



Connecting Courtenay

TRANSPORTATION MASTER PLAN

September 2019

URBAN
systems

Report for

City of Courtenay

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1. SETTING THE STAGE

1.1 OVERVIEW

The City of Courtenay (City) is a growing municipality on the east coast of Vancouver Island on the traditional land of the K'ómoks First Nation. With a vibrant and walkable Downtown area, it is the urban and cultural hub of the Comox Valley. The City is also home to a number of regional institutions, including the North Island Hospital Comox Valley and the Comox Valley campus of North Island College. The municipality is also located at the centre of the regional transportation network, providing important connections to the Town of Comox, the Village of Cumberland, the Comox Valley Airport, and Canadian Forces Base (CFB) Comox.

Connecting Courtenay imagines a future in 2038 with a population of 41,000 people in the City. How will the transportation challenges that exist now evolve over time? How can the City best respond to those challenges and meet the needs of residents of all ages and abilities and with diverse needs and goals? How can the City and partner agencies address larger objectives related to environmental sustainability and the local economy through transportation?

Connecting Courtenay is the Transportation Master Plan for the City. It highlights demands and needs for transportation within the community; creates a vision, goals and objectives for transportation; and identifies strategies and initiatives to move the community towards those goals over the medium- and long-terms. Overall, public and agency stakeholders expressed a desire to create a balanced, safe, and efficient transportation system that is sensitive to the local culture and the environment.



1.2 STUDY PROCESS

Connecting Courtenay was developed through a six-phase process between Fall 2017 and Spring 2019 that included both technical work and public and stakeholder consultation, as outlined below.

PHASE 1

Project start-up provided the foundation for Connecting Courtenay by ensuring integration with regional and local aspirations and plans and utilizing information on existing travel patterns and transportation conditions.

PHASE 4

Priority improvements were developed that are achievable in the medium-term, address existing issues and have the greatest impact in working towards achieving overall goals.

PHASE 2

Existing conditions assessment included a review and summary of present-day conditions - local and regional policy, travel patterns, mobility conditions, collision history, and issues and challenges communicated by the public and stakeholders.

PHASE 5

Development of long-term strategies (20+ years) captured the possibilities to explore a long-term direction for walking, cycling, transit and the road network. Large scale options for the road network were explored in addition to key corridors for walking and cycling infrastructure.

Beyond large scale initiatives, improvements to address safety and operational issues for all modes of transportation were explored.

PHASE 3

Future base conditions assessment addressed the question of "what impact would growth and development have on a transportation network that hasn't changed?" This information was used to engage the community in discussions about the transportation vision, goals, and objectives.

PHASE 6

Plan documentation provided a guide for why, what and how Courtenay should invest in transportation infrastructure.

1.3 CONSULTATION WITH THE PUBLIC + STAKEHOLDERS

Public and agency stakeholder engagement was essential to Connecting Courtenay. Two rounds of engagement were completed – the first focused on issues, challenges, and ‘Big Moves’ (i.e., significant transportation changes) and the second focused on long-term strategies and priorities. The results of the consultation which influenced the plan and central messages are incorporated throughout Connecting Courtenay. More information about the public consultation events, stakeholders, and the results of consultation are documented in separate reports.

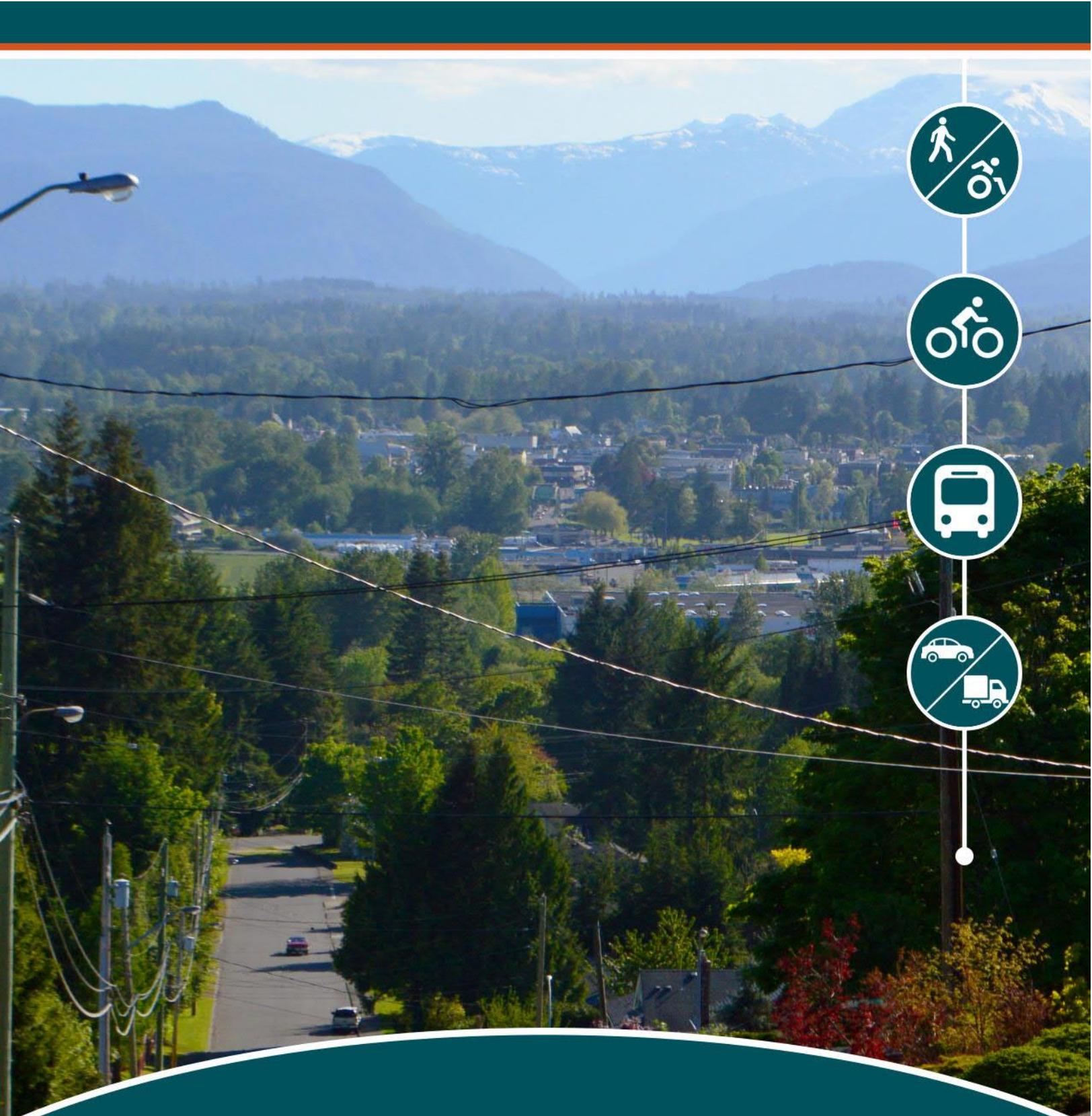
1.4 APPLYING THE PLAN

Connecting Courtenay is a guide for the development and implementation of transportation infrastructure, policies, programs, and activities. It will require funding and partnerships to be successful. Further, it looks both to the long-term – i.e. what issues should the City be prepared to address and what are the most promising solutions – as well as to the actions that should be implemented in the next ten years. This is a living document, and the actions recommended here within must be reaffirmed through funding, Council resolutions, and effective partnership action on an annual basis. This is particularly important for major infrastructure, which may be deferred if investments in non-automobile modes of transportation and changes in land use patterns are successful in limiting vehicle volume growth.

1.5 PLAN FRAMEWORK

Connecting Courtenay is separated into eight sections as highlighted below:

1. **Shaping Influences** highlight those factors that currently influence travel demands and choices within the City.
2. **Overall Directions** are based on community input and guidance when considering existing and future base conditions.
3. **Streets Plan Themes** provide a strategic approach for managed investments in the current and future road network within Courtenay that include municipal, regional and provincial interests.
4. **Walking Plan Themes** include infrastructure and programs to encourage walking or getting around Courtenay with mobility devices.
5. **Cycling Plan Themes** highlight current design standards and identify a future cycling network and support facilities.
6. **Transit Infrastructure Themes** provide guidance on the City’s responsibilities for making transit universally accessible.
7. **New Mobility Themes** address new and future transportation modes anticipated to emerge during the life of this plan.
8. **Implementation & Phasing** summarizes priorities for investment during the first 10-years of the plan based on community input and alignment with the Vision.



2. SHAPING INFLUENCES

Courtenay’s geographic location in the region, land use patterns and demographics shape daily travel to, from, within and through the City. The City is located at the centre of the Comox Valley Regional District (CVRD), and serves as the centre for commercial, employment, educational and recreational activities. The City is also surrounded and served by several key regional gateways, such as the Comox Valley Airport, as well as the Provincial highway system. This section of Connecting Courtenay explores those factors that most influence today’s travel needs and choices within Courtenay – specifically demographic and land use patterns.

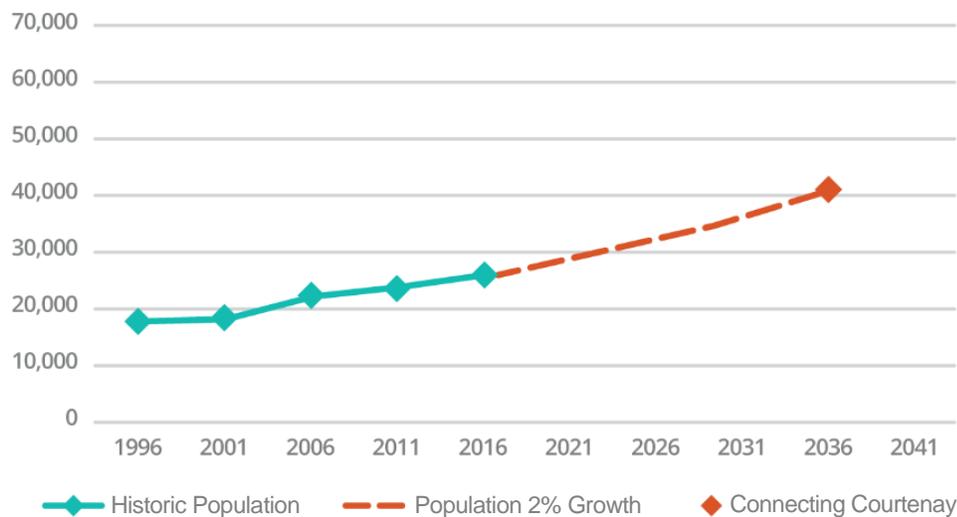


Credit: Kim Stalknecht

2.1 DEMOGRAPHIC CONTEXT

Courtenay is attractive for people of all ages – youth, families and seniors. In 1996, the City’s population was approximately 18,000 people. As of the 2016 census, the City’s population has increased by 1.9% per year to approximately 25,600 people (or almost 40% of the Comox Valley Regional District) as illustrated in **Figure 2-1** below. Much of this growth occurred in the eastern areas of the City in the form of greenfield development in addition to some infill within the established areas.

Figure 2-1: Courtenay’s Historical & Projected Population



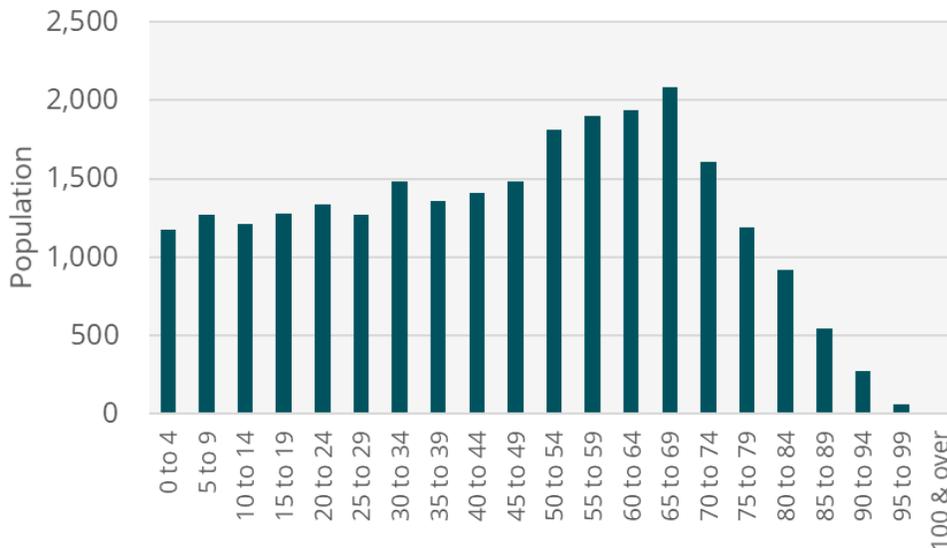
Over the next 20 years or so, the regional population is expected to grow substantially, much of which is planned for the Town of Comox and the Village of Cumberland. The City's Official Community Plan (OCP) identified a population projection range for Courtenay of between 1.5% and 3.5% compounded annual growth.

Courtenay's population is projected to grow at a rate of approximately 2% annually over the next 25 years if land use plans are achieved as predicted. The City will monitor population growth to confirm the 2% annual growth projection, as the schedule for delivery of transportation projects may need to be adjusted to align with the observed rate of growth.

Consistent with other infrastructure plans, faster rates of growth will mean that the investments included in the TMP will need to be accelerated. Conversely, slower growth rates reduce pressure on travel demands and subsequently allow for deferred investment in capital infrastructure such as walking, cycling, transit and roadway infrastructure.

Beyond the overall population growth in the City and region-wide, the age profile of Courtenay residents influences transportation choices. **Figure 2-2** illustrates the age profile of residents in 2016. The largest age cohort includes adults between 65 and 69 years. This is followed by the cohorts between 50 and 64 years, confirming Courtenay's attractiveness as a destination for retirees and active seniors. Looking ahead, it will be especially important to provide high quality, accessible, multi-modal transportation choices for residents of Courtenay to get around.

Figure 2-2: Courtenay Age Demographic Profile (2016)



2.2 LAND USE CONTEXT

Land use and transportation are fundamentally interrelated. The type, scale, mixture and form of land uses impact how much, where and how people choose to travel. Low density, single use residential or commercial land use patterns typically mean fewer trips generated to these areas during specific times of day, and longer travel distances that are not as walkable or cyclable. Providing attractive transit services can be difficult with fewer trips being generated to different areas of the City.

Today, Courtenay is comprised of established mixed-use areas within the urban core in addition to suburban scale and form of land use patterns.

Figure 2-3 illustrates the key generators of travel in the City. The general land use patterns and key destinations include:

1. **Commercial Areas.** Downtown Courtenay is an important destination for employment, shopping, and recreation. Proximity of residential areas surrounding the urban core make walking, cycling and transit possible. More suburban character commercial uses exist around Ryan Road and Lerwick Road, and these areas are generally less accessible by walking and cycling due to their location and design.
2. **Community Facilities.** Many of Courtenay's important cultural, civic and recreational facilities are located downtown, including City Hall, the library, Florence Filberg Centre and Native Sons Hall. The North Island Hospital Comox Valley and North Island College are both located north of Ryan Road and west of Lerwick Road. A number of other facilities such as, Courtenay & District Memorial Outdoor Pool, Lewis Centre, Lewis Park and LINK Youth Centre are located off of Old Island Highway.
3. **Regional Destinations.** The Comox Valley Airport is located east of the City and is primarily accessed through the City via Ryan Road, as is CFB Comox. The Comox and Cumberland communities are also both important regional destinations.
4. **Schools.** There are nine schools in Courtenay: five elementary schools, one middle school and three secondary schools. The City is also home to one of four North Island College campuses.

The existing land use designations and the City's OCP provide guidance on future growth. Over the next 20 years, the City's transportation system will need to support and accommodate more residents, jobs and services.

Additional retail growth is planned along Ryan Road east of Lerwick Road, as well as in the downtown and around Cliffe Avenue. It is also important to note that neighbouring municipalities and K'ómoks First Nation are also expected to experience population growth, and an increase in residential population in these communities is anticipated to rely on the commercial and institutional uses in Courtenay.

Figure 2-3: Community Destinations in Courtenay

-  Transit Exchange
-  Airport
-  Ferry
-  Hospital
-  College
-  School
-  Park / Greenspace
-  Destination Node
-  Regional Destination



2.3 TRAVEL PATTERNS

Where and when people travel and the transportation options available to them impacts how they choose to travel. Today, Courtenay is part of an integrated region, with 93% of Courtenay residents working within the region and 94% of people who work in Courtenay living within the region. Approximately 64% of residents both live and work in Courtenay. These relationships are illustrated in **Figure 2-4**.

Today, approximately 83% of commute trips to work or school are made by private vehicle (car, van, truck) including both drivers (77%) and passengers (6%). The use of public transit (3%), walking (8%) and cycling (4%) makes up most other commute trips, with the remainder taking some other mode (taxi, motorcycle, boat, etc.).

Figure 2-4: Where Courtenay Residents & Workers Travel

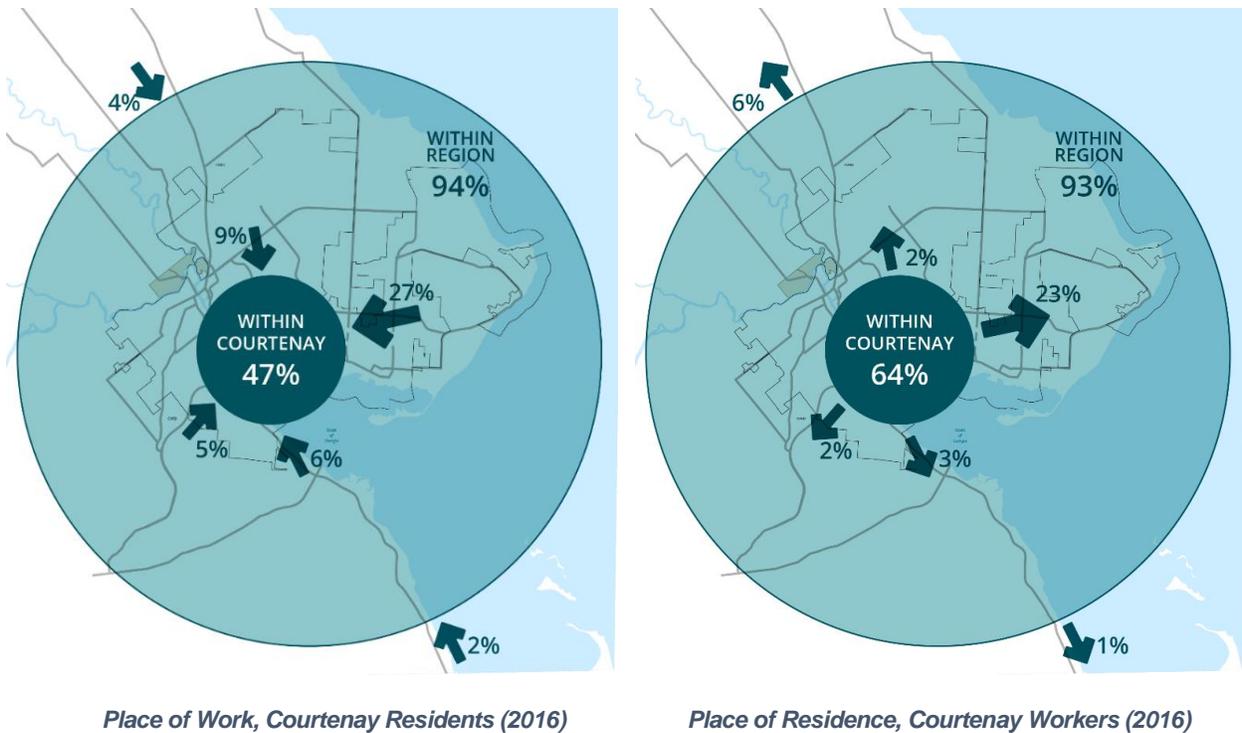


Figure 2-5 illustrates how residents of Courtenay choose to travel each day – or “mode split” – in comparison to other communities. Across British Columbia, approximately 75% use their car for work travel in comparison to 85% in Courtenay.

The time of day that people travel also influences how they choose to travel and provides insights on the worst-case periods of the day. In many cities, morning and afternoon peak period travel makes up a significant portion of daily trips by car and transit, while goods movement is more prominent during the midday period.

Although travel data and surveys are limited in Courtenay, traffic patterns on Highway 19A provide insight on the overall profile of travel demands in Courtenay’s core areas, as illustrated in **Figure 2-6**.

Figure 2-5: Mode Split to Work (2016)

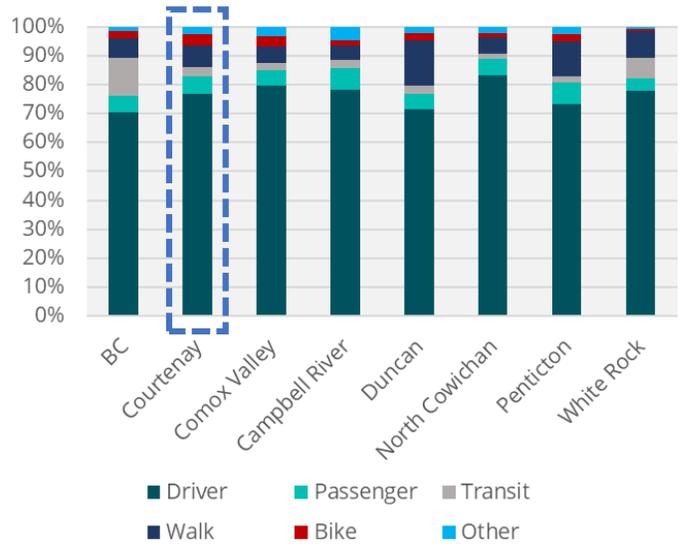
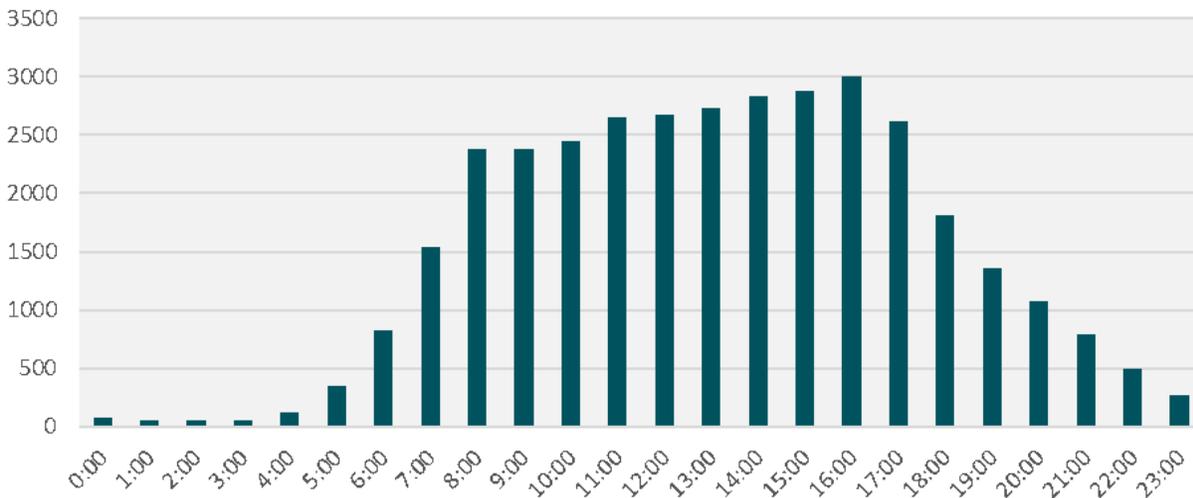


Figure 2-6: Weekday Hourly Traffic Distribution, Highway 19A at the 17th Street Bridge

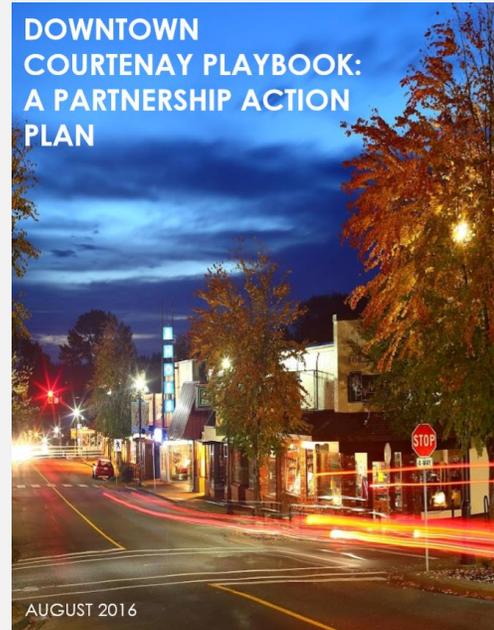


Consistent with an older demographic community, these patterns clearly indicate that travel demands are relatively consistent throughout the day. This means that the most effective travel options for people to shift modes in future must be available during daytime and peak periods. Further, these patterns also mean that any congestion levels within the core area and across bridges are also evident during morning, afternoon, as well as midday periods.

Recognizing the scale and patterns of growth in the City and region-wide, travel demand is expected to increase along major corridors and across key screenlines between areas within the City (a screenline is a point on a key corridor across which traffic volumes are measured).

Figure 2-7 illustrates the expected growth in afternoon peak period travel across screenlines over the next 20 years assuming no significant changes in walking, cycling and transit facilities and services.

As illustrated, peak vehicle travel demands are projected to increase substantially across key screenlines such as the river and major corridors without significant investments in transit, walking and cycling. Demands for crossing the river between the eastern and western areas of the City are expected to increase by approximately 20%, contributing to increased congestion and reduced mobility for car and truck travel.



DOWNTOWN COURTENAY PLAYBOOK: A Partnership Action Plan

August 2016

The Playbook is a product of the 2015 Downtown Forum and the 2016 Design Charrette. It summarizes the community vision for Downtown Courtenay created through the engagement process and the planning directions and actions for downtown revitalization.

The Playbook contains five strategic planning goals, one of which is specific to transportation:

Make It Easier to Get to and Be Downtown

All modes of transportation are conveniently able to access, circulate, and park within downtown.

Connecting Courtenay's overall directions have been developed to align with the strategic planning goals of the Playbook.



3. OVERALL DIRECTIONS

Connecting Courtenay presents a long-term vision for how people and goods get around based on input and guidance from the community. This section of Connecting Courtenay provides the foundational themes and direction that guide this document, including the vision for the City’s transportation system and guiding principles to shape travel choices and support a land use vision.

3.1 VISION & VALUES

The City has worked with the community on various aspects of the transportation system over the past five years. Connecting Courtenay gave residents the opportunity to confirm their vision for the City’s transportation systems, identified at right. The vision is supported by six shared values (or objectives) that further guide the direction of Connecting Courtenay and the priorities and levels of investment.

VISION

“The City of Courtenay supports a transportation network that prioritizes connectivity and access to daily destinations and, through a balanced approach to transportation planning, provides all road users safe choices in their mode of transportation.”

1. Sustainability, Livability & Health

The transportation system is balanced and environmental impacts and GHG emissions are minimized. There is high quality cycling infrastructure, walking is convenient for users of all abilities, and transit is attractive and accessible, while vehicle trips are managed.

2. Safety + Efficiency

Transportation infrastructure is designed and built to be safe for users of all ages and abilities, and especially for the most vulnerable users. At the same time, traffic movements are efficient and reliable, and congestion is minimized. This is achieved first through optimization of existing infrastructure and then through the development of additional capacity, where warranted.

3. Economic Prosperity

Transportation attracts businesses and investment through efficient and reliable mobility for employees, goods, and services. Downtown Courtenay is a vibrant destination.

4. Connectivity

The transportation network has a high degree of connectivity for all modes of transportation. The modes of transportation are integrated to facilitate trips using multiple modes. This multi-modal network is also integrated at a regional level, supporting seamless transportation throughout the Comox Valley.

5. Affordability

The transportation system is affordable and financially sustainable. Individuals and families of all income levels can access transportation. At the same time, infrastructure budgets allow the City to continue to fund other programs and services. Investment in alternative modes has been prioritized, allowing the City to defer some major infrastructure projects.

6. Sustainable Land Use

Development patterns have become more compact and urban, resulting in a more livable community supporting varied travel modes.

City of Courtenay STRATEGIC PRIORITIES 2019 -2022

Council's Strategic Priorities, 2019-2022 were confirmed in early 2019 and consist of priorities organized into six broad topic areas that include organizational excellence, economic development, land use, and partnerships. One of the six focus areas is multi-modal transportation, which clarifies that **"we [the City] plan & invest in methods of multi-modal transportation"**.

The document clarifies Council's intent to pursue the following specifically related to multi-modal transportation:

1. Move forward with implementing the City's Transportation Master Plan (i.e., Connecting Courtenay)
2. Collaborate with regional and senior government partners to provide cost-effective transportation solutions
3. Explore opportunities for electric vehicle charging stations

The intent to implement Connecting Courtenay and partner with other levels of government to enhance multi-modal transportation, as well as to support new mobility options such as electric vehicles, are reflected throughout this document and help determine where priority investments are made in the medium- and long-term as part of the implementation of this Plan.



3.2 GUIDING PRINCIPLES

Beyond the Vision and Values described above, the recommendations of Connecting Courtenay are shaped by guiding principles and supporting technical assessments of issues and opportunities. The guiding principles were presented to the public and stakeholders during consultation and received a high level of support, ***with almost 75% of survey respondents agreeing or somewhat agreeing with the principles.***

The following guiding principles were used to shape Connecting Courtenay:

1. **Design streets to be complete & support all modes.** This includes new roadways built as a part of development, as well as new connections and improvements to existing roadways.
2. **Make walking, cycling & transit safer and more attractive.** Recommendations should focus on infrastructure, policies, and programs that will make walking, cycling, and transit safer and more attractive and accessible for people of all ages and abilities.
3. **Increase accessibility for people of all ages & abilities.** This includes more accessible walking infrastructure and support programs for people with mobility and vision challenges and cycling infrastructure for all ages and abilities.
4. **Support planned growth & increasing travel demands.** Community livability and a strong economy both rely on the ability for people and goods to travel safely, efficiently, and reliably by their chosen mode of transportation.
5. **Recognize safety, mobility, accessibility & affordability in identifying transportation improvements & evaluating alternatives.** Connecting Courtenay takes a balanced approach to improving safety and mobility in a way that is affordable for individuals, families, and the municipality as a whole.
6. **Defer the need for major infrastructure through land use, investment in non-automobile modes of transportation, & maximization of existing infrastructure.** The demands for major investments can be deferred through maximizing the effectiveness of existing assets and managing growth through strong land use planning and investments in sustainable modes.
7. **Ensure that the transportation system is planned and designed to support other community goals including, but not limited to, land use, recreation, social, environment, & economy.** Much like other communities, Courtenay's transportation goals are interdependent with the land use, social, environmental, and economic contexts all influencing – and being influenced by – transportation choices. Connecting Courtenay will support these other community goals.

3.3 MODE SHARE TARGET

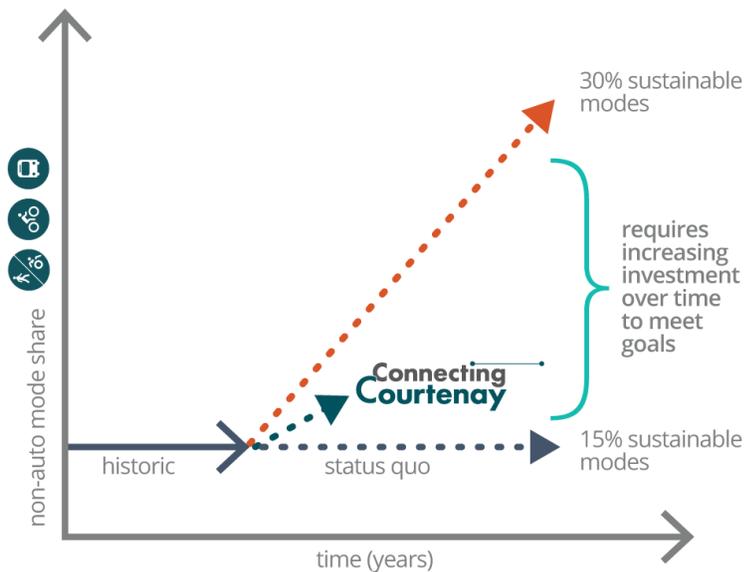
Today, approximately 85% of all trips made by Courtenay residents are by car (as driver or passenger). Sustainable travel modes – walking, cycling and transit – account for approximately 15% of all weekday trips. Without significant investments in walking, cycling and transit infrastructure and services, these patterns have not significantly changed over the last 20 years.

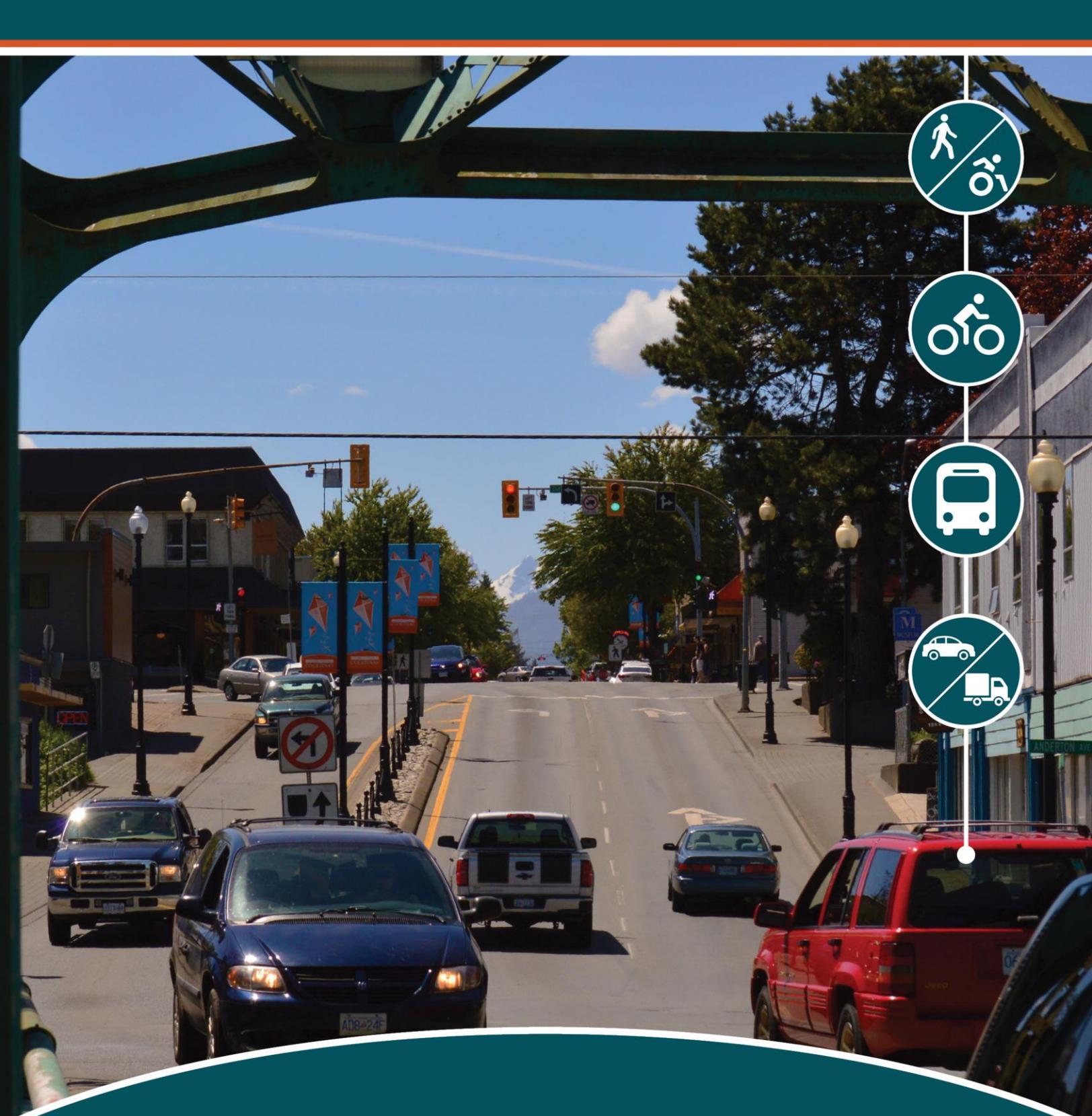
With population expected to grow by approximately 60% over the next 20 years, Courtenay residents want to shift travel choices toward more sustainable modes through land use plans and investments in non-automobile travel modes.

The City's OCP provides targets to double the percentage of trips by walking, cycling and transit. This direction aligns with the City's goals to reduce GHG emissions. That means transportation investments must be directed toward sustainable modes of travel to support an increase from 15% today – *transit (3%), walking (8%) and cycling (4%)* – to 30% of all trips. See **Figure 3-1**. Achieving these targets requires integrated land use and transportation decisions and prioritizing investments in sustainable travel modes.



Figure 3-1: Sustainable Mode Share Target





4. STREETS PLAN

Streets are the “conduits” of the transportation network. They facilitate the movement of goods and services between provincial, regional and local destinations, and provide access to local properties. Streets are designed to support vehicular, walking, cycling and transit trips.

The historical challenge that remains in Courtenay (and many other communities) is that vehicles are often given preferential treatment in the allocation of space and roadway operations. Planning, designing, and building roads with consideration for walking, cycling and transit has the potential to positively impact the urban character on major corridors.

The Streets Plan highlights the key issues and concerns with the road network and outlines a long-term plan that includes improvements at major intersections and corridors, new connections and major road widenings.

4.1 ISSUES & OPPORTUNITIES

The existing street system in Courtenay serves local, regional and provincial travel demand for walking, cycling, transit, driving and goods movement. Because of this, the key issues and opportunities for streets – concerning connectivity, mobility, safety, access – typically impact conditions across modes.

Through the technical review and engagement with the community and agency stakeholders, key issues for streets in Courtenay were identified as follows:

- **The network for all modes is constrained** by natural barriers such as Comox Harbour, the Courtenay River, and the Tsolum River.
- **Congestion on key routes that serve provincial regional, and local travel**, including river crossings, Ryan Road and the Highway 19A bypass. **Figure 4-1** illustrates the long-term levels of service or congestion hotspots in the City projected with planned growth and without network improvements.
- **Most traffic uses roads in the core area and the lack of a bypass limits resiliency to incidents and construction.** The North Courtenay Connector opened in 2017 and provides a level of network resiliency and improved river crossing capacity.
- **Planned local and regional growth will put pressure on existing corridors**, including on river crossings, the Highway 19A Bypass, Ryan Road and major intersections. **Figure 2-7** indicated that forecast demand across core area bridges could increase by up to 25% without significant investment in alternative modes and/or new routes across the City.
- **Collision hot spots at high volume intersections on corridors with multiple accesses and high left turn volumes.** Collision frequency for the top ten collision locations are illustrated in **Figure 4-2**. High collision locations include Lerwick Road and Ryan Road; Old Island Highway and Ryan Road; 17th Street and Cliffe Avenue; and Island Highway and Ryan Road.

Figure 4-1: Forecast Base (2038) PM Peak Hour Intersection Level of Service (LOS)

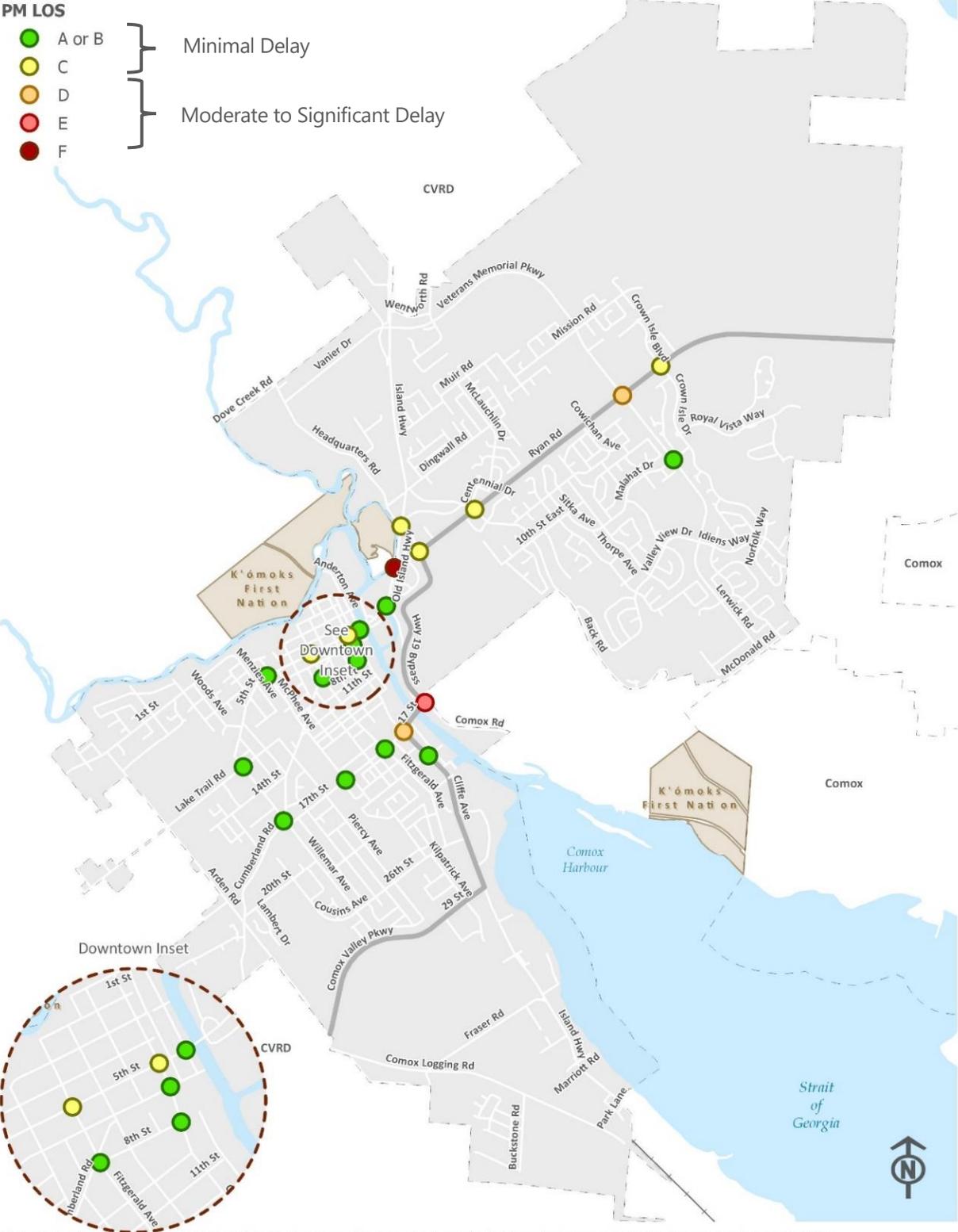
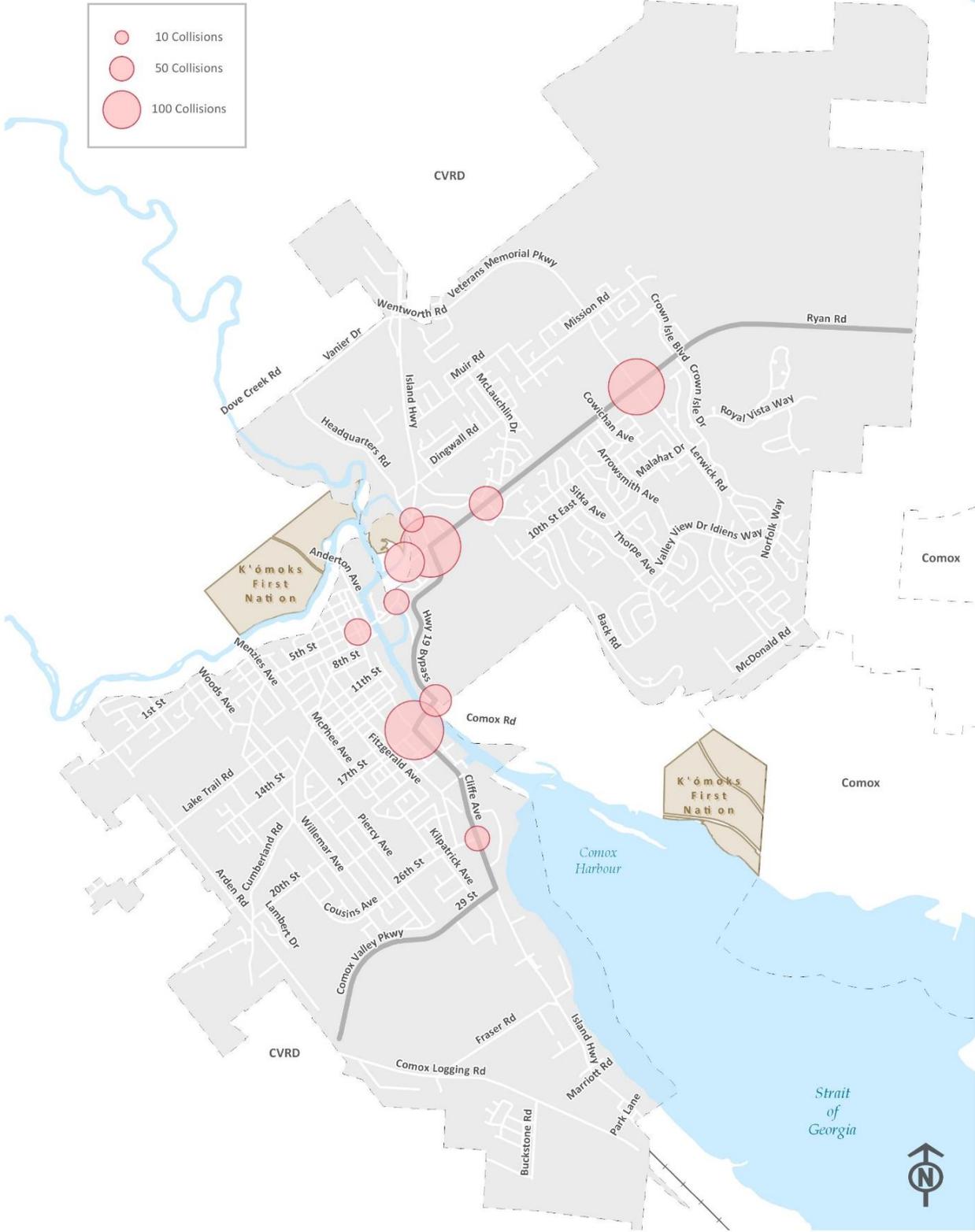


Figure 4-2: Top-10 Collision Locations (2011 to 2015)

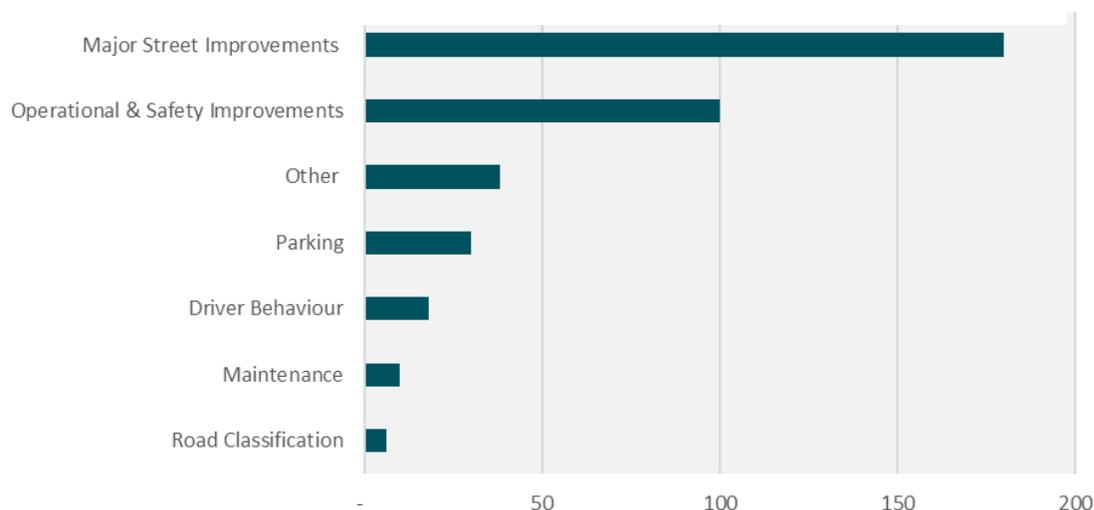


There are several opportunities to address the key issues and to enhance the mobility, safety, and operation of streets for all modes of transportation.

- Connect land use and transportation planning, invest in all modes of transportation, and support emerging technologies and new mobility to improve mode choice and reduce reliance on driving as the primary mode of transportation and address GHG reduction targets.
- Ensure all new streets and major widenings accommodate all modes of transportation.
- Manage existing infrastructure to ensure it is operating as safely and efficiently as possible.
- Consider long-term opportunities for east-west connections across Courtenay to increase network resiliency and reliability, reduce conflict on existing routes that are serving multiple roles, and accommodate growth.
- Maximize use of existing arterial roads by planning for widening in the long-term and beyond and monitoring operations to determine if and when widening is required.
- Seek opportunities for street trees in new roadway projects, consistent with the City's Urban Forest Strategy.
- Continue to enhance Downtown Courtenay streets as a livable and vibrant destination with streets that accommodate all modes, understanding that this may result in lower speeds and increased travel times for vehicular traffic.

When asked what ideas should be explored as part of the TMP process, residents provided a range of answers from the provision of new and widened major streets to operational and safety improvements. **Figure 4-3** below summarizes the possibilities identified by residents that were used to guide the development of the TMP.

Figure 4-3: Community "Ideas"
(What could we do to make it easier to drive or carpool in Courtenay?)



4.2 LONG-TERM STREETS PLAN

The long-term Streets Plan provides the foundation for the City’s transportation system, and captures directions for walking, cycling and transit in Courtenay. Consistent with the vision to increase sustainable travel in Courtenay, the Streets Plan supports a philosophy on managing existing infrastructure before investing in major road network improvements. As illustrated in **Figure 4-4** this approach is designed to both manage investments in the City’s road network and allow for increased walking, cycling and transit facilities.

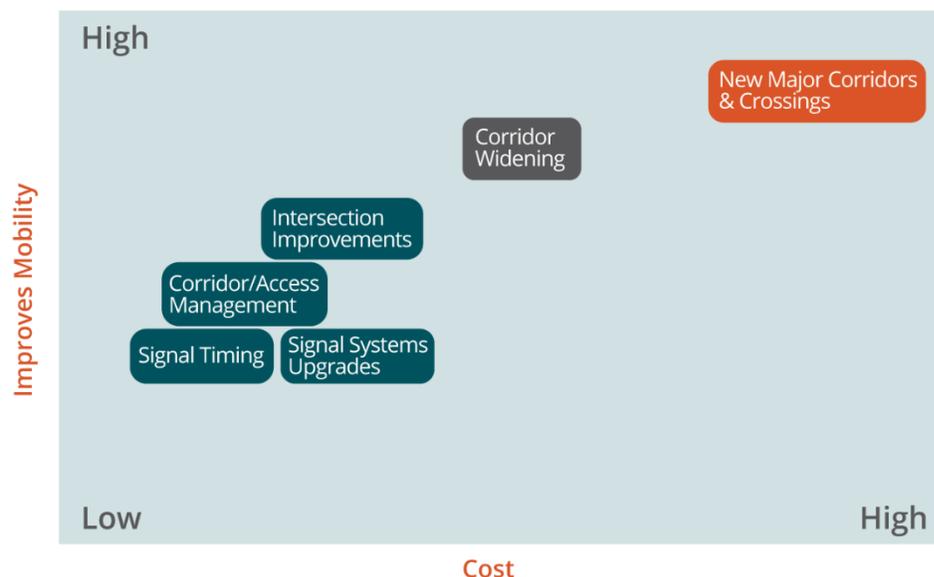
Within all urban areas, major intersections are often the primary source of congestion. The long-term plan begins with strategies to manage the existing road network – **Safety and Operational Improvements** - through enhancements to signal systems and intersections. In this regard, corridor and access changes along major roadways also help to increase performance and address safety issues.

The next level of improvements highlighted in the Streets Plan include **Corridor Widenings** where intersection and corridor management improvements should be considered to extend the life of the asset or where a road may be redesigned to better address multi-modal needs.

The final aspect of the long-term Streets Plan includes **New Corridors and Crossings** of the City. In some expanding areas of the City’s built environment, new communities need to be served by major roadways that connect with the existing road network. In some cases, alternative east-west corridors have been explored as a means of addressing growing regional and City travel demands. Although some of these improvements are not considered a high priority in the next 10 to 15 years of planned growth within the Comox Valley, improvements being made in the medium-term should be planning for possibilities beyond the next 20 to 25 years.

The following sections describe the recommendations in more detail for each of these themes contained in the Streets Plan.

Figure 4-4: Types of Street Improvements



4.2.1 Safety & Operational Improvements

Major intersection and corridor safety and operational improvements include moderate-scale projects that are part of managing and investing in existing infrastructure. They can mitigate existing and anticipated future issues and extend the life of infrastructure, helping to delay larger, more expensive improvements.

In addition to addressing mobility and safety, these investments improve efficiency and performance for transit through the provision of priority lanes, as well as reduce conflicts with pedestrians and cyclists.

Specific safety and operational improvements are identified on **Figure 4-5** and include:

- a. **Ryan Road and Lerwick Road** protected left-turn movements and changes in signal phasing.
- b. **Old Island Highway corridor improvements** (Comox Road to Ryan Road) focus on maximizing effectiveness of existing lanes and improving safety. The recommended improvements include a centre median with dedicated left turn lanes, improving access, and new pedestrian and cyclist crossings.
- c. **Ryan Road corridor management** (MoTI, Old Island Highway to Highway 19A Bypass) to address safety and mobility issues. This includes strategies to better manage the corridor such as: a centre median island to direct turning vehicles to key intersections and alter site access to right-in/right-out; extension of the northbound right-turn lane from Old Island Highway to Ryan Road to beyond the northbound through queue; and eastbound transit bypass lane to reduce transit delays.
- d. **Ryan Road corridor management** (MoTI, Sandwich Road to Back Road). Convert the two-way left turn lane to a median island along the corridor to reduce delays and exposure to collisions.
- e. **17th Street Bridge (Highway 19A) area network and intersections** (MoTI Jurisdiction). Intersection improvements on both sides of the bridge will serve to maximize capacity of the existing crossing and approaches.
- f. **Old Island Hwy / Fraser Road / Millard Road** intersection geometry improvements to address off-set configuration and possible signalization.
- g. **Signal timing updates at City-owned intersections**. Update existing signal timings and clearances to be the most efficient possible.
- h. **Signal replacement program**. Signal system upgrades to support improved signal coordination and bicycle crossing objectives. Changes to accommodate bicycle push buttons are documented in the Long-Term Cycling Plan.
- i. **Traffic control upgrades, including new signals and / or roundabouts**. In the long-term, it is recommended that the City monitor traffic growth and operations at unsignalized intersections to determine where and when new signals or roundabouts are needed.

Figure 4-5: Safety and Operational Improvements

Legend

- Access Control
- Intersection Improvements
- City Street
- Provincial Highway

- i. City-wide Intersection Traffic Controls (signals / roundabouts)**
- 11th & Cliffe
 - Back & 6th
 - Ryan & Cowichan
 - Cumberland & Arden
 - Island Hwy & Muir Rd
 - 19th & Hwy 19A

- d. Ryan Rd Corridor Management (Sandwich to Back)**
- Convert 2-way left-turn lane to centre median

- a. Ryan Rd and Lerwick Rd**
- EB/WB protected signals
 - NB/SB protected signals

- c. Ryan Rd Corridor Management (Old Island to Hwy 19A)**
- Convert 2-way left-turn lane to centre median
 - NB right turn lane extension

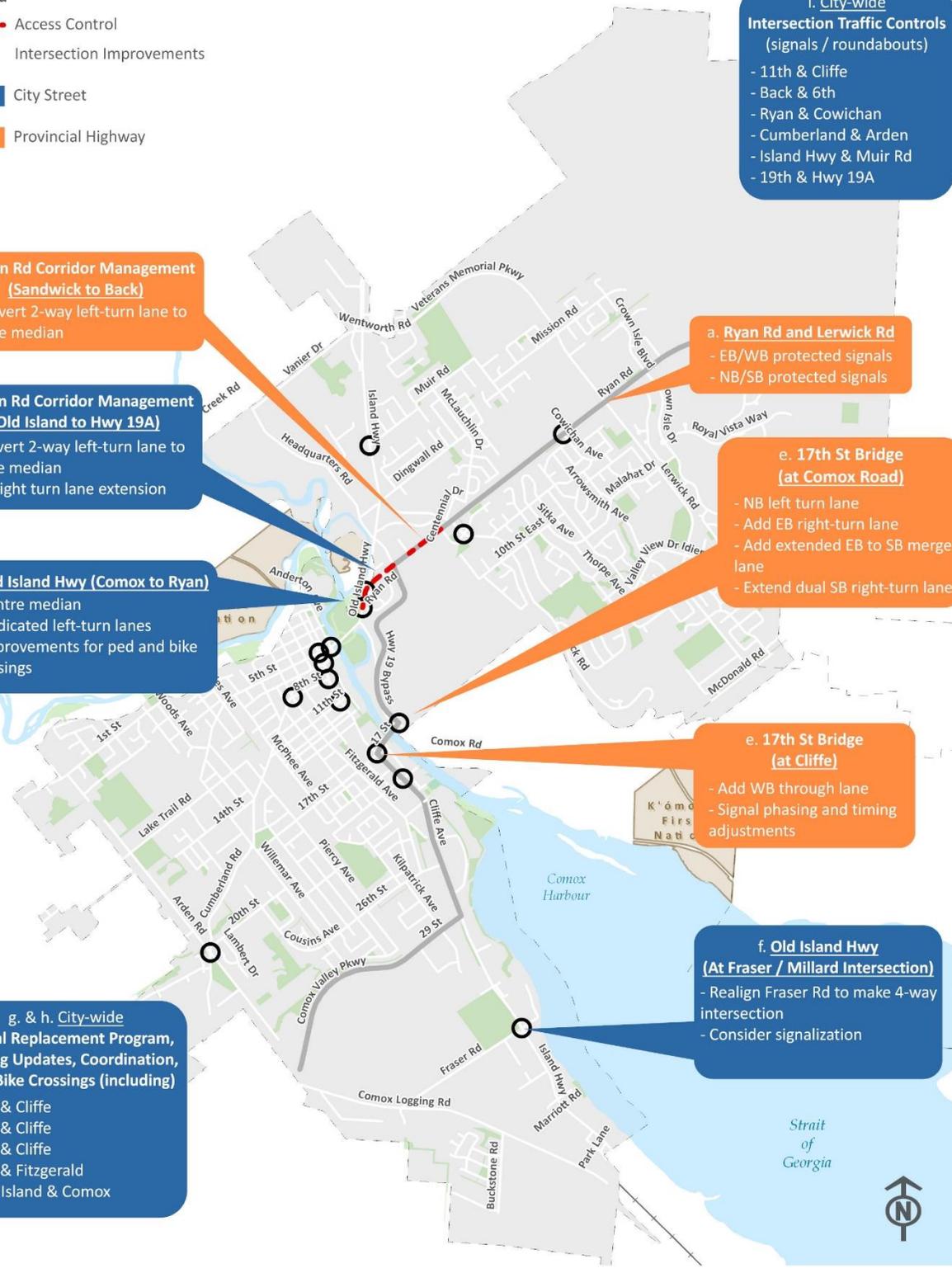
- e. 17th St Bridge (at Comox Road)**
- NB left turn lane
 - Add EB right-turn lane
 - Add extended EB to SB merge lane
 - Extend dual SB right-turn lane

- b. Old Island Hwy (Comox to Ryan)**
- Centre median
 - Dedicated left-turn lanes
 - improvements for ped and bike crossings

- e. 17th St Bridge (at Cliffe)**
- Add WB through lane
 - Signal phasing and timing adjustments

- f. Old Island Hwy (At Fraser / Millard Intersection)**
- Realign Fraser Rd to make 4-way intersection
 - Consider signalization

- g. & h. City-wide Signal Replacement Program, Timing Updates, Coordination, and Bike Crossings (including)**
- 8th & Cliffe
 - 5th & Cliffe
 - 6th & Cliffe
 - 8th & Fitzgerald
 - Old Island & Comox



4.2.2 New & Widened Major Corridors & Connections

Intersection safety and capacity improvements will maximize Courtenay’s existing infrastructure and allow for opportunities to increase investments in other modes. Over the next 20 years however, further investments in widening existing corridors and creating new major roadways in growth areas is required to support planned growth and development.

Community input through the Connecting Courtenay process confirmed that existing traffic delay is a significant issue and many expressed interest in major road improvements. When asked, major street improvements were among the most common themes identified in the public survey. At the same time, public input called for investment in walking, cycling, and transit – as well as innovative solutions – to reduce traffic demand.

Using background plans and additional input from the community, the Connecting Courtenay process explored a wide variety of potential major roadway widenings and new connections, as well as improving existing or creating new river crossings.

In some cases, select widenings were considered as a means of maximizing use of existing rights-of-way, and new connections provided access to growing areas of the City and redundancy to the City’s major roadways.

As part of the process, improvements to existing river crossings and new river crossings were considered as part of the long-term plan. Beyond the intersection improvements previously described for the 17th Street Bridge, historical crossing options illustrated in **Figure 4-6** were all considered in the process with input and feedback from the community and Council.

In general, the rights-of-way for each of the historical crossing options are no longer available. In most cases, buildings have been constructed along or near the alignment and right-of-way that would be required. In a few cases – such as 21st Street – existing active uses prevent advancing any planning and design, and in other cases – such as 29th Street – cost would be prohibitive in addition to other significant impacts.

Figure 4-6: Historical Crossing Options



For the 21st Street and 29th Street crossing options, bridges and connections for either alignment would be complex, costly and potentially impact existing uses and environments. As such, Council passed a motion in mid-2018 to 'abandon' further investigation of the 21st Street crossing during the Connecting Courtenay process.

Rather than focus on planning for the potential of a new crossing on the south side of Courtenay, Connecting Courtenay highlights other roadway widenings and new connections that will help with local area network redundancy as well as enhance mobility and connectivity across the City and region. The proposed improvements described below include both municipal roadways and provincial highways and are illustrated on **Figure 4-7**.

- a. **Hwy 19A Widening (MoTI, 17th St to Ryan Rd).** Traffic volumes on this roadway are projected to increase by 20% over the next 20 years. Widening to four lanes will increase capacity and serve as an important connection for vehicles and transit. At the same time, the widening can also preserve for walking and cycling connections along the east side of the Courtenay River.
- b. **Ryan Rd Widening (MoTI, Back Rd to Cowichan Rd).** With traffic volumes expected to grow by 10% to 20%, the volumes on this three-lane section of Ryan Road will exceed capacity within 20 years. The widening will support growth in this area of the City as well as mobility for transit. Improvements to the corridor will also recognize the need for safe and attractive cycling and walking facilities.
- c. **Ryan Rd Widening (MoTI, Crown Isle Dr to Anderton Rd).** The future volumes on this roadway will depend on the scale, density, and internal road networks of the planned development area on the north side of Ryan Road. It is recommended that consideration be given to eventually widening this corridor over the next 20 years.
- d. **Lerwick Road Widening (Malahat Dr to Valley View Dr / Idiens Way and from Blue Jay Place to McDonald Rd).** Although growth along this corridor will depend on development in Courtenay and externally, the Connecting Courtenay process identified the potential need for an eventual widening from two to four lanes.
- e. **Back Road Widening (Ryan Rd to 10th St East).** Current volumes and forecast growth in this area of the City suggest that the widening of Back Road from two to four-lanes should be preserved as a long-term improvement.

Beyond widening of existing roadways, two key new roadway connections are recommended to provide redundancy in the City's overall major road network and to enhance overall access and circulation for all modes of travel.

f. Northern Corridor (Piercy, Vanier, Veterans Connection to Anderton). Today, the majority of east-west regional travel through the City is across the 5th Street or 17th Street bridges. In 2017, the Ministry invested in a new Piercy Road crossing of the river to improve overall east-west connectivity between Highway 19 and the Comox Airport and ferry terminal. In a further effort to improve east-west connectivity, it is recommended the City work with other regional and provincial partners on a northern corridor that includes an extension of the Veterans Memorial Parkway through to Anderton Road. The specific alignment of this corridor should be designed to support inter-municipal travel for all modes and be planned with developments anticipated for the area. As traffic increases in the very long-term, the City and other regional partners will want to explore other improvements that may be required to Piercy Road to provide attractive connections to Highway 19. Highway signage notifying drivers of a northern corridor to access the ferry and airport would also potentially increase use of a northern corridor.

g. Tunner Dr Extension (Back Road to Hwy 19A). A very limited network of continuous east-west roadways in Courtenay means that Ryan Road is concurrently serving provincial, regional, City-wide and local functions. Although a northern route as previously described would help, local area network redundancy would also support improved mobility along Ryan Road and for local residential areas. The extension of Tunner Drive to connect with Highway 19A is recommended to provide an alternative route for local area travel for residents between Back Road and Lerwick Road, south of Ryan Road. It will also form the spine of the pedestrian and cycling route between this area and downtown. Further study is recommended to clarify the street configuration and understand local impacts.

h. Comox Logging Road Upgrades & Re-alignment.

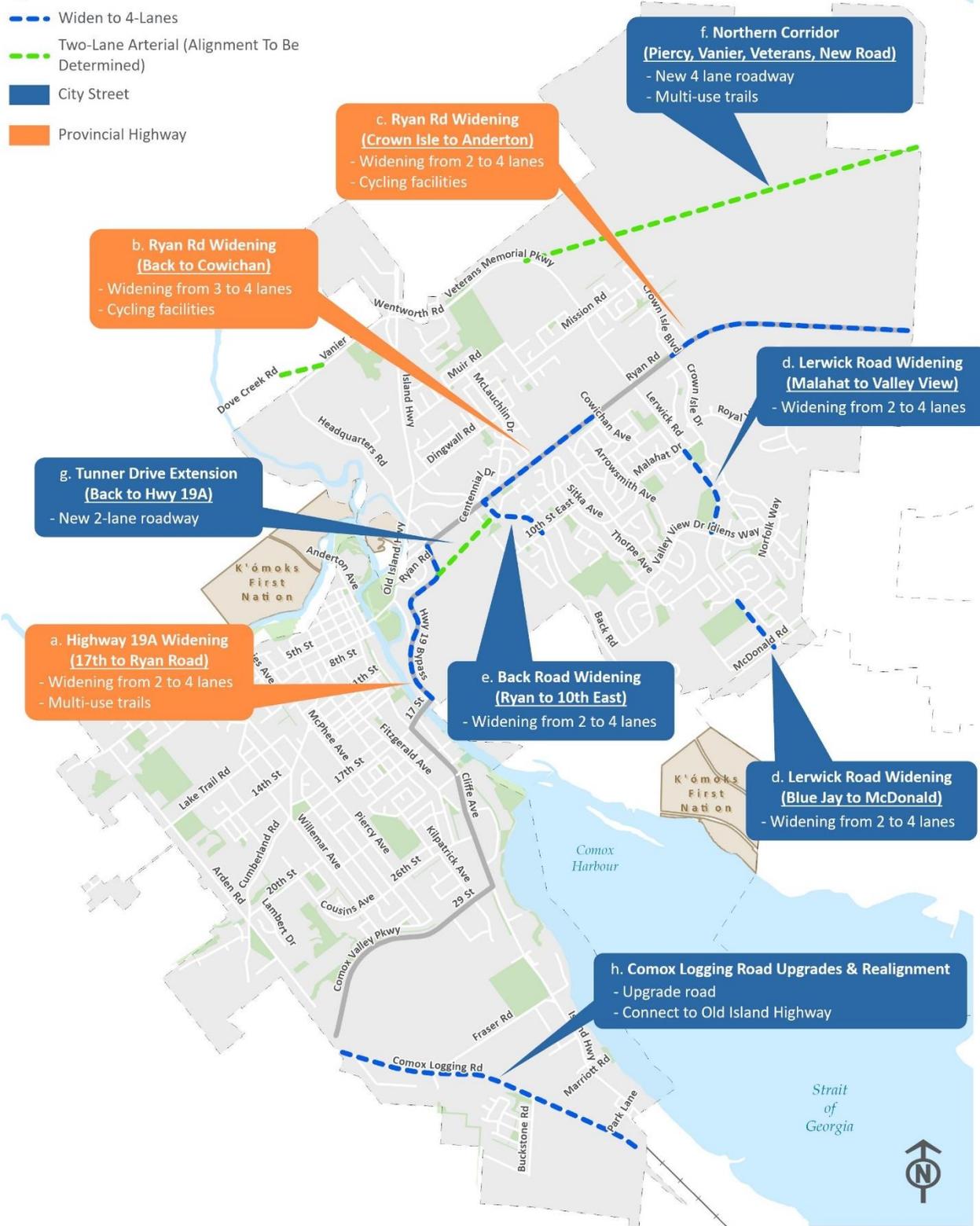
The Comox Logging Road between the Comox Valley Parkway and Old Island Highway represents a new connection to address planned growth in South Courtenay and an alternative to north-south travel on the Old Island Highway. Upgrades are required along the entire length of Comox Valley Logging Road between Comox Valley Parkway and Old Island Highway to bring it up to collector standard, with specific consideration for the ultimate alignment and intersection configuration at the north and south ends.

This corridor could ultimately connect to Arden Road to provide a continuous north-south corridor at the west edge of the City.

Figure 4-7: New & Widened Major Corridors

Legend

- - - Widen to 4-Lanes
- - - Two-Lane Arterial (Alignment To Be Determined)
- City Street
- Provincial Highway



4.2.3 Roadway Classification

The City's street classification system guides everything from specific design standards and features through to interaction with surrounding uses. In 2018, the City updated the Subdivision & Development Servicing Bylaw (SDS) to balance the needs of all modes of transportation. The SDS identifies the minimum recommended widths for each roadway element for different classifications of roadways. Wider roads can be designed depending on the context, available property, and other factors.

The existing SDS road classifications have been updated here to simplify the approach to classifying existing roadways and to capture the planned network changes of Connecting Courtenay.

The updated classification system presented in **Figure 4-8** illustrates the proposed network classification map for the City.

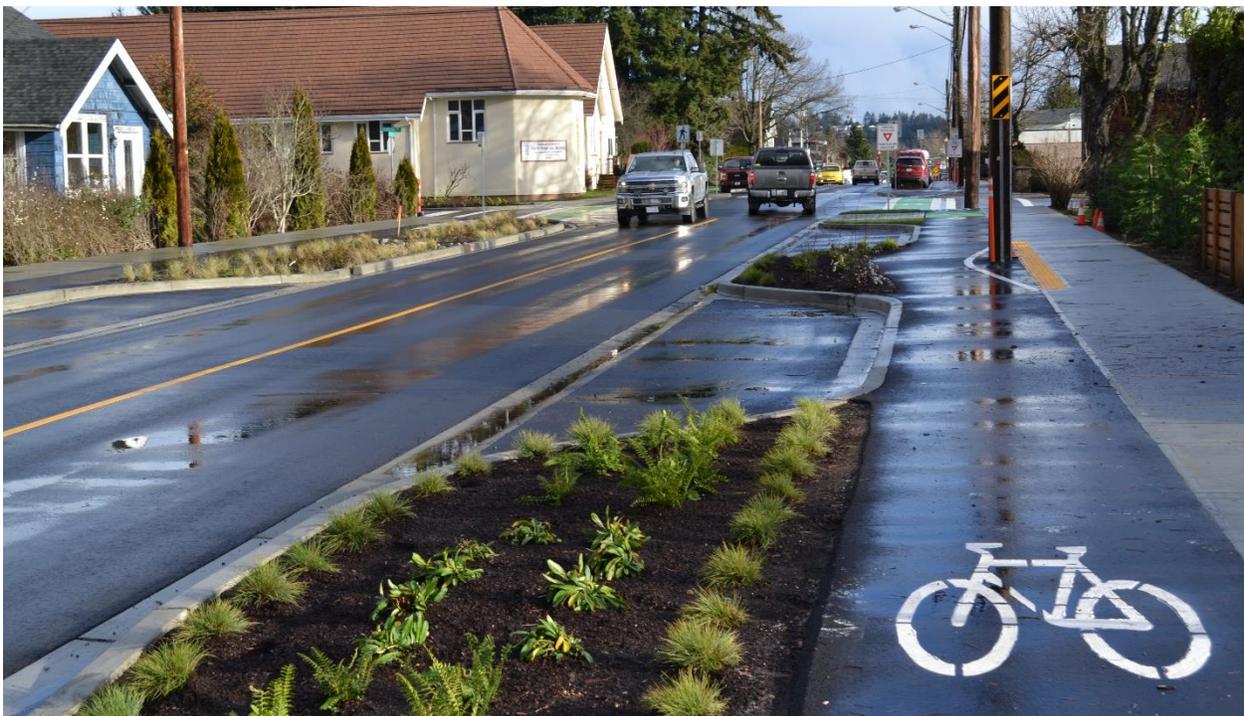


Figure 4-8: Recommended Road Classification Scheme

Recommended Road Classification	Future Road Classification
Highway	Arterial - Major
Arterial - Major	Collector
Arterial - Minor	
Collector	
Local	

Future collector and local road network to be determined through neighbourhood plans.



4.2.4 Beyond the Next 20 Years & City Boundaries

The City and the surrounding region will continue to grow and expand beyond the next 20 years. In addition to those network improvements and new or widened roadways already recommended, the City will want to preserve or even acquire other rights-of-way for possible new connections. At this time, these new connections and further widenings are largely intended to support and provide a grid system of streets in the long-term where there are many opportunities to get around Courtenay.

Figure 4-9 illustrates those roadway connections that are recommended for long-term planning within City boundaries. They include:

1. **Willemar Avenue Extension (between 26th St & Comox Valley Parkway).** As infill growth and development occur in the established areas of the City, adding to the grid of north-south streets can serve to address mobility challenges along existing corridor such as Cliffe Avenue and will provide connectivity for all modes of travel. As development occurs in the area, the City may wish to consider extending and connecting Willemar Avenue south of 26th Street through to Comox Valley Parkway.
2. **Old Island Highway Widening from 2 to 4 lanes to accommodate growth in South Courtenay.** As growth occurs in South Courtenay and in areas south of Courtenay, consideration should be given to protecting future opportunities to widen the Old Island Highway beyond the Connecting Courtenay planning horizon.
3. **Crown Isle Collector Roadways.** Although the Local Area Plan will be used to identify the local collector and arterial road system, the City will want to ensure a grid street network that provides multiple connections to Ryan Road and Lerwick Road, as well as support the extension of Veterans Memorial Parkway.



Figure 4-9: Protecting Possibilities Beyond the TMP

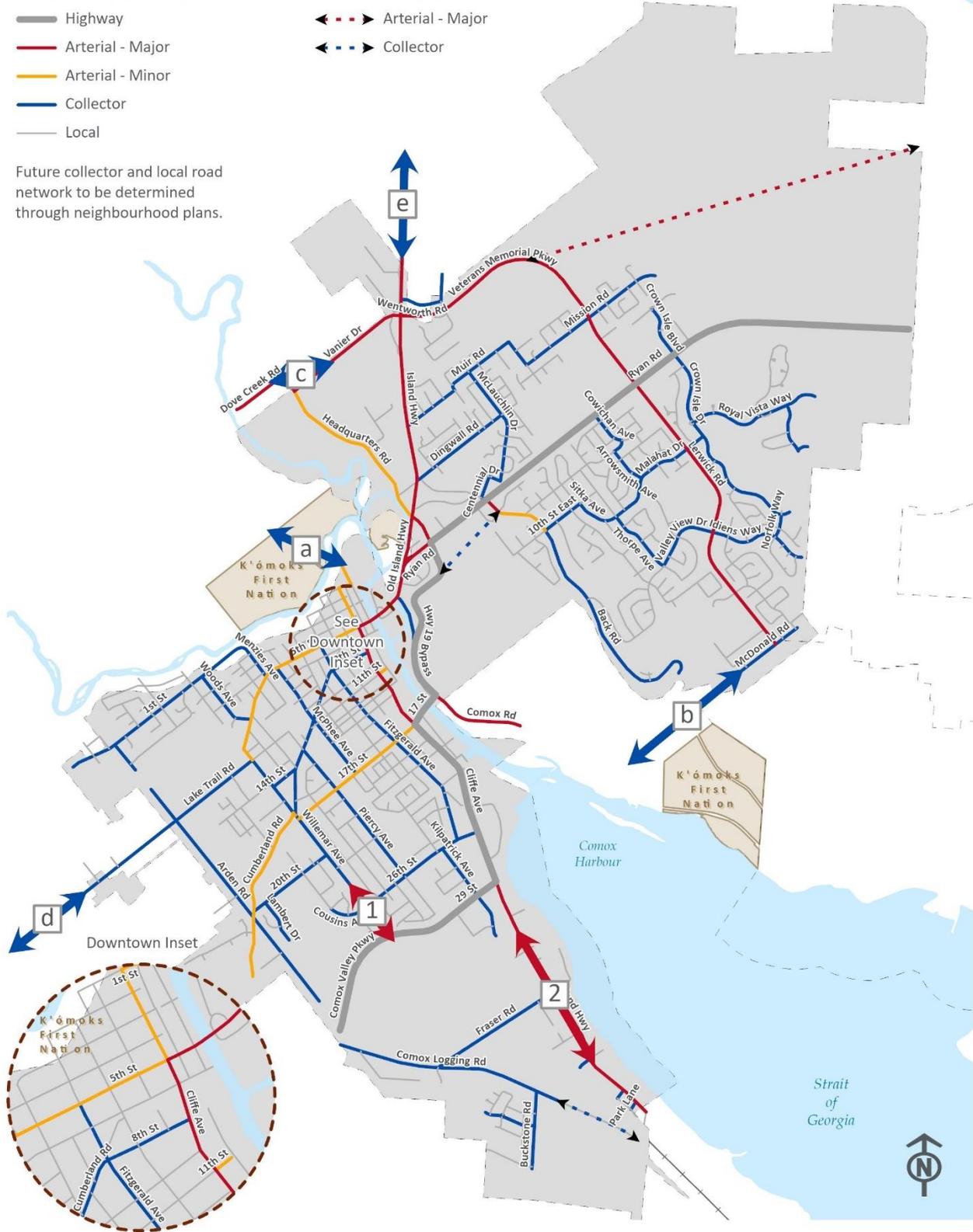
Recommended Road Classification

- Highway
- Arterial - Major
- Arterial - Minor
- Collector
- Local

Future Road Classification

- Arterial - Major
- Collector

Future collector and local road network to be determined through neighbourhood plans.



Outside City boundaries, there are new and improved connections that should be preserved for the long-term in order to enhance overall regional connectivity and planned growth. Some improved connections may be examined within the planning horizon of the TMP to identify alignments and preserve rights-of-way, and others may be considered and preserved beyond the next 20 years. These external improvements would require collaborative partnerships and discussions between the province, region and area municipalities in the Comox Valley as well as local First Nations. **Figure 4-9** illustrates those possible long-term external network connections and improvements.

a. Condensory Road Improvements (north of Puntledge River)

On the north end of the downtown area, Condensory Road bridge crosses the Puntledge River, providing alternative connections to Piercy Road and then west to Highway 19 or east to Highway 19A. It is recommended that Courtenay work with K'ómoks First Nation as well as the province and regional agencies on the possibility of providing enhanced alternatives to support improved connectivity that may support growth and connectivity north of the City and outside the region. Improvements to Condensory Road could include replacement of the bridge over the Puntledge River and upgrades to the two lane cross-section and alignment with shoulders.

b. McDonald Road Extension between Back Road & Comox Road

As noted in Section 4.2.2, the east-west network of roadways is limited on the east side of the City. It is recommended that the City work with K'ómoks First Nation, the Regional District (and/or Electoral Areas) and neighbouring municipalities on the potential to extend McDonald Road to Comox Road. This connection enhances access for transit and cycling as well as supports long-term mobility.

c. Headquarters Road Reconfiguration & Realignment (between Vanier Dr & the North Courtenay Connector)

As part of efforts to provide an east-west route across the northern end of the City, it is recommended that consideration is given to reconfiguring the connection between Vanier Drive and the new northern crossing along Piercy Road.

d. Lake Trail Road Grade-Separated Interchange with Highway 19

The existing connections to Highway 19 are at Piercy Road in the north and Comox Valley Parkway in the south, over 9-km apart from one another. An extension of Lake Trail Road to Highway 19 would be the preferred location if/when a third interchange is necessary. This initiative would require the City to work with the province, region and local municipalities to confirm the ultimate timing and location.

e. Highway 19A (north of Veterans Memorial Parkway)

Although it is not anticipated that travel demand over the next 20 years will require further upgrades to Highway 19A north of the Veterans Memorial Parkway, it is recommended that the City work with the province and region to monitor plans for growth and preserve for longer-term improvements beyond the planning horizon.



5. WALKING PLAN

Walking, including using a mobility device, is the most fundamental form of transportation. Walking is a part of every trip, whether made by car, transit or bicycle. If suitable conditions exist – such as having a complete, connected sidewalk network and destinations nearby where residents live – walking can also be a convenient alternative to vehicles for almost all short trips. Promoting walking can help reduce vehicle dependence and GHG emissions, improve public health outcomes and help to create a more liveable and vibrant community.

Walking accounts for 8% of all commute trips within Courtenay. Based on feedback received from residents and stakeholders, Courtenay residents are walking for a variety of trip purposes, including to school and work, and to access shopping, groceries and restaurants. Approximately 72% of survey respondents indicated they walk at least once per week and 41% walk at least once per day.

The City has an extensive walking network, which includes sidewalks on many streets as well as off-street trails and pathways, traffic signals, and crosswalks. Still, there are existing barriers to walking, including gaps in the sidewalk network and major roadway crossings that are difficult for people of different abilities. Continued investment in walking is important as Courtenay continues to grow and evolve. Because of changing demographics, the needs of a wide variety of users must be considered when providing for walking in Courtenay. Providing connected and comfortable walking encourages more people to walk across all demographics.



Credit: Ron Pogue



Credit: Craig Carson

5.1 ISSUES & OPPORTUNITIES

Courtenay’s OCP highlights importance of walking as a desirable mode of transportation, particularly within the downtown area. The OCP also notes that the City will pursue the development of a continuous pedestrian system and will ensure that walkways and pedestrian linkages are provided in all new developments, particularly for major destination points.

Today, there are approximately 173 km of sidewalks in Courtenay and approximately 65% of all streets have sidewalks on at least one side.

Table 5-1 outlines the sidewalk requirements for new development areas based on roadway classifications in the City’s 2018 SDS Bylaw. Sidewalks are currently required on both sides of arterials and collectors in urban and residential areas and one side of local roads (but are not required on collector roads in rural areas). The Bylaw also provides guidance on sidewalk width dependent on road classification and land use context.

Although sidewalk coverage in established areas of the community are not expected to meet the same requirements of new neighbourhoods, a large portion of major roadways in the City do not have sidewalks on both sides as summarized in **Table 5-2**.

Table 5-1: Sidewalk Requirements for New Development by Road Classification

Road Class	Sidewalk Requirements	Width (m)
Arterial	2 sides	2.0
Collector Urban	2 sides	1.8
Collector Residential	2 sides	1.5
Collector Road Rural	N/A	-
Local Road	1 side	1.5
Cul-de-sac	1 side	Unspecified

Table 5-2: Existing Sidewalk Coverage

Road Class	No Sidewalk	One Side	Two Side
Arterial	48%	16%	36%
Collector	26%	26%	48%
Local	32%	39%	29%
Provincial	45%	23%	32%

Through the consultation process, the community showed strong support for investments in making walking more attractive in Courtenay. Some of the more significant issues highlighted include:

- **Gaps in the sidewalk network make walking unsafe and uncomfortable.** This challenge is highlighted on major roads where traffic speeds and volumes are high, and along transit routes where passengers rely on sidewalks or other walkways to access bus stops.
- **Lack of safe crossings of some major roads can be barriers to walking.** These conditions can be particularly challenging when combined with low light or low visibility and for pedestrians with slower travel speeds.
- **Accessibility challenges along existing sidewalks and crossings making those with mobility aids travel longer distances to cross or not travel at all.** Contributing factors include sidewalks in disrepair, landscaping encroaching on sidewalk, poorly located push-buttons, and poorly designed curb let-downs.

Figure 5-1 highlights some of the more notable gaps identified by the community.

Addressing these issues in the City's walking network through infrastructure improvements, policies and programs will enhance the walking environment and encourage more people to walk. When the community was asked about ideas to make walking more attractive in Courtenay, there were several key themes as summarized in **Figure 5-2** that have been captured in this plan.



5.2 LONG-TERM WALKING PLAN

The long-term Walking Plan addresses barriers and gaps to provide more safe, convenient and comfortable walking areas in Courtenay. Within the four strategy areas, actions have been identified to support the goal of increasing walking trips to key pedestrian areas in the City and supporting connections to transit.

The Walking Plan themes begin with the provision of new pedestrian network connections to fill notable gaps identified by the community. Beyond that, provisions are made for improved crossing treatments to enhance access for people of all ages and abilities.

Figure 5-2: Community “Ideas”
(What could we do to make it easier to be a pedestrian in Courtenay?)



5.2.1 Long-Term Pedestrian Network

Pedestrian network improvements were identified on highways, arterial and collector roads, focusing on areas around schools, commercial areas, and connections to transit. Recommended network improvements are identified in **Figure 5-3**, including:

- **New Sidewalks.** New sidewalks are recommended on urban area highways, arterial roads, and collector roads that currently have one or no sidewalks and are in areas around schools, in commercial areas, and along transit routes. Pedestrian facilities along highways will need to be coordinated and implemented in partnership with MoTI.
- **New Multi-use Pathways.** In some cases, it is more effective to provide for both bicycles and pedestrians in a multi-use pathway running alongside the roadway. Recommended multi-use pathways reflect parallel recommendations from the Long-Term Cycling Plan.
- **Improvements to Multi-use Trails.** The Parks and Recreation Master Plan recommends improvements to multi-use trails that also support walking for transportation. These are reflected in Connecting Courtenay.
- **New Trails & Connections.** Beyond what is shown on the network map, it is recommended that the City seek opportunities to provide trails that connect to transit routes and key destinations to shorten trip distances and improve access to transit. These should be considered as development and property acquisition opportunities arise and in conjunction with parks planning activities.
- **Pedestrian Crossings.** New pedestrian crossings of Cliffe Avenue, Back Road, and Ryan Road are recommended. Each identified location should be studied in detail to ensure they meet basic crossing warrants and can be designed to facilitate safe pedestrian crossing with appropriate sightlines.
- **New & Improved River Crossings.** Widening the sidewalks on both the north and south sides of the 5th Street Bridge in conjunction with other maintenance and rehabilitation work would better accommodate all active transportation modes. In the long-term, the Parks and Recreation Master Plan recommends a pedestrian crossing on the 6th Street alignment, which will provide a more direct recreational connection between downtown and Simms Millennium Park.

A potential multi-use pathway along the Arden Road corridor could be considered to increase pedestrian and cyclist connectivity in this area. As part of this multi-use pathway, a pedestrian crossing of Morrison Creek could be considered in conjunction with utility upgrades. Any further study of a potential pathway in this area would require consideration of the Arden Local Area Plan (2013) and the Action Plan for the Western Brook Lamprey – Morrison Creek Population.
- **Enhanced Intersections & Improved Accessibility.** Intersections and crossings are barriers to walking for many people of all ages and abilities. Improvements to intersections can include new and improved crossings in locations where there are existing gaps, geometric improvements for universal access (particularly in high demand areas), standards for intersections with new roadways, and improvements that can be implemented during on-going maintenance and rehabilitation projects.

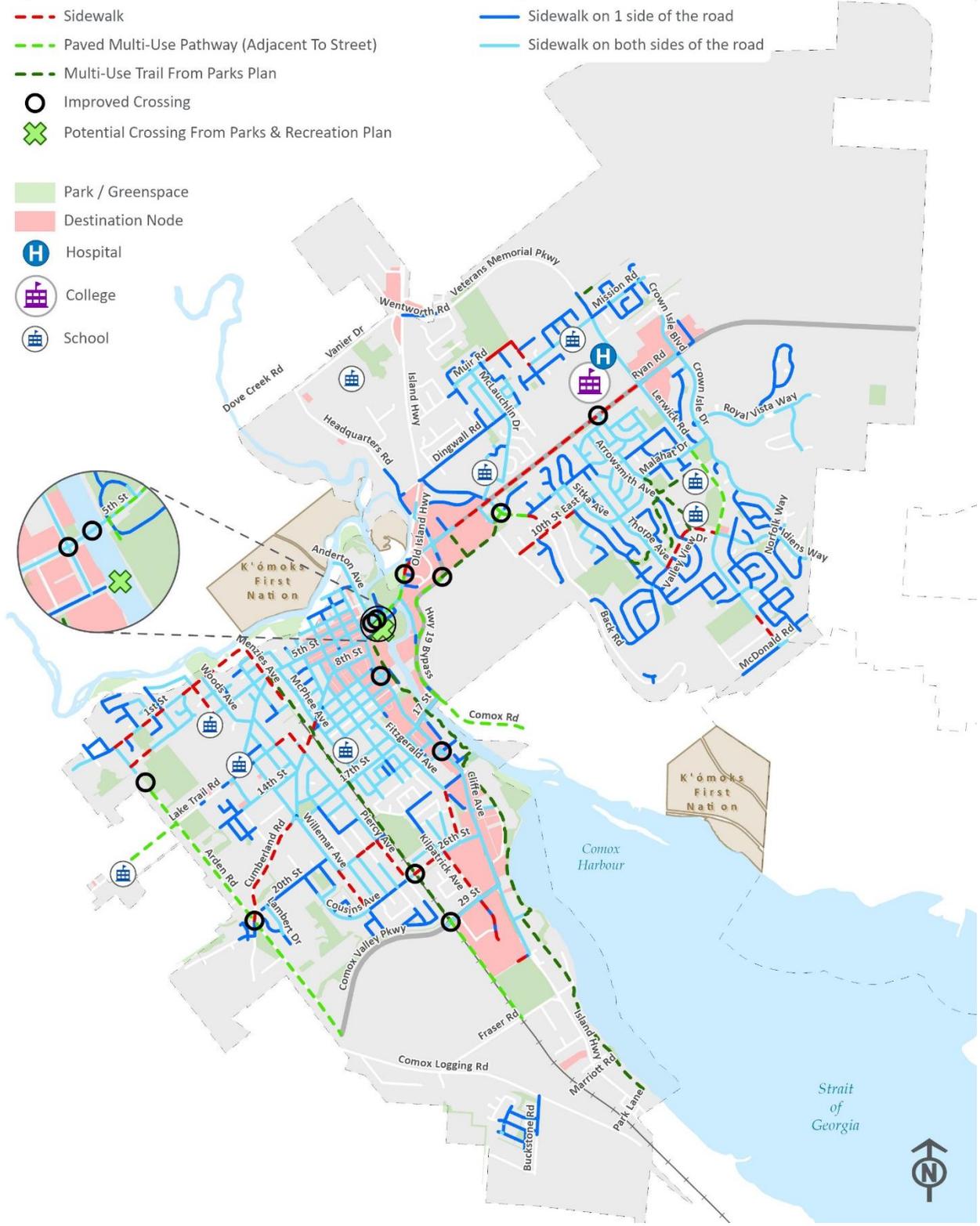
Figure 5-3: Recommended Pedestrian Network Plan

Legend

- Sidewalk
- Paved Multi-Use Pathway (Adjacent To Street)
- Multi-Use Trail From Parks Plan
- Improved Crossing
- X Potential Crossing From Parks & Recreation Plan
- Park / Greenspace
- Destination Node
- H Hospital
- C College
- S School

Existing Sidewalks

- Sidewalk on 1 side of the road
- Sidewalk on both sides of the road



Beyond the provision of new crossings, it is recommended that all crossings in Courtenay are examined for accessibility treatments during signal replacement programs, on-going road rehabilitation and new construction. A “toolbox” of accessibility treatments that are recommended for consideration include, but are not limited to, the following:

- **Pedestrian countdown timers** indicate to people walking how much time they have to cross the street at a signalized intersection.
- **Lighting** ensures people walking are clearly visible at night to drivers.
- **Pedestrian activated pushbuttons** must be located where they can be accessed by people using various mobility aids and of differing heights.
- **Marked crossings** with enhanced visibility and safety.
- **Reduced crossing distances through minimum radius curbs, curb-extensions, and median islands** can help reduce pedestrian crossing distances while providing additional space for pedestrian amenities.
- **Audible pedestrian signals** are used to communicate when to walk in non-visual formats, including audible tones, speech messages, or vibrating surfaces.
- **Accessible curb letdowns** should be aligned with the crosswalk and should include directional guidance for those with visual impairments. Tactile surfaces can also be installed at curb letdowns to provide indicators to pedestrians who are visually impaired that they are approaching the intersection.
- **Pedestrian crossing time and clearance intervals** can be lengthened to allow people more time to safely cross the street.



5.2.2 Theme

A comfortable and pleasant pedestrian realm on streets is an essential component of a vibrant and livable community, especially in commercial cores. Enhanced street treatments can help create destinations in and of themselves and produce lively, vibrant, pedestrian-oriented streetscapes.

In Courtenay, the most significant key destination is the downtown. Other high pedestrian generators include the areas around schools, parks and recreation facilities, and commercial and community centres that may emerge in new neighbourhoods.

Potential enhancements include, but are not limited to, the following treatments:

- **Wider sidewalks** than the minimum standard, particularly in high activity areas and on commercial streets. Wider sidewalks create more space for individuals with mobility aids, buggies, or carts. They also provide more room for additional pedestrian amenities.
- **Boulevards and curb extensions** are buffers that separate people walking from vehicle traffic. These spaces create a more comfortable walking experience and provide space for street trees and other amenities.
- **Street trees** play an important role in increasing the comfort and safety of people walking and – consistent with the City’s Urban Forest Strategy – should be incorporated into boulevards wherever possible. Street trees also help to provide shade in the summer, improve air quality, create wildlife habitat, reduce the urban heat island effect, and act as carbon sinks, absorbing and storing greenhouse gases.
- **Pedestrian amenities** such as planters, litter and recycling bins, water fountains, and benches help to improve the attractiveness and comfort of the pedestrian environment.
- **Public art**, including artistic benches, community art projects, and community-based design initiatives can also help to improve spaces for people walking. There may be opportunities to partner with local artists or with K’omoks First Nation on public art initiatives.
- **Weather protection** can create more inviting and useable outdoor spaces year-round.
- **Wayfinding** creates a navigable pedestrian environment by identifying pedestrian routes, key destinations, and access to public transit.

The need to develop a City-wide approach to planning and investing in greenways was identified during the Plan process. A greenway planning initiative is recommended as a short-term action item to define the City’s approach to greenways and identify greenway corridors, with England Avenue being given consideration as a candidate greenway corridor and/or pilot location.

5.2.3 Pedestrian Support Programs

Education and social marketing initiatives encourage and educate people on the benefits of walking. In many cases, coordination with non-profit organizations, community groups, and other agencies (e.g. ICBC, Island Health, police, school districts) can help improve the effectiveness of these programs, and should be encouraged and supported by the City. Support programs to encourage walking include:

- **Safe Routes to School program** historically operated by School District 71 could be restarted as a partnership with the City. These programs promote walking and cycling among school-aged children.
- **Walking clubs** can help get people active while encouraging social interaction (i.e. Seniors Walking Group).
- **Neighbourhood walking maps (digital and hard copies)** provide information about local walking routes for transportation and recreation.
- **Pedestrian wayfinding** information can support pedestrian-friendly design for people using the City's sidewalks, trails, and multi-use pathways. Kiosks for pedestrians can display key information such as transit routes, community facilities, and businesses. Maps that show "you are here" information, and a five-minute walking distance can also help give people a sense of scale. Wayfinding signage and kiosks are especially important at the intersection of major pedestrian routes, such as two different multi-use trails.

Beyond education and awareness programs, it is recommended that the City engage with partner agencies and stakeholder groups on a regular basis to confirm directions and priorities and to seek to understand new issues as they arise. These groups should also be consulted in the development of projects from planning through to detailed design.



6. CYCLING PLAN

Cycling can be an attractive transportation option as it is convenient, relatively low cost and for shorter trips can be a practical alternative to vehicle travel. The benefits of cycling to individuals, the community and the environment are vast – it is enjoyable, efficient, affordable, healthy, sociable and a sustainable form of transportation.

Cycling is already a popular recreational activity in Courtenay, due to the City’s natural beauty and great climate. Cycling accounts for 4% of all trips to/from work and school within Courtenay.

Residents and stakeholders are cycling in Courtenay for a variety of trip purposes including cycling to school and work but also when they are going shopping, to restaurants, for groceries and other daily needs. The most common trips are to work and for daily errands.

Developing a safe and comprehensive bicycle network along with supporting education and promotional programs is important to encourage cycling as a viable and attractive mode of transportation. With appropriate facilities, cycling can be time-competitive with both automobiles and transit, particularly over short-to-moderate distances during peak travel periods. A variety of factors influence an individual’s decision to bicycle, such as network connectivity, quality of facilities, and the distance between destinations.



6.1 ISSUES & OPPORTUNITIES

Courtenay’s OCP outlines the importance of cycling as a form of transportation with a target that by 2020 10% of trips in Courtenay will be made by bicycle. The OCP also states that the City will continue to pursue the development of a continuous, integrated bicycle network to promote and encourage cycling as a commuting alternative to personal vehicles and as a means of active recreation.

The SDS Bylaw identifies the recommended bicycle facility types by street network classification and land use context for new developments in the City of Courtenay.

As summarized in **Table 6-1** below, the City has approximately 30km of existing bicycle facilities, as well as bicycle parking and other support infrastructure. Courtenay’s existing bicycle network is limited and largely on-street. Multi-use pathways, such as the Courtenay Riverway, the Rotary Trail, and other connections provide key connectivity, but face special challenges due to narrow widths, popularity with a wide variety of trail users, and uncontrolled intersection crossings.

Existing cycling facilities are illustrated in **Figure 6-1**.

Table 6-1: Length of Existing Bicycle Facilities

Bicycle Facility	Km	%
Off Street Pathway (Paved)	12.7 km	44%
Off Street Pathway (Unpaved)	11.5 km	40%
Protected Bicycle Lanes	500m	0.5%
Bicycle Lane	1.3 km	4%
Signed Bicycle Route	3.5 km	11.5%
Total	29.5 km	100%

Figure 6-1: Existing Cycling Facilities

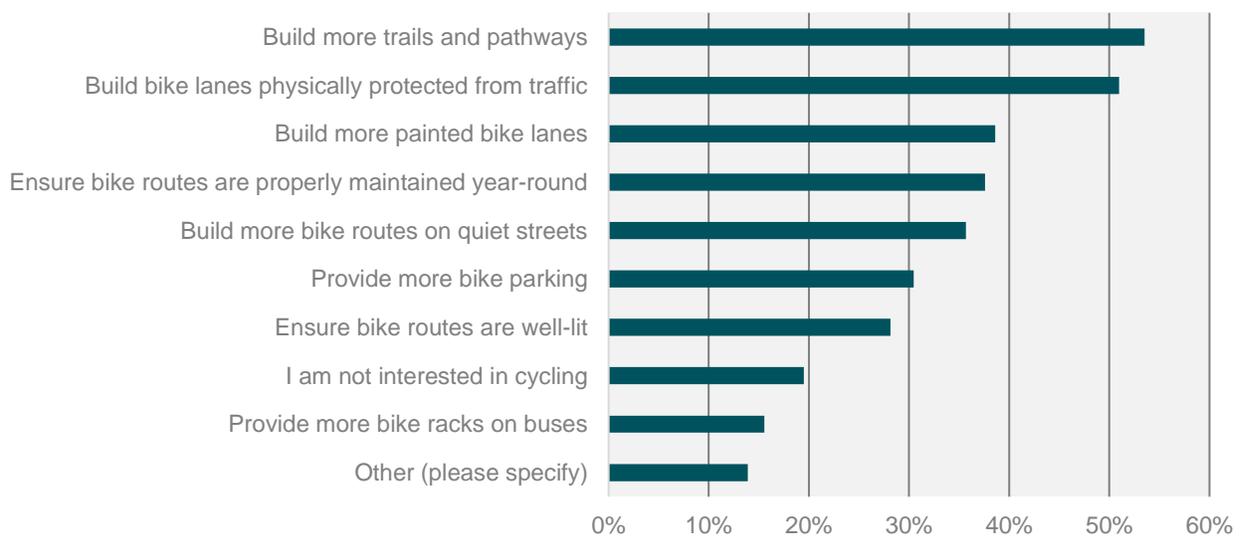


The community engagement process identified strong resident interest in improved cycling facilities for trips across the City and in key areas. Some of the more significant issues to be addressed include:

- Limited network of designated routes.** Courtenay has very few protected and off-street cycling routes that connect to key destinations and 54% of survey respondents indicated that they do not feel safe riding in traffic.
- Without a more cycling-friendly river crossing option, cycling is less likely to be an attractive option for trips that involve crossing the river.** Although popular off-street pathway facilities act as the spine to the current network, there are inherent barriers in some locations. When the pathway is busy, cycling can be a challenge and intersections can be difficult to safely navigate.
- Many neighbourhood routes that are comfortable to ride on are unsigned.** Cyclists currently use local roads to make many trips, however, they can be hard to locate and are not communicated with potential cyclists and drivers.
- Lack of secure bicycle parking** results in many cyclists not having a safe and secure place to store their bicycles at the end of their trip. Almost 30% of survey respondents indicated that having no safe place to park their bicycle discouraged them from cycling more often.

Addressing these issues through infrastructure improvements, policies, and programs will enhance the cycling in Courtenay and encourage more people to bike for all trip purposes. When asked about what the City should consider in Connecting Courtenay to improve cycling, most respondents requested more trails and pathways in addition to on-street bike lanes protected from traffic as summarized in **Figure 6-2** below.

Figure 6-2: Community “Ideas”
(What could we do to make it easier to be a cyclist in Courtenay?)



6.2 LONG-TERM CYCLING PLAN

The Long-Term Cycling Plan addresses key issues by identifying where, when, and how the City can invest in the development of a comfortable cycling network, support programs, and facilities. Like the other long-term plans, the recommendations are intended to be advanced by the City and its partners over a number of years. The City will also need to work with partners and stakeholders to refine and further develop the recommendations outlined in the Plan.

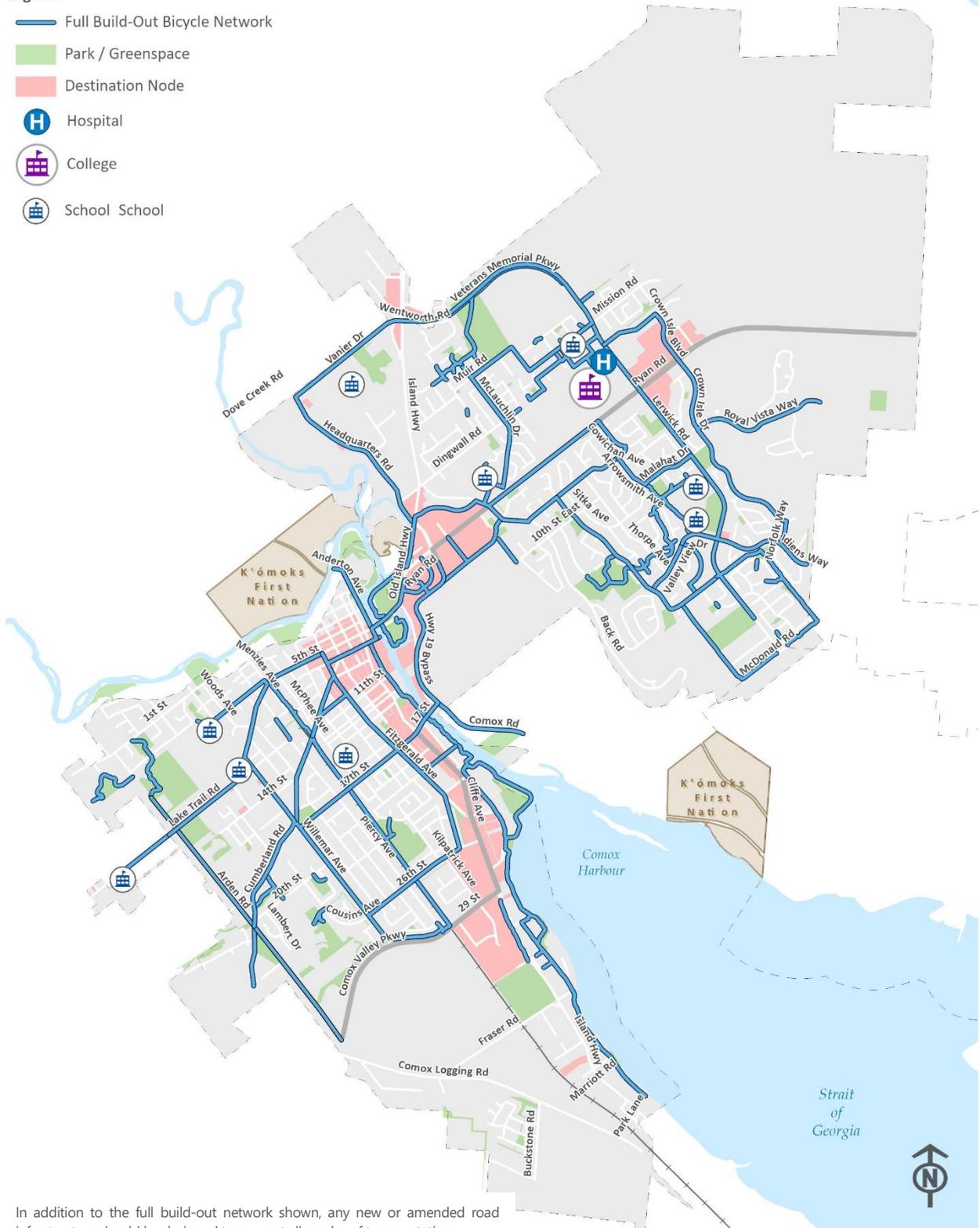
The Long-term Cycling Plan begins with a toolbox of **bicycle facilities and intersection treatments** that are recommended for use to guide planning and design as Connecting Courtenay is implemented. The Plan also includes a recommended **cycling network** that encourages all ages and abilities to maximize potential for cycling in Courtenay. In an effort to further bolster the Plan, **supporting bicycle facilities and programs** are also outlined.



Figure 6-4: Long-Term Cycling Network

Legend

-  Full Build-Out Bicycle Network
-  Park / Greenspace
-  Destination Node
-  Hospital
-  College
-  School



In addition to the full build-out network shown, any new or amended road infrastructure should be designed to support all modes of transportation

6.2.3 Cycling Support Facilities

In addition to on-street and off-street network connections, there are other bicycle infrastructure improvements that make cycling a more attractive and convenient transportation choice. The key support facilities include:

Bicycle Parking

Safe, secure parking deters bicycle theft and addresses a common barrier to cycling. There are many types of bicycle parking that can be tailored to specific situations, and is typically categorized as either short- or long-term. Consideration may also be given to access to an electrical outlet to facilitate electric bicycle charging.

Recommendations to improve bicycle parking in Courtenay include:

1. End-of-Trip Facilities

End-of-trip facilities such as showers and clothing lockers should be included where possible at workplaces to make cycling more practical, particularly for commuting. Many bicycle commuters make have long commutes and require a place to shower / change.

2. Bicycle-Transit Integration

Transit integration allows cyclists to make trips that make farther trips and transit riders to reach destinations that are not within comfortable walking distance of transit. The City can work with BC Transit to ensure that buses have bicycle racks and that bicycle parking is available at transit exchanges and major transit stops.

3. Facility Maintenance

Once installed, it is important that bicycle infrastructure is regularly maintained year-round.

4. Cycling Amenities

It is also recommended that the City identify opportunities to provide cycling amenities throughout the City. Cycling amenities include drinking fountains with bottle fill stations and bicycle maintenance stations at key locations.

Wayfinding

While most residents know how to travel through the City by car, it may not be obvious which routes are the best by bicycle. Bicycle route signage and pavement markings can also highlight for drivers and other road users where they should expect to see greater concentrations of cyclists, which can help to educate drivers and cyclists and to improve cycling safety.



6.2.4 Cycling Support Programs

Education, awareness campaigns, events and other incentive and information programs can help bolster cycling activity in addition to infrastructure improvements. There are a number of non-profits, agencies, and other organizations within the City and the Comox Valley that already work to provide some of these programs and events, and it is recommended that the City partner with these organizations and with other nearby communities to gain support for those programs described below to help make them more effective.

Cycling Education Programs

It is recommended that the City work with partner agencies to provide cycling skills and information to residents. Examples of programs include Share the Road safety campaigns, School Travel Planning programs, and bike skills courses for both adults and school-aged children.

Promotional Events

Promotional events help to raise awareness and showcase the benefits of cycling as a healthy sustainable transportation option. These events can be mixed in with other active transportation events such as Bike to Work Week.

Bicycle Network Maps

Bike maps enable users to identify designated cycling routes that match their cycling ability and comfort level. The City could build on the regional base map to develop updated maps as new infrastructure is delivered. Digital and hard-copy bike maps should identify bicycle facility types and include important local destinations and amenities.





7. TRANSIT INFRASTRUCTURE PLAN

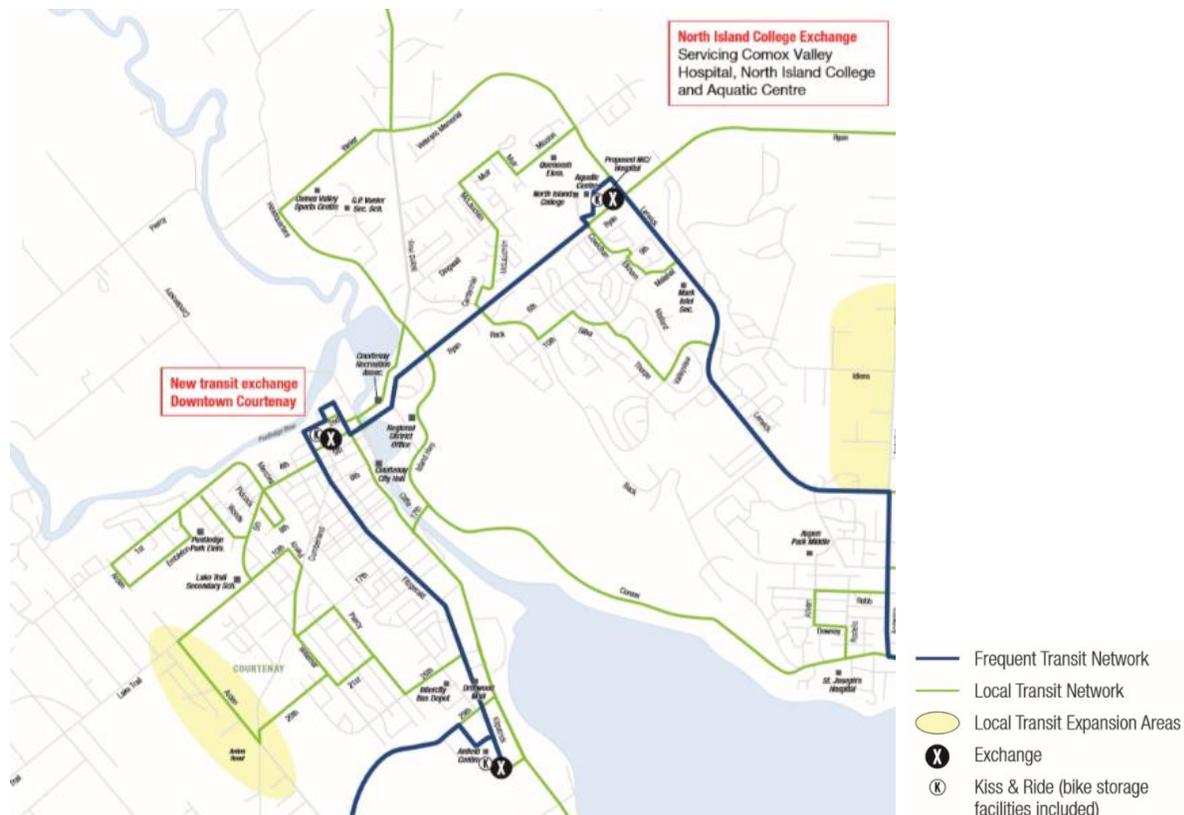
Public transit is the primary alternative to driving for longer trips and can often be the only option for people who do not drive. An accessible and equitable public transit system supports overall community health and connectivity for all residents. Frequent, accessible and direct public transit can attract riders, reduce the negative environmental impacts of transportation and delay investment in new and widened roadways. At the same time, public transit trips by bus are subject to the same delays and congestion as vehicle traffic.

The CVRD partners with BC Transit and Watson and Ash Transportation to plan and deliver transit service in the Comox Valley. Service types include conventional bus service and HandyDART for people with mobility challenges. Public transit accounts for approximately 3% of commute trips in Courtenay.

The central document that details existing conditions and future plans for transit service is the *Comox Valley Transit Future Plan (2014)*. This plan assesses existing service levels and outlines the vision, goals, targets, network, and implementation strategy for conventional and custom transit for the next 25 years. It identifies the transit future network for the Comox Valley consisting of the frequent and local transit networks, as well as four transit exchange locations (three within Courtenay). Refer to **Figure 7-1**.

Connecting Courtenay supports the Transit Future Plan with the build-out of a transportation system that includes everything from improved access to bus stops and exchanges through to transit priority treatments to reduce impacts of delays to transit customers and operations. These improvements align with current and planned transit services in Courtenay as presented in the Transit Future Plan.

Figure 7-1: Transit Future Network (Comox Valley Core)



7.1 ISSUES & OPPORTUNITIES

The Comox Valley transit system has 14 routes providing service to the City of Courtenay, Town of Comox, Village of Cumberland, and smaller communities in the Comox Valley, including Royston, Oyster River, and Merville. Refer to **Figure 7-2**. The City is at the centre of many routes, with exchanges located in Downtown Courtenay, at Driftwood Mall, at North Island College and the Comox Valley Aquatics Centre. Service is provided on all routes Monday through Friday, with most routes beginning operation between 6:00 a.m. and 8:00 a.m. and ending between 6:00 p.m. and 10:00 p.m. All routes, with the exception of the VMP connector, offer Saturday service. Select routes operate infrequent Sunday service (1, 2, 4, 6, 8, 10) with between 2 and 8 trips over the day.

Results of the community survey for Connecting Courtenay identified transit as the least attractive travel mode, with almost 60% of respondents reporting that it was not effective. Today, only 3% of commute trips occur on transit in the City and more than 75% of respondents to the public survey had never used transit in the Comox Valley.



Figure 7-2: Existing Transit Services

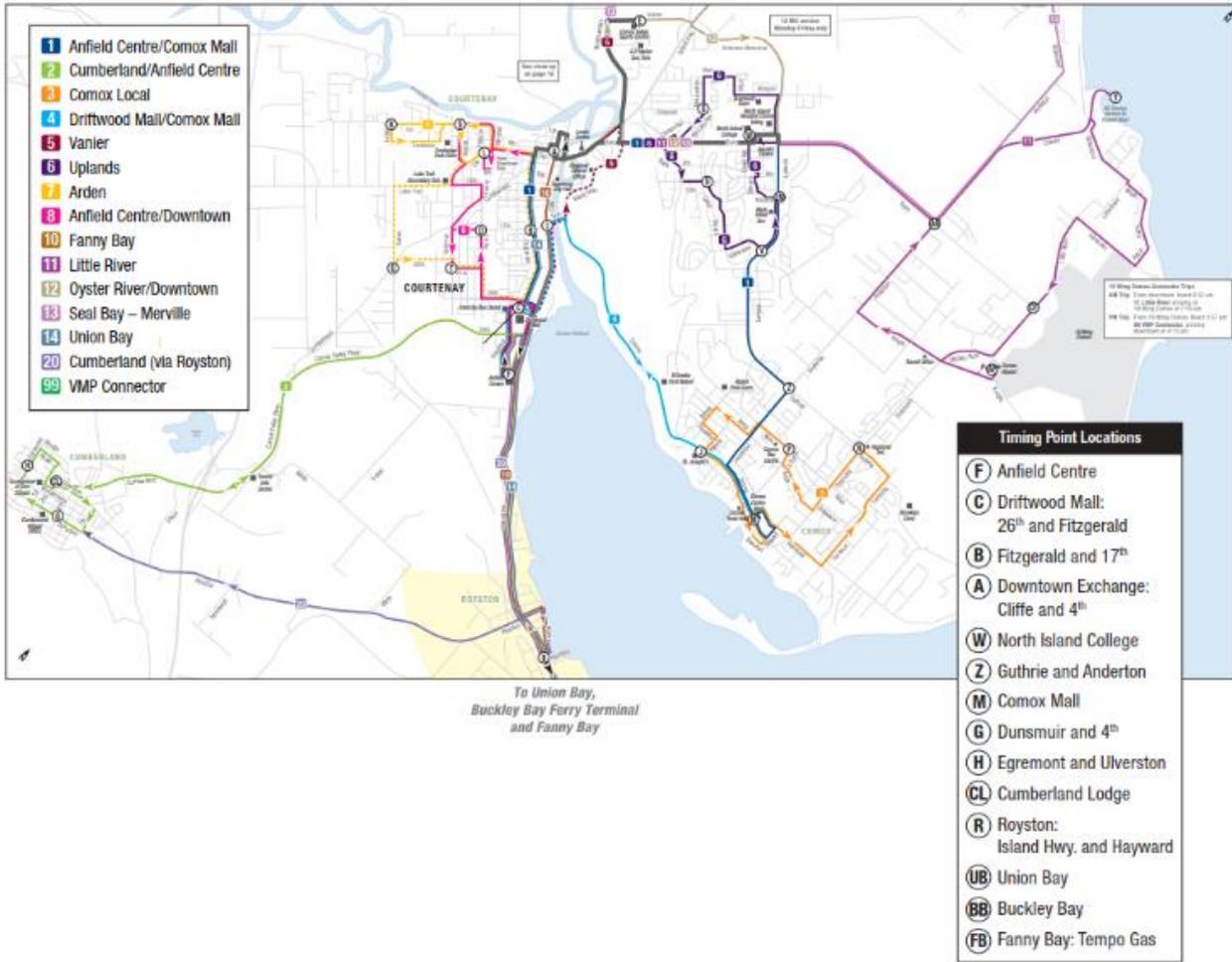
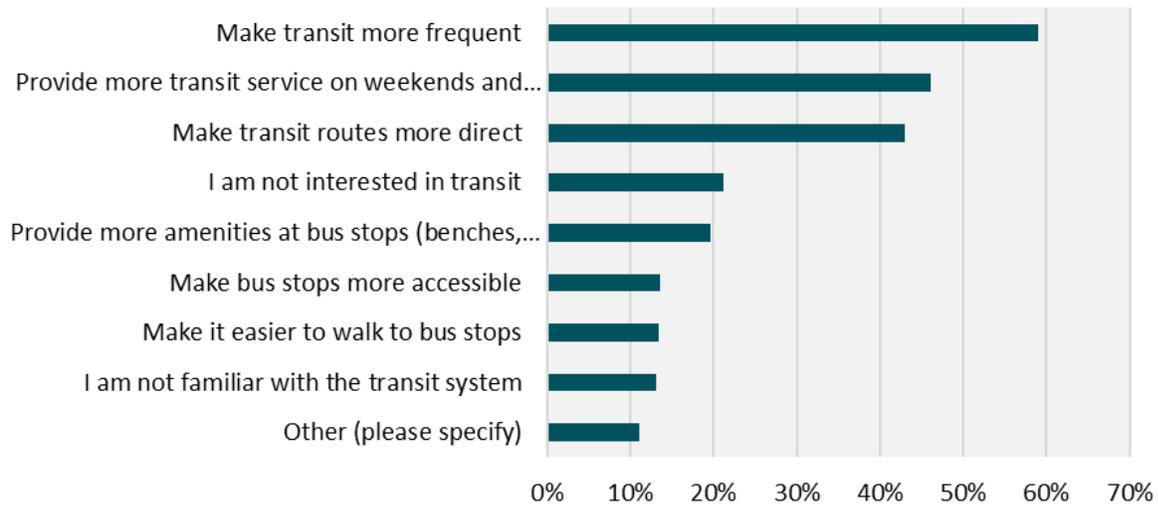


Figure 7-3: Community "Ideas"
(What could be done to make it easier to take transit in Courtenay?)



Although transit service improvements are generally being addressed in the Transit Future Plan, residents provided input on key issues and challenges associated with current day service (before changes in Fall 2018). The key themes relating to service are summarized in **Figure 7-3** (above) and include the following:

- **Transit service is infrequent.** Before Fall 2018, most routes in Courtenay operated with one-hour frequencies, even during peak hours. Starting in Fall of 2018, BC Transit introduced a Frequent Transit Network (FTN) and Route 1 now has 20-minute frequency in the peak hours and 30- to 60-minute frequency off-peak. This improvement makes transit more convenient for people with origins and destinations in downtown Courtenay, along Ryan Road and Lerwick Road, and in central Comox. However, 20-minute frequency leaves room for future investment in shorter frequency over time. Beyond this route, service through the rest of the system is infrequent.
- **Limited weekend and evening service.** Peak hour service supports travel to work and school for people with a standard '9-to-5' schedule. People who must travel outside of those times or would use transit for other (non-work) trips are left with a more limited schedule, making transit less appealing and may leave those who do not drive with limited options.
- **Routes are indirect and the system is complex.** The Transit Future Plan identified network efficiency as a challenge. Indirect routes create longer travel times and reduce the attractiveness of the system. Over half the survey responses indicated that they did not take transit more often because it takes longer than other modes.

Transit infrastructure concerns identified by community stakeholders are summarized below:

- **Access to transit can be difficult, especially for people with mobility challenges.** Although transit vehicles have become more accessible, some transit stops are not connected to sidewalks, making it difficult to safely reach the stop. A lack of accessible waiting and boarding areas can make it difficult or impossible for people using mobility aids to access transit. This is especially important along the emerging Frequent Transit Network, which is expected to attract the highest ridership.
- **Limited customer amenities through much of the system.** Safe, comfortable, and convenient customer amenities at stops and exchanges can increase the attractiveness of transit and make it easier to use. Many existing transit stops in Courtenay do not meet BC Transit's standard guidelines. Future planned transit exchanges in Downtown Courtenay, at North Island College, and at Driftwood Mall / Anfield Centre create an opportunity to provide a range of customer amenities.
- **Buses are subject to the same delays and reliability issues as other traffic.** Throughout Courtenay, buses travel in lanes with other traffic and are subject to the same queues and delays. This can reduce the reliability and efficiency of the transit network, especially during peak hours. As congestion grows, delays and variability in travel times can be expected to increase, worsening existing issues.

When surveyed about making transit more effective in Courtenay, responses included comments about the service and facilities as illustrated in **Figure 7-2**.

7.2 LONG-TERM TRANSIT-SUPPORTIVE INFRASTRUCTURE

Because of the extensive work completed by BC Transit, and the regional nature of the transit system, the Transit Plan within Connecting Courtenay focuses on specific strategies and actions the City can implement to support access to transit, as well as transit efficiency, and passenger comfort and convenience.

Beyond the transit supportive infrastructure themes described below, increasing transit mode share will require continued support for increasing service frequencies and longer service hours as outlined in the Transit Future Plan. This, in turn, calls for on-going increases in the financial support provided by the City over time. It is recommended that this is completed in consultation with BC Transit and is discussed further in the implementation priorities section of the plan.



7.2.1 Improved Connections to Transit

Connections to transit are strongly tied to improvements in the walking and cycling network. The completeness and accessibility of the walking network adjacent to transit stops and exchanges, in particular, can support access to transit for people of all ages and abilities. Beyond these connections, improving accessibility and safety at transit stops and future exchanges will improve the comfort and usability of these connections.

- **Close sidewalk gaps on the transit network.** As noted in the Walking Plan, prioritize investment in improving the sidewalk network around transit routes, with a focus on the FTN. This included addressing gaps on Ryan Road, Fitzgerald Avenue, Kilpatrick Avenue, and Lerwick Road.
- **Invest in accessible transit stops.** The street leading up to the stop should be well-maintained and should include the necessary pedestrian accessibility treatments to allow those with differing mobility to safely reach the transit stop. Treatments can include sidewalks, crosswalks near bus stops, and accessible curb letdowns (see Walking section).
- **Enhance safety around transit stops.** Safety measures can include providing adequate lighting and locating the stop in a location with good visibility of the surrounding street in accordance with Crime Prevention through Environmental Design (CPTED) principles.

7.2.2 Transit Priority Treatments

Treatments that offer transit vehicles priority over other vehicles and minimize delays can improve transit service delivery and result in more transit use, reduced GHG emissions, and support a more balanced and sustainable transportation system.

As noted earlier, BC Transit and CVRD have identified intersections where transit priority would support operations on the FTN. Key improvements have been reflected in the road plan and are described in more detail below:

- **Cliffe Avenue & 5th Street.** There is an existing southbound queue jump lane for buses at the intersection of Cliffe Avenue & 5th Street. Recommended signal upgrades at this location include transit signal priority to further reduce transit delay.
- **Old Island Highway & Ryan Road.** Recommended improvements at this intersection include a westbound queue jump lane and transit signal priority.
- **Cowichan Drive & Ryan Road.** Information provided by BC Transit indicates that buses turning in and out of North Island College from Ryan Road are subject to delays due to cross street traffic volumes. With the provision of a pedestrian activated crossing, the City will explore on-bus signal communications with BC Transit.

7.2.3 Downtown Exchange

The need for a transit exchange has been documented in planning work by BC Transit as important to the overall function of the transit system. In cooperation with BC Transit and the CVRD, further work is to be undertaken to determine the location and design for a new downtown exchange.

7.2.4 Transit Passenger Amenities

Increasing transit usage is dependent on more than the transit services themselves, as passenger facilities provided at transit exchanges and bus stops contribute greatly to the transit experience. Amenities that make bus stops and transit exchanges more comfortable can also have a significant impact on passenger safety and satisfaction, in addition to attracting new customers.

- **Benches & Shelters.** Shelters provide weather protection, making waits significantly more pleasant. Benches allow people to rest after their walk to the bus stop and are especially important for seniors and people with physical disabilities.
- **Customer information, including safety information, transit system maps & schedules, & wayfinding.** Safety information should be provided on buses and at transit stops. Adequate customer information and wayfinding should be provided to assist users in navigating the transit system. For example, people with cognitive difficulties, language barriers, and tourists may need extra assistance using transit. Information on fares, accessing transit, and safety, with contact information for the transit agency can also improve the customer experience.
- **Litter/Recycling Bins.** Providing litter and recycling bins help to keep the area clean and provide a service to customers.
- **Public Art.** Art can beautify and add interest to a transit ride and stop.
- **Bicycle parking near transit exchanges and / or major transit stops.** Bicycle parking at major stops and transit exchanges facilitates multi-modal trips by bicycle and transit. This can allow people to access transit where their homes are not well served by transit.



8. EMERGING TECHNOLOGIES & NEW MOBILITY

Transportation technology is changing rapidly, leading to new ways of thinking about providing transportation to communities. Advances in telecommunications and socio-behavioural shifts have already led to the exponential growth of new mobility services such as carsharing, ride-hailing (i.e., Uber, Lyft), and bikesharing in larger cities, the impacts of which are only now beginning to be understood. Electric vehicles are changing the environmental impact of private transportation. Further, autonomous vehicle technology is rapidly emerging and changing how safety and capacity may be enhanced without making changes to the established road network.

These technologies will have wide-ranging implications on the way we live and move-about communities, both large and small, and will influence the way we plan for Courtenay's future. Community discussions indicated that there is strong interest in supporting emerging technologies and new mobility, and in enhancing the potential benefits of these advances while limiting any potential negative impacts.

8.1 ISSUES & OPPORTUNITIES

Exploring the existing context for emerging technologies and new mobility allows for understanding of how these new modes are already impacting transportation in Courtenay.

Electric Vehicles. Electric, hybrid, and alternative energy vehicles are becoming more common and affordable in today's fast changing automobile market. Although the technology is steadily advancing, allowing vehicles to travel further on a single charge, wide scale proliferation of electric cars has not yet occurred, which may in part be limited by a lack of conveniently located and readily accessible charging stations.

Plug-in electric vehicles are recharged by plugging into the electricity grid via a charging station. Three charging station types are available:

- Level 1 (one hour of charge – 8 km of range)
- Level 2 (one hour of charge – 30 km of range)
- Level 3 (one hour of charge – 250 km of range)

A Level 3 charging station (also known as a DC Fast charge station) can fully charge most EVs in under one hour.

There are currently five public electric vehicle charging stations in Courtenay (per [chargehub.com](https://www.chargehub.com)), located at the following businesses:

- Wayward Distillation House (Level 2)
- Best Western Westerly Inn (Level 2)
- Real Canadian Superstore (Level 3)
- Comox Valley Nissan (Level 2)
- Comox Valley Volkswagen (Level 1)

Expanding the local electric vehicle charging network is a priority of Council as identified in the Strategic Priorities 2019-2022 and the City is actively pursuing grant opportunities to help fund new charging stations.

Electric Bicycles. E-Bikes are electric bicycles with an electric motor of 500 watts or less and functioning pedals limited to a top speed of 32 km/h without pedalling. The level of assistance provided by the motor depends on the size of the motor - smaller motors work to only assist the rider's pedaling and larger, more powerful, motors can propel the bike forward without the rider needing to pedal.

Three distinct e-bike types exist, as follows:

1. Pedal assist (or "pedelecs") automatically provide assistance when the user encounters conditions where increased physical effort is required.
2. Power-on-demand systems provide assistance when initiated by the user, typically using a throttle integrated into the handgrip.
3. Hybrid systems combine both the automated pedal-assist sensor and the option to manually engage the motor utilizing the throttle.

The improved cycling infrastructure laid out in Connecting Courtenay will facilitate e-bike use, in addition to conventional bicycles. The high cost of e-bikes (typically \$2,000 to \$5,000 or more) and related security / theft concerns are the key barriers to e-bike uptake and may be addressed through high-quality bicycle parking facilities.

New Mobility / Mobility as a Service. Advances in information technology have provided travel consumers with the ability to access, plan, reserve, and pay for travel options at the push of a button. Powered by real time information, travel consumers can now choose the optimal mode for each trip or trip segment from a suite of options.

In a fully developed mobility system, these options can consist of walking, public transit, bike-share, car share or ride-sharing (ride-hailing). A traveller may choose to take public transit for one trip and may later choose to use carshare to run errands. This way of interacting with the transportation system is a shift from viewing one's mobility options as relatively unchanging to relating to mobility as a service.

Autonomous Vehicles (AV) technology is rapidly emerging. Currently most major auto manufacturers and large technology companies (such as Google and Uber) are rapidly advancing research and development to fine-tune the technology with vehicles already being trialed to varying degrees on city streets. Over the next several years, fully autonomous vehicles are expected to be available for purchase with market adoption occurring over the next 30 years.

Amongst other implications, autonomous vehicles could extend the freedom of personal mobility to those who cannot or are unwilling to drive, such as the visually impaired and youth under the age of 16. As 90% of vehicle collisions are a result of human error, it is anticipated that autonomous vehicles will significantly reduce collision rates. Further, autonomous vehicles are projected to improve roadway operations.

8.2 LONG-TERM NEW MOBILITY PLAN

The Long-Term New Mobility Plan guides City actions toward addressing concerns and facilitating up-take of new and emerging travel options, specifically **Electric Vehicles** and **New Mobility Services**. Given the uncertain timeline associated with these new mobility services, the recommendations contained in this section are flexible and are intended to be pursued only once new mobility options emerge.

8.2.1 Electric Vehicles

The B.C. government is introducing new legislation to phase out gas-powered vehicles over the coming decades. The legislation will require the sale of all new light-duty cars and trucks to be zero-emissions vehicles by 2040, with requirements for automakers to reach a zero-emission sales target of 10% by 2025 and 30% by 2030.

New infrastructure is required to facilitate greater uptake of electric vehicles and meet the forthcoming demand for charging, including public charging stations and designated parking. Transportation policy and business / tax incentives may also be considered in promoting these types of vehicles.

The City should consider the following to encourage the use of electric vehicles:

- Work with businesses and community partners to identify and incentivize locations for public charging stations, including candidate locations for Level 3 charging stations.
- Develop policies to locate charging stations in desirable and visible parking spots to incentivize local residents to purchase an electric vehicle.
- Change parking regulations to require a portion of parking spaces to be “electric vehicle-ready” and/or require charging stations at new multi-family residential or commercial developments.
- Identify opportunities to partner to provide Level 2 and Level 3 charging stations at public facilities, either by leveraging development funding to introduce a charging station to an on-street parking stall or through grants or cost-sharing at new City-owned buildings.
- As the City’s light-duty fleet vehicles require replacement, consider electric and alternative fuel vehicles.

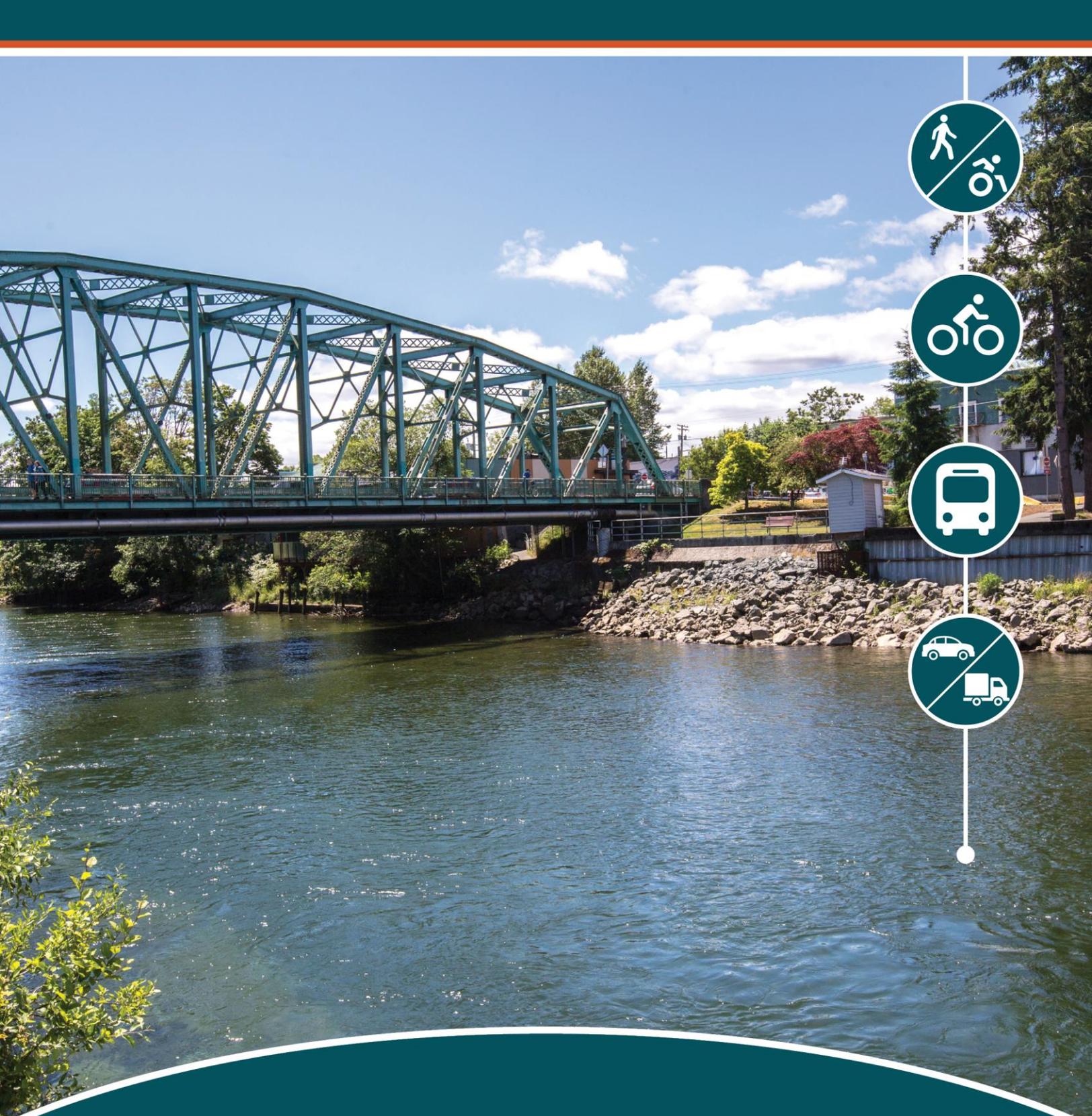


8.2.2 New Mobility Services

While growth in new mobility services have mainly occurred to this point in larger cities, these services could have benefits to small cities in the future. Courtenay should put strategies in place to encourage the adoption of new mobility / mobility as a service.

- Explore the suitability and viability of bike sharing in Courtenay including a range of technology options for the provision of bike share services, focusing on areas around the Long-Term Cycling Network (refer to **Figure 6-4**).
- Work closely with business and community partners to identify opportunities for partnerships for bike-sharing and carsharing, including major employers and destinations, such as North Island College and Island Health.
- Develop an approach to on-street and off-street public parking that includes incentives for carshare vehicles (i.e. priority parking, free parking at parking meters). This includes identifying street parking spaces in Downtown Courtenay that could be reserved for carshare in the future.
- Investigate the potential for parking variances if developers provide and support carshare services. This provision is based on research that carshare vehicles can significantly reduce the need for private vehicle ownership.
- While Provincial legislation is required to enable Transportation Network Companies to legally operate and will likely regulate aspects such as customer safety, pricing, accessibility requirements, licensing, insurance, and operations, the City of Courtenay should consider the following once ride-hailing is legalized:
 - Study the impacts of ride hailing in Courtenay. To accomplish this task, the City should seek to acquire data from Transportation Network Companies on a periodic basis, such as length of trips, time of day, customer wait times, trip distributions (origins and destinations), and accessible versus non-accessible vehicle statistics. This data will allow the City to effectively assess the impacts of ride hailing in Courtenay, as well as identify areas for improvement.
 - Explore the need for support infrastructure including designated pick-up / drop-off zones at key locations and the relationship to established taxi infrastructure such as taxi stands.
 - Work with BC Transit and the CVRD to explore whether ride-hailing could be used to expand basic transit provision to zones outside the current service area.





9. FINANCIAL PLANNING & IMPLEMENTATION PRIORITIES

The implementation of long-term improvements for streets, walking, cycling, and transit supportive infrastructure and programs will take many years. The City will not only require new and additional sources of funding through local, provincial and federal partnerships, but will also need to substantially increase funding for sustainable travel modes at the municipal level. Investments in sustainable modes will contribute towards the mode shifts envisioned in Connecting Courtenay, as well as at the regional level, and defer the need for other investments in major transportation infrastructure.

This section of Connecting Courtenay highlights the overall costs estimated to implement the long-term plans for walking, cycling, streets and transit supportive infrastructure.

Recognizing that Connecting Courtenay will take 25 years or more to implement, guidance is also provided on a phasing and implementation strategy. This phasing strategy reflects a combination of community input and feedback, technical assessment of conditions and needs, alignment with the goals and objectives of the plan as well as elements of affordability.

It should be noted that the cost estimates presented here should not be used for budgeting purposes. They are developed based on unit costs for conceptual level designs of possible configurations. Each infrastructure project will require a functional design to identify exact project scope, impacts and mitigation requirements before the cost estimate can be confirmed. It is also best practice to engage the community that may be impacted by specific projects in the process of design.

As is, the costs do not include other major items such as property, utility and environmental, as well as staff resources and stakeholder engagement for each improvement. It should also be noted that the long-term improvements for each mode and phasing strategy over the next 10 years do not imply a financial commitment.

Pending available resources, financial commitments are confirmed through the City's annual budget and capital plans. Beyond the City's budgets, the specific timing for recommended projects will be influenced by the pace of growth and development - slower rates of growth will mean deferred need and resources for spending on transportation infrastructure. Conversely, faster rates of growth mean that projects can likely be advanced.

The timing to implement the long-term plan and short- to medium-term improvements can also be impacted by partnerships. For some infrastructure, partnerships with the provincial and federal governments will be required to support significant investments. Additionally, the City will want to leverage opportunities for development related infrastructure improvements as well as partnerships with local agencies and volunteer groups for support programs.

9.1 LONG-TERM PLAN COSTS

Conceptual order-of magnitude cost estimates were developed for each of the capital investments identified in the Long-Term Plan sections for each mode. Refer to **Figure 9-1**. This provides a sense of the potential overall future levels of transportation investment for the City and its partners in current (2018) dollars. These costs can be escalated to the year of implementation for planning purposes, but they should be refined to establish project budgets. Actual costs for implementation could vary significantly for each initiative as project scope gets confirmed through subsequent stages of design and costs are clearer.

The level of investment required to implement improvements and programs recommended in Connecting Courtenay that are within municipal or shared jurisdiction is approximately \$142.6-million as summarized in the following sections.

Table 9-1: Long-term Implementation Order-of Magnitude Cost (Class D, 2018 \$)¹

Plan Theme	Class D Cost (2018 \$)
Walking Plan	\$11.5 M
Pedestrian Network Improvements	\$7.5 M
Enhanced Intersections and Improved Accessibility Allowance	\$2 M
Enhanced Street Treatments for Major Destinations	\$1 M
Pedestrian Support Programs	\$1 M
Cycling Facilities	\$26.7 M
Cycling Facility Standards	\$0.3 M
Cycling Network Improvements	\$24.4 M
Support Facilities Allowance	\$1 M
Support Programs Allowance	\$1 M
Transit Plan²	\$6 M
Improved Connections to Transit Allowance	\$2 M
Improve Intersections & Consider Transit Priority (included in Streets Plan)	n/a
Transit Passenger Amenities	\$4 M
Streets Plan³	\$97.5 M
Major Intersection and Corridor Safety & Operational Improvements	\$13.3 M
New / Widened Major Corridors & Connections	\$84.2 M
Roadway Classification	n/a
Emerging Technologies & New Mobility Plan (first 5 years only)	\$0.9 M
Electric Vehicles Allowance	\$0.3 M
New Mobility / Mobility as a Service Allowance	\$0.3 M
Autonomous Vehicles Allowance	\$0.3 M
TOTAL	\$142.6 M

¹ Class D (2018 \$) cost estimates are based on concept level information using unit rates for linear works and intersection improvements. Cost estimates include 25% engineering and communications as well as 40% contingency. Cost do not include property and other significant impacts. Class D cost estimates should not be used for budgeting purposes.

9.2 PHASING & IMPLEMENTATION

This phasing and implementation section of the Plan provides guidance on priority walking, cycling, street and transit supportive infrastructure projects to be implemented over the next 5 to 10 years. The priorities are identified based on the guiding principles outlined below:

- Priority street improvements should target the most congested areas and maximize the efficiency and safety of existing infrastructure.
- High priority walking improvements should focus on enhancing connectivity on major roads, around schools, access to transit, and improving accessibility.
- Priority cycling improvements should form the spine of the cycling network, connect existing infrastructure and focus on easily achievable successes in neighbourhoods.
- Transit infrastructure investments should be centred on supporting the accessibility, comfort, and reliability of the FTN.

² Does not include financial contributions to operations or shared investment in rolling stock.

³ Excludes projects that fall entirely within MoTI jurisdiction.

9.2.1 Street Network

The total long-term cost for street network capital improvements recommended in this plan is approximately \$97.5-million⁴. This includes the new major roadways and connections, which should be advanced along with partner agencies.

Over the next 10 years, the City and its partners will continue to invest in improving existing major roadways. This approach will maximize effectiveness and efficiencies of existing infrastructure before investing in upgrades or new major roadways. This approach also focuses on improving safety for all modes by addressing the locations with the most significant safety challenges first. Many of the projects identified in this section are integrated with walking, cycling, and transit priorities to maximize investment and ensure a multi-modal approach that supports the efficiency and safety of all road users.

The total cost of projects and programs recommended for the medium-term is approximately \$25.2-million (2018 dollars), as summarized in **Table 9-2**.

As previously noted, improvements centre around maximizing use of existing infrastructure as well as addressing hotspots for delays and collisions. Many of the intersection investments also centre around improving safety and mobility at intersections for pedestrians with improved controls and laning.

Beyond these priorities, the City should work with MoTI to advance priority improvements that are under MoTI jurisdiction.

Table 9-2: Medium-term (10 Year) Street Improvement Cost Estimates & Allocations (Class D, 2018 \$)⁵

Street Improvements	Class D Cost (2018 \$)
Major Intersection and Corridor Safety & Operational Improvements	\$5.7 M
Ryan Road (Old Island Highway to Highway 19A Bypass / Island Highway) Access Management and Intersection Improvements	\$2.4 M
Old Island Highway (Comox Road to Ryan Road) Access Management, Multi-Use Pathway, and Intersection Improvements	\$1.2 M
Old Island Highway & Fraser Road / Millard Road Intersection Improvement	\$1.0 M
Tunner Drive Extension	\$10.0 M
Signal Replacement & Improvement Program	\$1.9 M
Intersection Control & Upgrades Program	\$3.0 M
Total	\$25.2 M

⁴ Excludes projects entirely within the jurisdiction of MoTI

⁵ Class D (2018 \$) cost estimates are based on concept level information using unit rates for linear works and intersection improvements. Cost estimates include 25% engineering and communications as well as 40% contingency. Cost do not include property and other significant impacts. Class D cost estimates should not be used for budgeting purposes.

Figure 9-1: Medium-Term (10 Year) Street Improvement Priorities

Legend

- Widen to 4-Lanes
- 2 Lane Roadway
- Access Control
- Intersection Improvements



9.2.2 Pedestrian Network

The total long-term cost for the walking projects recommended in this plan is approximately \$11.5-million. This focus is on sidewalk improvements. Costs for intersection improvements that facilitate pedestrian crossings are included in the total cost for streets and costs for multi-use pathways are included in the total cost for cycling.

The total cost of the pedestrian projects and programs recommended for the medium-term is approximately \$5.3-million (2018 dollars) as summarized in **Table 9-3**.

In addition to the provision of sidewalks and addressing key crossing barriers, support facilities and programs should be planned and implemented within the medium-term as described in the Plan.

The recommended pedestrian network projects are illustrated in **Figure 9-2**. The medium-term projects address sidewalk gaps along major roads, connections to transit and access to schools.

Table 9-3: Medium-term (10 Year) Walking Improvement Cost Estimates & Allocations (Class D, 2018 \$)⁶

Improvement / Program	Class D Cost (2018 \$)
1st Street from Embleton Crescent to Menzies Avenue	\$590 K
Cumberland Road from Piercy Avenue to McPhee Avenue	\$120 K
Cumberland Road from Burgess Road to Willemar Avenue	\$290 K
Back Road from Tunner Drive to 10th Street East	\$410 K
10th Street from Back Road to Hobson Avenue	\$120 K
Kilpatrick Avenue from 26th Street to 29th Street	\$180 K
Fitzgerald Avenue from 21st Street to north of 26th Street	\$190 K
Valley View Drive from Thorpe Avenue to Lerwick Road	\$280 K
Lerwick Road from Lerwick Nature Park to McDonald Road	\$220 K
Morrison Creek / Arden Road crossing	\$1,600 K
Enhanced Intersections and Improved Accessibility Allowance	\$50K / yr
Enhanced Street Treatments for Major Destinations	\$50K / yr
Pedestrian Support Programs	\$50K / yr
Total	\$5,300 K

⁶ Class D (2018 \$) cost estimates are based on concept level information using unit rates for linear works and intersection improvements. Cost estimates include 25% engineering and communications as well as 40% contingency. Cost do not include property and other significant impacts. Class D cost estimates should not be used for budgeting purposes.

Figure 9-2: Medium-Term (10 Year) Pedestrian Improvement Priorities

Medium Term Pedestrian Improvement Priorities

- Sidewalk
- Multi-Use Path (Adjacent To Street)
- Improved Crossing



9.2.3 Cycling Network

The long-term capital cost for the cycling projects recommended in this plan is approximately \$26.7-million. This includes linear facilities and improvements to intersections, some of which should be undertaken in collaboration with partner agencies.

Historically, the City has not invested significantly in cycling infrastructure. Consultation with the public and stakeholders indicates that there is a desire to increase funding for cycling, especially for projects that separate bicycles from vehicles. Still, some cycling projects should be prioritized for medium-term investment to allow for an increase in cycling funding over time. Funding from other sources, including grants, will allow the City to maximize investment and advance projects more quickly. Key destinations considered in project prioritization are Core Commercial areas (especially Downtown Courtenay), Lewis Centre, North Island College, schools, and connections from the spine cycling network to existing paved trails (including the Courtenay Riverway and trails in east Courtenay that connect to Comox). In addition to providing on- and off-street cycling facilities to get around the community, support facilities and programs should be planned and implemented in the medium-term.

The total cost of projects and programs recommended for the medium-term is \$11.5-million (2018 dollars). Costs do not include property, environmental impacts, utility relocations, staff time, or operations and maintenance. The recommended medium-term priority projects are summarized in **Table 9-4** and shown on **Figure 9-3**.

Expansion of pedestrian and cycling facilities on the Fifth Street Bridge is not included in the capital cost estimate for medium-term priorities as it is being addressed through a parallel process. This project is recommended for the medium-term as part of overall bridge rehabilitation and maintenance work.

Table 9-4: Medium-term (10 Year) Cycling Improvement Cost Estimates & Allocations (Class D, 2018 \$)⁷

Improvement / Program	Class D Cost (2018 \$)	Improvement / Program	Class D Cost (2018 \$)
Anderton Avenue Intersection + Anderton Avenue from 5th Street to 6th Street	\$314 K	Old Island Hwy from Ryan Road to Braidwood Road	\$231 K
6th Street from Fitzgerald Avenue to Anderton Avenue	\$69 K	Braidwood Road from Back Road to Old Island Highway	\$77 K
Cumberland Road from Piercy Avenue to Fitzgerald Avenue	\$202 K	Back Road from Ryan Road to Braidwood Road	\$34 K
Fitzgerald Avenue from 5th Street to 8th Street / Cumberland Road	\$70 K	Centennial Drive / McLauchlin Drive from Back Road to end of McLauchlin Place	\$86 K
Fitzgerald Avenue from Cumberland Road to 26th Street	\$170 K	Muir Road / Mission Road from McLauchlin Drive to Lerwick Road	\$52 K
19th Street from Fitzgerald Avenue to Courtenay Riverway	\$70 K	Veterans Memorial Parkway from Caledon Crescent to Mission Road	\$420 K
26th Street from Willemar Avenue to Fitzgerald Avenue	\$266 K	Back Road from Ryan Road to 6th Street	\$349 K
17th Street from Willemar Avenue to Comox Road	\$448 K	Tunner Drive from Williams Road to Back Road	\$114 K
Willemar Avenue from Cumberland Road to south end of trail	\$48 K	6th Street / Hobson Avenue / Hawk Drive from Back Road to Swallow Crescent	\$77 K
Cumberland Road from Willemar Avenue to Arden Road	\$266 K	Cowichan Avenue / Arrowsmith Avenue from Ryan Road to Malahat Drive	\$30 K
Willemar Avenue from 5th Street to Cumberland Road	\$196 K	Malahat Drive from Arrowsmith Avenue to Lerwick Road	\$154 K
Lake Trail Road from Willemar Avenue to Webdon Road	\$810 K	Lerwick Road from Malahat Drive to Valley View Drive	\$440 K
Arden Road from Morrison Creek to Comox Valley Parkway	\$1,485 K	Valley View Drive / Idiens Way from Mallard Drive to trail connection	\$263 K
4th Street from Willemar Avenue to Menzies Avenue / 5th Street	\$21 K	Crown Isle Drive from Ryan Road to Idiens Way	\$80 K
5th Street from Menzies Avenue to Lake Trail Road	\$2,267 K	Royal Vista Way from east end to Crown Isle Drive	\$48 K
5th Street / Old Island Highway from 5th Street Bridge to Lewis Centre	\$223 K	Crown Isle Boulevard / Water Place from Lerwick Road to Ryan Road	\$280 K
Tsolum Road / Puntledge Road from Old Island Highway to Highway 19A	\$15 K	Support Facilities Allowance	\$50 K / yr
North Island Highway from 17th Street Bridge to Ryan Road	\$825 K	Support Programs Allowance	\$50 K / yr
		Total	\$11.5 M

⁷ Class D (2018 \$) cost estimates are based on concept level information using unit rates for linear works and intersection improvements. Cost estimates include 25% engineering and communications as well as 40% contingency. Cost do not include property and other significant impacts. Class D cost estimates should not be used for budgeting purposes.

Figure 9-3: Medium-Term (10 Year) Cycling Improvement Priorities

Legend

- Protected Bicycle Lane / Cycle Track
- Paved Multi-Use Pathway
- Bike Boulevard / Neighbourhood Bikeway
- Buffered / Painted Bicycle Lane

- New / Upgraded Crossing



9.2.4 Transit Supportive Infrastructure

The City of Courtenay supports transit operations through annual contributions that help fund the transit system. Beyond this, Connecting Courtenay includes infrastructure projects to support transit customers and operators in the case of transit priority treatments. Transit support priority projects recommended for the medium-term include:

- Sidewalk and pathway connections to the FTN. High priority connections to the FTN are included in the pedestrian and cycling priority sections.
- Transit priority treatments at key intersections.
- Transit customer amenities along the FTN on an annual basis.
- Transit exchanges that support intermodal travel and provide a high level of customer safety and comfort.

The total cost allocation for these recommended priorities is \$3-million, excluding items that are covered within priority projects for other modes. Refer to **Table 9-5**. This amount is an allocation and not derived from cost estimates. It does not include staff time, operations and maintenance, or shared investment in rolling stock.

Table 9-5: Medium-term Transit Improvement Cost Estimates & Allowances (Class D, 2018 \$)

Improvement / Program	Class D Cost (2018 \$)
Improved Connections to Transit Allowance	\$1.0 M
Improve Intersections and Consider Transit Priority (price included in Street Plan)	n/a
Transit Passenger Amenities	\$2.0 M
Total	\$3.0 M

9.2.5 New Mobility

Connecting Courtenay prepares the City for the changing landscape of transportation. The City should look to leverage emerging technologies and new mobility while mitigating possible negative impacts. In the next ten years, this calls for programs that allow the City to show leadership and to understand and respond to key changes.

The total cost allocation in the next ten years for these recommended priorities is \$800,000, as identified in **Table 9-6**.

Table 9-6: Medium-term (10 Year) New Mobility Improvement Cost Estimates & Allowances (Class D, 2018 \$)

Improvement / Program	Class D Cost (2018 \$)
Electric Vehicle Allowance	\$250 K
New Mobility / Mobility as a Service Allowance	\$300 K
Autonomous Vehicles / Preparing for the Future Allowance	\$250 K
Total	\$800 K

9.3 PARTNERSHIPS & FUNDING STRATEGIES

Connecting Courtenay has been a community-based initiative to create a long-term plan with implementation priorities for transportation infrastructure, programs and policies. Over 1,000 residents were engaged in developing the Plan and identifying priorities. Further, several partners and community groups were engaged. These included the Accessibility Committee, Comox Valley Cycling Coalition, School District #71, K'omoks First Nation, and regional government partners. Implementation of the Plan will require guidance and participation from many community groups and individuals.

The City typically plans and funds transportation facilities and programs through various revenue streams, as well as cost sharing opportunities. As part of the City's on-going capital planning, consideration may be given toward utilizing alternative funding sources for the delivery of key street, walking, cycling, and transit facilities and programs as briefly outlined below.

General Revenues

The City should incorporate the recommendations from Connecting Courtenay into its short-, medium-, and long-term budgeting plans to ensure that the projects are accounted for in the City's capital planning process. To accommodate this, the City may seek changes to its capital budget to fund the implementation of this Plan over the medium- and long-term. The City should also seek to integrate transportation improvements with other capital projects, such as utility projects.

Developers

The City should leverage transportation investments during the planning of new development projects such as through: public realm improvements; community amenity contributions; density bonusing contributions; and high-quality bicycle parking facilities. Cash in-lieu of parking is one means to fund new active transportation and transit facilities.

Development Cost Charges (DCC)

The City has a DCC bylaw that should be updated to include projects identified through Connecting Courtenay.

Provincial Programs and Initiatives

Key infrastructure may be funded in partnership with the province.

Federal Funding

There are several programs that provide funding for environmental and local transportation infrastructure projects in municipalities across Canada. Typically, the federal government contributes one third of the cost of municipal infrastructure projects.

Green Municipal Fund

The Federation of Canadian Municipalities manages the Green Municipal Fund, with a total allocation of \$550 million. This fund is intended to support municipal government efforts to reduce pollution, reduce greenhouse gas emissions, and improve quality of life.

Carbon Tax Rebate

Municipalities that signed the Climate Action Charter receive an annual rebate based on completion to support sustainable transportation projects.

ICBC

ICBC's road improvement program provides funding for road improvements, including pedestrian and bicycle infrastructure, particularly where these have the potential to reduce crashes, improve safety, and reduce claims costs to ICBC.

Private Sector

Many corporations wish to be good corporate neighbours— to be active in the community and to promote environmentally-beneficial causes.

9.4 SUMMARY

Connecting Courtenay is a guide for the development and implementation of transportation infrastructure, policies, programs, and activities in Courtenay. It will require funding and partnerships to be successful. Further, it looks both to the long-term – i.e. what issues should the City be prepared to address and what are the most promising solutions – as well as to the actions that should be implemented in the next ten years. This is a living document, and the actions recommended here within must be reaffirmed through funding, Council resolutions, and effective partnership action on an annual basis. This is particularly important for major infrastructure, which may be deferred if investments in non-automobile modes of transportation and changes in land use patterns are successful in limiting vehicle volume growth.



