.

TABLE 34: COLLECTOR AND LOCAL ROAD CROSS-SECTIONS FOR NEIGHBOURHOOD ROADS

NEIGHBOURHOOD	MAJOR ROADS	COLLECTOR		LOCAL	
		ROADS	CROSS-SECTION	ROADS	CROSS-SECTION
ATKINS	ISLAND HIGHWAY	ATKINS ROAD	URBAN - CLASS B (Limited s/w on north side)		
	SIX MILE ROAD	CHILCO ROAD	URBAN - CLASS B (No s/w on south side)		
BURNSIDE	WATKISS WAY (between Burnside Road West and Helmcken Road)	WATKISS WAY (between Burnside Road West and Highland Road)	URBAN - CLASS B (Limited s/w on south side)		
	BURNSIDE ROAD WEST (between Watkiss Way and Island Highway)	BURNSIDE ROAD WEST (between Watkiss Way and Municipal Border)	URBAN - CLASS B		
		HIGHLAND ROAD	URBAN - CLASS B (No s/w on west side)		
CRAIGFLOWER	ISLAND HIGHWAY			GLENTANA ROAD	URBAN - CLASS B
	ADMIRALS ROAD			ALDERSMITH PLACE	URBAN - CLASS B
				HALLOWELL ROAD	URBAN - CLASS B
HARBOUR	ISLAND HIGHWAY	HELMCKEN ROAD (between Island Highway and View Royal Avenue)	URBAN - CLASS B	VIEW ROYAL AVENUE	
HELMCKEN	ISLAND HIGHWAY			BRUNETT ROAD	LOCAL - RURAL (18m / 14m)
	HELMCKEN ROAD (between Island Highway and Municipal border)				
HOSPITAL	HELMCKEN ROAD			CHANCELLOR AVENUE	URBAN - CLASS B
	WATKISS WAY				
	BURNSIDE ROAD WEST (between Helmcken Road and Municipal border)				
THETIS	SIX MILE ROAD				
WILFERT	ISLAND HIGHWAY			HART ROAD	URBAN CLASS B / LOCAL URBAN or LOCAL - RURAL (14m OR 18m)
				WILFERT ROAD	

After examining the Major, Collector and Local roads in the various neighbourhoods, the roadways that are providing access to the Major roads are a combination of Collector and Local roads as listed in Table 34 along with their recommended cross-sections.

While the initial TMP had focused on the Major road network and providing infrastructure for pedestrian and bicycle modes of travel on that network, this update looks at the opportunities for providing similar infrastructure on the Collector network. As shown in the previous section, this has had mixed or limited success primarily due to the absence of a Collector network and recognizing that it is not cost effective to consistently provide this infrastructure at the Local street level of the road network.

PEDESTRIAN AND BICYCLE NETWORK IMPROVEMENTS

Due to the transportation related issues as discussed previously, it will be increasingly important to foster the shift away from the private single occupant automobile trip. Walking, cycling and transit infrastructure improvements can increase the shift to these modes. The focus of this update is specific to the Change Areas and the connections from these areas to the nearest Major road network link for all modes.

In previous sections, the land use changes from current utilization to OCP land use designations have been identified and used to calculate incremental vehicular trips to and from the various neighbourhoods. This information was used to recommend appropriate cross-sections for the roads connecting the Changes Areas to the Major road network. Additionally, the infrastructure associated with pedestrian and cycling activity on Major and Collector roads have been reviewed to identify if gaps exist, and if so, where . This analysis was not extended to Local roads even though they may be directly connected to the Major road network as it would not be cost-effective to make design standards related to bicycles, for example, as a component of Local road cross-section standards.

The gaps identified for the Major roads are contained in Table 35 and it reflects well on the Town to note how many positive changes have been made to the Major road network since the initial analysis contained in the 2008 TMP. Island Highway, between Beaumont Avenue and Admirals Road; Helmcken Road between Island Highway north to the municipal border; Watkiss Way and Burnside Road West in the Burnside Neighbourhood are all examples of how the Town's vision for multi-modal transportation networks promoting more active modes can be achieved without sacrificing values related to a community's well-being and overall health.

At this point, it is possible to build on these achievements by addressing gaps identified in Table 35, although it is recognized that some gaps cannot be addressed in the short term. For example, the paved shoulder on the west side of Island Highway, north of the casino should at some point be replaced with a sidewalk and bike lane to help achieve the vision for the Western Gateway Community Corridor. This change would likely be addressed when adjacent properties are redeveloped rather than being funded as a Capital Project. However, the lack of bicycle lanes on Island Highway north of Six Mile Road is more problematic as there is an existing six-lane cross-section of through and turning lanes in this portion of the corridor with curb and gutter and sidewalks built on the edges of the vehicle travel lanes. It would be extremely expensive and disruptive to incorporate bicycle lanes into this section of Island Highway although there appears to be sufficient right-of-way north of Dukrill Road to do so on that portion of Island Highway. These are the issues that preclude expedient solutions for many of the gaps and the availability of external funding has been important in the past in the achievement of some of the

improvements noted above. Sources of external funding are listed in a subsequent section and the Town has been successful in the past in securing funding from some of these sources.

TABLE 35: GAPS IN PEDESTRIAN AND BICYCLE INFRASTRUCTURE ON MAJOR ROADS

MAJOR ROADS		SIDEWALK / BICYCLE INFRASTRUCTURE GAPS	NEIGHBOURHOODS
ISLAND HIGHWAY	Municipal Border to Parsons Bridge	Sidewalk and bicycle lane stops at southern boundary of 1660 Island Highway and paved shoulder continues until the sidewalk just south of Hart Road a distance of 335m.	WILFERT
	from Parsons Bridge to Thetis interchange	Sidewalks on both sides but no designated bicycle lanes on either side between Six Mile Road and Island highway juntion at Thetis Interchange	ATKINS
	from Thetis Interchange to E & N Rail overpass	No sidewalk or paved shoulder of sufficent width on south side between Prince Robert Drive and the sidewalk of the new Public Safety Centre.	HARBOUR / HELMCKEN
		No sidewalk or paved shoulder of sufficent width on south side for the majority of the distance from east of the Public Safety Centre to Helmcken Road. Where there is a wide paved shoulder, it is being used for informal parking	
		No bicycle lane on the south side of the road from Stewart Avenue to Beaumont Avenue	
	from E & N Rail overpass to Admirals Road	No issues as the section of Island Highway from Beaumont Avenue to Craigflower Road was rebuilt recently to an appropriate standard.	CRAIGFLOWER
HELMCKEN ROAD	Island Highway to Trans Canada Highway	No bicycle lanes on either side from roundabout at Pheasant Lane until Cull Road a distance of approximately 45m due to constraint of width of bridge deck	HELMCKEN
	Trans Canada Highway to Municipal Border	No issues as this section has sidewalks and bicycle lanes on both sides and some boulevards associated with the newer developments in this section of the road.	HOSPITAL
ADMIRALS ROAD	from Craigflower Bridge to Hallowell Road	There are no bicycle lanes on either side of Admirals Road between Hallowell Road and island Highway / Craigflower Road. The E & N Rail Trail will use the boulevard south of Hallowell Road to connect the Rail Trail to Admirals Road. With bike lanes on Island Highway, Craigflower Road and Admirals Road north of Island Highway, this section of Admirals Road is a missing link to bike lanes on all the major roads that it connects to.	CRAIGFLOWER
		The sidewalk on the east side of the road just south of Craigflower Road has two narrow sections which appear to be less than 0.5m which compromise the ability of people to use the infrastructure especially if they have strollers or mobility issues.	
WATKISS WAY	Burnside Road West to Game Road	No issues on this section of Watkiss Way at this time as there is infrastructure to accommodate pedestrian and cycling activity	BURNSIDE
	Game and Helmcken Roads to Municipal Border	No issues on this section of Watkiss Way at this time as there is infrastructure to accommodate pedestrian and cycling activity	HOSPITAL
BURNSIDE ROAD WEST	between Watkiss Way and Island Highway	This section is part of the Thetis Interchange and not expected to accommodate pedestrian and cycling activity. North of the interchange is undeveloped and as such no land uses to generate active transportation trips	BURNSIDE
	between Helmcken Road and Municipal border	This 410m section of road has no bicycle lanes on either side, paved shoulder separated from the roadway by extruded asphalt curbing on the south side only. No paved or gravelled shoulders of any width on the north side. RoW at least 20m in width.	HOSPITAL
SIX MILE ROAD	from island Highway to entrance to Thetis Lake Regional Park	No bike lanes on either side of the road for its entire length.	
		Sidewalk on north/east side of road along its complete length. Sidewalk on south / west side has a gap from about 40m south of the Galloping Goose overhead to the railway overhead. There is a paved shoulder north of Chilco Road into the park.	ATKINS

The focus of this analysis, while including some of the Major road elements from the initial TMP, has been to analyze Collector roads which are the link between the Local roads that access individual properties , typically subdivisions and the Major roads in the community such as Island Highway, Helmcken Road and Admirals Road. Collector roads offer mobility for users of the facility as well as direct access to various land uses which are most

often residences. The analysis of the Collector roads is summarized in Table 36 but it is not a long list which will be discussed in more detail below.

Collector roads will face some of the same impediments as Major roads in terms of constrained rights-of-way or curbs built on the edge of roadways that make it difficult to retrofit bicycle lanes or sidewalks that are components of the recommended cross-section standard. Often these are achieved through development of abutting properties but in established neighbourhoods or newer communities, these changes could take a significant amount of time.

TABLE 36: GAPS IN PEDESTRIAN AND BICYCLE INFRASTRUCTURE ON COLLECTOR ROADS

COLLECTOR ROADS	SIDEWALK / BICYCLE INFRASTRUCTURE GAPS	NEIGHBOURHOODS
ATKINS ROAD from municipal border to Six Mile Road	There are no bicycle lanes on this road. Sidewalks are constructed on the eastern end only from Six Mile Road but they would not be required along the total length of the road on the north side as development will be limited due to proximilty to the E & N Railway	ATKINS
BURNSIDE ROAD WEST from Watkiss Way north to municipal boundary	There are no issues with the southern portion of this road between Watkiss Way and the back entrance to Eagle Ridge Elementary School. North of this point with dual jurisdictions there would be a need to consult on a mutually acceptable standard. Saanich is proposing to change the road from Major to Collector and their cross-section for this class of road is comparable to View Royal's Collector - Urban Class B cross-section standard	BURNSIDE
CHILCO ROAD	There are no bicycle lanes on this road. Sidewalks are constructed on the north side of the road only without boulevards except for the first two blocks from Six Mile Road. As with Atkins Road, the proximilty of the E & Railway precludes development on the south side of the road which means there is no need for sidewalks.	ATKINS
HELMCKEN ROAD south from Island Highway to View Royal Avenue	There are no bicycle lanes on either side of this road. South of Bessborough Avenue there is a sidewalk on the west side only.	HARBOUR
HIGHLAND ROAD	With the west side of the road being bounded by Thetis Lake Regional Park, there only needs to be the existing sidewalk on the east side of the road. However for Collector Roads, bicycle lanes are recommended and there are no bicycle lanes on this road. Additionally the right-of way is narrow at the north end of the road at less than 13m.	BURNSIDE
WATKISS WAY between Burnside Road West and Highland Road	Paved shoulders on each side of the road for cycling and a sidewalk on the south side from Burnside Road West to Creed Road. Probably sufficient as there doesn't appear to be any opportunity for more development on that side of the road. There are no sidewalks on the north side of the road except adjacent to the Community Mail box, Also there is a constraint on the inside corner where Watkiss Way turns into Highland Road. Barriers have been installed on the corner which limit or impede pedestrian and cycling traffic.	BURNSIDE

For example, Chilco Road in the Atkins Neighbourhood is designated as a Collector road as it accesses a large number of residential units and the phases of developments in this area are relatively new. As a Collector road, the recommended cross-section would have bicycle lanes as a component but as a newer community there may not be much appetite for construction to develop bicycle lanes on Chilco Road. This would be magnified as the connecting Major road Six Mile Road does not have designated bicycle lanes either. This is why funding for similar road improvements is typically allocated to the Major road network before the Collector road network but to

develop complementary networks it is important to know their respective functions and the standards to apply and work towards.

It was mentioned above that the list of Collector roads in View Royal is relatively short which means that there is not a well developed Collector network within the Town. As discussed earlier the major transportation corridors of TCH, E&N Rail Trail, Galloping Goose Regional Trail and Island Highway are essential transportation corridors for the region but they also traverse the Town and present obstacles to developing comprehensive transportation networks where Major roads provide mobility, Collector roads balance mobility and access while Local roads provide access. The result is many Local roads directly accessing the Major Road network.

TRANSPORTATION PLANNING AND SUSTAINABILITY

Transportation planning for vehicular traffic traditionally focused on the provision of roads and streets to provide high speed and high levels of service for mobility and access. It was shaped by engineering and included the design, construction and maintenance of new streets and roads as well as ongoing improvements of existing infrastructure[10]. This response of chasing capacity for a seemingly unquenchable travel demand rarely satisfied the appetite for long as the construction of these new facilities would result in a higher that forecast demand and more capacity would be needed sooner than anticipated.

This combination of providing more capacity while underestimating growth in combination with latent and diverted demand is not sustainable. In fact, it was enabling what we now see as negative behavior by encouraging single occupant vehicles as well as facilitating urban sprawl as development moves further from urban centres for lower land costs while the increased transportation-related costs for both users and infrastructure providers were not considered in any substantive way.

As society has evolved over the intervening decades, there have been many positive changes in how we now perceive transportation and the proactive responses include:

- An increasing recognition of the changing role of vehicular transportation in the hierarchy of modal choices as described in the initial View Royal Transportation Master Plan;
- The complementary focus on alternative modes of transportation and their positive impacts on healthy lifestyles, sustainable communities and decreased health costs;
- Increased citizen involvement and advocacy which has also generated web sites which provide significant resources and information on for various aspects of transportation such as BC Climate Action Toolkit and Smart Growth BC;
- Increased exposure and discussion of the transportation sector and its relationship to sustainability by all levels of government including the United Nations[11];
- Development of concepts, methodologies and tools ranging from smart growth and sustainable communities to transportation demand / supply management and transit oriented design; and
- Increasingly sophisticated multiple account processes for project analysis, evaluation and prioritization that include socio-economic factors such as customer service, environment, economic development and social or community impacts.

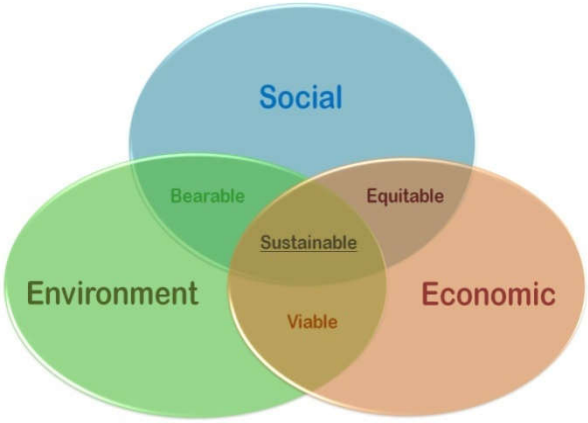
Over the past decades there has also been a similar focus on sustainable development and in 1987 the Brundtland Commission[12] published the seminal document “Our Common Future” which defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

10 Project for Public Space www.pps.org/blog/transculture

11 Sustainable Development Knowledge Platform www.sustainabledevelopment.un.org/?menu=1569

12 “Our Common Future”, World Commission on Environment and Development (Brundtland Commission) October 1987

This definition contains two key concepts in terms of the concept of "needs" and in particular the essential needs of the world's poor which should be given overriding priority and the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs.



The three main pillars of sustainable development include economic growth, environmental protection, and social equity. Unfortunately the majority of countries have put economic development first with consequential negative impacts on the environment and social equity. While difficult to get consensus on competing priorities from these three critical areas, progress is being made around the globe.

Subsequent to the above discussion, sustainable transport was coined to capture the modes or systems of transport planning which are consistent with the wider concerns of sustainability. While there are many definitions of sustainable transport, the European Union Council of Ministers of Transport have defined a sustainable transportation system as one that:

- Allows the basic access and development needs of individuals, companies and society to be met safely and in a manner consistent with human and ecosystem health, and promotes equity within and between successive generations;
- Is affordable, operates fairly and efficiently, offers a choice of transport mode, and supports a competitive economy, as well as balanced regional development; and
- Limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation, and uses non-renewable resources at or below the rates of development of renewable substitutes, while minimizing the impact on the use of land and the generation of noise.

There can be no doubt about the impact of transportation on the GHG emissions as 23% of world energy-related GHG emissions in 2004 were from transport systems with about three quarters coming from road vehicles[13]. The figures are more alarming for British Columbia as the transport sector accounted for 37% of GHG emissions in 2005. Of these emissions, 60% came from road vehicles most of which would be light passenger vehicles including motorcycles, cars, pickups, minivans and SUVs[14]. Some approaches to addressing issues related to transport and development, and the need for them to be considered in an integrated manner, are outlined in the following sections.

13 "Environmentally sustainable transport", Wikipedia, http://en.wikipedia.org/wiki/Sustainable_transport

14 "Actions for Transportation", BC Climate Action Toolkit, http://www.toolkit.bc.ca/solution/actions-transportation

SMART GROWTH

There are many definitions for Smart Growth but the most succinct is from the Victoria Transport Policy Institute.[15] It defines Smart Growth as a general term for policies that integrate transportation and land use decisions. Examples include encouraging more compact, mixed-use development within existing urban areas, and discouraging dispersed automobile dependent development at the urban fringe. It can help create more accessible land use patterns, improve transport options, create more livable communities, reduce public service costs and achieve other land use objectives.

While there are many organizations involved in advocating and advancing smart growth, they share the fundamental principles outlined below.

- Mix land uses. Each neighbourhood has a mixture of homes, retail, business, and recreational opportunities.
- Build well-designed compact neighbourhoods. Residents can choose to live, work, shop and play in close proximity. People can easily access daily activities, transit is viable, and local businesses are supported.
- Provide a variety of transportation choices. Neighbourhoods are attractive and have safe infrastructure for walking, cycling and transit, in addition to driving.
- Create diverse housing opportunities. People in different family types, life stages and income levels can afford a home in the neighbourhood of their choice.
- Encourage growth in existing communities. Investments in infrastructure (such as roads and schools) are used efficiently, and developments do not take up new land.
- Preserve open spaces, natural beauty, and environmentally sensitive areas. Development respects natural landscape features and has higher aesthetic, environmental, and financial value.
- Protect and enhance agricultural lands. A secure and productive land base, such as BC's Agricultural Land Reserve, provides food security, employment, and habitat, and is maintained as an urban containment boundary.
- Utilize smarter and cheaper infrastructure and green buildings. Green buildings and other systems can save both money and the environment in the long run.
- Foster a unique neighbourhood identity. Each community is unique, vibrant, diverse, and inclusive.
- Nurture engaged citizens. Places belong to those who live, work, and play there. Engaged citizens participate in community life and decision-making.

Sustainable development and smart growth bring some fundamental concepts and approaches to planning and land use decisions not the least of which is incorporating transportation planning into the methodology. Other

15 Victoria Transport Policy Institute, www.vtpi,org

related concepts include New Urbanism[16] which in a similar manner to smart growth, lays out a set of principles for urban design in order to address problems associated with urban sprawl and car dependency.

It shares the goals of smart growth and sustainability in wanting to manage growth, reduce traffic, create sustainable development and make smart transportation investments. It also incorporates place-making[17] as an integral component of these communities which is focused on the creation and sustaining of public spaces to build stronger communities and provide a focal point for activities and give residents a sense of place and identity.

These concepts have existed and evolved over the years and it is to the Town's credit that their direction was consist with these concepts when the initial TMP was launched in 2006 and completed in 2008. The Town's vision was stated as:

> *'a quiet traditional "small town" residential community with a modest rate of growth. It is made up of sustainable neighbourhoods that are desirable places to live – convenient, walkabout, attractive, affordable and safe. These neighbourhoods will be self-sufficient in many respects and be connected to one another through greenspace corridors and pedestrian / cyclist-friendly streets. The impact of major transportation corridors that pass through View Royal will be minimized.'*

It was further detailed in seven goals:

- to recognize the unique natural characteristics of the Town that are highly valued;
- to confirm the environmental conscious responsible nature of the community;
- to develop a strong system of community services, parks and recreational facilities within the financial means of the Town;
- to provide suitable land areas for commercial and institutional activities to provide local employment opportunities while broadening their tax base;
- to recognize the regional role of the community as a link in major transportation systems and protecting local values while cooperating with adjacent municipalities and senior governments in regional interests;
- to promote a strong sense of community in all areas and neighbourhoods of the Town; and
- to enhance the quality of life for all citizens of the Town by facilitating effective planning in conjunction with an informed and involved community.

This vision has been further clarified and expanded with the development of the Town's most recent Official Community Plan[18] which was adopted in July 2012. It contains a consistent vision and goals from those just described while adding issues of climate change and being more descriptive in terms of how its neighbourhoods should develop and feel and create and define a sense of place and identified character. The OCP then provides a

16 New Urbanism, www.newurbanism.org/newurbanism/principles.html

17 Project for Public Space, www.pps.org/blog/transculture

18 Official Community Plan Bylaw No. 811 Town of View Royal July 2012.

community development framework of identifying areas where land use and design character should be promoted as well as stable areas of the Town where significant change should not occur. It builds upon the identifiable Neighbourhood Centres connected by greenspace, trails and multimodal street, a Town Centre, revitalized Community Corridors as well as a new Residential Area at Mill Hill. This is done within the context of the existing eight neighborhoods within the Town and how the existing land use development and transportation infrastructure supports this vision as well as the identified Change Areas and how they can be used to further the Town's vision.

TRANSIT-ORIENTED DEVELOPMENT / TRANSIT-ORIENTED COMMUNITIES

One method of supporting sustainable transportation / smart growth is referred to as transit-oriented development (TOD). It is defined as a mixed-use residential and commercial area designed to maximize access to public transport, and often incorporates features to encourage transit ridership which can be as small as a specific building. A transit-oriented neighbourhood (TON) typically has a center with a transit station or stop (train station, metro station, tram stop, or bus stop), surrounded by relatively high-density development with progressively lower-density development spreading outward from the center. TODs and TONs generally are located within a radius of one-quarter to one-half mile (400 to 800 m) from a transit stop, as this is considered to be an appropriate scale for pedestrians, thus solving the last mile problem[19]. This definition has been refined further to include transit-oriented communities (TOC) which are characterized as focusing higher-density, mixed-use, pedestrian friendly development within walking distance of frequent transit; and implementing mobility management measures to discourage unnecessary driving[20].

An example of how these types of land uses can be developed can be found within British Columbia in three case studies on the CMHC web site (http://www.cmhc-schl.gc.ca/en/inpr/su/sucopl/sucopl_007.cfm). They include the Short Street in Saanich, TIME in North Vancouver and Collingwood Village in Vancouver. They range from 0.44 ha with 72 condo units and 630 m^2 of retail to 11.3 ha with 2,700 suites and 6,500 m^2 of non-residential use. The Lower Mainland examples are related to the evolution of Metro Vancouver growth planning which can trace its roots to the Livable Regional Plan of 1975 through the 1996 Livable Regional Strategic Plan to the current Regional Growth Strategy adopted in July 2011. This in turn has been a stimulus for the work of Translink in the development of TOD related initiatives.

Their documentation on Transit-Oriented Communities outlines key concepts of TOD and also details attributes that are common to high levels of transit demand and productive transit service. Extending earlier work by Cervero and Kockelman[21], they outline six factors – destinations, distance, design, density, diversity and demand which must be considered and work in concert. However it is also noted that all six need to be implemented at all spatial scales of planning starting to the regional scale and moving down to the community, neighbourhood and

19 "Transit-Oriented Development", Wikipedia http://en.wikipedia.org/wiki/Transit-oriented_development

20 "Transit-Oriented Communities: A Primer on Key Concepts", TransLink, December 2011 http://www.translink.ca/

21 "Travel Demand and the 3Ds, Density, Diversity and Design", Cervero & Kockelman, Transportation Research Part D: Transport and Environment, Vol 2, Issue 3, Sept. 1997, pp 199-219

site scales. Translink has also supplemental documentation related to a literature review of the relationship between the built environment and transit ridership as well as design guidelines for TOCs.

Characteristics of TOD[22], which are common to sustainable planning and smart growth, include:

- A greater sense of community and place;
- More sustainable and efficient use of land, energy and resources;
- Less reliance on cars resulting in lower gas consumption and greenhouse gas emissions;
- Reduced household spending on transportation:
- Increased foot traffic for local businesses:
- Increased property values which can be leveraged for future development;
- Improved public health through increased walking and biking;
- Opportunities for mixed income housing;
- Expanded transit ridership; and
- Lower public expenditures on roads, water and sewer infrastructure, and police and fire protection.

While there are many advantages to TOD, there also are typically many barriers including zoning, financing and the increased costs of structured parking. It is also possible that existing residents may be resistant to such changes in land uses. A community can help facilitate these types of development by identifying areas where land uses, transportation, housing and economic development investments are targeted towards transit and thus encourage TOD.

TRANSIT SUPPORTIVE LAND USE

There is a strong relationship between transit and land use, and this relationship works in both directions. Transit supportive land use is critical for the success of the transit system. In turn, transit - especially rapid transit or other fixed corridor, high quality transit service – can help to attract and support higher density, mixed-use development.

Transit supportive land use typically includes the following features:

- Residential density is critical. Medium and higher density development can better support transit because it means that a greater number of potential transit users can be located within walking distance of a transit stop or station, thus enlarging the transit customer base and leading to increased ridership. Thus, a transit stop in an area with a density of 10 persons per hectare (large lot or low density single family development) would have 500 potential passengers within a 400 m walking distance, while a transit stop in an area with a density of 100 persons per hectare (a mix of low and medium-rise apartments) would have 5,000 potential passengers within walking distance.

22 Centre for Neighborhood Technology, http://www.cnt.org/tcd/programs/tod/

- Non-residential density (which relates closely with employment density) is also very beneficial for transit. Employment and other non-residential destinations can be much more efficiently served by transit when they are concentrated.
- In order to support transit, it is not necessary to have uniformly high densities throughout the region. Nodes and corridors of medium and higher density can be very effective since they concentrate a large proportion of the population and the non-residential activities into areas that are within walking distance of transit.
- Mixed use development can help to support more efficient transit service. Different uses attract activity at different times of day, so mixed uses tend to lead to more balanced travel flows throughout the day and in both directions, which reduces peaking and one-directional travel. In addition, people who live or work in mixed-use areas are more likely to use transit since they don't need their cars to run errands during lunch or after work.

Transit users begin and end their trips as pedestrians, so pedestrian friendly design will also make using transit more attractive. This could include attractively designed sidewalks and pedestrian areas, and buildings that are located close to the sidewalk rather than behind a sea of parking

TRANSPORTATION DEMAND MANAGEMENT

As noted earlier there has been a cultural shift in how transportation is viewed and its role within our communities. The changing modal priorities also impacts how we manage transportation supply and demand and the tools available to achieve our goals.

Historically Transportation Demand Management (TDM) tried to influence modal choice during peak hours to encourage usage of higher occupancy vehicles such as buses, van pools and ride sharing. There were also efforts to spread the peak demand by staggering work hours or shift time changes for major employers to times outside the typical weekday peak hours of travel as well as decreasing demand by encouraging telecommuting. These initiative were primarily a response to the oil shortages of the 1970's but the stability of pricing in the 1980's and 1990's resulted in increased demand for travel and development of outlying areas created longer trip lengths as urban sprawl increased the journey to work distance, as well as duration with the resulting increased congestion. Coincidentally there has also been shifts from rail and marine to road freight as well as a different paradigm in manufacturing for just-in-time deliveries which have all increased road traffic and the demand for additional road capacity. However, it has also been recognized that we cannot continue to try and build our way to a solution as chasing road capacity has not addressed the problems associated with increased travel demand, nor the symptoms.

Rather there has been an increased awareness of what followed was largely the implementation of TDM measures from the bottom-up as application of programs has been on a smaller localized scale. This leads to a fractured approach and tends to be a short term operational response to the issue of TDM. There needs to be a

longer term vision that would articulate issues and develop a top down framework and application[23]. Towards this end, there seems to be a redefinition of TDM from a tool kit of related initiatives to be applied locally to a broader scope incorporating such concepts as mobility management and active travel management. It can also be redefined as being "designed to better balance people's needs to travel with the capacity of available facilities to efficiently handle this demand".

TDM is also being understood as a broader concept and how it is one integral component of implementing sustainable mobility in order to realize the benefits of sustainable transport. The research by Black & Schreffler[24] states that the demand for travel needs to be managed by: expanding supply of (more sustainable) alternatives; controlling demand (use of unsustainable modes); and application of effective / full-cost pricing.

To do so means looking at four prime categories of TDM as follows:

- Physical – infrastructure to make TDM work – HOV facilities, special use lanes, park & ride, access control, active transportation as well bicycle lanes, sidewalks, trails, paths;
- Operational – processes to manage / influence trips – real time multi-modal information, predicting travel times, active transportation management, parking management, etc;
- Financial – using economics to affect trip choice economic incentives and disincentives – cordon pricing in congested centres, pricing schemes, revenue for improved transit, other modes; and
- Organizational – institutional integration incorporate demand management into planning, management and operations via partnerships- coordination – new policies

The thrust is to not have silos of information and applications but rather integration to leverage a multi-disciplinary approach to TDM and form a cornerstone for the development of long term sustainable transportation.

With this as a framework, the application of programs from bus passes, ride sharing, van pooling, emergency ride home and a multitude of others then become consistent programs that can be managed and measured as to their effectiveness and lead to best practices to be shared.

23 "Understanding Transport Demand Management and Its Role in Delivery of Sustainable Urban Transport", Blank & Scheffler, Transportation Research Record 2163, pp81-88.

24 ibidem

FUNDING SOURCES FOR INFRASTRUCTURE

There are several valuable sources for information related to funding sources for municipal programs which will be summarized in the following sections.

FEDERAL GOVERNMENT / NATIONAL ORGANIZATIONS

Part of the present federal government's direction is was increased investment in infrastructure as illustrated in the Infrastructure Canada web site depicted below in Figure 22.

FIGURE 22: INFRASTRUCTURE CANADA – A TRANSFORMATIONAL INFRASTRUCTURE PLAN

A Transformational Infrastructure Plan was announced as part of the Fall Economic Statement 2016 which indicates immediate investments of $11.9 billion in public transit, green infrastructure and social infrastructure. It also proposes an additional $81 billion through 2027 – 28 in public transit, green and social infrastructure, transportation infrastructure that supports trade, and rural and northern communities. With the creation of the new Canada Infrastructure Bank, dedicated to increasing investment in growth-oriented infrastructure, the direction is to change the way infrastructure is planned, funded and delivered across the country. The primary funding pools are:

- Public Transit: Faster commutes and innovative communities $25.3 Billion
- Green Infrastructure: Clean Air, Clean Water $21.9 Billion
- Social Infrastructure: Better Neighbourhoods for our Kids $21.9 Billion
- Getting Canadian Products to Global Markets $10.1 Billion
- Rural and Northern Communities $2 Billion

More details about this long-term infrastructure plan are to be announced soon.

The New Building Canada Plan (NBCP) is an existing program which builds upon previous investments in infrastructure including the $33 billion provided in 2007 for various projects across the country. This program has undergone changes to provide greater flexibility by extending eligible funding categories and accelerating all remaining funding to support priorities within the next two years. There will be $3 billion made available annually for municipal projects through the Incremental Goods and Services Tax Rebate for Municipalities and the Gas Tax Fund. Uncommitted finds from legacy programs will also be allocated to municipalities through the Gas Tax Fund in 2016 – 17.

The Federal government, primarily through Infrastructure Canada, had intended to provide approximately $80 billion over the next decade for public infrastructure with the $53 billion within the New Building Canada Plan[25] for provincial, territorial and municipal infrastructure which is shown in **Figure 23** and the four main funding areas briefly described below. However it is not clear how these funding streams may be affected by the new Transformational Infrastructure Plan.

- Community Improvement Fund, consisting of the Gas Tax Fund and the Incremental Goods Services Tax Rebate for Municipalities will provide $32B;
- New Building Canada Fund will provide $14B as follows:
- National Infrastructure Component (NIC) will fund up to $4B for projects of national significance; and
- Provincial Territorial Infrastructure Component (PTIC) with $10B of funding for projects of national, regional and local significance which is further divided into $9B for national and regional projects (PTIC – NRP) and $1B in a Small Communities Fund for communities with a population of less than 100,000 (PTIC – SCF);
- P3 (Public-Private Partnerships) Canada Fund[26] of $1.25B; and
- $6B in existing commitments to infrastructure programs.

The largest funding pool is the Gas Tax Fund. A new Administrative Agreement on the Federal Gas Tax Fund in British Columbia has been signed by Canada, British Columbia and the Union of British Columbia Municipalities (UBCM) and took effect April 1, 2014. It provides the framework for the delivery of federal Gas Tax funding to BC local governments, indexed at 2% / annum starting in 2014 / 15, for the next ten years. **Table 37** shows funding for British Columbia for five years from 2014-15 up to 2018-19.

UBCM's web site (http://www.ubcm.ca/EN/main/funding.html) contains current information about Renewed Gas Tax Agreement (GTA). It also provides information on Local Government Program Services which include Asset Management Planning, Community to Community Forum, Seniors Housing & Support Initiative, Strategic Wildfire Protection and an associated program related to Structural Protection Units. As noted above, the federal government has committed to $3 billion per year so that could increase allocations across the country.

25 New Building Canada Plan", Infrastructure Canada, http://www.infrastructure.gc.ca/plan/nbcp-npcc-eng.html

26 PPP Canada, http://www.p3canada.ca/en/

The other relevant funding area is PTIC under which each province and territory will receive a base amount of $250 million plus a per capita allocation over the 10 years of the program. The per capita allocation will be based on the Statistics Canada Final 2011 Census figures.

FIGURE 23: NEW BUILDING CANADA PLAN AND FUNDING

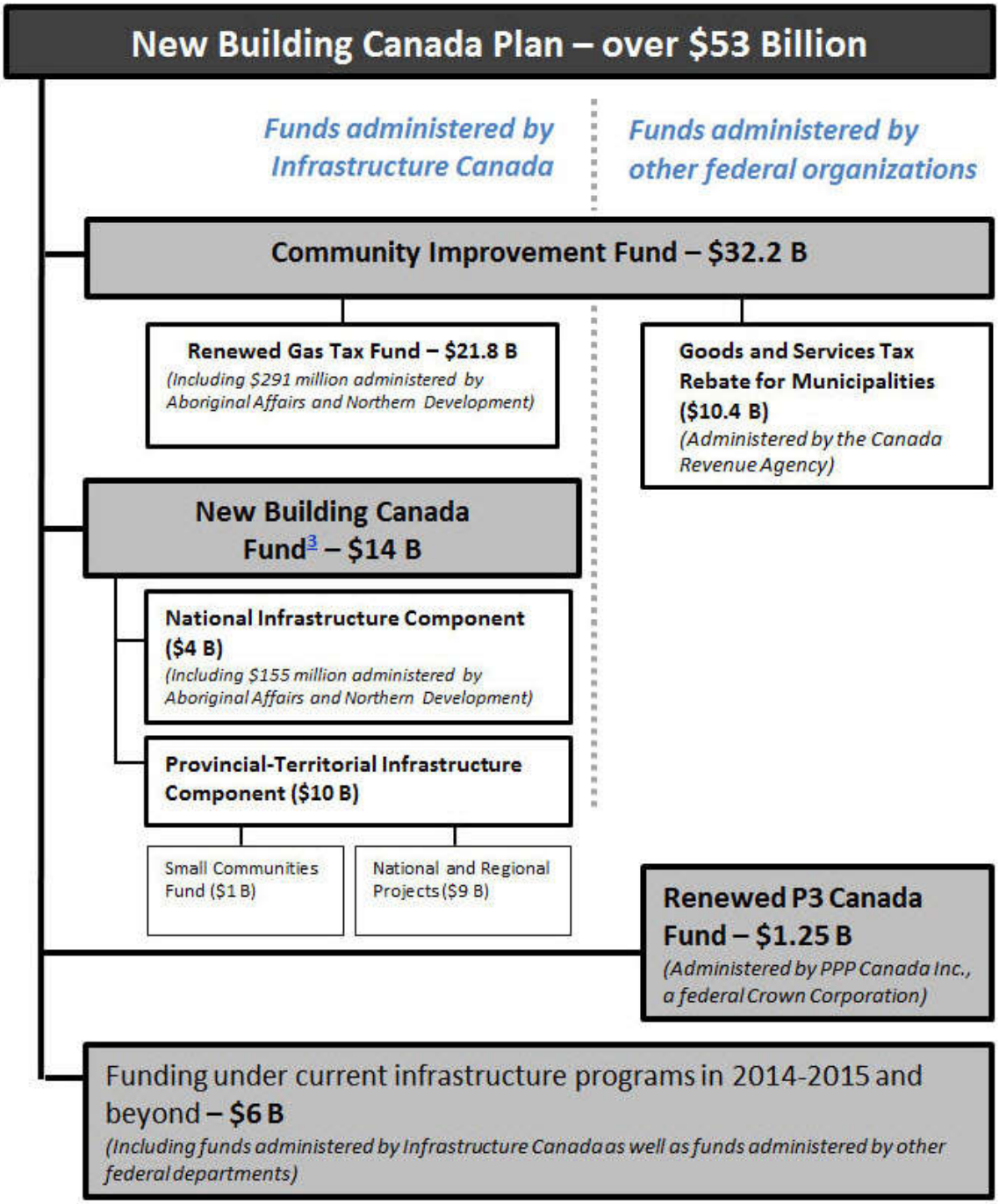


TABLE 37: GAS TAX AGREEMENT FUNDING FOR BRITISH COLUMBIA UP TO 2018-19 (IN 1,000S)

Jurisdiction	2014 - 15	2015 - 16	2016 - 17	2017 - 18	2018 - 19	Total
Newfoundland & Labrador	$ 29,865	$ 29,865	$ 31,358	$ 31,358	$ 32,852	$ 155,298
Prince Edward Island	$ 15,000	$ 15,000	$ 15,750	$ 15,750	$ 16,500	$ 78,000
Nova Scotia	$ 53,226	$ 53,226	$ 55,887	$ 55,887	$ 58,549	$ 276,776
New Brunswick	$ 43,322	$ 43,322	$ 45,488	$ 45,488	$ 47,655	$ 225,276
Quebec	$ 458,219	$ 458,219	$ 481,130	$ 481,130	$ 504,041	$ 2,382,738
Ontario	$ 744,949	$ 744,949	$ 782,196	$ 782,196	$ 819,444	$ 3,873,735
Manitoba	$ 65,471	$ 65,471	$ 68,744	$ 68,744	$ 72,018	$ 340,448
Saskatchewan	$ 56,290	$ 56,290	$ 59,104	$ 59,104	$ 61,919	$ 292,707
Alberta	$ 208,651	$ 208,651	$ 219,083	$ 219,083	$ 229,516	$ 1,084,983
British Columbia	$ 253,277	$ 253,277	$ 265,941	$ 265,941	$ 278,605	$ 1,317,040
Yukon	$ 15,000	$ 15,000	$ 15,750	$ 15,750	$ 16,500	$ 78,000
Northwest Territories	$ 15,000	$ 15,000	$ 15,750	$ 15,750	$ 16,500	$ 78,000
Nunavut	$ 15,000	$ 15,000	$ 15,750	$ 15,750	$ 16,500	$ 78,000
First Nations	$ 26,731	$ 26,731	$ 28,067	$ 28,067	$ 29,404	$ 138,999
Totals	$ 2,000,000	$ 2,000,000	$ 2,100,000	$ 2,100,000	$ 2,200,000	$ 10,400,000

The provincial allocation of the GTA will be delivered through three programs streams: Community Works Fund; Strategic Priorities Fund; and Greater Vancouver Regional Fund which are outlined in Figure 24.

FIGURE 24: PROGRAM STREAMS FOR RENEWED GAS TAX AGREEMENT

Program Stream	Community Works Fund	Strategic Priorities Fund	Greater Vancouver Regional Fund
Available to	All local governments	All local governments outside of the Greater Vancouver Regional District	The Greater Vancouver Regional District and its member municipalities
Purpose / Objective	Supports the achievement of local priorities through an allocation based on population and a funding floor	Provides funding for strategic investments that are larger in scale or regional in impact, or innovative	Provides funding for regional transportation projects within the Greater Vancouver region.
Delivery Method	Delivered to local governments semiannually; local choice about which eligible projects to fund	Application based process; payments on reimbursement (claim) basis	Funding for regional transportation projects proposed by TransLink are approved by GVRD Board.

Of the two streams that are applicable to the Town, the Community Works Fund (CWF) is a direct allocation to the Town which is currently at $426,889.33 / annum and rising to $469,633.33 by 2018-19 which is a total of $2,219,880.05 over five years as shown in Table 38. The UBCM web site lists the 18 categories of projects which are eligible to be funded by the CWF which includes local roads / bridges, highways, broadband connectivity and public transit.

TABLE 38: COMMUNITY WORKS FUND ALLOCATION FOR THE TOWN OF VIEW ROYAL UP TO 2018-19

Recipient Name		Year 1 2014 / 15	Projected Year 2 2015 / 16	Projected Year 3 2016 / 17	Projected Year 4 2017 / 2018	Projected Year 5 2018 / 2019	Total 2014 - 2019
Capital	Reg. Dist.	$ 1,043,749	$ 1,043,749	$ 1,095,937	$ 1,095,937	$ 1,148,064	$ 5,427,436
Central Saanich	District	$ 690,242	$ 690,242	$ 724,754	$ 724,754	$ 759,272	$ 3,589,264
Colwood	City	$ 696,549	$ 696,549	$ 731,377	$ 731,377	$ 766,209	$ 3,622,063
Esquimalt	Township	$ 701,210	$ 701,210	$ 736,271	$ 736,271	$ 771,335	$ 3,646,296
Highlands	District	$ 135,173	$ 135,173	$ 141,931	$ 141,931	$ 148,799	$ 703,008
Langford	City	$ 1,224,259	$ 1,224,259	$ 1,285,472	$ 1,285,472	$ 1,346,592	$ 6,366,054
Metchosin	District	$ 242,964	$ 242,964	$ 255,113	$ 255,113	$ 267,350	$ 1,263,505
North Saanich	District	$ 495,510	$ 495,510	$ 520,285	$ 520,285	$ 545,103	$ 2,576,693
Oak Bay	District	$ 773,767	$ 773,767	$ 812,456	$ 812,456	$ 851,135	$ 4,023,582
Saanich	District	$ 4,459,376	$ 4,459,376	$ 4,682,348	$ 4,682,348	$ 4,904,621	$ 23,188,068
Sidnay	Town	$ 499,085	$ 499,085	$ 524,040	$ 524,040	$ 549,035	$ 2,595,286
Sooke	District	$ 509,410	$ 509,410	$ 534,881	$ 534,881	$ 560,391	$ 2,648,975
Victoria	City	$ 3,264,748	$ 3,264,748	$ 3,427,988	$ 3,427,988	$ 3,590,752	$ 16,976,224
View Royal	Town	$ 426,889	$ 426,889	$ 448,234	$ 448,234	$ 469,633	$ 2,219,880
CRD Totals		$ 15,162,932	$ 15,162,932	$ 15,921,088	$ 15,921,088	$ 16,678,292	$ 78,846,332

The Strategic Priorities Fund (SPF) is an application based program which has two funding streams of capital infrastructure and capacity building. It is available to all local governments outside of the Greater Vancouver Regional District and eligible project categories, expanded under the Renewed GTA are the same as for the CWF. The difference is that SPF projects are larger in scale, have a regional impact or innovation, and align with program objectives of productivity and economic growth, a clean environment and strong cities and communities.

There is an SPF Program Guide which can be used to confirm that projects and associated costs are eligible for funding and an Online Application Form. However the 2015 SPF application process is closed at this point but the next cycle will commence early in 2016.

Another national organization of import is the Federation of Canadian Municipalities which has nearly 2,000 representatives of local governments. It also has a Green Municipal Fund[27] which is described as a unique program that provides funding and knowledge services to support sustainable community development. GMF-supported initiatives aim to improve air, water, and soil, and mitigate the impacts of climate change. They fund

27 http://www.fcm.ca/home/programs/green-municipal-fund/about-gmf.htm

plans, studies and projects of municipal environmental initiatives. Transportation capital projects have their environmental outcomes assessed under the energy performance criteria and typically focus on modal shifts away from single-occupant vehicles, increasing fuel efficiency or reductions in life-cycle GHG emissions as means of achieving reductions in environmental impacts from the transportation sector.

PROVINCIAL GOVERNMENT / ORGANIZATIONS

The Provincial government has a number of funding programs for transportation-relation projects. By way of context, the Government of British Columbia issued "B.C. on the Move: A 10-Year Transportation Plan" in March 2015 outlining plans for improvements in road infrastructure, highway safety, highway capacity and reliability, provincial trucking, airports, ports and rails, ferries, etc. Through this program, MoT&I will invest almost $2.7 billion over the next three years.

Within the plan, two modal options highlighted for investment over the next decade were transit and cycling which continues the Government of B.C's funding of cycling projects as they have contributed more than $220 million in cycling grants and infrastructure to over 100 communities across the province since 2001. Communities on Vancouver Island will receive almost $2.7 million in Bike BC funding this year for seven cycling infrastructure projects most of which is funding a portion of the E&N Rail Trail, separated bike lanes in Langford, bike lanes on Lansdowne Road and a two-way protected bicycle facility on Pandora Avenue.

BikeBC is the Province's cost-sharing program for communities wanting to expand or enhance cycling capability. The funding is part of the "B.C. on the Move" program and has a commitment of $6 million annually for the next three years to cost-share on projects such as bike trails, pedestrian bridges, multi-use paths and shoulder bikeways. It has three funding programs as described below:

- Gateway Cycling Program (GCP) provides funding to Lower Mainland communities wanting to link to the Gateway Program cycling network. Projects which facilitate better connections to transit, cycling and pedestrian routes are eligible for funding;
- Provincial Cycling Investment Program (PCIP) contributes to major cycling infrastructure projects; and,
- Cycling Infrastructure Partnerships Program (CIPP) assists with smaller-scale projects, such as bike lanes and paths through municipalities.

A useful compilation of grants for local governments is the CivicInfoBC site[28] which has 74 records in their Grants database.

28 http://www.civicinfo.bc.ca/grants?pn=1

SUMMARY / CONCLUSIONS

The methodology of this study covered many facets of the ongoing development of the Town of View Royal. It was able to incorporate the OCP adopted subsequent to the original TMP and due to the time elapsed from the start of this project, the current zoning of the Town lands was also incorporated into the analysis.

The result of the analysis is a documentation of all the land uses in the 14 Traffic Analysis Zones of the CRD TransCAD model for the Town of View Royal as well as the 8 neighbourhoods defined in the OCP. These land uses are examined in terms of their potential trip generating capacity relative to the current zoning bylaw, their current level of utilization, their trip generation capacity as defined by the land use designations in the current OCP and the volume of incremental trips between current conditions and the realization of the OCP land uses.

The incremental traffic volumes calculated for each neighbourhood are then used to determine an appropriate cross-section standard for the roads connecting the neighbourhoods to the Major Road network. It should be pointed out that this works well when the neighbourhood lands are well defined in terms of future use but there are some areas where that level of clarity is not available at present. Examples are the Town Centre in the Helmcken Neighbourhood; the IMU development in the Hospital Neighbourhood; and the Atkins Neighbourhood Centre (View Royal Transit Exchange) where the mix of land uses, densities and form are all conjecture as these developments are conceptual at this point. In order to create a bookmark, a high intensity trip rate was assumed for the first two areas (Shopping Centre) which generates a high volume to flag this area for future analysis when more details become available. For these future analyses, it may be more useful to develop timelines for such long-term developments and calculate trip generations based on specific development scenarios rather than a comparison of current conditions to full buildout which cannot be completely described.

In addition to the recommended Collector road cross-sections as contained in Table 34, the infrastructure for the active transportation modes of pedestrian and bicycle traffic were examined for Major roads and Collector roads in order to determine gaps in the networks. These gaps were documented in Tables 35 and 36 and present many long-term projects due to constraints in right-of-way, as-built roadways and as-built developments which may leave few viable options.

One gap in the Major roads which is pressing is the lack of designated bicycle lanes on the segment of the Admirals Road corridor between Island Highway and Hallowell Road. There are bicycle lanes on the other three legs of the Admirals Road / Island Highway / Craigflower Road and the E & N Rail Trail being built on Hallowell Road which highlights this missing link in the bicycle network. This issue was also highlighted in the CRD's Pedestrian and Cycling Master Plan as a critical corridor for bicycle infrastructure.

During the conduct of this study, with the identification of the Collectors and their intersection to Major roads, the need to examine these intersections as to their performance now and how much of the additional traffic they can accommodate with their present configuration and what future improvements may be needed, is highlighted. To proceed with this type of analysis requires intersection counts at the key intersections and a program to monitor intersections whose performance indicators may be approaching thresholds that would necessitate changes to the intersection. Such an annual program could be developed to monitor these network intersections. A baseline could be established which would also indicate which locations should be monitored more closely so that timely improvements could be implements where and when needed.

One other noteworthy point related to developments in the Town was the identification of two areas of residential development which appear to have a single point of road access. Chilco Road appears to be the only road access to all the residential development north of the E& N Railway and west of Six Mile Road at this point. As well Shoreline Drive and Craigowan Road is the only road access to Christie Point which may be even more critical at this point when a proposal is being considered to more than triple the number of residential units in this area. As part of emergency access to such areas, a secondary route needs to be identified or a plan developed as to what procedures are to be implemented to deal with an emergency situation in such locations.

Information on the secondary suites is incomplete at this time but for a logical reason. The Town approved a new Zoning bylaw in 2014 which approved the development of secondary suites in six land use categories and issued a guide to ensure that any secondary suites are compliant with the BC Building Code and Town of View Royals' requirements. The Town also requires annual permits for approved suites and at this time there are approximately 400 approved secondary suites within the Town. What is not known is the number of secondary suites that are not permitted and their impact on residential densities in the various neighbourhoods. While the use of minimum lot sizes for various residential land uses is a conservative approach which will over-estimate the number of residential units, but not being able to quantify the secondary suites does add a degree of uncertainty in the results that should be addressed in preparation for the next cycle of updating OCPs and TMPs.

With the recent change in the federal government there is a resultant increase in funding being made available through Infrastructure Canada via a Transformational Infrastructure Plan and long terms investments of $186B over the next 10 – 12 years. While details are still being released with respect to the funding streams and the impact on the New Building Canada Plan, it is clear there will be more federal funding in addition to the continuation of the Gas Tax Fund which is now approximately $266M for this year and next. Additionally other funding is available at the provincial level through such programs as Bike BC.

A final note is related to the extensive documentation contained in this report on various components of sustainable transportation planning. While progress has been made in some areas, and there is an ongoing dialogue in support of commuter rail, land use practices continue to results in low to medium densities for residential development. This does address market demand but it can also diminish the viability of commuter rail as is does not provide densities that are needed to support such a significant investment in that travel mode. However, it is also recognized that commuter rail is not going to happen soon so now is the time to plan, to consider options and outline possibilities such as a View Royal Transit Exchange which would trigger an Atkins Neighbourhood Centre. The development of higher capacity transit is also a consistent component of the maturation of a Town Centre for View Royal.

RECOMMENDATIONS

In preparing to document recommendations arising from this study, the recommendations for the initial TMP were reviewed and many remain relevant for this project in terms of providing context and direction such as:

- Develop land-use bylaws that encourage mixed use, transit oriented development
- Acquire right-of-way along road corridors as development provides opportunities for wider rights-of-way. This is not to add lanes but to accommodate more sustainable options such as priority transit, HOV or intermediate and high capacity commuter options;
- Continue the development of an integrated network of alternative mode facilities;
- Work with major employers to promote TDM strategies and incentives;
- Work with BC Transit to improve service within and through the town;
- Mitigate the effects of automobile emissions and other pollutants through landscape and road drainage treatment improvements; and
- The Town build on its success in obtaining grant funding and use its financial resources in matching government grants for identified municipal infrastructure upgrades.

As part of the earlier TMP, prioritized lists of projects were developed for projects related to road, pedestrian and bicycle networks which have served the Town well in the intervening years and helped provide some guidance in how to achieve the Town's vision related to transportation. For the next phase of creating an updated list, the technical update of the TMP has listed the roads providing connections between the Major road network and the Local roads in each of the Town's neighbourhoods and recommended an appropriate cross-section standard for these Collector roads. As well, gaps in the pedestrian and bicycle networks have been documented.

The next step is to put this information to use in order to update the listings of prioritized modal projects to be used in the years ahead to build on the progress already achieved. In order to do so, it is critical to obtain additional data to ensure that the Collector roads are sized appropriately to accommodate the forecast traffic as well as determine the impact on the incremental traffic on the operation of the intersections on the Major roads when they meet. For this reason, it is recommended that an Intersection Count Program be undertaken for the locations identified in Table 39. Nineteen locations have been identified for counts but many of these locations are known to not be experiencing operational issues at this time and for other locations, traffic signal controller downloads may provide enough information initially to make that determination. A baseline count for all locations could be spread out over a few years with higher profile locations collected early in order to monitor them more closely to determine existing levels of performance and monitor its rate of change so that improvements can be managed to be made where and when required.

While providing a process for updating the road infrastructure, the potential projects for the other travel modes also needs to be addressed. The 2008 TMP used a process of different accounts such as social, environmental and economic and used a 'triangle of pairs' approach with the Transportation Advisory Committee to assist them in developing a list of prioritized projects. The Town could follow a similar approach to incorporate the information and outputs from this study to update the pedestrian and bicycle infrastructure within the Town.

TABLE 39: LOCATIONS FOR INTERSECTION TRAFFIC COUNT PROGRAM

NEIGHBOURHOOD	MAJOR ROADS		COLLECTOR ROADS		LOCAL ROADS	
	ROAD APPROACH	ROAD APPROACH	ROAD APPROACH	ROAD APPROACH	ROAD APPROACH	ROAD APPROACH
ATKINS	ISLAND HIGHWAY (N/S)	SIX MILE ROAD (W)				
	SIX MILE ROAD (N/S)		CHILCO ROAD (W)		NURSERY HILL DRIVE (E)	
	SIX MILE ROAD (N/S)		ATKINS ROAD (W)		ATKINS ROAD (E)	
BURNSIDE	BURNSIDE ROAD W (S)	WATKISS WAY (E)	BURNSIDE ROAD W (N)	WATKISS WAY (W)		
CRAIGFLOWER	ISLAND HIGHWAY (W) CRAIGFLOWER ROAD (E)	ADMIRALS ROAD (N/S)				
	ADMIRALS ROAD (N)	ADMIRALS ROAD (S)			GLENTANA ROAD (W)	
	ADMIRALS ROAD (N)	ADMIRALS ROAD (S)			ALDERSMITH PLACE (W)	COOPER ROAD (E)
	ADMIRALS ROAD (N)	ADMIRALS ROAD (S)			HALLOWELL ROAD (W)	
HARBOUR	ISLAND HIGHWAY (E/W)	HELMCKEN ROAD (N)	HELMCKEN ROAD (S)			
	ISLAND HIGHWAY (E/W)				VIEW ROYAL AVENUE (S)	
HELMCKEN	ISLAND HIGHWAY (E/W)	HELMCKEN ROAD (N)	HELMCKEN ROAD (S)			
	ISLAND HIGHWAY (E/W)				BRUNETT ROAD (N)	
	ISLAND HIGHWAY (E/W)				STORMONT ROAD (N)	
	HELMCKEN ROAD (N/S)				RUDYARD ROAD (E)	
HOSPITAL	HELMCKEN ROAD (N/S)	WATKISS WAY (W)			CHANCELLOR AVE. (E)	
	WATKISS WAY (E/W)				ACCESS TO EMERGENCY ROOM	ACCESS TO EAGLE CREEK
	HELMCKEN ROAD (N/S)	BURNSIDE ROAD W (E)			BURNSIDE ROAD W. (W)	
THETIS	SIX MILE ROAD					
WILFERT	ISLAND HIGHWAY (N)	ISLAND HIGHWAY (S)			HART ROAD (E)	
	ISLAND HIGHWAY (N)	ISLAND HIGHWAY (S)			WILFERT ROAD (W)	WILFERT ROAD (E)

One project that was identified in the analysis is the installation of bicycle infrastructure on Admirals Road between Craigflower Road and Hallowell Roads and it is recommended that it be addresses as soon as possible. There are bicycle lanes on the other three legs of the Craigflower Road –Island Highway intersection and the E & N Rail Trail is being constructed on Hallowell Road and then south on Admirals Road. This portion of Admirals Road is a missing link, which was also highlighted in the CRD's Pedestrian and Cycling Master Plan, and will augment the E & N Rail Trail currently under construction. Admirals Road in this area is within the jurisdiction of MoT&I, and the issue has been raised in the past, but the infrastructure remains unchanged.

As mentioned in the previous section, it is recognized that updates to the TMP and OCP are cyclical with a 5 to 10 year interval between versions. From this latest update, there is an understandable lack of detail around some of the proposed developments in the OCP such as the Town Centre, IMU area in the Hospital Neighbourhood, and the Atkins Neighbourhood Centre. They are all conceptual at this time, but in trying to incorporate them into the full build-out scenario it is difficult to quantify their impact as there are no details about character and form and

intensity of development. In this instance, it is very possible that the Town Centre may not be achievable within the next ten to twenty years and as such, perhaps it should not be used when doing an update that is going to be revisited within the next ten years. This does not detract for the validity of the Town Centre as a goal or an integral vision to be pursued, but conducting an analysis with it as a component leaves a gap in the results as it is difficult to define what would exist in an as yet undefined Town Centre. It would offer a better product to the Town to provide an update of what transportation infrastructure would be required to accommodate for scenarios which do not consider conceptual developments that will in all likelihood be redefined and reshaped in the years ahead.

Further to the previous point, it would be advisable to try to quantify the number of unpermitted secondary suites in the Town of View Royal in order to refine the transportation impact of such residential units prior to the next iteration of updating OCPs and TMPs.

With the observation of two residential developments with what seems to be single road access, it is recommended that it should be determined whether a secondary road access could be developed or what types of procedures need to be put in place to respond to an emergency response situation in these areas if no road access it available due to an unforeseen incident that temporarily blocks the available access road.

A critical resource for advancing infrastructure construction is financing and that was a key plank in the new federal government's election campaign which has developed into increased funding announcements from Infrastructure Canada for all provinces. While some details have yet to be announced, some of the recent transportation improvements within the Town became a reality with the assistance of funding from external sources and it is strongly recommended that that approach continues to be vigorously pursued to build on the commendable progress from the previous TMP projects.

GLOSSARY OF TERMINOLOGY

APA	American Planning Association
ATP	Active Transportation Plan
CA	Change Area
CIF	Community Improvement Fund
CHIP	Casino Highway Improvement Project
CIPP	Cycling Infrastructure Partnership Program
CNT	Center for Neighbourhood Technology
CRD	Capital Regional District
CTOD	Centre or Transit-Oriented Development
CVRD	Cowichan Valley Regional District
CWF	Community Works Fund
DND	Department of National Defence
E & N	Esquimalt and Nanaimo Railroad
EGD	Esquimalt Graving Dock
FCM	Federation of Canadian Municipalities
FOI	Freedom of Information
FSR	Floor Space Ratio
FTN	Frequent Transit Network
GCP	Gateway Cycling Program
GFA	Gross Floor Area
GHG	Green House Gases
GLA	Gross Leasable Area
GTA	Gas Tax Agreement
HOV	High Occupancy Vehicles
ICF	Island Corridor Foundation
IHIP	Island Highway Improvement Project
IMU	Intensive Mixed Use
ITE	Institute of Transportation Engineers
LTN	Local Transit Network
MoT&I	Ministry of Transportation and Infrastructure
NBCF	New Building Canada Fund
NIC	National Infrastructure Component
NMU	Neighbourhood Mixed Use
OCP	Official Community Plan

PCIP	Provincial Cycling Investment Program
PPS	Project for Public Spaces
PTIC	Provincial-Territorial Infrastructure Component
RPCM	Regional Pedestrian and Cycling Master Plan
RTN	Rapid Transit Network
SPF	Strategic Priorities Fund
SRVI	Southern Railway of Vancouver Island
SUV	Sports Utility Vehicle
TAC	Transportation Advisory Committee
TAZ	Traffic Analysis Zone
TCH	Trans Canada Highway
TDM	Transportation Demand Management
TMP	Transportation Master Plan
TOC	Transit Oriented Community (ies)
TOD	Transit Oriented Design
TON	Transit Oriented Neighbourhood
TS	Targeted Services
TSM	Transportation Supply Management
TAZ	Traffic Analysis Zone
UBCM	Union of British Columbia Municipalities
UVic	University of Victoria
VMP	Veterans Memorial Parkway
VRTS	Victoria Regional Transit System