
Old Island Hwy
UVIC

[4.0 STRATEGIC DIRECTIONS AND ACTIONS]

- A Network of Vibrant Centers
- Liveable Neighbourhoods
- A Walkable Community
- Comfortable Cycling Facilities
- Convenient and Attractive Transit
- Complete Streets

The Transportation Master Plan represents a significant opportunity for the City, as it will play a key role in achieving the City's goals for transportation, but will also help to achieve the City's broader community aspirations and commitments towards livability and sustainability.

In addition to addressing the broad-arching goals of livability and sustainability, the Transportation Master Plan has six overarching themes to direct the Plan. These themes are:

NETWORK OF VIBRANT CENTRES

Support the City's economic development aspirations by creating walking, bicycle-friendly, and transit supportive centres.

LIVEABLE NEIGHBOURHOODS

Enhance local residential streets to improve safety, quality and liveability by managing the adverse impacts from vehicle traffic.

A WALKABLE COMMUNITY

Make walking safe, comfortable, accessible and a pleasant mobility choice for people of all ages and abilities

COMFORTABLE CYCLING FACILITIES

Connect vibrant centres with a complete bicycle network which enhances connectivity and improves the comfort level of bicycle facilities both locally and regionally.

CONVENIENT AND ATTRACTIVE TRANSIT

Examine the role of transit within a multi-modal framework to support and shape land use patterns and other City aspirations.

COMPLETE STREETS

Accommodate growth and development with an efficient multi-modal road network to access destinations throughout the City.

This section explores each theme explored in detail and establishes a series of strategies, policies, and actions for each theme.

4.1 A NETWORK OF VIBRAN

A Vibrant Centre is an area which is full of energy and life, and characterized by the rapid and rhythmic movement of people. To support such vibrancy requires support for all modes of mobility, enticing activities and attractions, and an easily accessible location with supportive land uses. The Transportation Master Plan identifies a network of Vibrant Centres throughout the City.

VIBRANT CENTRES

Regional
- Colwood City Centre

Urban
- Royal Bay Village Centre
- Allandale Mixed-Use Employment Centre

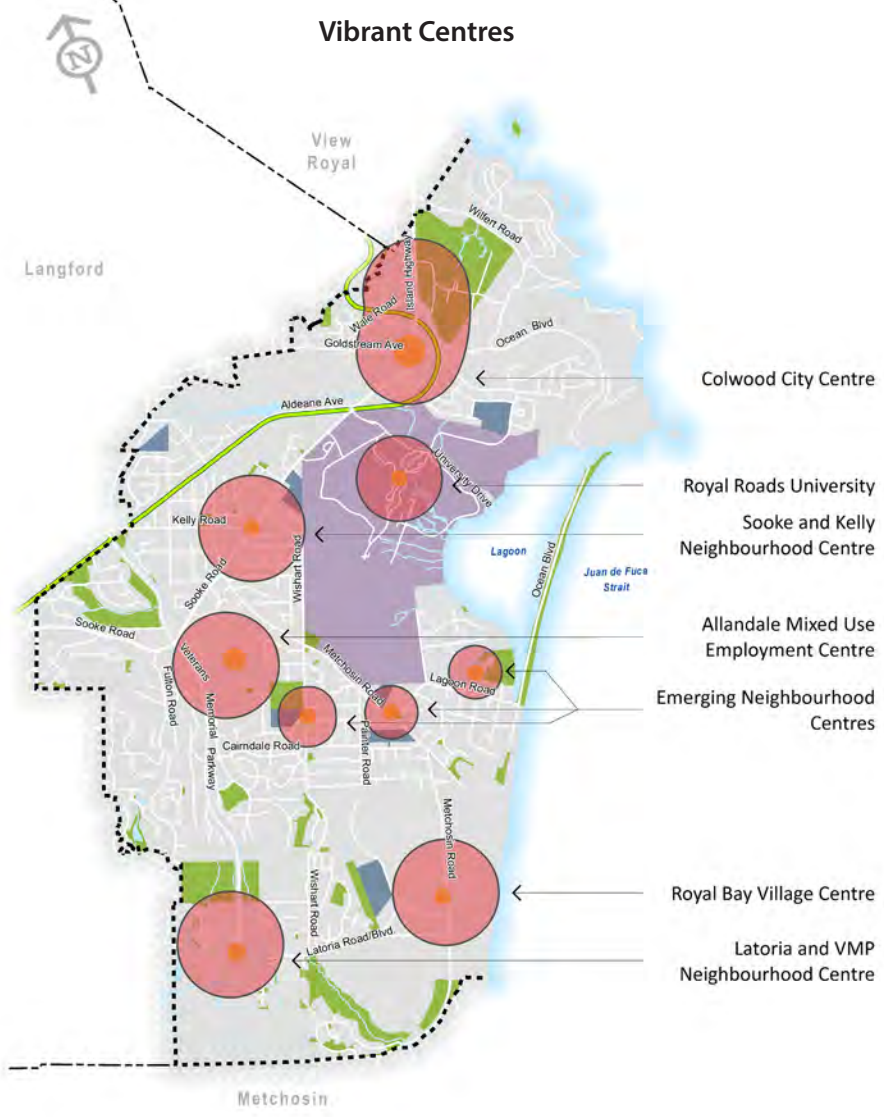
Local
- Sooke Neighbourhood Centre
- Kelly Neighbourhood Centre
- Latoria & Veterans Memorial Parkway Neighbourhood Centre
- Emerging Neighbourhood Centres

Establishing a network of Vibrant Centres throughout Colwood is fundamental to attracting economic development and identifying a framework for land use and transportation planning priorities. Due to the diversity in density, service orientation, and scale of the various vibrant centres identified throughout the Transportation Master Plan, the Vibrant Centres have been categorized into three classes for the purposes of associating appropriate strategies, policies and actions as they relate to a diverse range of transportation needs. The three categories, described below, consist of a Regional Centre, Urban Centres, and Local Centres with the most notable transformative opportunities associated with Colwood City Centre, Royal Bay Village, and the Allandale lands.

Colwood is fortunate that many of the identified Vibrant Centres are just now coming into development and therefore have the opportunity to choose whether they want to develop parks or parkades, plazas or malls, urban villages or suburbs. This section of the Transportation Master Plan supports the sustainability goals of the Colwood's OCP and the CRD's related plans. It is intended to support the development of great places in addition to great transportation options.

T CENTRES

Vibrant Centres



Colwood's Vibrant Centres

- Galloping Goose Regional Trail
- Vibrant Centres
- Schools
- Royal Roads University/DND
- Parks / City Owned Property
- Neighbourhood Nodes

4.1.1 REGIONAL CENTRE

Colwood City Centre has been identified as a Vibrant Regional Centre. Colwood City Centre surrounds the intersection of Goldstream Avenue, Sooke Road and Island Highway. The existing land uses support a regional growth centre with institutional, office, commercial, light industrial, and major civic uses. The area is intended to be a significant location for community gathering. This will be accomplished with art and entertainment activities, public squares, parks and open space.

This vibrant centre will have numerous inter-city and inter-regional multi-modal transportation connections. It is located along both frequent and regional transit network routes, and with higher population and employment densities it will be able to support higher transit ridership and more walking and cycling. In local and regional plans, Colwood City Centre is a strategic transportation hub. It exemplifies the characteristics for future Transit Oriented Development (TOD), with plans for more compact housing types, a variety of employment opportunities, and excellent regional transportation accessibility.

The Crown of the City Source: Colwood OCP, pg 3-5

Colwood City Centre is identified in the CRD's Regional Transportation Plan (RTP) as a 'complete mobility hub' and is intended to provide services consistent with the definition obelow.

> "Complete Hubs are areas with high levels of multi-modal transportation activity. They are locations of major trip origins or destinations both in the peak and off-peak periods, are served by multiple or frequent transit routes, and include convenient access to bikeways, arterials, and major collector roads. These hubs have an attractive urban design that encourages high pedestrian volumes."
>
> *(CRD, Regional Transportation Plan, 2014)*

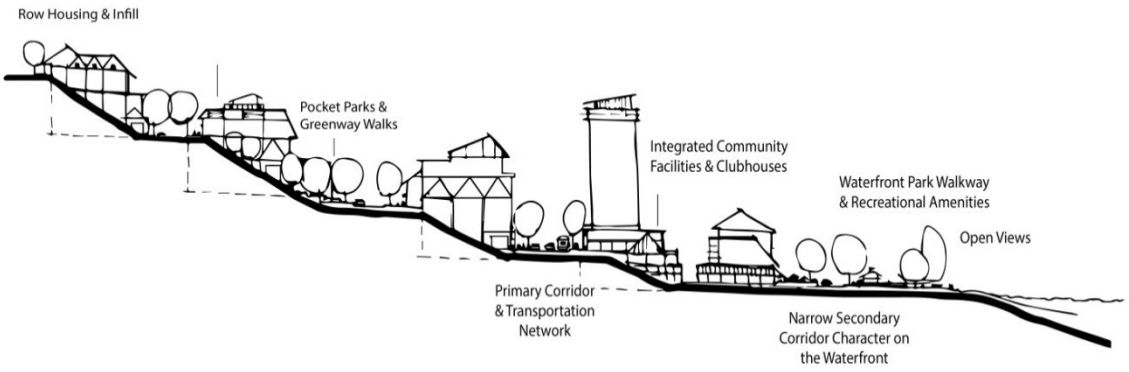
As development progresses and population densities increase, there will be renewed demand for high quality, inter-city and inter-regional transit connections throughout Colwood and surrounding areas. Through the integration of land use and transportation planning, and in association with urban design improvements, it is possible to provide the setting for a transit-oriented, walkable, and bicycle-friendly community which is inherently less dependent on private automobile use. The area will support a rich context for a socially connected pedestrian environment supporting local and regional economic development.

To ensure an integrated approach to land use and transportation planning, a local area plan should be completed to fully take advantage of the location. The location is intercepted by the Galloping Goose Regional Trail, which has the opportunity for significant regional cycling traffic. Improvements to the trail are critical as there are current gaps in the network in Colwood. As part of the growth of the Colwood City Centre, the municipality will encourage the building of a grade-separated trail over the Island Highway to close the gap in the Galloping Goose and ensure cycling connectivity. This attractive bridge will also act as a gateway to Colwood.

Mobility requirements to support the vibrancy of Colwood's Regional Centre include the provision of an excellent pedestrian environment and the support for high quality transit connections both locally and regionally.

4.1.2 URBAN CENTRES

Vibrant Urban Centres are planned to become significant areas of local mixed-use commercial and services, and support more compact forms of residential development in the near future. Both the Royal Bay Village Centre and Allandale Mixed-Use Employment Centre have been identified as Urban Centres.



A Concept for our Village Centre Source: Colwood OCP, pg 3-8

Royal Bay Village Centre is currently under development and is planned to take full advantage of the stunning waterfront setting on the shores of the Juan De Fuca Strait. Royal Bay Village Centre is poised to be highly attractive to new residents, business, and investment. As approved in an OCP amendment, this Vibrant Urban Centre is predominately residential featuring a variety of housing types. The development will offer affordable housing, rental housing, and the provision of commercial services and amenities to support the daily needs of local residents. Parks and open spaces will be integrated throughout the area along with educational, health and child care facilities to serve the needs of residents. Transit connections will be provided to accommodate residents' local and regional trips.

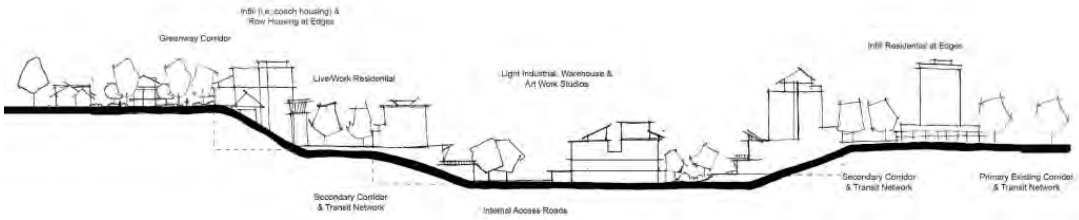
The Royal Bay Local Area Plan proposes a comprehensive approach to developing the Urban Centre with mixed-use development and moderate to high densities planned for the Commons and the Landing neighbourhoods. The 2,300 new units will provide a population base to support a broad range of commercial and transportation services.

Source: Royal Bay Local Area Plan

Allandale Mixed-Use Employment Centre has been recognized in the Colwood OCP as an emerging Vibrant Urban Centre. It has a strategic location and provides an excellent opportunity for comprehensive development that supports employment and housing needs. The OCP

recognizes the area as predominately a workplace area that would permit a range of business (commercial, accommodation, institutional, and light industrial) and housing types (live-work, mixed-use, student housing, and rental). Parks, public squares, open space, and active transportation greenways would be integrated throughout the area with inter-city and/or regional transit and active transportation linkages to connect employees to the employment centre.

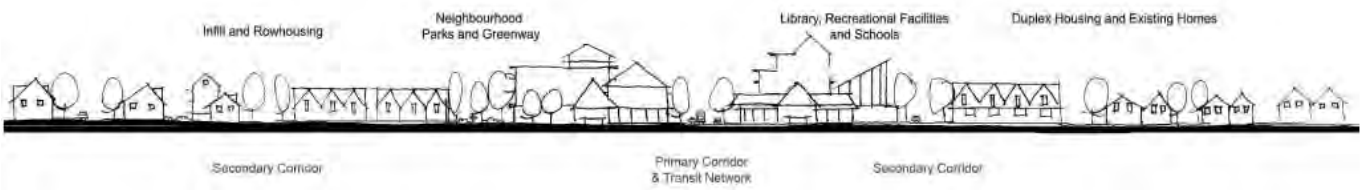
To support the vibrancy of this future urban centre, local and regional transit connections, quality cycling and pedestrian connections, and a diverse range of supportive land uses are required. A neighbourhood plan should be completed to ensure comprehensive integration of these land use and transportation components including connections to arterial roads.



A Concept for our Mixed-Use Employment Centre at Allandale Pit
Source: Colwood OCP, pg 3-12

4.1.3 VIBRANT LOCAL CENTRES

Vibrant Local Centres are neighbourhood centres at key intersections within the existing and emerging neighbourhood areas. Neighbourhood centres identified in the OCP are medium density mixed-use nodes surrounded by low to medium density housing. A notable example of a Vibrant Local Centre is at the intersection of Latoria Road and Veterans Memorial Parkway, where there is a mix of residential densities and local commercial services.



Neighbourhood Centre
Source: Colwood OCP, pg 3-14

Mixed-use commercial intensification at key intersections should be serviced by transit, walking and cycling. The provision of safe routes to schools, community facilities, and other institutional uses should be encouraged through traffic calming and improvements to cycling and pedestrian infrastructure.

4.1.4 STRATEGIC DIRECTION AND ACTIONS

Strategic Direction

Integrate land use and transportation planning in the development of compact, mixed-use vibrant centres to support walking, cycling, transit service, and economic development.

Actions

1. Encourage pedestrian activity through improved facilities and infrastructure
2. Support Complete Streets between Vibrant Centres
3. Invest in the Public Realm

Integrate land use and transportation planning in the development of compact, mixed-use vibrant centres to support walking, cycling, transit service, and economic development.

1. ENCOURAGE PEDESTRIAN ACTIVITY THROUGH IMPROVED FACILITIES AND INFRASTRUCTURE

Economic activity and social well-being is enhanced with the presence of pedestrian activity. Colwood's OCP supports the concept of walking. It notes that an attractive pedestrian environment complemented by a range of uses will encourage people to walk rather than drive when residing

within 800 metres (e.g. a 10 minute walk) from local services. To support the identified targets for pedestrian mode share and encourage a vibrant public realm, the following actions aim to encourage walkability as a primary mode within all of the Vibrant Centres.

- **A Safe Pedestrian Environment.** Prioritize pedestrian safety within and around the identified Vibrant Centres by building sidewalks, reducing travel speeds via traffic calming features, developing pedestrian prioritized plazas, and implementing support facilities consistent with Crime Prevention Through Environmental Design (CPTED) features.

- **Make Walking Convenient and Accessible.** Implement urban design tools to support 'filtered accessibility,' which provides access to pedestrians and cyclists but discourages automobile traffic. Encourage walking so it is the most convenient means of mobility within the Vibrant Centres.

- **Create Attractive Pedestrian Spaces.** Enhance sidewalks and pedestrian facilities to make them more attractive by using wide pathways, quality surfacing, pedestrian-oriented lighting, universal accessibility, abundant seating and tables, wayfinding, landscaping, recreational and entertainment amenities, and public art.

- **Attract the Right Businesses.** Encourage businesses to integrate with the public realm through the use of terraces, outdoor seating, and dynamic store frontages. Limit large format retail outlets or businesses associated with automobile services. Support food and beverage commercial services and encourage retailers to maintain evening business hours.

2. SUPPORT COMPLETE STREETS BETWEEN VIBRANT CENTRES

Concentrating future growth within the identified Vibrant Centres helps establish a framework for where to prioritize transportation corridors throughout the City. Accommodating for a diverse range of mobility needs within a shared travel corridor or Right of Way is often referred to as achieving a "Complete Street". The following actions support the development of Complete Streets to connect the Vibrant Centres throughout Colwood.

- **Plan for Future Transit Exchanges and Stations.** Allocate suitable lands for the provision of future transit exchange facilities within Regional and Urban Centres (such as Colwood City Centre, Royal Bay and Allandale Lands), and transit stations at key intersections of the various Local Centres. Ensure that Colwood City Centre transit exchange incorporates the determined needs for a future Bus Rapid Transit/Light Rail Transit Exchange as determined in

the BC Transit Future Plan, and enhances the quality and frequency of transit stations at key intersections within Local Centre neighbourhood nodes, including appropriate passenger amenities.

- **Enhance Cycling and Pedestrian connections.** Provide safe routes between Vibrant Centres for cyclists and pedestrians with separated bicycle lanes on arterial and collector roads. Provide end-of-trip facilities such as bicycle racks or long term bicycle parking at Regional Centres to support regional multi-modal trips.

- **Reduce Vehicle Traffic.** Utilize transportation demand management strategies to discourage automobile usage. This can include reducing available parking, limiting vehicle access to services, limiting parking to short term or pay parking, reducing parking requirements, and/or providing various incentives to pedestrians, cyclists, transit users and carpool users.

- **Supportive Land Use Zoning.** Support flexible land use zoning typologies to encourage a variety of civic, institutional, and commercial interests, in addition to a diversity of residential densities, within the context of Regional, Urban and Local Centres. This will support transit-oriented development and supply local community needs.

- **Maximize benefits from Developer Contributions.** Update Colwood's Roads Development Cost Charges (DCC) bylaw immediately to capitalize on the opportunity to contribute to transportation improvements for walking, cycling and transit initiatives, as well as the more typical capacity improvements for vehicular travel.

3. INVEST IN THE PUBLIC REALM

Place-making and urban design can have significant influence over the effectiveness of a Vibrant Centre to attract new businesses, residents, and economic development opportunities. The Colwood OCP recognizes that

"Thoughtful urban design is one of our community's most powerful tools to advance the quality of life of our residents, as well as the competitive advantage and attractiveness of the community, which is so critical for attracting business, investment and jobs." (Colwood OCP, 2008)

From the strategic location of Colwood City Centre to the beautiful waterfront of Royal Bay Village, the following actions support the continual development of Vibrant Centres as unique and attractive places for people and commerce.

- **Develop Public Space to Enhance Quality of Life.** In large Vibrant Centres develop public plazas that support civic activities and attract a diversity of users. Beautify the streetscape with attractive landscaping, quality surfacing materials, and intriguing signage and public art. Separate pedestrians from the noise and pollution of automobile traffic and create 'bumping places' where residents can catch up, chat or recreate together.

- **Urban Design for the People.** To support human scale development the following sample urban design recommendations apply:

  - Encourage ground floor commercial uses fronting onto pedestrian priority zones (i.e. plazas, greenways, traffic calmed local roads),
  - minimize vehicle parking fronting commercial uses from arterial or collector roads,
  - encourage underground parking and reduced parking ratio requirements, and
  - limit vehicle access to encourage walking from store to store.

- **Enhance the Landscape with Public Art.** Encourage various mediums of public art along prominent pedestrian and cycling corridors and pedestrian plazas. Create a public art policy with an accompanying budget that provides a process to acquire public art and display it in prominent locations.

- **Partnerships.** Identify strategic opportunities to work in partnership with developers, other governments or community groups to implement urban improvement projects. The public art project is one example of such a partnership.

4.2 LIVEABLE NEIGHBOUR

Colwood's neighbourhoods are the building blocks of the community. Each neighbourhood's unique environment contributes to the overall quality of life and identity of the City. This includes street patterns, road design and local amenities that can influence people's travel behaviour and mode choices. Enhancing the local street network to create local neighbourhood streets where people can walk and bike, neighbours can chat, and children can play or sell lemonade is an important element to supporting liveable neighbourhoods.

The residential neighbourhoods in Colwood are primarily composed of single-family residential dwellings. In the Official Community Plan (OCP) residential neighbourhoods are identified as controlled growth areas and any future density is limited to infill through secondary suites. There are currently pockets of commercial and educational services, with schools, daycares and corner stores meeting some of the neighbourhood's daily needs. In the OCP, home-based businesses and live-work opportunities are encouraged along more significant corridors.

On many local streets in Colwood vehicles have been prioritized in the design and management of the street space. Many neighbourhood streets in Colwood have limited or fragmented pedestrian infrastructure, lack traffic calming measures, and have circuitous road networks that lead to inefficient and indirect connections for pedestrians and cyclists. There are great opportunities to build sidewalks, slow vehicle speeds, and create connections to multi-use trails to encourage active travel and liveable neighbourhoods.

Strategic Direction

Enhance neighbourhood transportation networks to meet local needs and encourage active transportation.

Actions

1. Safe local streets
2. Reclaim local roads as an integral part of the neighbourhood's public realm
3. Encourage walking and cycling as primary transportation modes for meeting local needs

Enhance neighbourhood transportation networks to meet local needs and encourage active transportation.

1. SAFE LOCAL STREETS

Many Colwood citizens have raised concerns about the safety of neighbourhood streets due to high vehicle speeds and non-local traffic short cutting through neighbourhoods. Traffic calming is an important tool to decrease the speed and volume of vehicles in a specific area. All local streets in residential neighbourhoods in Colwood should be designed for, and used by, low volume and low speed traffic.

The City should implement traffic calming in school areas, as noted on the map below. In parallel, the City should work with resident groups in neighbourhoods with demonstrated traffic volume, speed or short-cutting issues. The areas should be prioritized as pilot areas for proposed traffic calming measures and improved pedestrian and cycling facilities. The intent of these pilot areas are to not only make streets safer for residents and celebrate these public spaces, but also to encourage walking or other modes of active transportation as a preferred travel mode.

School Priority Areas

Traffic calming priority areas are:

- Roads around schools to facilitate the implementation of "safe routes to school";
- Neighbourhoods with high traffic volume, especially short-cutting traffic;
- Neighbourhoods with speed issues (e.g. criteria requires residents to be involved in identifying streets with high traffic speeds or short-cutting issues); and,
- Greenways that provide an alternative to driving.

Traffic Calming Elements. A focus on the design and treatments applied to neighbourhood streets can positively influence the shape of neighbourhoods and the quality of life enjoyed by those living in them. Reducing the conflicts between road users and residents is very important. Local road design standards should prioritize the safety of pedestrians and cyclists to enhance the neighbourhoods' safety and enjoyment. It is also important that the consideration of any traffic calming elements incorporate the needs of emergency vehicles.

SPEED CUSHIONS

Speed Cushions are several small speed humps installed across the width of the road with spaces between them. They allow emergency vehicles to straddle the cushions .

Speeds in excess of 40 km/hour are not conducive to neighbourhood liveability, yet unless otherwise posted provincial legislation allows vehicle speeds up to 50km/hour within neighbourhood districts. Traffic calming elements can mitigate high travel speeds which are not appropriate for local streets.

Within the proposed traffic calmed neighbourhoods or when any local roads are being upgraded, the City should consider physical traffic calming features such as lane narrowing, bulb-outs, or speed cushions. Visual features such as landscaping and surface treatments can also slow traffic speeds.

Short-cutting vehicle traffic. Some neighbourhoods in Colwood experience non-local commuter traffic using local streets as short-cuts or as an attempt to avoid congestion on the arterial roads. This means more and faster traffic on local streets. To decrease this behaviour, the City should

VISUAL SUMMARY TRAFFIC CALMING TREATMENTS

CURB EXTENSIONS

Extending the curb on one or both sides of the roadway, narrowing the roadway width.

TRAFFIC CIRLCES

Raised islands located in the centre of intersections.

DIVERTERS

Diversions of both directions of travel on a pair of streets that prevent car through traffic, though are permeable by both pedestrians and cyclists.

RAISED MEDIAN INTERSECTION

Medians extending through the intersection to prevent through and turning movements from and to cross-streets.

SPEED HUMPS

Widened speed bumps that gently rock a car at moderate speeds, and provides more of a jolt at higher speeds.

RAISED CROSSWALKS

A combination of a speed hump with a marked crosswalk.

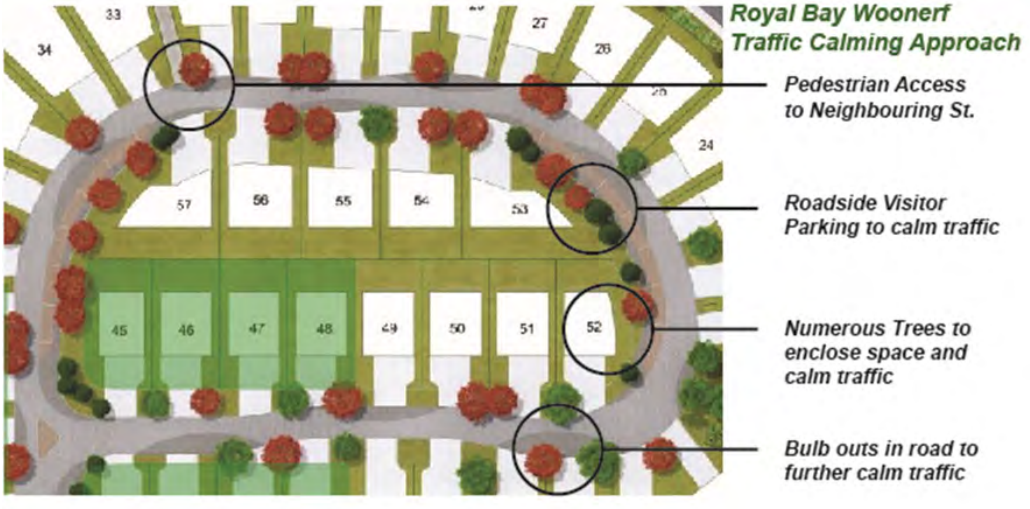
identify vehicle short-cutting routes and implement measures to reduce the attractiveness for short-cutting vehicles. This can be done by limiting the connectivity between local and arterial streets, restricting vehicle access, and introducing traffic calming features.

2. RECLAIM LOCAL ROADS AS AN INTEGRAL PART OF THE NEIGHBOURHOOD'S PUBLIC REALM

Many of Colwood's neighbourhood streets have been designed primarily to accommodate motor vehicles, with limited focus on active transportation and streets as meeting places for people. This has meant a loss of children playing and neighbours exchanging pleasantries.

One strategy to reclaim local roads is woonerf streets. Colwood's OCP recognizes the woonerf street as a means to 'accommodate the needs of automobile drivers but also integrate the needs of other users, such as pedestrians, cyclists, and playing children'. The concept of the woonerf street is highly applicable to local neighbourhood streets, especially around schools or neighbourhood nodes where there is a concentration of pedestrian activity. This design reclaims the streets for the needs of pedestrians and enhances the function of the road as a public space.

The City should establish a series of design standards and speed limits to reflect Colwood's vision for woonerf streets and seek opportunities to implement improvements through new developments and significant road upgrades.



Other events. The City of Colwood can encourage residents to use their streets for more activities, including block parties. This City currently provides information on hosting block parties, but

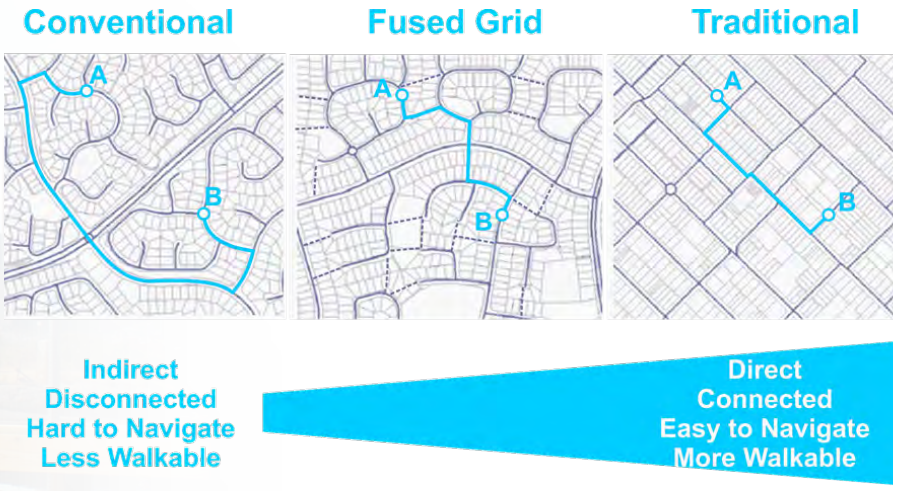
the street closure policy is complex and onerous for the closure of smaller, local streets. The street closure policy should be simplified and refined in cooperation with emergency services to apply to small, local streets. Further information and small grants could also be given to local neighbourhoods to facilitate events.

3. ENCOURAGE WALKING AND CYCLING AS A PRIMARY MODE FOR MEETING LOCAL NEEDS

As will be discussed in the walking and cycling chapters, if the right conditions are in place in a community, people will be more likely to choose active transportation to get to their destination. Already 12% of trips within Colwood are on foot and there is opportunity for further growth. As part of that, neighbourhood street design and site designs should encourage residents to walk or cycle to meet their local needs.

The City should implement cycling and walking infrastructure on neighbourhood streets. This includes the sidewalk network identified in the walking chapter and traffic calming mentioned above. Streets can be enhanced with features such as boulevards between sidewalks and curbs, narrowing streets at crossings and intersections, and providing on-street parking, street furniture and street trees. These features, while not explicitly traffic calming treatments, can have a calming impact by cueing drivers to slow down and by making pedestrians and cyclists more visible.

It is also important that neighbourhoods are connected through walking and multi-use trails. As demonstrated below, street layout within and between neighbourhoods can have a significant impact on how direct, navigable and ultimately walkable and bikeable a community is. The City of Colwood should ensure that the layout of any new neighbourhood is designed with pedestrian and cyclists connectivity in mind. As well, the City should review the current neighbourhood street networks to identify future pedestrian and cyclist access points that can provide additional connections. Upon re-development of these key properties, the City should implement a statutory right of way/trail dedication to connect neighbourhoods with multi-use trails.



Another component of encouraging walking and cycling in local neighbourhoods is having destinations within the neighbourhood or nearby. Land uses such as neighbourhood commercial uses should be supported near neighbourhood centres.

4.3 A WALKABLE COMMUN

Walking is the most basic form of transportation. It is a part of every trip, whether that trip is made by car, transit, or bicycle. If suitable conditions exist such as the presence of a complete connected sidewalk network and destinations within an accessible distance, research suggests that residents will consider walking a viable transportation option.

Walking can be a convenient alternative to the automobile for almost all short trips and is also an important recreational activity for many residents. Promoting and facilitating walking can help reduce automobile dependence and greenhouse gas emissions, improve public health outcomes, and help to create more liveable and vibrant communities.

Currently, 12% of all daily trips within the City of Colwood are made by walking. These trips are typically for shopping and errands or recreational and social outings, as only 3% of residents commute to work by foot. The limited number of walking trips, particularly for commuting purposes, highlights challenges with the pedestrian network as well as land use patterns that currently exist in Colwood. These include a lack of sidewalk connectivity (including no or limited sidewalks), sidewalk quality, difficult road crossings, uncomfortable pedestrian environments, and limited connections to local trails.

Factors that discourage people in Colwood from walking more for their day-to-day needs

- Lack of time/my usual destination are too far away
- I often need to transport kids/ family/heavy loads
- Sidewalks are too narrow or incomplete
- I feel unsafe with high-speed traffic close by

Colwood has a great opportunity to increase walking. A number of neighbourhoods have a mostly grid-like street pattern that can support a higher level of connectivity for pedestrians, and most streets have available right-of-way to provide additional pedestrian facilities. There are also numerous attractive trails, including the Galloping Goose Regional Trail and an extensive trail network through the Royal Roads University campus.

Building on the Official Community Plan (OCP), Regional Transportation Plan (RTP) and Pedestrian and Cycling Master Plan (PCMP) goals, citizens of Colwood have identified a walkable community as a top priority for the Master Transportation Plan. In response, this Plan sets bold targets to increase the walking mode share to 10% of all trips by 2038.

To encourage walking as an accessible and enjoyable way to travel within the City, the Transportation Master Plan includes a series of actions to expand and enhance the pedestrian network, develop safety and accessible crossings, create a more enjoyable walking experience, and support walking initiatives.

Strategic Direction

Make walking accessible and enjoyable for residents of all ages and abilities.

Actions

1. Expand and enhance the Pedestrian Network
2. Develop safe and accessible crossings
3. Create a more enjoyable walking experience
4. Support walking initiatives

Make walking accessible and enjoyable for residents of all ages and abilities.

1. EXPAND AND ENHANCE THE PEDESTRIAN NETWORK

Future Pedestrian Network. Ultimately it is ideal to have sidewalks on every street. In the meantime, the Transportation Master Plan recommends filling the City's sidewalk network strategically. The construction of new sidewalks and enhancement of existing sidewalks should be prioritized based on key destinations throughout the City, focusing on where there is the greatest opportunity to increase the number of walking trips. Expanding and enhancing the sidewalk network is recommended on all arterial and collector streets, as well as other streets with higher pedestrian demand, such as areas around commercial land uses, schools, bus stops, and parks.

The City's short and medium term goals for a sidewalk network should prioritize:

- Concrete sidewalks on at least one side of the streets near schools and parks, and along bus routes.
- Concrete sidewalks on both sides of all streets in Vibrant Centres, including local streets; and
- Concrete sidewalks on both sides of all arterial and collector streets;

Priority Sidewalk Improvements

Where new road infrastructure is constructed, or as part of a new developments, the Transportation Master Plan recommends that all streets should be developed with sidewalks on both sides of the street or that a comfortable walking environment, such as a woonerf street, be implemented. Developers should be responsible for building or funding these sidewalks on all new streets and large re-developments of properties.

The recommended sidewalk network is shown in the Priority Sidewalk Network Map. In the long term the City's goal is to have sidewalks on every street.

The pedestrian network should also include the following components:

- **Complete streets.** The construction and enhancement of sidewalks provides the opportunity to integrate pedestrian amenities, cycling infrastructure, innovative storm water management techniques, utilities, and street beautification.

- **All ages and abilities.** Sidewalks facilities that are developed or enhanced should support all ages, abilities and needs, in addition to being pleasant and attractive to users. These accessibility components include sidewalk widening, improved quality (surfacing), tactile stripping, and curb letdowns. Regular maintenance, including snow clearing and repairs, is also essential. These features increase accessibility for people with mobility challenges and families with strollers.

- **Multi-use trails.** Colwood's vast network of multi-use pathways through the various parks and open space areas is an incredible asset to encourage walkability amongst residents. As mentioned before, the opportunity to enhance the usage of these trails is associated with how well the multi-use trail network connects to roads which support active transportation facilities and local greenways.

2. DEVELOP SAFE AND ACCESSIBLE CROSSINGS

Pedestrians in many areas of the City find crossing larger roads uncomfortable. Crossings are also where most pedestrian-vehicle collisions occur and making improvements at these locations is an important priority to improve pedestrian safety. Difficult crossings can act as significant barriers to walking, making trips much longer or creating safety issues, particularly for vulnerable road users such as seniors, children, and people with physical and cognitive disabilities.

The City should prioritize the use of crossing enhancements within the sidewalk network where

pedestrian demand is the greatest or where safety performance is poor. This can occur by tracking public complaints on an ongoing basis and monitoring ICBC accident rates on an annual basis.

Actions to improve safety and accessibility of crossings throughout the City include:

- **Update street design guidelines** in Subdivision Servicing Bylaw to increase pedestrian visibility and safety at pedestrian crosswalks by:
  - standardizebasic designs,
  - consider crossing improvements where applicable,
  - reduce curb return radii,
  - increase pedestrian crossing times,
  - install accessible pedestrian push buttons and pedestrian countdown times, and
  - consider where appropriate, leading pedestrian intervals, pedestrian scrambles and pedestrian activated signals.
- **Upgrade existing signals** with accessible push buttons and audible signals at locations prioritized in consultation with representatives from the mobility and visually-challenged communities.

3. CREATE A MORE ENJOYABLE WALKING EXPERIENCE

To make each trip within Colwood more attractive and enjoyable for walking, the City and its partners should provide pedestrian amenities such as weather protection, street furniture, hard and soft landscaping features, and pedestrian-oriented lighting within public and private spaces. The City should support retail and other commercial frontages with broad sidewalks, street furniture, landscaping, and/or outdoor café/restaurant seating. This can be achieved through public investment or with private involvement during the development process.

Features that can enhance the pedestrian experience include:

- **Pedestrian design features** such as public art, benches, community art projects, and community based design initiatives that can be used to help highlight the emerging Vibrant

VISUAL SUMMARY PEDESTRIAN CROSSING TREATMENTS

ACCESSIBLE CURB LETDOWNS

Critical to provide access between the sidewalk and the street at intersections. Where possible, separate curb letdowns should be properly aligned with crosswalks with directional guidance provided for those with visual impairments. Tactile surfaces can also be used to act as indicators to pedestrians who are visually impaired to alert pedestrians that they are approaching an intersection or grade change.

NARROWER CROSSINGS

Using curb extensions, bus bulges, and median islands can be provided to reduce crossing distances. Curb extensions extend the sidewalk across the curbside parking lane. Narrower crossings benefit pedestrians by improving visibility and reducing crossing distances, and can offer opportunities for pedestrian amenities, such as landscaping and benches.

PEDESTRIAN REFUGE ISLANDS

Placed in the street at an intersection or mid-block to protect crossing pedestrians from motor vehicles. The refuge islands make the crossing the road easier for pedestrians by allowing them to cross in two stages and to deal with one direction of traffic flow at a time.

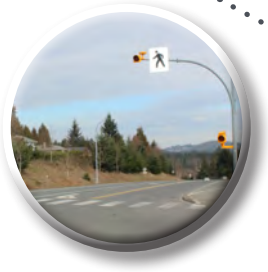
ACCESSIBLE PEDESTRIAN SIGNALS

Can be used at signalized intersections to assist pedestrians with disabilities and communicate when to walk or not walk in visual formats, such as pedestrian countdown timers, or in non-visual formats, such as through audible tones, speech messages, or vibrating surfaces. The use of braille on pedestrian signals can also enhance the accessibility of intersection crossings.

MARKED CROSSINGS

Enhance the visibility and safety of crossing pedestrians, where warranted. Raised crosswalks can also be used to extend the level of the sidewalk across the road and act as a traffic calming measure.

ENHANCED CROSSINGS



Go beyond a painted crosswalk and can include flashing pedestrian warning beacons, two-stage crossings and pedestrian half signals, where warranted.

Centres in Colwood. A tool to facilitate this process can be a public art policy, which can guide the acquisition and installation of art in municipally-owned public spaces.

- **Pedestrian amenities** that improve the attractiveness and comfort of pedestrian environments include planters, garbage cans, public toilets and water fountains. These amenities are essential to create commercial areas that are comfortable and interesting to pedestrians.

- **Street trees** should be incorporated into all sidewalks, as they can play an important role in increasing pedestrian comfort and safety. This is particularly important for streets with high pedestrian demand or where parking does not provide a buffer between the road and the sidewalk. Street trees also help with air quality, reduce the urban heat island effect and add shade in the summer.

- **Entrance and wayfinding features** that invite pedestrians to visit and explore further.

The City should create and implement design guidelines that encourage, and in some cases require, developers to provide amenities to enhance the pedestrian environment, including building setbacks and weather protection, such as canopies or awnings.

4. SUPPORT WALKING INITIATIVES

Improved infrastructure is one component of the effort to shift travel habits. Education and promotion are also important in sharing the benefits of shifting travel modes and providing information to make walking as a form of transportation easier.

A majority of programs combine walking and cycling to support active transportation in general. In many cases, the City should partner or support non-profit organizations and other agencies who provide programs in this area.

Support initiatives may include:

- Information about walking and cycling in Colwood, including walking maps, provided on the City's website.

- Wayfinding systems to guide people to key activity areas by walking and biking. These systems can be incorporated into current municipal infrastructure, such as utility boxes.

Enhanced wayfinding signage can benefit residents and visitors, helping to orient pedestrians to major destinations.

- Safety education and awareness intiatitives, as promoted through the City and/or partnerships with ICBC, RCMP and the School District #62.
- Walk and bike to school programs in cooperation with School District #62 should be expanding to promote walking and cycling with youth.
- Support and promote events such as Street closures, Sunday Streets/Open Streets/Ciclavia, World Walking Day, iWalk, Move for Health, and Active Month by providing easy access to street space for community events.
- Creation of parklets or pop up plazas in areas formerly used for on-street motor vehicle parking.

4.4 COMFORTABLE CYCLIN

Cycling is an important and growing mobility choice in Colwood for both commuting and recreational purposes. Cycling currently accounts for approximately 3% of trips to work in Colwood – the highest cycling mode share of all West Shore communities. For all trips completed by Colwood residents, 1% are currently completed by bike.

With a compact land area, relatively flat topography in many areas of the City, direct connection to the world-class Galloping Goose Regional Trail, and exceptional parks and trails, the City is well positioned to increase the number of cycling trips for both residents and visitors.

Cycling can be a convenient transportation choice, particularly for short to medium-distance trips that are time-competitive with driving. Cycling is not only a practical way to get around Colwood and the region; it is also healthy, good for the environment, and saves money.

The Colwood Cycling Advisory Committee has been active for many years and continues to play an important role in bringing cycling issues and initiatives to City staff and council.

G FACILITIES

Although the City has made progress implementing bicycle facilities, there are significant gaps in the City's bicycle network. There is a recognized need to provide safe, efficient, and enjoyable cycling infrastructure to access major destinations within the municipality and the surrounding regional network.

The Transportation Master Plan sets bold targets to increase the number of cycling trips to 8% by 2038. Developing a comprehensive cycling network that covers the entire City and which residents would feel comfortable using is integral to achieving these targets. The bicycle network will connect the City's destinations – schools, parks, commercial areas – with a range of high quality on- and off-street cycling facilities that are comfortable for people of all ages and abilities.

Factors that discourage people in Colwood from cycling more for their day-to-day needs

- I feel unsafe riding in traffic
- I often need to transport kids/ family/heavy loads
- Lack of time/my usual destination are too far away
- Poor weather (too rainy/too cold)
- The streets or routes are not appealing

Strategic Direction

Make cycling a safe, comfortable, convenient and fun experience for residents and visitors of all ages and abilities.

Actions

1. Develop a Complete, Connected and Comfortable Bicycle Network
2. Make Cycling More Convenient
3. Market and Promote Cycling

Make cycling a safe, comfortable, convenient and fun experience for residents and visitors of all ages and abilities.

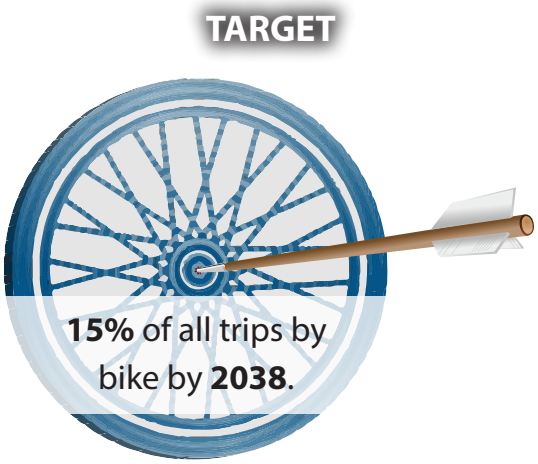
1. DEVELOP A COMPLETE, CONNECTED, AND COMFORTABLE BICYCLE NETWORK

The City of Colwood strives to provide a complete network of bicycle facilities that are attractive to people of all ages and abilities. In order to make cycling a safe, comfortable, and enjoyable transportation option for people of all ages and abilities, the Transportation Master Plan recommends developing and implementing a complete bicycle network. This network would connect with all key destinations throughout the City as well as external commuter routes and place all residents within a short distance of a bicycle route.

The Colwood bicycle network was developed based on the following key principles:

- **A Dense Network.** The long-term bicycle network plan ensures that bicycle routes are regularly spaced to ensure all residents are within a reasonable distance to access a route. A complete bicycle network in Colwood is envisioned as one that ideally places all residents

and businesses within 500 metres (or four-to-five blocks) of a bicycle route that will connect to major destinations throughout the City, and region.



- **A Connected Network.** It is critical that bicycle routes are direct and provide connections to key destinations, to promote a convenient experience and to support bicycle travel times that are competitive with automobiles. Recognizing this, the bicycle network promotes connections to commercial areas – including the network of Vibrant Centres, schools, parks, and community facilities such as libraries and community centres. The design of the network also integrates the on-street bicycle network with the off-street bicycle network to ensure the network feeds into the Galloping Goose Regional Trail as the spine of the network.

- **A Comfortable Network.** The long-term bicycle plan focuses on providing bicycle facilities that are comfortable for people of all ages and abilities. There are a variety of corridor treatments that the City can consider for different contexts, as demonstrated on the following pages.

Bicycle facilities have varying levels of appeal for different users. Colwood's proposed bicycle network focuses on multi-use pathways, buffered bicycle lanes and neighbourhood

greenways as a means of developing a complete network that is comfortable for people of all ages and abilities.

- **Part of a Regional Network.** The bicycle network in Colwood is part of a regional network, including the Galloping Goose Regional Trail, E&N Rail Trail, and bicycle facilities in surrounding communities. In order to enhance the cycling experience across the West Shore communities and the entire region, the City should work closely with the CRD and its municipal neighbours to develop a seamless bicycle network across boundaries.

- **A Navigable Network.** While most residents know how to travel through the City by car, it may not be obvious which routes are the best by bicycle. For both experienced and inexperienced cyclists, signage can help riders to find the best routes that match their cycling abilities and comfort levels and to find new routes as they become more confident. Bicycle route signage can also highlight for drivers and other road users where they should expect to see greater concentrations of cyclists.

- **Safe Intersections.** The City should carefully consider how intersections are addressed, as these are where many cycling collisions occur. Intersection and crossing treatments can be used to assist cyclists passing through major intersections and crossing major roads. Different treatments seek to minimize potential conflicts with motor vehicles, and to increase safety and convenience for cyclists.

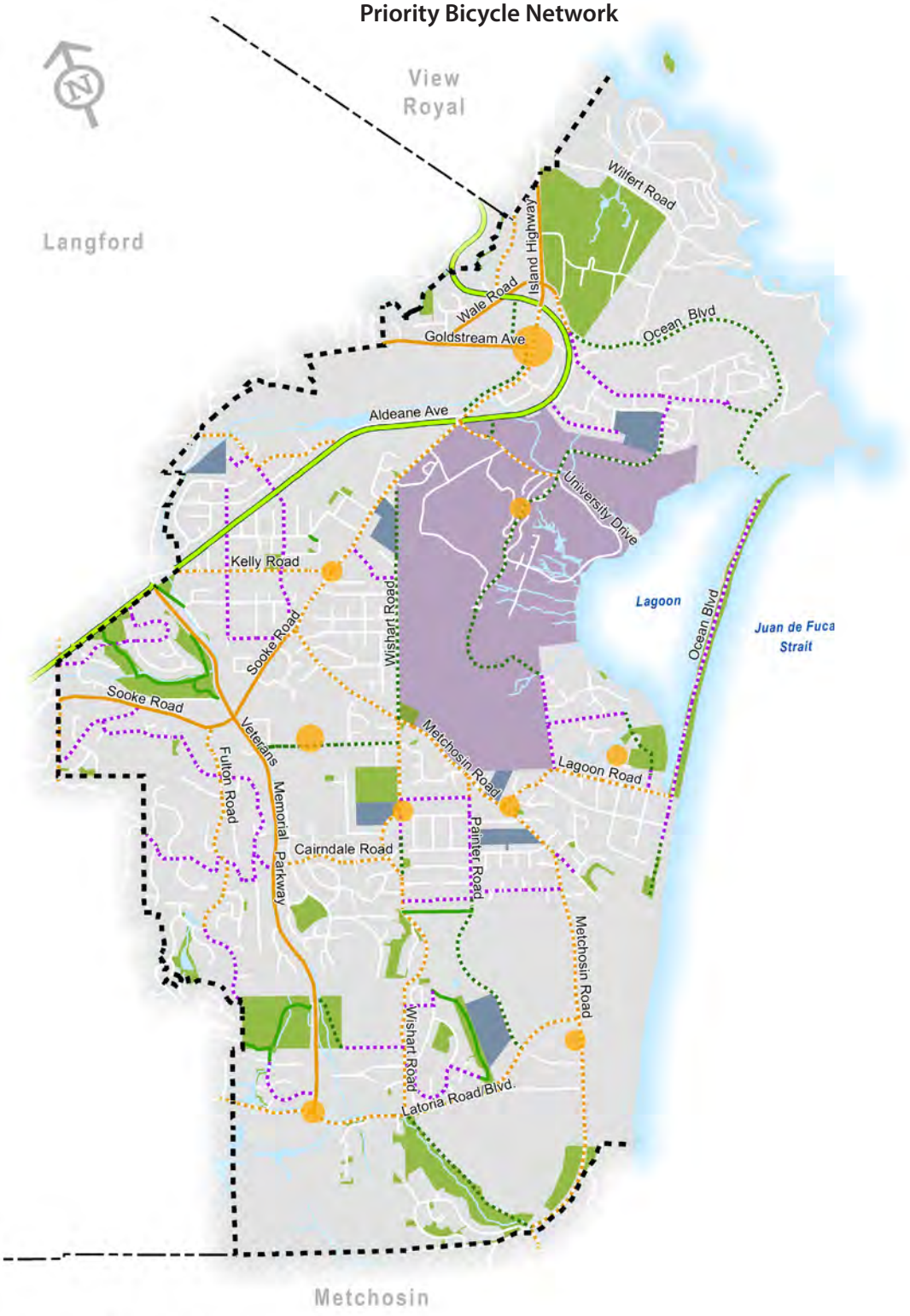
Proposed Bicycle Network. Following the above principles, a dense, connected comfortable bicycle network was identified. The network is made up of multi-use pathways, buffered bike lanes and neighbourhood greenways.

Multi-use Pathways. Colwood is fortunate to have an abundance of multi-use pathways that provide a functional role in connecting the transportation network and excellent recreational

Currently, the City's bicycle network is 17.1 km, with just over half of the City within 500 metres of a bike route.

With the completion of the bicycle network, there will be 66.5 km of bikeways and 94.7% of the City will be within 500 metres of a bicycle route.

Priority Bicycle Network



Proposed Bicycle Network

- Galloping Goose Regional Trail
- Schools
- Royal Roads University/DND
- Parks / City Owned Property
- Neighbourhood Nodes
- Existing Multi-Use Pathway
- Existing Bicycle Lanes/Shoulder Bikeway
- Proposed Multi-Use Pathway
- Proposed Buffered Bicycle Lane
- Proposed Neighbourhood Bikeway

VISUAL SUMMARY BICYCLE FACILITY TYPES

MULTI-USE PATHWAYS

Physically separated from streets, typically away from the road right-of-way and designed to support cyclists, pedestrians, and other non-motorized users.

PROTECTED BIKE LANE

Bicycle only facilities physically separated from vehicle travel lanes but still located within the street. Protected bike lanes can be one or two-way and combine the experience of an off-street path with the on-street infrastructure of a conventional bicycle lane.

BICYCLE LANES

Lanes designated by painted markings and signage for the exclusive use of bicycles.

NEIGHBOURHOOD BIKEWAYS

Local streets with low vehicle speeds and volumes in which cyclists share the same space with vehicles. They often include traffic calming measures to keep speeds low as well as improvements at major road crossings to help cyclists cross safely.

SHOULDER BIKEWAYS

Shoulder bikeways or paved shoulders, are typically found on streets without curb and gutter, with shoulders wide enough for shared bicycle/ pedestrian travel. Shoulder bikeways often, but not always, include signage alerting motorists to expect bicycle travel along the roadway.

BUFFERED BIKE LANES

Provide more protected space for cyclists than a conventional bicycle lane, typically through a painted buffered or 'shy' zones on one or both sides of the cyclists.

opportunities. A number of recommendations are provided to improve multi-use pathways, including upgrades to existing pathways and new pathways. Ideally, all multi-use pathways should be paved, have ample lighting and separate pedestrians and cyclists. The paths should be at least three metres wide, though more width is preferred. Key improvements include:

- **Galloping Goose Regional Trail.** The Galloping Goose is an important regional active transportation corridor that passes through the heart of Colwood. However, though much of the City, the Galloping Goose is unpaved and unlit.

  As the Galloping Goose is under the jurisdiction of the Capital Regional District (CRD), it is essential that the City works closely with the CRD to improve the usability and safety of the trail. The City should work with the CRD to pave the Galloping Goose through the entire City and provide sufficient lighting. When paving occurs, the CRD should be encouraged to install conduit for future lighting needs. This will help ensure that this pathway is attractive for recreational and commuter cyclists. It will also make the pathway more accessible for other wheeled users, including wheelchairs, rollerbladers, and scooters. Enhancements on and around the Galloping Goose include directional signage and maps to direct people to and from the Trail. As well, signage should direct users to nearby amenities, including attractions and restaurants.

Currently there is a detour in the Galloping Goose through Colwood City Centre. The detour along Wale Road is neither intuitive nor comfortable. It is necessary to improve the safety and ease of this route through intersection upgrades, signage and an overpass over Sooke Rd.

A comprehensive design from the Galloping Goose's intersection at Wale Rd and Wilfert Rd down to the multi-use trail at Island Highway and Ocean Blvd is needed. The route should be well-signed to direct cyclists who want to continue along the Galloping Goose trail.

- **Overpass.** With the re-development of the City Centre, it would be ideal to restore the original alignment of the Galloping Goose from Wale Rd to Island Highway and construct an attractive grade separated crossing over Island Highway. This crossing would ensure users of the Galloping Goose can stay on a high-quality, comfortable route through Colwood. It also provides the opportunity for the City to build, in partnership with the CRD, a visually stunning and iconic gateway to Colwood. The bridge could be integrated into new developments with plazas and amenities.

- **Sooke Road and University Ave/Aldeane Ave.** Soon after the Galloping Goose travels

VISUAL SUMMARY BICYCLE CROSSING TYPES

COLOURED CONFLICT ZONE MARKINGS

Used in intersections, driveways, merge areas and other conflict zones to raise visibility of cyclists and to highlight areas of potential conflicts.

DASHED BICYCLE LANE MARKINGS

When through intersections they serve to position cyclists appropriately as they traverse the intersection, and to alert motorists of the potential presence of cyclists in the intersection.

BICYCLE BOXES

Used at signalized intersections to provide cyclists an opportunity to position themselves ahead of queued vehicles, and to proceed through the intersection when the signals turn green in advance of vehicles.

ENHANCED BICYCLE SIGNAL CROSSINGS

Include full signals or pedestrian and bicycle activated signals which can be activated by a cyclists using a range of technologies, such as bicycle loop detectors, bicycle pushbuttons, or video detection at traffic signals. Dedicated bicycle signal heads can also be considered.

CROSSBIKES

Crossbikes or "elephants feet", are pavement markings that indicate a crossing zone in which a cyclist does not need to dismount. These pavement markings may be combined with a pedestrian crosswalk or may be used to indicate a separate bicycle crossing.

TWO-STAGE MEDIAN CROSSINGS

Two-stage median crossings or refuge islands, are positioned in the middle of the roadway, allowing cyclists to cross the road in two stages instead of one. The median refuge islands provides cyclists (and pedestrians) the ability to safely wait in the middle of the road, before making the second stage of their crossing. This allows cyclists to deal with one direction of traffic flow at a time.

through the City Centre, users reach the intersection of Sooke Road and University Avenue/ Aldeane Avenue. It is currently a difficult crossing with no formal infrastructure for cyclists. It is recommended that this intersection is re-design to consider all road users. This could include the installation of crossbike pavement markings and green conflict zone markings, along with a dedicated bicycle signal. Improvements at this intersection will also enhance the north-south connection from the existing Galloping Goose Trail south to Metchosin Road.

- **Wishart Road (between Sooke Road (Colwood Elementary) and Metchosin Road)** has a wide right-of-way with room on the east side of Wishart Road to provide an off-street multi-use pathway. As this is Royal Roads University and Department of National Defence property, a partnership with the City would be required. This route would provide an attractive and more direct north-south connection from the southern neighbourhoods of Colwood to the Galloping Goose and City Centre.

- **Routes through Royal Roads University / Department of National Defence Lands.** There is an extensive network of trails within the Royal Roads University campus and Department of National Defence lands. In the interest of creating more cycling connections throughout the municipality, the City should work with these partners to identify trails that could be enhanced to become multi-use pathways for pedestrians and cyclists.

- **Connections.** In many cases, multi-use pathways can be used for short sections to complete a connection that cannot be made using the roadway network. This can often be the case in suburban communities to provide connections in areas with fragmented roadway networks, such as connections between cul-de-sacs or through parks. The Bicycle Network provides short connections between roads and to other multi-use paths. It is important that these connections are formalized through a statutory-right-of-way whenever possible and in all cases, when the subject property is re-developed.

Buffered Bicycle Lanes are enhanced bicycle lanes that provide additional distance separation between the bicycles and motor vehicle travel lanes. This painted buffer is particularly important as the arterial and collector roads in Colwood have significant traffic volume and speed.

Buffered bicycle lanes can be further enhanced to become physically separated bicycle lanes using a variety of treatments, such as bollards, curbs, medians, or planters. The creation of

protected bike lanes or cycle tracks would greatly increase the safety and attractiveness of the facility and, if part of a network, entice a substantial increase of new users.

Buffered bicycle lanes are recommended on higher volume arterial and collector roads in Colwood, including:

- Sooke Rd/Island Highway (Wale Road to Metchosin Road) (Goldstream Ave to Royal Roads University)
- Metchosin Road (Sooke Road to Latoria Road)
- Kelly Road
- Latoria Road
- Wishart Road

When the opportunities arise, the City should also consider upgrading existing bicycle lanes and shoulder bikeways to buffered bicycle lanes or physically separated bicycle lanes on Veterans Memorial Parkway, Island Highway, Sooke Road, Goldstream Avenue, and Wale Road to increase comfort and safety on these roads.

Neighbourhood Bikeways refer to shared bicycle routes which are generally located on local streets and lower volume collector streets and prioritize cycling and pedestrians.

If traffic volumes and speeds on these streets are sufficiently low (under 500 vehicles a day and 30 km/hour), cyclists and motorists are able to safely share the street without the need for significant physical improvements to the roadway. In some cases, the only improvements required are signage identifying the street as a bicycle route, and intersection improvements where they cross major roads.

In cases where traffic speeds or volumes are higher, traffic calming measures may be needed to reduce motor vehicle traffic volumes and speeds, and to improve the safety and comfort of cyclists and pedestrians. Treatments that the City should consider on neighbourhood bikeways include:

- Providing bicycle route signage and pavement markings to clearly indicate the presence of a neighbourhood bikeway to cyclists and motorists;
- Lowering speed limit to 30 km/hr speed limits on all neighbourhood bikeways;

- Orienting stop signs at two-way stops along neighbourhood bikeways to minimize stops for cyclists;
- Providing traffic circles and speed humps to reduce traffic speeds where necessary;
- Providing traffic diversion measures such as median islands, right-in/right-out islands, and full street closures where necessary to restrict traffic volumes, where traffic volumes are high; and
- Installing pedestrian and bicycle activated signals with bicycle pushbuttons at all locations where neighbourhood bikeways cross collector or arterial roads.

In addition, the City should work to provide other streetscape, public art, and rainwater management enhancements in conjunction with neighbourhood bikeways, as well as sidewalk improvements to improve conditions for all road users on neighbourhood bikeways. Further details regarding these treatments are provided in the Liveable Neighbourhoods chapter.

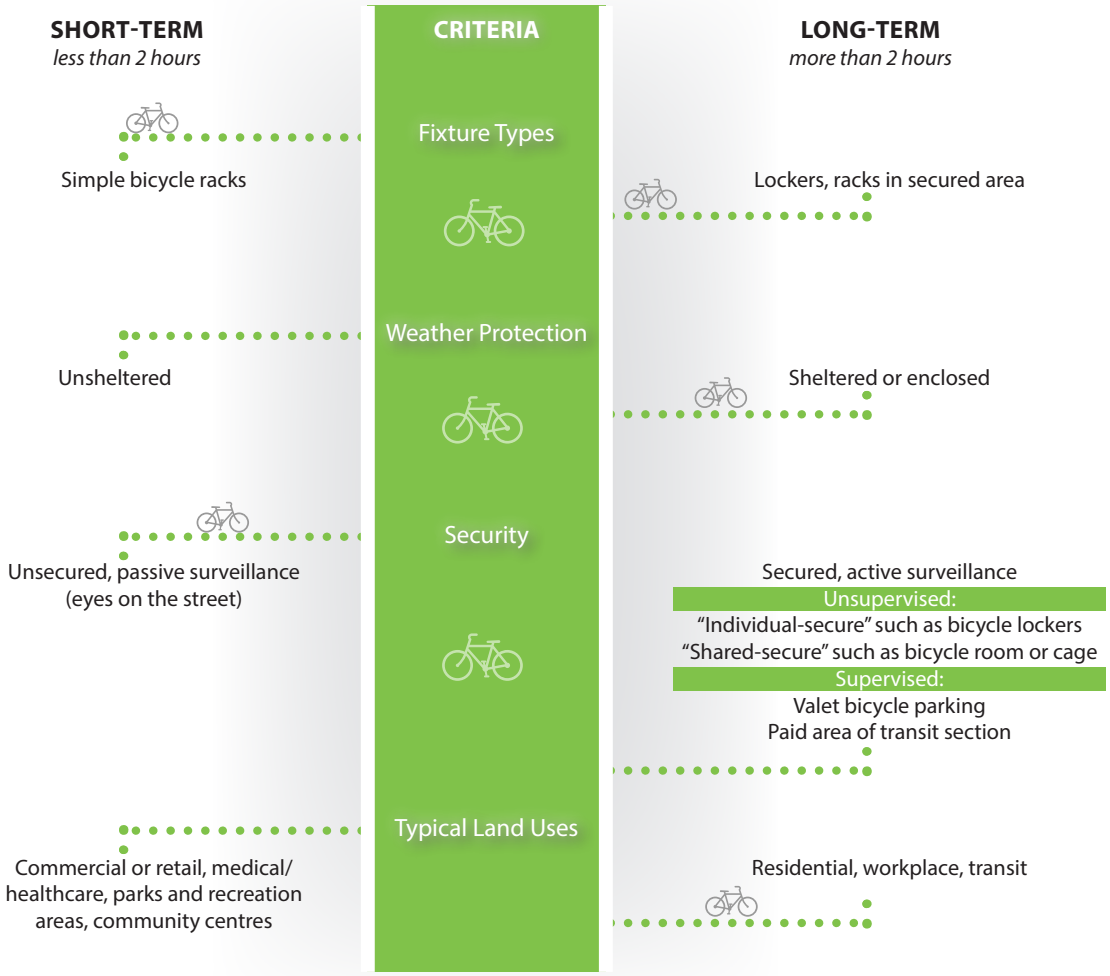
2. MAKE CYCLING MORE CONVENIENT

Every trip by bicycle requires that the bicycle be parked at the end of the trip. In many cases, this means locking the bicycle on the street, where it could be stolen. The fear of theft or vandalism is a significant deterrent to cycling. Consequently, providing safe and secure parking at key locations throughout the City is a significant means of encouraging cycling. In addition, end-of-trip facilities such as showers and change rooms as well as bicycle and repair and maintenance stations are important. For longer trips, enhanced integration with transit is an important part of making cycling more convenient for more Colwood residents and visitors.

- **Bicycle Parking.** It is important to provide safe and secure bicycle parking throughout the City as a means of encouraging cycling. There are a range of bicycle parking facilities that can be provided, based on the type of facility that bicycle parking is serving. Bicycle parking is typically categorized as either short-term (less than two hours) or long-term (beyond two hours). Bicycle racks and on-street bicycle corrals are often suitable where there is short-term bicycle parking needs such as commercial areas, community centres, and parks. Longer-term bicycle parking, such as bicycle shelters, cages, or lockers, are more suitable for key employment areas and visitor destinations such as post-secondary institutions, schools, and transit exchanges. The following table summarizes the differences between short-term and long-term bicycle parking.

Colwood values the need for improved cycling infrastructure and has integrated this desire into

their Land Use Bylaw through the mandatory provision of bicycle racks. The size and type of the proposed building determines the number of required bicycle racks. In addition to establishing a required number of bicycle stalls, the Colwood Land Use Bylaw also addresses the design requirements for both short-term and long-term parking.



Beyond continuing to require bicycle parking as part of the development process, the City should enhance bicycle parking in key areas. The City can work with businesses to provide regularly spaced and sheltered bicycle parking in the public right-of-way in all Vibrant Centres, other commercial areas, and other major destinations in the City. The City should also develop a bicycle corral program to provide on-street bicycle parking as an alternative to bicycle racks on sidewalks. On-street bicycle parking is recommended in key areas in Colwood, including:

- Vibrant Centres
- Royal Roads University
- West Shore Parks and Recreation
- Schools
- Parks
- Transit Exchanges
- Trailheads
- Waterfront

- **End-of Trip Facilities.** Providing end-of-trips facilities such as showers and clothing lockers at workplaces is an important component in making cycling convenient for employees. This particularly the case for bicycle commuters who have a long commute. The City should amend its Zoning Bylaw to require end-of-trip facilities such as showers and clothing lockers for major employers.

- **Bicycle-Transit Integration.** Transit and cycling work well in combination. This combination provides cyclists with the ability to make trips that are farther than they may be able to ride and allows transit riders to reach destinations that are not adjacent to transit routes. All BC Transit buses are currently equipped with bicycle racks. There is currently limited long-term bicycle parking at the Colwood Exchange.

  The City should work with BC Transit to ensure that attractive and secure short-term and long-term bicycle parking is provided at all existing and planned transit exchanges. At these exchanges, short and long-term bicycle parking would allow cyclists to "park and ride" on transit. In addition, better access to transit exchanges and bus stops can enhance the convenience of people wanting to incorporate both cycling and transit into their daily trips. In that regard, the City's bicycle network plan ensures bicycle routes connect to all existing and planned transit exchanges.

- **Cycling Hubs.** The City should work to develop a number of Cycling Hubs at key nodes in the City's bicycle network. These cycling hubs can provide a range of amenities for cyclists, including:

  - Bicycle racks;
  - Bicycle air pumps and maintenance and repair station;
  - Wayfinding and signage, including kiosks with network maps;
  - Public art;
  - Lighting;

- Bicycle counters including visual displays showing the number of cyclists per day; and,
- Other amenities for pedestrians and cyclists, including garbage bins, benches, and water fountains.

These hubs will help to make cycling more convenient for residents and visitors, and also help to market and brand the City's bicycle network and raise awareness of cycling both for cyclists as well as motorists and pedestrians. Cycling hubs are proposed at the intersection of Sooke Road and Metchosin Road, and on the Galloping Goose Regional Trail at either Wale Rd and Wilfert Rd, Island Highway and Ocean Blvd (Park and Ride), or at the entrance to Royal Roads University.

3. MARKET AND PROMOTE CYCLING

In addition to cycling infrastructure and amenities, the City should develop and support education, awareness, and marketing initiatives to promote and support cycling in conjunction with its partners. These initiatives are important in raising awareness about the City's bicycle network and integration with the regional network, educating cyclists and motorists, and making residents more aware of the opportunities that exist to travel by bicycle.

It is also important for the City to include education and marketing as part of all infrastructure projects. This includes promoting new infrastructure and providing education on how to use it correctly and safely. Studies have shown that cycling infrastructure combined with education and marketing will encourage more users than the infrastructure alone.

The City should consider the following education and awareness initiatives:

- **Education and Skills Training.** The City should support education programs in conjunction with partner agencies to develop skills, knowledge, and confidence. Locally, Bike to Work Victoria provides cycling skills courses, which can be delivered in Colwood. After taking one of the courses, residents will be more confident and comfortable with cycling and therefore more likely to cycle.

- **Safe Routes to School.** Safe Routes to School programs can spread awareness among children, youth, and parents on walking and cycling skills. Safe routes to school programs typically focus on the 5 E's of engineering, education, encouragement, enforcement, and evaluation. Through initiatives such as in-class curriculum, walking clubs, walking/cycling school buses, no-idling campaigns, and active transportation-based field trips, a program can support increasing walking and cycling education and uptake among students. This

initiative could be led by School District #62 in partnership with the City.

- **Signage and Wayfinding.** Improving signage and wayfinding can help cyclists as they navigate to their destinations. While most residents know how to travel through the City by car, it may not be obvious which routes are best by bicycle. Signage, including signs and road markings, can help riders find the best routes to match their cycling abilities and comfort levels and to find new routes as they become more confident. The CRD has Regional Bicycle Wayfinding Guidelines. The City should develop cycling wayfinding and signage consistent with these guidelines, as well as complimentary to the City wayfinding already in place for parks.

- **Create a Colwood/West Shore Cycling Map.** The City should develop a user friendly map highlighting existing bicycle routes within the City, regional connections to other communities, and other major destinations such as transit exchanges, schools, commercial centres, community facilities, and bicycle retailers. This could provide a local and more detailed version of the CRD's new bike map that identifies bikeways by comfort level.

- **Dedicated Webpage.** The City should establish a dedicated webpage and related social media for walking and cycling opportunities, to provide links to the City's cycling map and the CRD's regional cycling map. The webpage can provide other related links to provide general information about the benefits of walking and cycling and tips on safe cycling.

- **Develop a Brand.** Establishing a recognizable visual identity or brand for active transportation in Colwood can be effective, particularly as more events, construction, and news pertaining to walking and cycling are available. A more comprehensive branding strategy and/or a visual identity can be used to market educational material and spread awareness of cycling and walking opportunities in Colwood. This visual identify can be a recognizable tagline such as "Cycle Colwood" and "Walk Colwood" along with a unique logo to be used on the website, included on signage and wayfinding, placed on bicycle racks and cycling hubs, and incorporated on promotional materials.

- **Support Public Events.** Colwood is currently involved in a number of programs to promote the benefits of cycling to the public and to encourage safe riding habits. These initiatives are a vital component of moving forward to see cycling as having a stronger presence in the modal share of transportation options. The City should continue to support public events and initiatives that encourage cycling in the City and surrounding area, including Bike to Work Week.

4.5 CONVENIENT AND ATTRACTIVE TRANSIT

Convenient and attractive public transit is critical to creating a vibrant and sustainable community. Public transit, in combination with walking and cycling, provides an attractive alternative to automobile travel for both local and regional connections. Public transit can offer competitive travel times to the automobile and reduce the environmental and community impacts of transportation.

BC Transit is responsible for providing transit services in the City of Colwood and throughout the Capital Region District. Decisions on fares, routes and service levels are made by the Victoria Regional Transit Commission based on public feedback and information provided by BC Transit. City of Colwood provides input to the Transit Commission and BC Transit on current and future services.

The existing transit system in Colwood is made up of conventional transit, which provides local and regional bus service within the City and broader region. Conventional bus service is provided on most arterials and collector facilities in Colwood. Regional routes travel the Island Highway, Goldstream Avenue, Kelly Rd, Veterans Memorial Parkway and Sooke Road corridors. In all, eleven conventional bus and community routes serve the City of Colwood. In addition, HandyDART service is provided for customers with physical or cognitive disabilities. Public transit services in the West Shore communities of View Royal, Langford, Colwood, and Metchosin are seamlessly interconnected with routes crossing all four communities. A map of the existing transit network is available on the BC Transit Website.

The transit system in Colwood faces several key issues and challenges. The first is that there is infrequent service to local neighbourhoods and during off-peak hours. There are some situations

where bus routes have limited schedules and do not run during evenings and weekends. There is also dissatisfaction with transit service provided to regional destinations such as a lack of efficient connection to and from Victoria. There are network challenges in connecting to key destinations, including the University of Victoria, Saanich, and the airport and ferry terminal. Residents would like access to more rapid transit options, including Light Rail Transit (LRT), commuter rail or a ferry.

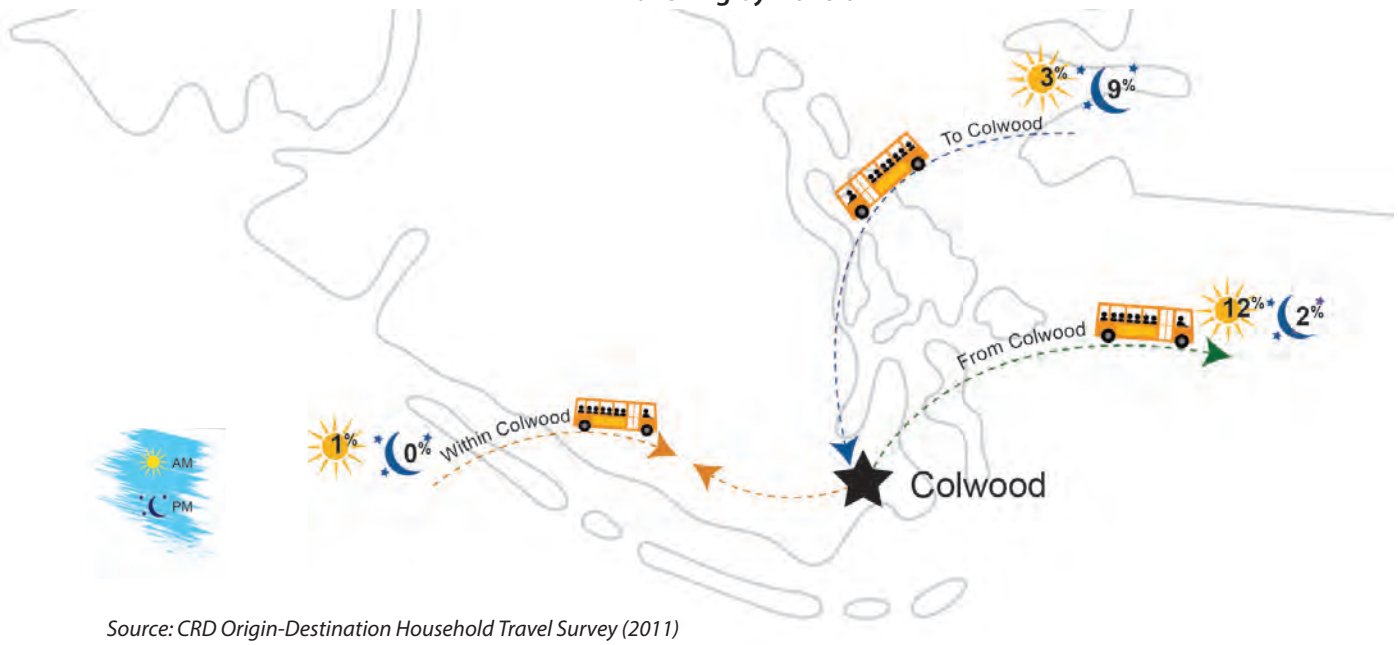
In 2011, BC Transit adopted the Victoria Region Transit Future Plan which charts the course for transit improvements throughout the Capital Region over the next 25 years. The Transit Future Plan will ensure that transit is well positioned to not only accommodate growth and enhance the customer experience, but to support the environmental, social, and economic goals of the region.

The Transit Future Plan highlights a range of transit service improvements in the region that include a rapid transit network using high capacity rail vehicles and buses, a frequent bus network, a local transit network and various other targeted services.

Factors that discourage people in Colwood from taking transit more for their day-to-day needs

- Transit is not frequent enough
- Lack of time/transit is too slow
- Transit doesn't go where I need to go

Travelling by Transit



Source: CRD Origin-Destination Household Travel Survey (2011)

As transit has the opportunity to play an increasingly important role in Colwood's transportation systems, this plan aims to have 10% of trips taken by transit by 2026, and 12% of trips taken by transit by 2038. This ultimate goal is consistent with BC Transit's aspirations as outlined in the Transit Future Plan.

The Transportation Master Plan provides the City with an important opportunity to articulate its vision for transit service, guiding policy and infrastructure improvements that will ensure the transit system supports overarching goals and objectives of creating a sustainable transportation system. While transit forms a relatively small part of Colwood's current transportation mix, it will play an increasingly important role in connecting Colwood's vibrant centres with each other and to other parts of the region as they grow.

Strategic Direction

Make transit convenient and attractive with enhanced frequent and local service.

Actions

1. Create more attractive transit services
2. Improve transit facilities
3. Implement transit priority treatments
4. Enhance the transit customer experience

Make transit convenient and attractive with enhanced frequent and local service.

1. CREATE MORE ATTRACTIVE TRANSIT SERVICES

In order to achieve the targets in the Transportation Master Plan, Colwood's transit system needs to be designed to provide convenient and attractive services by improving the speed, frequency, and directness of transit services. By doing so, the transit system can be made more time-competitive with automobile travel and attract more "choice" riders – people who may have access to an automobile but choose to take transit because it is convenient.

The Transportation Master Plan identifies a transit network that is consistent with the Victoria Regional Transit Future Plan and is made up of three layers of transit service. The focus is on the development of a core Rapid Transit Network (RTN) and a Frequent Transit Network (FTN). Along these rapid and frequent corridors, frequent transit service throughout the day would also allow users to casually use transit without referring to schedules. Although the RTN and FTN are the top priorities, they will not reach all destinations. Improved local transit service is also required to provide basic coverage to all areas of the City. Together these different layers of service create a comprehensive transit network to best meet the existing and future needs of Colwood residents.

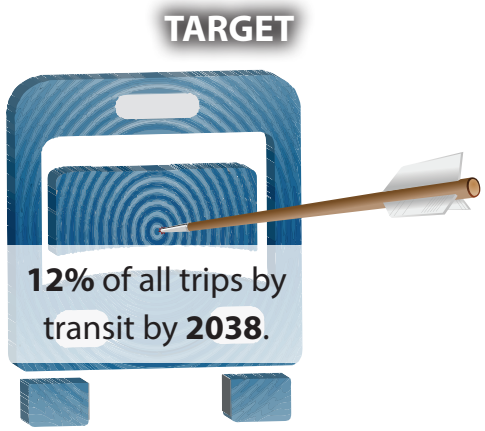
- **Implement a Rapid Transit Network (RTN)** which is designed to move high volumes of passengers between major regional destinations along key transportation corridors. Service is frequent (15 minutes or better between 7:00 a.m. and 10:00 p.m.), seven days a week, and the bus stops less often than traditional transit services. Investments in RTN infrastructure, technology, vehicles and service levels combine to greatly increase system performance. To improve travel time and reliability, RTN services utilize an exclusive (Exclusive Corridor) or semi-exclusive (Priority Corridor) right-of-way to eliminate or significantly reduce the impact of general traffic on transit vehicles. RTN services use high capacity transit vehicle technologies such as light rail vehicles and high capacity buses. Other investments required

along the corridor are premium transit stations, off-board ticketing and typically corridor branding. Proposed Rapid Transit Network corridors in Colwood include:

- Island Highway north of Goldstream Avenue as an exclusive corridor for rapid transit;
- Goldstream Avenue as a priority corridor for rapid transit.

BC Transit continues to pursue the development of a rapid transit line with the Victoria Regional Rapid Transit project. The agency has already completed extensive work on the project, including identifying the functional alignment, preferred corridor, and funding options.

- **Establish a Frequent Transit Network (FTN)** that provides frequent, direct and reliable connections between areas of the City with the highest demand. These areas include medium- to high-density mixed land use corridors. Transit service on FTN corridors will have a target frequency of less than 15 minutes throughout the day, seven days a week, so that transit riders will be able to travel without having to consult a transit schedule. As the FTN will carry a large share of the transit system's total ridership, the FTN should include transit priority treatments, right-of-way improvements, a high level of transit stop amenities and corridor branding. The following corridors are designated as FTN corridors:
  - Sooke Road and Island Highway
  - Metchosin Road
  - Veterans Memorial Parkway
  - Goldstream Avenue
  - Latoria Road



- **Enhance the Local Transit Network (LTN)** to extend the reach of the Rapid and Frequent Transit Networks and form connections between neighbourhoods, local destinations and the rest of the transit system. Although the City's priority is to focus on developing the Rapid Transit and Frequent Transit Networks, the Local Transit Network service is also important as it extends coverage of the transit network to many of the City's neighbourhoods. A review of existing transit services and routes is recommended to improve the frequency and directness of services. The LTN is envisioned to provide relatively frequent service (30 minutes or better during peak periods) with more focus on coverage running all day and into the evening. Options to expand coverage may include the City working with developers, where appropriate, and BC Transit to finance additional transit service.

2. IMPROVE TRANSIT FACILITIES

The attractiveness of transit is based not only on services, but also on passenger facilities provided at transit exchanges and bus stops. Improving transit facilities will enhance the overall transit customer experience and help make transit an attractive and convenient transportation choice. Improvements to transit exchanges and bus stops are described below.

- **Transit exchanges** are both key destinations and transfer points between bus routes. Where properly planned and designed, transit exchanges can become multi-modal transportation centres, with connections to transit, bicycle parking, car share, and park-and-ride lots (including micro lots), and kiss-and-ride drop off areas. The City currently has one major transit exchange – the Colwood Exchange – at the corner of Island Highway and Ocean Boulevard.

  With future development in Colwood, it is important that the City consider the demand for additional transit exchanges. By anticipating their need, the exchanges can be fully integrated into the design of the development. Recommended improvements for transit exchanges include:

  - **Colwood Exchange** is the sole transit facility in the City of Colwood. Located near Juan de Fuca Recreation Centre at the intersection of Island Highway and Ocean Boulevard in Colwood's northeast, this exchange provides connectivity between local West Shore routes and regional routes to Victoria and the University of Victoria. A Park and Ride lot is available at the Colwood Exchange for transit users.

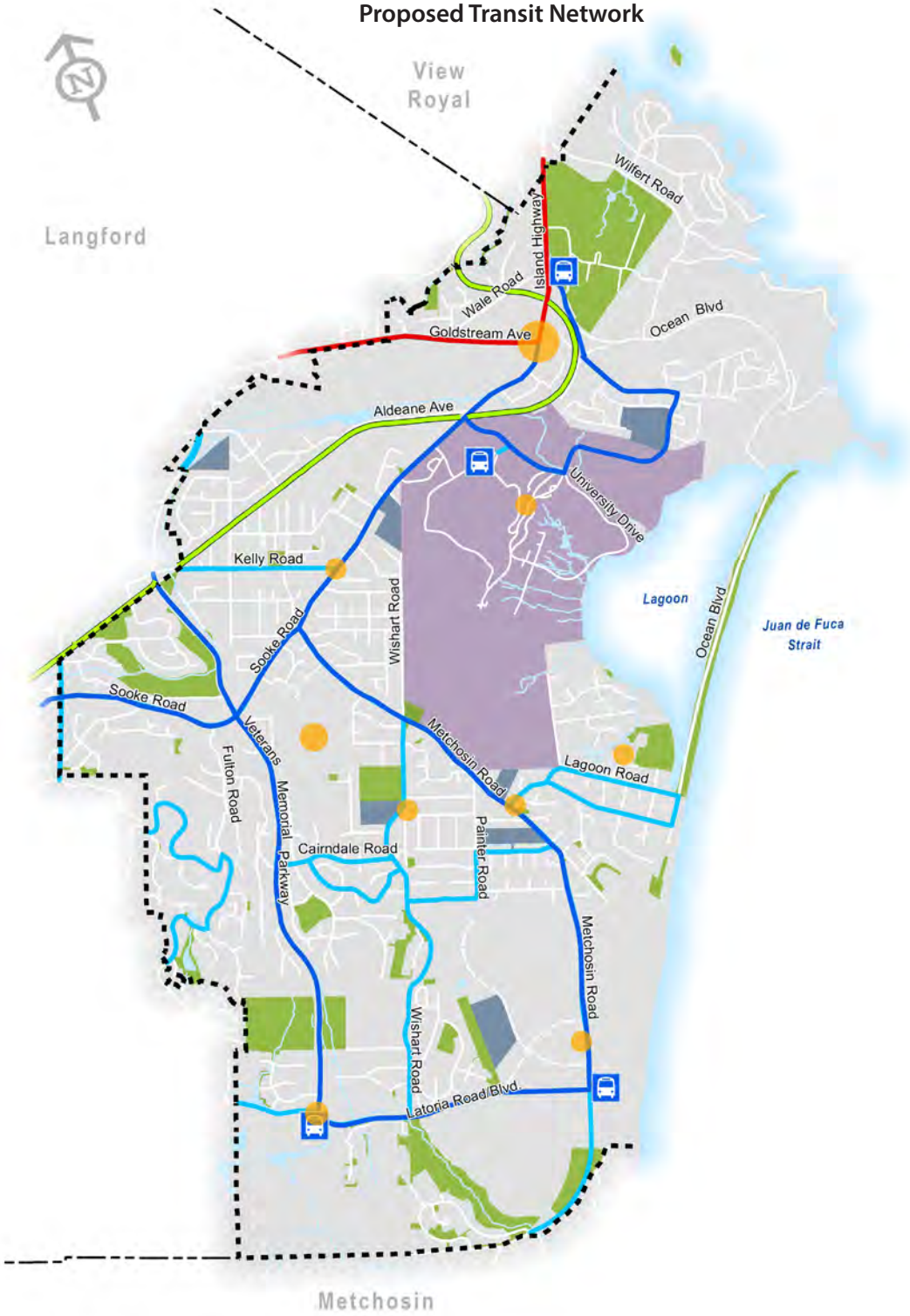
  - **The City** should explore the relocation of this exchange to City Centre, which could allow a Park and Ride facility, proximity to commercial amenities used by transit riders, and be a multi-modal transportation hub.

  - **Royal Bay Exchange** is identified in the Royal Bay Area Plan as a medium-sized exchange located in the Village Common.

  - **Royal Roads Exchange** and **Latoria Walk Exchange** are suggested as locations for smaller bus exchanges as bus frequency and the opportunities for transfers between buses increase.

- **Bus stops.** Improvement to bus stop accessibility and passenger amenities can help make transit more attractive and convenient. Amenities at bus stops can include seating, shelter, lighting, and customer information.

Proposed Transit Network



- **Accessibility.** Increased accessibility to transit can serve to enhance services for existing customers and attract new riders. With an aging population, the number of people with mobility impairments will increase in the future and recommendations to improve transit accessibility in Colwood can include working with BC Transit to ensure that people with disabilities and seniors are comfortable and confident using public transit, and that the needs of seniors are accommodated by transit operators. In terms of infrastructure, the City can work towards ensuring that there is adequate access to all bus stops.

    - There are also additional opportunities for the City to enhance infrastructure leading to bus stops, such as ensuring that there is a sidewalk along streets with bus stops, crosswalks near the bus stop, and accessible curb let-downs. It is recommended that the City prioritize improvements to make all FTN bus stops fully accessible, followed by prioritizing improvements for bus stops on local routes within each Vibrant Centre and near other destinations such as community centres. The City should ultimately strive to have all of its bus stops fully accessible.

- **Passenger Amenities.** The City should strive to provide seating, shelter, and customer information at all bus stops along FTN corridors. The City should develop a prioritization methodology for bus stop amenity improvements, where precedence is given to:

    - Bus stops along FTN routes, particularly in the outbound direction;
    - Bus stops near key existing or future employment areas such as Royal Bay; and
    - Bus stops that service other residential growth areas.

3. IMPLEMENT TRANSIT PRIORITY TREATMENTS

Treatments that offer transit vehicles priority over other vehicles and minimize delays can effectively make transit service a more attractive travel option within the City. Establishing transit priority measures in Colwood requires working with BC Transit to review areas of delay where transit priority would be most beneficial.

Transit priority treatments are recommended along existing and future FTN corridors. Where delays and congestion exist today or are anticipated to get worse in the future, the City and BC Transit will examine opportunities for priority treatments that reduce delays to bus services. These transit priority treatments will improve service for transit, sometimes at the expense of vehicles. Although many of these treatments will impact vehicles, these approaches are key to supporting

VISUAL SUMMARY TRANSIT SUPPORT INITIATIVES

CONSISTENT BUS STOP SIGNAGE

Serve to provide a recognizable transit 'brand', and can make it easier for transit passengers to identify bus stops, transit exchanges, and additional transit resources.

ENHANCED INFORMATION

Provided at bus stops and exchanges for the convenience of passengers, which can improve the experience and ease of using the transit system (e.g. route maps, schedules, accessibility information, and wayfinding).

TRIP PLANNER / MOBILE APPS

Allow customers to plan their transit trip ahead of time. Providing more information through online and mobile applications can improve the convenience of using transit.

REAL-TIME INFORMATION

Often displayed on electronic reader boards located at bus stops and exchanges, that display the wait time until the next bus arrival, service changes, and rider alerts. Real-time technology serves to increase communication with transit customers.

BUS SHELTERS

Provide transit passengers with a covered space to wait, and sometimes can include seating and scheduling information.

ACCESSIBLE BUS STOPS

Facilitate people with different abilities and special needs to find, board and get off the bus. Accessible bus stops can include features such as a wide landing pad for deployment of a wheelchair ramp, tactile surface indicators, signage, sidewalk curb letdowns to access the stop, and seating.

long-term transit ridership by prioritizing transit over vehicles. Transit priority treatments to be considered are shown in the visual summary below. Candidate locations for transit priority treatments include the following intersections along Sooke Road and Island Highway:

- Wale Road / Ocean Boulevard
- Goldstream Avenue
- University Drive / Aldeane Avenue
- Kelly Road
- Metchosin Road

In the long-term the City should work with Royal Roads University and the Department of National Defence to consider the possibility of a transit priority corridor through these lands to provide a direct connection between Royal Bay and other areas in southern Colwood with Sooke Road.

4. ENHANCE THE TRANSIT CUSTOMER EXPERIENCE

While improvements to transit services and facilities are important strategies to help expand the use of Colwood's transit system, there are many other ways in which the transit customer experience can be improved in Colwood to make transit easier to use, including:

- **Providing consistent bus stop signage** to provide a recognizable transit 'brand' consistent with BC Transit's standards, to make it easier for passengers to identify bus stops, exchanges and additional transit resources.

- **Providing enhanced transit information** at bus stops, including route maps, schedules, accessibility information, bus stop ID numbers, and wayfinding information for the surrounding areas.

- **Supporting on-line trip planner and mobile applications** through BC Transit, Google Trip Planner, or other applications that allow customers to plan their transit trip by entering an address, intersection, bus stop number, or bus route.

- **Providing real-time transit information** that tells passengers the actual wait time until the next bus arrival. This information can be provided at the bus stop or through a mobile phone application.

- **Developing corridor and vehicle branding standards** for the rapid transit network to ensure a recognizable brand for transit service.

4.6 COMPLETE STREETS

Building a safe and efficient street network to support all modes of transportation is a key feature of the Colwood Transportation Master Plan. Traditionally, roads in Colwood have been designed and built for motor vehicles. With increasing population growth and a rising interest in sustainable transportation, streets in Colwood need to be re-envisioned as complete streets that accommodate all users.

Street networks provide the opportunity to accommodate the mobility needs of all travel modes including walking, cycling, transit, automobiles and trucks. However, in most North American communities, including Colwood, vehicles are frequently given preferential treatment. This is often at the expense of more sustainable transportation modes such as walking, cycling or transit. The design of the street network in Colwood not only defines the shape of the community, but also influences the travel choices people make. Providing a more balanced transportation network has positive impacts on the quality of life for our residents, enhances neighbourhood livability, and is one of the most effective ways of reducing community GHG emissions.

The term Complete Streets refers to a design approach which requires that the street network be planned, designed, operated and maintained to enable safe, convenient and comfortable travel and access for users of all ages, abilities, and most importantly, for all modes of transportation. This approach considers the surrounding context, land use and all street users, including pedestrians, bicyclists, transit riders, motorists and commercial vehicles. Colwood has further expanded the definition to include innovative rain water management, street beautification and enhanced utilities (including community fibre optics, heat exchange or reclaimed water mains).

A Complete Streets' balanced approach results in streets that function better for more street users in comparison to historic designs that emphasized motor vehicle operations. Complete Streets can reduce collision rates, better support adjacent land uses, encourage shifts to sustainable transportation modes and improve the quality of streets as positive public spaces within communities.

This section of the Transportation Master Plan discusses existing technical challenges identified through analysis of the current transportation network. High-level recommendations are then provided to improve upon network capacity, user safety, and the accommodation of a variety of users.

CURRENT AND PROJECTED CONDITIONS

As previously discussed, currently most trips in Colwood are made by motor vehicle. For a deeper understanding of the impact of this mode share, detailed traffic modelling was completed.

Existing and future horizons were employed to understand the level of change expected to traffic volumes and traffic conditions within the City of Colwood. Existing conditions were assessed for 2014 and future conditions were established for 2038 to coincide with travel demand modelling work carried out by Capital Regional District (CRD) for the same horizon.

Travel forecasting models are used to predict changes in travel patterns and the utilization of the transportation system in response to alterations in regional development, demographics, and transportation supply. Modeling travel demand is a challenging task, but one that is required for rational planning and evaluation of transportation systems. The full modelling report is provided in Appendix B.

The CRD last updated and recalibrated its Regional Transportation Model (RTM) in 2008 using 2006 Census data, information from a 2006 CRD Household Origin/Destination Survey as well as a 2006 CRD Employers Survey. The model outputs for the RTM's 2038 horizon were used in this study to identify the impact of continued regional population growth and any road network alternatives. As described below, interim horizon years of 2019 and 2025 were established to gain a better sense of timing for which various traffic issues would require infrastructure improvements.

For traditional traffic impact studies, a future forecast horizon year is typically limited to a 10-15 year period. It is difficult to forecast significant changes to land uses and associated travel patterns

and characteristics which can occur beyond an approximate 15 year horizon. For this study, both the 2019 and 2025 models assume a background traffic growth rate of 1.5% per annum to account for moderate infill development within the City as well as external traffic impacting the road network within Colwood. Additionally, the horizon year models include the traffic anticipated to be generated by the first component of the proposed Royal Bay Master Plan development, consisting of the 425 single family homes planned for "The Meadows" development project, which is assumed to be built out by 2019. Traffic associated with a new high school is also included.

Existing and projected operations of Colwood's street network were assessed using two measures:

- **Volume-to-capacity ratio (V/C)** describes the extent to which the traffic volumes can be accommodated by the physical capacity of the road configuration and intersection control,

- **Level of Service (LOS)** is based on the estimated average delay per vehicle for each lane group at an intersection.

Based on these two mechanisms for estimating projected traffic volumes, the following traffic demands were identified:

- **2014 AM PEAK** - During the AM Peak Hour period, two signalized intersections show less than desirable performance indicators:
  - Sooke Road and Veterans Memorial Parkway *
  - Sooke Road and Aldeane Road

- **2014 PM PEAK** - During the PM peak commuter traffic periods, traffic flows toward Colwood and other communities to the west of Victoria and Saanich are metered to some degree by upstream signalized intersection capacity constraints, particularly at the Highway 1/McKenzie Avenue/Admirals Road intersection, the Island Highway/Craigflower Road intersection and again at the Island Highway/Six Mile Road intersection. Given these upstream capacity constraints, the signalized intersections within the Colwood boundary are shown to operate at acceptable levels and no mitigation is required at the existing intersections. However, two study intersections show less than desirable operating performance:

** Responsibility of Ministry of Tranportation and Infrastructure*

- Sooke Road and Veterans Memorial Parkway (VMP) *
- Sooke Road and Jacklin Road *

The capacity constraints described above and associated driver delay during the peak commuter periods are short-term conditions and, generally, all intersections within the study area operate well within desired capacity thresholds throughout the off-peak hours.

For the analysis conducted for this period, the existing traffic signal timings were optimized within the Synchro software in an attempt to balance overall intersection delays. At this time, the City could consider reviewing the existing signal timing plans to optimize traffic operations.

2019 AM PEAK - All signalized intersections will operate within desired performance levels, with the exception of:

- Sooke Road eastbound through movement at its intersection with Veterans Memorial Parkway *
- Sooke Road and Aldeane Road

2019 PM PEAK – During the PM peak hour, a number of signalized intersection movements are shown to reach or exceed their lane capacity along Sooke Road due to heavy westbound traffic flows. Where volumes exceed capacity, excessive delay is expected to result. As opportunities to add lane capacity are limited, this is expected to extend the duration of the peak traffic period. Other means to increase mobility should be explored, including the provision of transit priority measures to reduce travel time for higher capacity transit vehicles. The following non-signalized intersections would benefit from new traffic signal control and pedestrian / cyclist crossing improvements:

- Wishart Road and Latoria Road
- Latoria Road and Veterans Memorial Parkway

** Responsibility of Ministry of Tranportation and Infrastructure*

- Veterans Memorial Parkway and Cairndale Road

An enhanced benefit related to the **addition** of traffic signals is improved pedestrian crossing safety. Within Colwood, any new traffic signals should be fitted with audible beaconing and pedestrian and countdown timers to accommodate users of all abilities.

- **2025 AM PEAK** – All signalized intersections will operate at acceptable performance levels in 2025 AM peak conditions, with the exception of Sooke Road eastbound thru movements at its intersection with Veterans Memorial Parkway, Aldeane Road, and Island Highway/ Ocean Boulevard/ Wale Road. Traffic signals should be optimized to ensure a balanced delay. Drivers will look for alternate routes when faced with extended delays.

- **2025 PM PEAK** – During 2025 PM peak conditions, several movements are anticipated to exceed the prescribed capacity thresholds due to heavy commuter westbound traffic flows. The intersections of Sooke Road with Jacklin Road, Island Highway/Ocean Boulevard/ Wale Road, Aldeane Road and Veterans Memorial Parkway show capacity being exceeded resulting in delay and congestion. With limited options to increase capacity it is anticipated that, the peak commuter traffic period will continue to extend in duration and personal travel characteristics may change as result (e.g. discretionary trips may shift outside the peak commuter, reducing overall traffic demands to some degree). The unsignalized intersections at Metchosin Rd / Latoria Rd and Wilfert Rd / Wale Rd should be monitored and considered for new traffic signal control.

Adding additional capacity to accommodate for future traffic volumes has only had limited success in many instances, with the additional capacity supporting greater traffic volumes and resulting in a loss of civic space and negative environmental and social impacts. The Colwood Transportation Master Plan will accommodate future traffic volumes through a balance of land use and transportation infrastructure in addition to supporting mode share growth for pedestrians, cyclists, transit users and ride share options through better accommodation.

2038 Horizon

The TransCAD travel demand forecast model analysis shows that by 2038 traffic volumes along the major road network will increase to a level that will result in significant congestion and associated delay. Without any significant roadway capacity improvements or higher travel mode splits the effects will be similar, poor traffic conditions in the AM and PM peak periods. Notable modelling results include:

- **Veterans Memorial Parkway Corridor** traffic volumes are susceptible to significant traffic volume increase with nearly 1,000 new vehicle trips projected in the northbound direction between Latoria Road and Sooke Road during the AM period (current levels are up to 900 vehicles per hour northbound at Sooke Road). The total expected traffic volume is close to 2,000 vehicles which is beyond the capacity of a two-lane arterial road.

- **Island Highway/Sooke Road Corridor** will experience degraded intersection performance as traffic volumes increase, including the intersections with Ocean Boulevard / Wale Road, Aldeane Avenue and Veterans Memorial Parkway

Collisions. The Insurance Corporation of British Columbia (ICBC) collects and maintains statistics for all reported collisions in British Columbia. Between 2008 and 2013, there were 1,216 collisions in the City of Colwood. This is an average of 243 collisions per year. Within this time period there were three fatal car collisions, two of which involved pedestrian fatalities. Of all the collisions, 478 resulted in an injury. The majority of collisions occurred on weekdays, during the afternoon peak time between 3-6 pm. Within the City of Colwood, the most common type was rear-end collisions (46%). Research has shown that driver inattention is the greatest contributing factor to this type of collision.

Areas of Congestion and Delay. The overall performance of an urban roadway is typically measured by the delays experienced at major intersections, also referred to as Level of Service (LOS). In most urban areas, signalized intersections are the source of most delay experienced in the roadway network. The LOS is a measure of vehicle delay where LOS A suggests that there is no delay and LOS F indicates that there is significant delay and the intersection is experiencing

significant queuing. An overall intersection LOS D and volume to capacity ratio (v/c) of 0.85 or better is generally used as the target for planning purposes. For individual movements, a LOS E and v/c of 0.90 is considered the maximum acceptable value. Overall, there are few areas of significant congestion and delay in Colwood, as most signalized intersections in the City are currently operating at LOS C or better. While most intersections as a whole do not experience serious congestion or delay during the peak periods, there are some vehicle movements at intersections to note along Sooke Road and Island Highway that are nearing or have reached these thresholds and have longer queues and higher delays on some intersection approaches.

- **Ocean Blvd/Wale Rd at Island Highway** – Island Highway experiences the highest traffic volumes during both the AM and PM Peak commuter traffic periods. During the AM peak period a significant amount of traffic originating from Langford travels southbound along Wale Road to destinations to the east. This level of traffic impacts the heavier eastbound through movement on the Island Highway intersection approach, resulting in additional queuing and delay for this movement. Although the intersection is shown to operate at an overall LOS C, the Wale Road approach is operating at LOS D and the Ocean Boulevard (minor approach) is operating at LOS E for the through and left turn movements.

- **Sooke Road at Veterans Memorial Parkway** is a key intersection within the road network. At this location most traffic from the West Shore communities is entering or leaving Colwood. It also provides access to Langford and Highway 1 to the north. During the morning peak commuter period, turning movements from Sooke Road and Veterans Memorial Parkway operate at a high level of service. The eastbound through movement on Sooke Road is somewhat problematic, with LOS D and a v/c of 0.93, indicating delays and congestion for this movement. The congestion worsens during the afternoon peak, as the westbound through movement on Sooke Road experiences LOS E and a v/c of 0.97 at this intersection.

- **Sooke Road at Jacklin Road** is another key intersection affecting the road network. This intersection is on the municipal border with Langford and falls under the jurisdiction of the Ministry of Transportation & Infrastructure (MoTI). At this location, during the PM Peak commuter period, traffic originating from areas east are leaving Colwood to destinations to the west. For the westbound approach, traffic from Veterans Memorial Parkway and Sooke Road mix, resulting in higher traffic volumes along this section of Sooke Road. At the intersection with Jacklin Road, this traffic competes for green time with the eastbound left turn movement from Sooke Road onto Jacklin Road resulting in a v/c exceeding the

desired threshold for these two movements. It should be noted that external road network improvements had been identified in a previous Westshore Transportation Study (2006) and a proposed new link between Sooke Road and Highway 1 is proposed and would likely mitigate the existing congestion experienced at this intersection in the future.

High levels of traffic congestion and delay can present motorists with an opportunity to explore different travel modes, particularly if there are travel time savings or personal health benefits to be gained. Half of short trips (under 1 kilometre) taken in the City are now made by car and can instead be made by walking, if the right facilities are in place. With an average trip length of just over 6 kilometres, there is an opportunity to increase the bicycle mode share by implementing safe, well-situated cycling infrastructure.

The Transit Future Plan includes increasing transit service within the West Shore communities which will benefit Colwood and, if planned carefully, opportunities to enhance transit travel time along the Rapid Transit Network and Frequent Transit Network will provide the incentive needed to shift motorists to transit. Greater network coverage will give more residents the choice to take transit.

It is widely acknowledged that cities cannot build their way out of congestion. However, a number of strategic investments in the transportation network can be made to improve network connectivity. This will benefit all road users by better distributing traffic to the appropriate facilities, enabling the implementation of transit priority measures and general travel time for transit vehicles that do not have their own dedicated right of way. The City of Langford is planning to widen Jacklin Road to a four-lane cross-section which may provide some relief along Sooke Road if traffic redirects. Other infrastructure options were assessed and are listed below.

4.6.3 STRATEGIC DIRECTION AND ACTIONS

Strategic Direction

Improve the transportation network to enable safe, convenient and comfortable travel for users of all ages, abilities, and modes of mobility while managing capacity demands and future growth.

Actions

1. Design and build complete streets
2. Update street classification network
3. Complete the network
4. Manage the impacts of vehicles

Improve the transportation network to enable safe, convenient and comfortable travel for users of all ages, abilities, and modes of mobility while managing capacity demands and future growth.

1. DESIGN AND BUILD COMPLETE STREETS

Streets are the largest public space in the City, and directly influence how we travel. In the past, most streets in Colwood have been designed mainly to accommodate vehicle travel; however, streets should be comfortable places for all road users. They should be places that feel safe, convenient and interesting to travel, whether by foot, bicycle, bus or car.

Colwood has made a commitment to take a much broader view than solely supporting motor vehicles – the City strives to accommodate all road users within the process of building complete streets. By including complete street principles into design guidelines and standards, future infrastructure will encourage a more sustainable transportation system.

This section provides an inventory of major streets that have been prioritized for improvements following complete streets principles. Ultimately, the City's objective is to have every street designed as a complete street.

Provincial Highways are under the jurisdiction of the Ministry of Transportation & Infrastructure (MOTI) and are intended to provide for regional travel. The primary role of highways is to move traffic with minimal interruption from traffic controls and with restrictions on property access.

There is one provincial highway through Colwood. Sooke Road (west of Veterans Memorial Parkway) and Veterans Memorial Parkway (north of Sooke Road) both make up provincial Highway 14 and support regional connections. In particular, Sooke Road facilitates regional east-west travel, linking Colwood to the West Shore communities of Langford, Metchosin and

Sooke. Veterans Memorial Parkway provides a vital connection to the Trans-Canada Highway and connects Langford, View Royal, Victoria, and Saanich.

Though the Provincial government has jurisdictional control over these transportation corridors, the City of Colwood has an important role in influencing the design of these highways to reflect the needs and aspiration of the municipality.

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

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

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

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

Collector roads identified for improvements are:

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

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

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

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

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

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

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

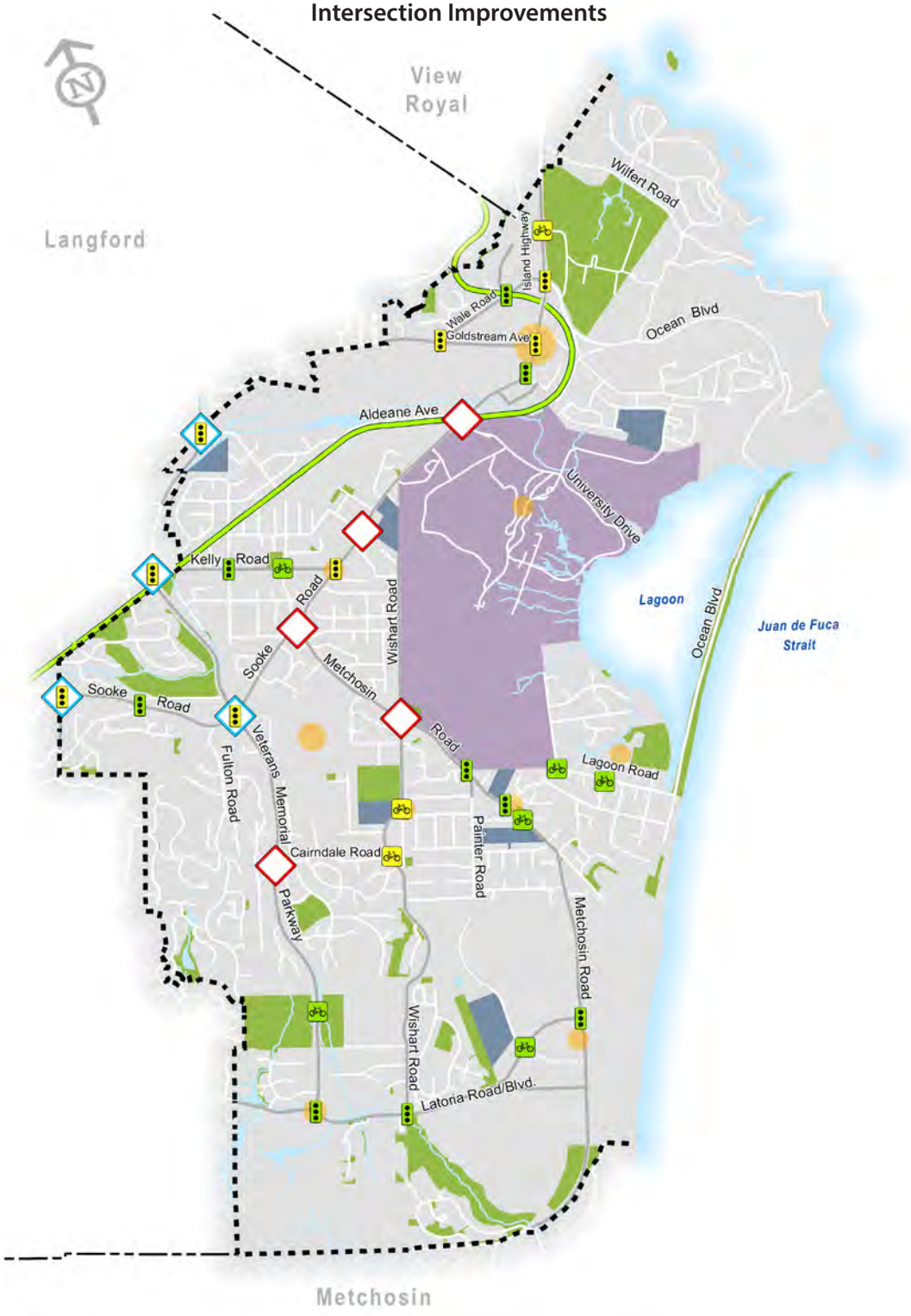
- Painter Road
- Heatherbell Road
- Metchosin and Adye Roads
- Owens and Benhomer Roads
- Dressler and Cotlow Roads

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

INTERSECTION IMPROVEMENTS

There are thirteen signalized intersections in Colwood. The majority (eight) of the traffic controls in Colwood are along Island Highway / Sooke Road. Six of the traffic signals along Island Highway/ Sooke Rd are under the City's jurisdiction, while the remaining four traffic signals are under the jurisdiction of Ministry of Transportation and Infrastructure (MOTI).

Intersection Improvements



Proposed Intersection Improvements

- Schools
- Royal Roads University/DND
- Parks / City Owned Property
- Neighbourhood Nodes
- MOTI Signals
- Existing signal
- Proposed signal
- Existing Pedestrian/Cyclist signal
- Proposed Pedestrian/Cyclist signal
- Operational and Safety Improvements

Table 4.1 Enhancements to Existing Traffic Signals

INTERSECTION		TOTAL # OF COLLISIONS (2008-2013)[5]	LEVEL OF SERVICES		SAFETY, OPERATIONAL AND MULTI-MODAL IMPROVEMENTS	REFERENCE
			AM	PM		
Island Highway	Wale Road	157	C	C	Remove right turn lane on Wale, move bike lane adjacent to sidewalk and buffer, provide elephant feet and green conflict markings, create two-stage left turn for cyclists travelling north-east along Galloping Goose ,add crosswalk on northside	Long-term LRT; Galloping Goose detour
Island Highway	Goldstream Ave	N/A	B	B	Bus priority study: Northbound Transit Queue Jumper	Long-term LRT; BC Transit Victoria Corridor Study
Island Highway	North of entrance to Rec Centre	19	N/A	N/A	Consider safety improvement study	
Veterans Memorial Parkway	Cairndale	N/A	N/A	N/A	New signal; tighten radius; realignment with Cairndale; four crosswalks; uphill bike lanes	Royal Bay OCP Amendment, or by 2019
Sooke Road	Metchosin Road	42	C	B	Improve pedestrian and bicycle crossing	
Sooke Road	Kelly Road	35	A	C	Improve pedestrian and bicycle crossing	
Sooke Road	Aldeane Ave	15	C	B	Remove right turn lane onto Aldeane from Sooke, Galloping Goose crossing improvements including elephants feet and conflict markings, bicycle hub	Galloping Goose crossing
Sooke Road	Veterans Memorial Parkway	N/A	N/A	N/A	Consider second left turn lane from Sooke onto Veterans Memorial Parkway heading south depending on development	
Sooke Road	Mt View Ave	N/A	N/A	N/A	Operational/safety improvements	
Metchosin Road	Wishart Road	N/A	A	A	Operational/safety improvements; pedestrian crossing across Metchosin Road on southeast side	
Latoria Road	Between Ryder Hesjedal Way and Metchosin	N/A	N/A	N/A	Left turn lane	Royal Bay OCP Amendment
Goldstream Ave	Wale Road	21	A	B		Long-term LRT
Wilfert Rd	Wale Road	N/A	N/A	N/A	New signal; Add crosswalk to other side of Wale; Elephant's feet and green conflict paint; bike hub on south side	Galloping Goose crossing/ detour

[5] *Source: 2008-2013 ICBC Collision Data*

Table 4.2 Proposed Traffic Signals

INTERSECTION		REFERENCE / TREATMENT
Metchosin Road	Lagoon Road	Signal
Metchosin Road	Painter Rd	Signal
Metchosin Road	Farview Road	Pedestrian/Cycling signal
Latoria Road	Metchosin Road	Royal Bay OCP Amendment
Latoria Road	Wishart Road	Signal
Latoria Road	Veterans Memorial Parkway	Signal
Latoria Road	Ryder Hesjedal Way	Pedestrian/Cycling signal; Royal Bay development
Kelly Road	Pickford Road	Evaluate as needed with Kelly Rd project
Kelly Road	Adye Road	Pedestrian/Cycling signal from bicycle network plan
Wilfert Road	Wale Road	Galloping Goose crossing/detour
Sooke Road	Colwood Crescent	Signal with development
Sooke Road	Cecil Blogg Dr	Signal to create cycling connection between Galloping Goose and Triangle Mountain
Lagoon Road	Heatherbell Road	Pedestrian/Cycling signal; connection to Royal Roads University
Lagoon Road	Goldfinch Road	Pedestrian/Cycling signal with development
Veterans Memorial Parkway	Havenwood Park	Pedestrian/Cycling signal
Veterans Memorial Parkway	Cairndale	Signal

Based on a review of collision data, level of service and multi-modal connectivity, a number of intersection improvements are recommended. These intersection improvements are intended to enhance the safety of drivers, pedestrians, and cyclists by reducing the potential for conflict and improve upon the efficiency of each of their respective movements.

Proposed and Traffic Signals. Based on new development, safety concerns and multi-modal connectivity the following new traffic signals are proposed (where applicable, a timeframe for implementation was included).

Safety, Operational and Multi-Modal Enhancements. Based on new development traffic, safety concerns and multi-modal connectivity the follow enhancements to existing traffic signals are proposed on the previous page.

2. UPDATE STREET NETWORK CLASSIFICATION

The City's street classification system guides the City's short-and long-term decisions regarding the configuration and design of roads and supporting facilities, as well as relationships with adjacent land uses. Currently in Colwood, there are some cases where the existing street classification neither reflects the current traffic operations or planned role and function of a given roadway. The Transportation Master Plan provides updated street classifications for some streets in order to better reflect their existing function and conditions and long-term role and function. From a network perspective, updating the street classifications also allows the City to establish design principles for the typical form and function of the street network on a City-wide basis.

The classification system represents the typical form and functions for each class and is meant only as a guideline. For existing urban streets in Colwood, changes to the street classification are intended to better reflect their current function and will not heavily influence shifts in traffic volumes. The recommended updated street network classification is shown in the street network classifications map and includes the following changes:

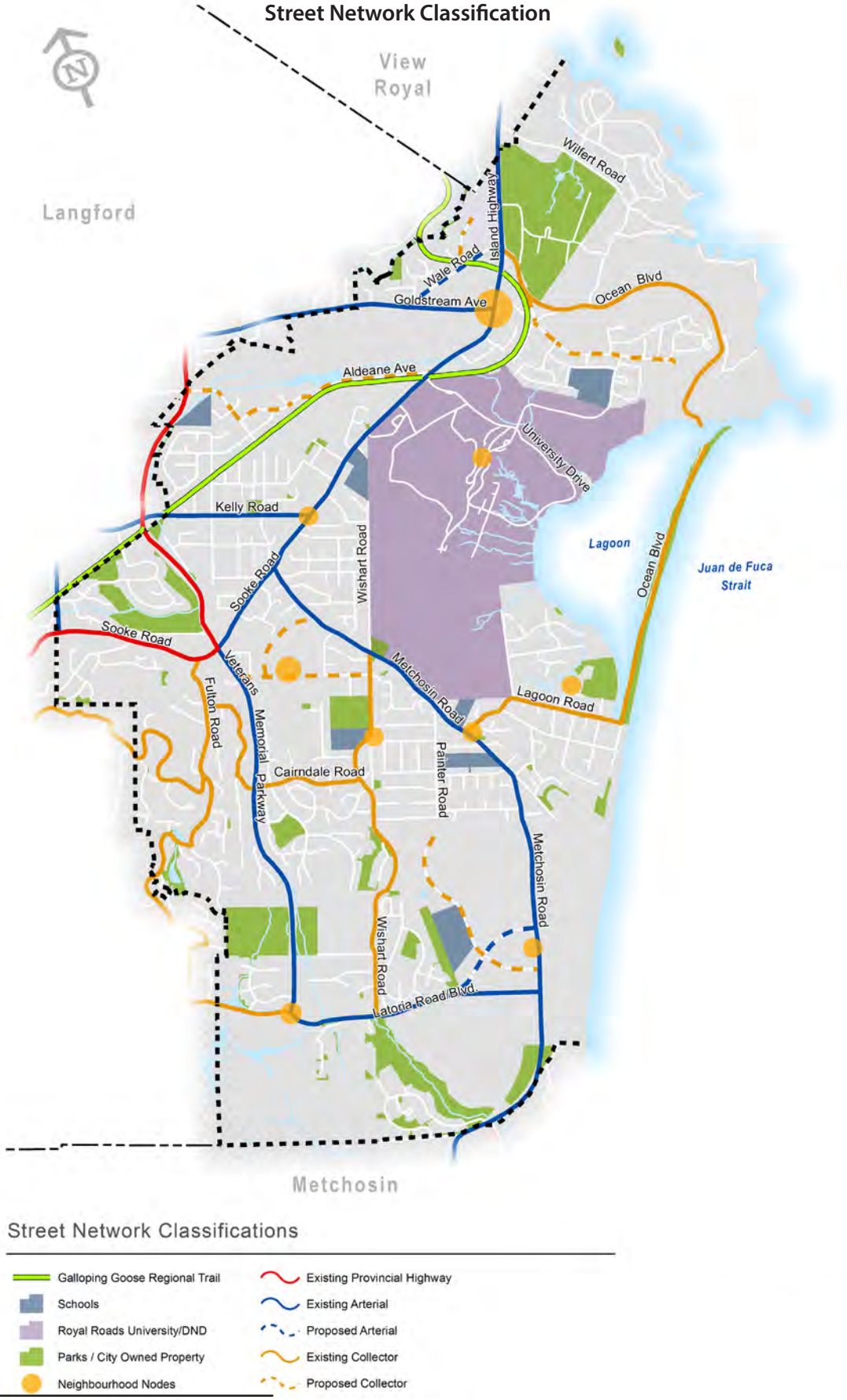
STREET	CURRENT CLASSIFICATION	PROPOSED CLASSIFICATION	RATIONALE
Aldeane Ave / Hagel Rd / Meaford Ave	Local	Collector	Network connectivity
Pickford Rd (north of Kelly Rd)	Local	Collector	Network connectivity
Belmont Rd / College Dr	Local	Collector	Network connectivity; transit route

Two additional roadway classification changes are planned as part of the Royal Bay development, as described below:

Latoria Drive – a realignment is planned to have Latoria Drive follow a curvilinear path east toward its intersection with Metchosin Road; and,

Ryder Hesjedal Way – is expected to be a collector road within the development, running perpendicular to Latoria Drive potentially, connecting as an emergency vehicle or transit only access at Painter Road.

Street Network Classification



3. COMPLETING THE NETWORK

A number of transportation infrastructure improvements were identified in the OCP, while others were developed as a response to operating conditions expected to arise due to forecast traffic volumes as development occurs. Some of these potential improvements were tested using the Regional Transportation Model (RTM) at horizon year 2038. A discussion of these opportunities to "complete the network" is included below. In order to mitigate traffic operations concerns modelling results describe the likely effectiveness. Appendix B contains a more detailed assessment of potential improvements that were modelled.

Central Colwood

As the development of central Colwood occurs, there is potential Allandale connection between VMP, Wishart and Mechosin Rds. In order to service future development, additional connector roads are required. The road network should be designed with the development of the first parcel.

Colwood City Centre

Colwood City Centre identifies the intersection of Goldstream Ave and Sooke Road/Island Highway. The south end of this area is the site of a large scale mixed-use high density residential development currently named 'Capital City Centre'. Colwood's OCP identified the need to develop a more connected and integrated road network in Colwood City Centre. The City should conduct a Colwood City Centre Area Plan that considers future land use and transportation requirements for this area. This includes the integration of the Galloping Goose overpass and other multi-use trail connections within the area.

South Colwood

With the development of Royal Bay and other sites in South Colwood, a comprehensive approach to completing the road network is required. Royal Bay is currently under development with new roads planned for the near future including Ryder Hesjedal Way and the realignment of Latoria Road.

There are a number of options for the development of new roads in the area of Latoria Road, Veterans Memorial Parkway and the Royal Bay development.

Network Connectivity Considerations

A new link from Wishart Road to Veterans Memorial Parkway in the vicinity of Bunker Road was tested in the 2038 Regional Transportation Model (RTM) to evaluate potential reductions in the impact of Royal Bay commuter traffic on the broader neighbourhood road network, particularly Wishart Road and Cairndale Road. Without a new connection, the model shows that a significant amount of Royal Bay traffic will travel along the Wishart Road corridor to Cairndale Road to continue along Veterans Memorial Parkway to regional destinations. In the long-term and as development occurs, a new collector road in the general vicinity of Bunker Road could also provide access to future development sites. An alternative approach would be to implement traffic calming devices along Wishart Road, between Cairndale and Royal Bay Drive. This approach could be considered in an attempt to reduce speeds and therefore travel times, which could shift some traffic to Veterans Memorial Parkway.

There are two new road connections to consider in order to achieve greater access and network connectivity in this area:

Elizabeth Ann Drive

With the increased traffic volumes projected along Latoria Road between Royal Bay and Veterans Memorial Parkway in the future, it is essential that the number of direct access driveways onto Latoria Road be minimized to ensure safe and efficient traffic flows. This approach has been successful on the south side of Latoria Road in the same area.

As development is pursued north of Latoria Road between Veterans Memorial Parkway and Wishart Road there is an opportunity for the City to explore the merits of a connecting road between Elizabeth Ann Drive and Brookside Road/ Veterans Memorial Parkway to provide access to these parcels and mitigate access/egress conflicts along Latoria Road. Elizabeth Ann Drive could either "dead end" at its current location, with a greenway connection for pedestrians and cyclists or it could connect through between Veterans Memorial Parkway and Wishart to provide additional capacity for Royal Bay residents to access Veterans Memorial Parkway and regional destinations.

Regardless of this connection, further consideration should be given to connecting the new section of Elizabeth Ann Drive to Latoria Road at Bezanton Way to create a north/south connection, linking the neighbourhoods on both sides of Latoria Road. As mentioned, the new Elizabeth Ann link may or may not provide a connection with the existing Elizabeth

Ann Place for vehicle traffic, but should provide pedestrian and cycling connectivity.

- **Bunker Road**

  Without a new connection between Veterans Memorial Parkway and Wishart Road, the RTM shows that a significant amount of Royal Bay traffic will travel along the Wishart Road corridor to Cairndale Road to continue along Veterans Memorial Parkway to regional destinations. In the long-term, a new collector road in the general vicinity of Bunker Road could provide access to future development sites.

  To accommodate future growth associated with the development of Royal Bay Village Centre, Bunker Road offers an alternative route to effectively distribute vehicle traffic onto Veterans Memorial Parkway for commuting purposes. While this connection is not anticipated to be required over the short-term or medium-term, the City should preserve this corridor for future consideration to extend Bunker Road to Veterans Memorial Parkway.

  Bunker Road is currently a local residential street and would have to be designated as a collector road with appropriate design parameters to safely accommodate additional vehicular traffic, as well as cyclists and pedestrians. At this point, the topography of the area and the grades of existing driveways appear to preclude the construction of this road in a form that could safely handle the anticipated traffic. Redevelopment along Bunker Road could provide an opportunity for this road to be constructed to the recommended standard.

Analysis suggests that this connection may be required upon full build out of the Royal Bay development; however, the Transportation Master Plan recommends that the City monitor traffic patterns as Royal Bay develops to consider if and when this connection is required. Further feasibility studies would be needed to confirm issues related to alignment, driveway accesses and grade due to topography.

A number of network connections should be considered in combination with the larger network and flow of traffic in the South Colwood area. The following are options to consider as a starting point. Others configurations may arise as traffic patterns are established and future development plans evolve:

- Extend Bunker Road from Veterans Memorial Parkway;
  - Connect through to Wishart Road for all modes; or,

- Leave Bunker as a vehicle cul-de-sac and provide a pedestrian and cycling connection to Veterans Memorial Parkway.

- Extend a road from Veterans Memorial Parkway and Brookside;
  - Connect via Elizabeth Ann Drive to Wishart Road for all modes; or
  - Leave Elizabeth Ann Drive as a vehicle cul-de-sac and provide only a pedestrian and cycling connection to Wishart Road; and,
  - Provide an all mode connection to Bezanton Way.

- Do not extend Royal Bay Drive for vehicle traffic into future development phases.

- Extend Painter Road as a connection for pedestrians, bicycle, and emergency vehicles into the Royal Bay development.

These options should be considered individually and as packages of improvements. A few remarks accompany the options listed above:

- Providing two multi-modal connections between Veterans Memorial Parkway and Wishart Road would help to achieve greater transportation "grid" connectivity and better distribute vehicular traffic across all roads, limiting the impact on any one connection.

- By not building Royal Bay Drive as a through street for vehicle traffic, residents of the future phases of Royal Bay would travel to Latoria Drive to leave the area. This would ensure there is no substantial additional traffic entering and travelling north along Wishart Road from Royal Bay Drive.

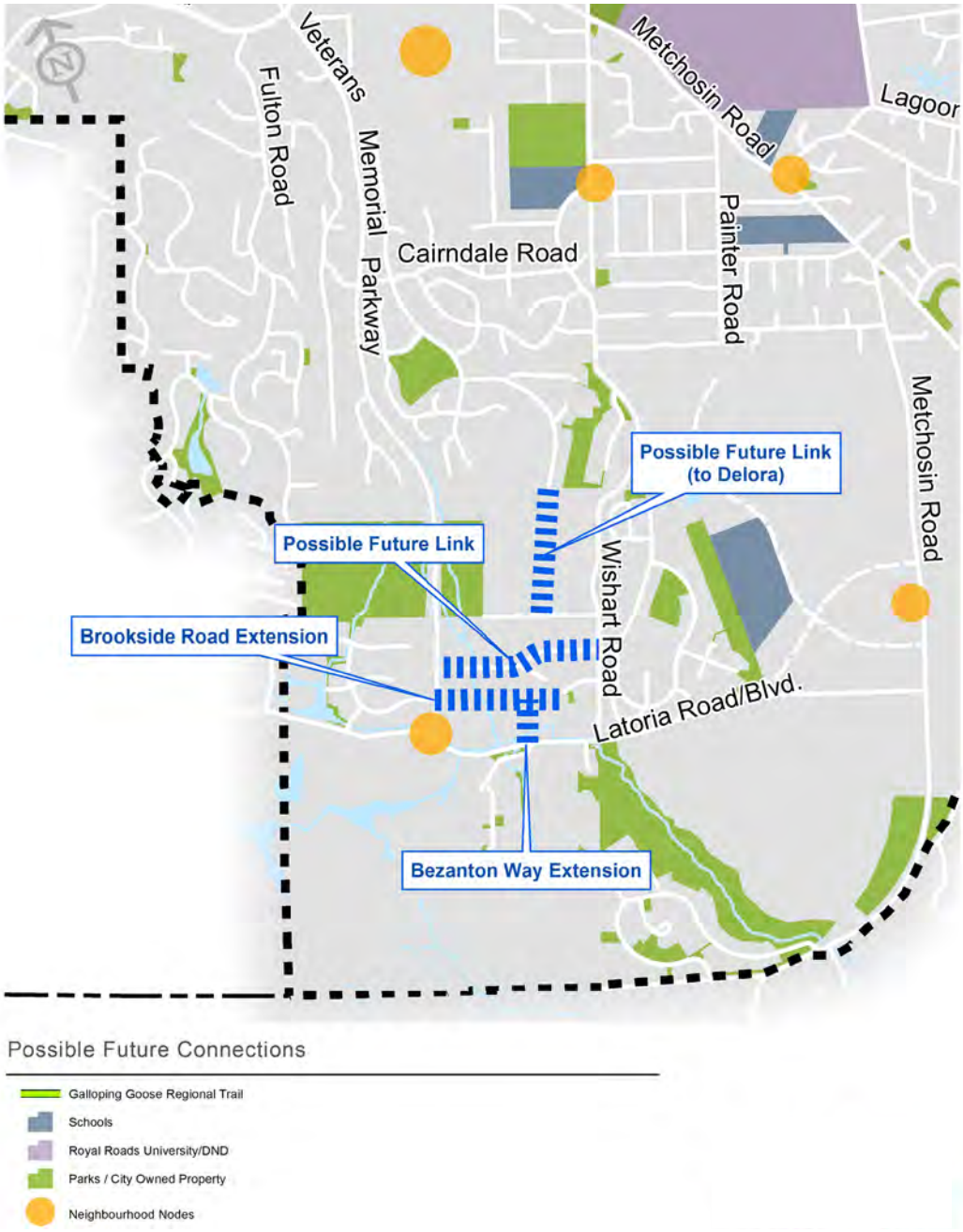
- The option to extend Painter Road as a through street for all modes is not recommended, in part because it travels through a school zone. Extending Painter Road would require building it to a collector standard and constructing extensive traffic calming throughout this road and neighbouring streets. The current development plan for Royal Bay identifies this as a multi-use trail for pedestrians and cyclists.

The need for additional network connections through this part of South Colwood is a long-term consideration and largely depends on development. Given the long term nature of transportation needs in this area, the City should monitor development impacts.

Wilfert Road

Connecting Wilfert Road north to the municipal boundary with View Royal would allow additional commercial access to the existing commercial properties along Island Highway. This access could additionally provide an opportunity to consolidate the number of driveway accesses directly onto Island Highway, which is very desirable from walking, cycling and transit perspectives.

Possible Future Connections



- **Development Related Roads**

  New roads will be required in other future development areas throughout the City. These connections have not been identified in the Transportation Master Plan but will be required at the time of development. It is recommended that Local Area Plans be completed in these growth nodes to provide additional policy and design recommendations related to transportation and land use planning. One key example where significant growth is expected is the Allandale Lands. The internal road network for this property and its integration with the larger road system will be developed through specific planning study process.

- **Ocean Boulevard**

  The assessment of transportation infrastructure required by 2038 included a review of potential impacts should climate change affect ocean levels to the point of requiring the decommissioning of part of Ocean Boulevard. A significant transfer of traffic volumes was forecast in the 2038 horizon of the RTM with the closing of Ocean Boulevard. This would increase pressure on intersections along Sooke Road and Island Highway (between the Wale Road and Metchosin Road) and along Metchosin Road (between Sooke Road and Lagoon Road) as well as on the broader road network. The westbound left turn lane at Sooke Road / Metchosin Road would likely require an additional lane for this movement.

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

4. MANAGING THE IMPACTS OF VEHICLE TRANSPORTATION

Recognizing that vehicles will continue to play an important role in the City's transportation network, the Plan seeks to reduce their negative environmental impacts and impacts on road capacity/ congestion. By increasing vehicle efficiency, vehicle occupancy (i.e. carpooling), reducing trip length and shifting travel times, more traffic can be accommodated with less impact on road capacity, travel time and the environment. Vehicle efficiency standards are expected to significantly improve over the life of the Plan, reducing per kilometer emissions of both GHGs and other air pollutants. Many of these changes are based on personal choices we make as individuals which can be influenced through education and marketing.

Strategies and actions the City can pursue to reduce the negative impacts of vehicle travel include:

- **Support Transportation Demand Management (TDM)** strategies to shift travel patterns and reduce the number of trips, change to a more sustainable mode of travel, and to change vehicle types to reduce the amount of emissions and energy use per kilometer of travel. TDM programs focus on educating and incentivizing the public to make different transportation choices. Strategies include complimentary transit passes, car share memberships, electric vehicle plug-ins, and active transportation resources.

  A TDM Strategy specific to Colwood would support a greater mode share split amongst Colwood residents. Major employers, developers, and schools can also play a role in shifting travel behavior and reducing travel demands. This can include employer-led programs and incentives, working with developers to identify appropriate TDM measures for their development (potentially in exchange for reduced parking requirements), and school TDM strategies that encourage students and parents to walk or cycle to school.

- **Prioritize Goods Movement Corridors.** Efficient goods movement supports local economic development although when not managed appropriately can add to road congestion and noise pollution. With any new commercial development, goods movement should be studied as part of the development process and in the completion of any Local Area Plans.

  To support the Capital Regional District's efforts towards regional improvements to future goods movement services, the City should support the CRD's primary route corridors along Island Highway, Sooke Road and Veterans Memorial Parkway and have representatives from the City of Colwood take part on the CRD's goods movement committee.

- **Promote Carsharing Programs.** Carsharing is a model of car rental where people rent vehicles for short periods of time, often by the hour. They are attractive to customers who make only occasional use of a vehicle, or a second vehicle, as well as those who would like occasional access to vehicles of a different type (i.e. pickup truck, minivan). Carsharing programs can reduce the impact of vehicle travel by reducing the number of vehicles that are purchased and owned by Colwood residents. The City should support carsharing programs in the municipality where sufficient density exists or is planned to provide a cost-effective transportation option for residents.

- **Develop a Parking Strategy.** The cost, availability, and convenience of parking influences where and how we travel to destinations. A parking strategy can be part of an economic development plan in urban commercial areas and a traffic calming mechanism on local and residential roads.

  Parking management is a tool that can be used to shape and support development patterns, street environments, surrounding land uses and transportation choices. Strategic on- and off-street parking policies can be applied to encourage the use of alternative transportation modes, densification, economic activity and, over time, reduce overall parking demand.

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

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

On-street parking was identified in instances where suitable conditions were met. The results are documented in the final section of the plan.

- **Low or Zero Emissions Vehicles.** On-road transportation is one of the most significant contributors to community-wide Greenhouse Gas (GHG) emissions in Colwood, and a significant proportion of transportation-related GHG emissions are from private vehicles. Promoting the use of low or zero emissions vehicles can help reduce the community-wide GHG emissions throughout the City. The City can encourage these vehicles by updating its parking requirements to provide electric vehicle charging stations throughout the City. This will build on the car charging stations the City has already installed at City Hall, Colwood Transit Exchange Park and Ride, Juan de Fuca Library, Royal Bay Bakery, and Royal Roads University.

- **Education & Awareness.** Many residents are not aware of the transportation options available to them. Marketing and education efforts can help to encourage a shift in travel behaviours and promote greater awareness of sustainable modes of transportation. Strategies to improve education and awareness generally fall into two categories: distributing existing information from other groups and agencies, and developing and running more locally generated programs.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EXCEPT FOR ELECTRIC VEHICLE CHARGING