CRESTON
MULTI-MODAL TRANSPORTATION PLAN

August 2022

CRESTON VALLEY
TOWN of CRESTON

WATT
Consulting Group

CRESTON VALLEY
TOWN of CRESTON

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1.0 INTRODUCTION AND OVERVIEW

The Town of Creston recognizes, acknowledges, and respects that this Multi-Modal Transportation Plan is located on the traditional territory of the Yaqan Nukiy within the Ktunaxa Nation. Since time immemorial the Yaqan Nukiy stewarded this Valley. It is with gratitude that the Town of Creston plans on these lands.

The Town of Creston is a growing municipality that witnessed 4.1 percent growth from 2016 to 2021 and has a population of 5,583 individuals. Creston is the hub of the Creston Valley and the crossroads of the Crowsnest (Hwy 3), Hwy 21, and Hwy 3A. Home to an abundance of farmland, Creston has predominantly been a rural community with a central population in the town center that relied on motorized vehicles for transportation needs. However, the historic downtown is highly walkable and the municipality is surrounded by the Skimmerhorn and Purcell mountain ranges and offers many recreational opportunities. Yet, despite the downtown's walkability, the community has several challenges in its pedestrian network including inaccessible intersections and disconnected sidewalks. Further, cycling in Creston is not currently comfortable—or safe—for all, making it harder to reach destinations both within the Town and in adjacent communities in the Regional District of Central Kootenay (RDCK).

This Multi-Modal Transportation Plan (MMTP) has been prepared based on the current state of transportation, transportation trends, and Creston policies, plans, and bylaws. It aims to identify and align the principles, vision, goals, and objectives for all transportation options within Creston over the next 30 years. The Town's MMTP is the first comprehensive plan that identifies how active transportation can play a multifaceted role in achieving Creston's broader strategic priorities including a healthy, livable, and diverse community and building and enhancing partnerships across the Creston Valley all while reducing Green House Gas (GHG) emissions. Creston's future active transportation network will reduce the community's climate impact, address the needs of vulnerable road users, and enhance overall quality of life for residents and visitors alike.

1.1 WHAT IS ACTIVE TRANSPORTATION?

This section largely draws from Chapter B of the BC Active Transportation Design Guide (BCATDG), which includes a detailed overview of active transportation and its benefits. According to the guide, active transportation is defined as follows:

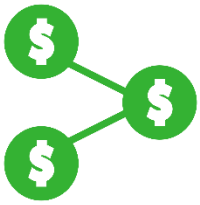
"Any form of human-powered transportation, including walking, cycling, or rolling using a skateboard, in-line skates, wheelchair, or other wheel-based forms of human-powered transportation. It also includes winter-based active modes, water-based active modes, and horseback riding, although these modes are typically more recreational in nature."

Active transportation users are a diverse group and include those who are walking, cycling, rolling (e.g., skateboarding, longboarding, scootering) and people using mobility devices such as wheelchairs, walkers, and strollers. All of these forms of active travel are pursued for a variety of reasons; some people may choose to walk for recreation, others may bike to work, some may use active transportation due to the lack of a personal vehicle, and others may be choosing to travel this way because of the environmental benefits. The reasons to travel by an active mode are multi-fold and so are the benefits, discussed below.

Benefits of Active Transportation

Environmental Benefits

Town Council has set a corporate target of reducing 2030 greenhouse gas (GHG) emissions by 20% below the 2007 baseline level. Creston's transportation sector in 2010 accounted for 58% of total community emissions (latest data), which is consistent with other municipalities in BC. Active transportation can cut GHG emissions and air pollution and is a critical part of lowering overall emissions in the Town's transportation sector.



Economic Benefits

The economic benefits of active transportation are multifold. Neighbourhoods and destinations that are more accessible and attractive for people using active modes can attract more visitors and tourists, who contribute to the local economy. Using active transportation as the main way of getting around is also more economical compared to owning a vehicle.

Health Benefits

Hundreds of academic papers and technical reports have found that active transportation is associated with healthier communities. This includes physical activity lowering the risk of early death and chronic diseases including obesity and cardiovascular issues along with mental health benefits.

Societal Benefits

Active transportation facilities can help make a community more accessible, affordable, and equitable. It can encourage social interactions and create opportunities for face-to-face meetings, helping build trust, respect, understanding, and a sense of community.

Safety Benefits

Active transportation facilities that are well designed enhance the overall visibility of active transportation users, helping to reduce the risk of collisions and fatalities. This can create a safer transportation system for all road users.

1.2 APPROACH

Undertaken from May 2021 to July 2022, the Multi-Modal Transportation Plan was guided by a collaborative process involving staff from the Town of Creston, community stakeholders, residents of Creston and the consulting team—all of whom played an important role in reshaping the future of transportation in Creston. **Section 3.0** provides a summary of the public engagement process and how the feedback helped shape the key directions of the MMTP.

The Plan encompassed eight distinct phases that are presented briefly below:

- **Phase 1** – **Reviewed existing conditions**, past plans and citizen feedback heard to-date.
- **Phase 2** – **Community Engagement, Round 1** - Gathered current community experiences of walking, cycling, taking transit, driving, and otherwise getting around Creston.
- Phase 3 – Developed the preliminary MMTP vision and options.
- **Phase 4** – **Community Engagement Round 2** - Refined preliminary vision and options through workshops with community panels.
- **Phase 5** – **Created the draft plan** recommendations and implementation strategy.
- **Phase 6** – **Community Engagement Round 3** - Enlisted the wider community to review and help further shape the draft Multi-Modal Transportation Plan recommendations and priorities.
- **Phase 7** – **Refined the draft Plan** recommendations based on community feedback.
- **Phase 8** – **Presented the Multi-Modal Transportation Plan** to Town of Creston Council; finalized the Plan and moving it forward for implementation.

Section 2 – Our Community Today

2.0 OUR COMMUNITY TODAY

The Town of Creston is a growing municipality that witnessed 4.1 percent growth from 2016 to 2021 and has a population approaching 5,583 individuals. The Town is located within the traditional territory of the Yaqan Nukiy within the Ktunaxa Nation and has a rich and storied history. It was incorporated in 1924 but settlement began in the late 1800s when the Canadian Pacific Railway and Great Northern Railroad built tracks through the valley. Home to an abundance of farmland, Creston is predominantly a rural community with central population in the town center that relied on motorized vehicles for transportation needs. A Regional Growth Containment Area and Agricultural Land Reserve exists to protect farms and guide where growth should occur.

2.1 LOCATION

Today, Creston sits at the crossroads of the Crowsnest (Highway 3) east/west, Highway 21 to the USA boarder to the south, and Highway 3A to the north. It is the hub of the communities in the Creston Valley and is the largest town between Cranbrook and Castlegar. The hilly nature of Creston is similar to that of other Kootenay towns, such as Nelson. See**Figure 1** for an overview map of the Creston Valley.

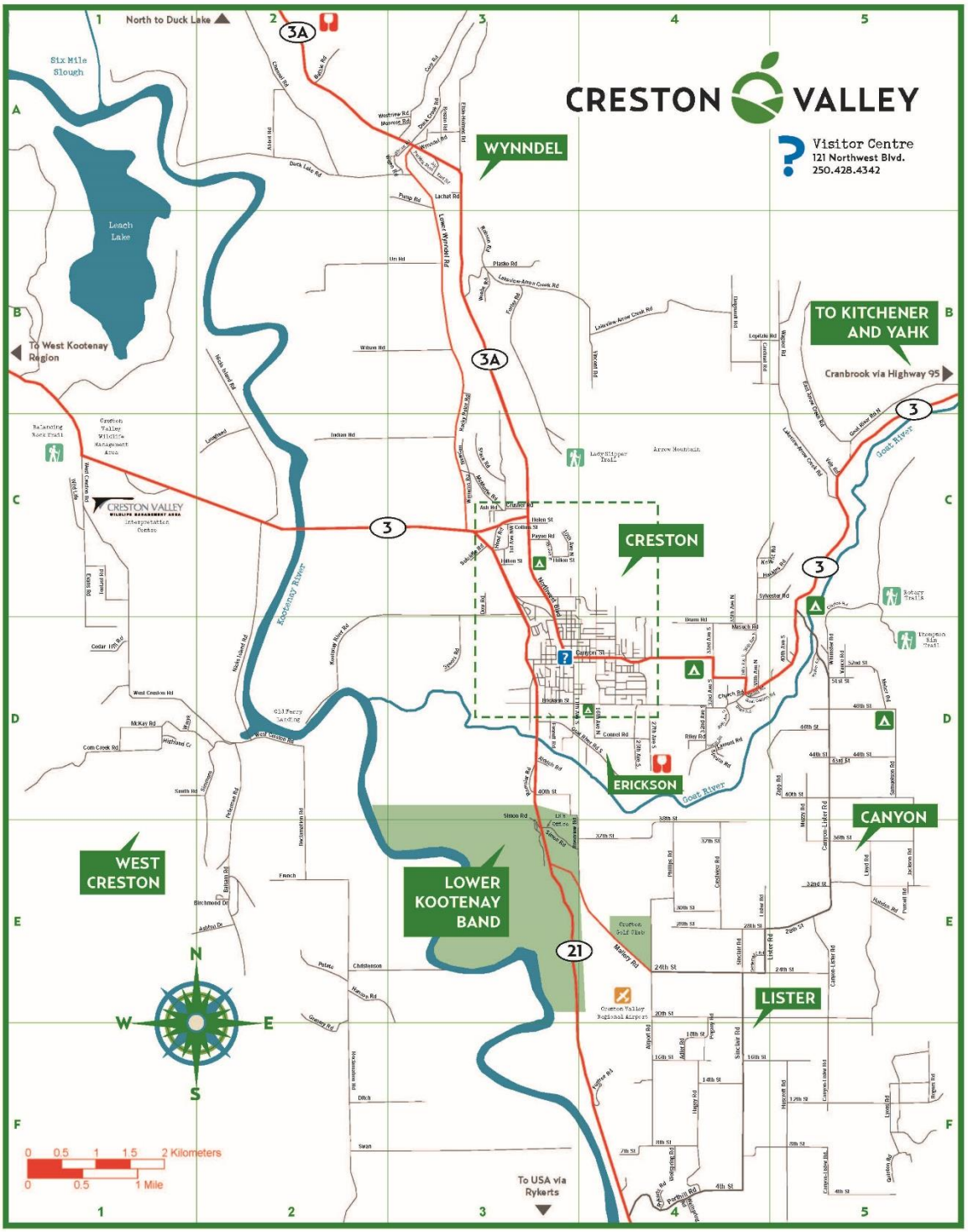


Figure 1: Creston Valley Map

Retrieved From: https://www.creston.ca/DocumentCenter/View/1161

Creston's downtown is highly walkable. The municipality is surrounded by the Skimmerhorn and Purcell mountain ranges and offers many recreational opportunities with the local mountain, lakes, rivers, and marshes. The Town limits are confined at 81.6 Ha. The urban core is dissected by the Crowsnest Highway and is bounded in the north by the Arrow (Goat) Mountain and by the farmland on the other three flanks.

2.2 DEMOGRAPHIC SUMMARY

According to the Statistics Canada 2021 census, the Town of Creston has a population of 5,583. The population has grown by 16% since 2001 when there were about 4,795 residents (approximately 1% per year increase). The overall Creston Valley has a population of approximately 17,000. According to population projections, over the next 10 years, the Town's population is projected to reach 6,212 by 2031—a 9% increase from 2021, which is a significant amount of grow at an anticipated rate of 1% per year.

The Town's 2021 median population age is 57.6 years. This is 16 years older than the Canadian average. It is of note that this trend might be reversing as there was a 16% increase in the children population between 2016 and 2021. This is understandable given the associated growth in the young adult population of 10% for the 20-34 year old age group.

The demographic trends underscore the importance of building a transportation network that is inclusive for all ages and abilities—particularly for the senior population and younger children.

2.3 TRANSPORTATION MODE SHARE

A comparison between commuter transportation mode share in Creston and the provincial average based on the 2016 Statistics Canada Census was completed as is shown in Table **1** and **Figure 2**. The data indicates that Creston is currently an auto-dependent community with approximately 83% of commutes occurring by car, which is 8% higher than the provincial average. Creston does have a healthy walking split. 13% walk to work in Creston whereas the Provincial average, Cranbrook, Castlegar, and Kimberly are in the 7-9% range. Nelson is the leader in the region as far as active mode share goes. 31% of Nelson commuter trips are done by walking or cycling. As such, Nelson is the best benchmark in the region and shows what is possible as far as targets go if active transportation is a key focus for the town. Creston, like Nelson, has a beneficial compact core but also has significate topography challenges. One key difference between Nelson and Creston is their respective median ages. In 2021,

Nelson's median age was 42 whereas Creston's was 58, 16 years higher. Any active transportation improvements must be made with the consideration for older folks in mind.

Table 1: 2016 MODE SHARE – CRESTON VS. SURROUNDING JURISDICTIONS[1]

	Creston	British Columbia	RDCK	Nelson	Cranbrook	Castlegar	Kimberley
Vehicle - Driver	77%	70%	78%	60%	79%	81%	79%
Vehicle - Passenger	6%	5%	6%	6%	7%	6%	5%
Public Transit	1%	13%	1%	1%	1%	2%	2%
Walked	13%	7%	11%	26%	9%	7%	9%
Bicycle	1%	2%	2%	5%	2%	2%	1%
Other Method	2%	2%	2%	2%	2%	1%	3%

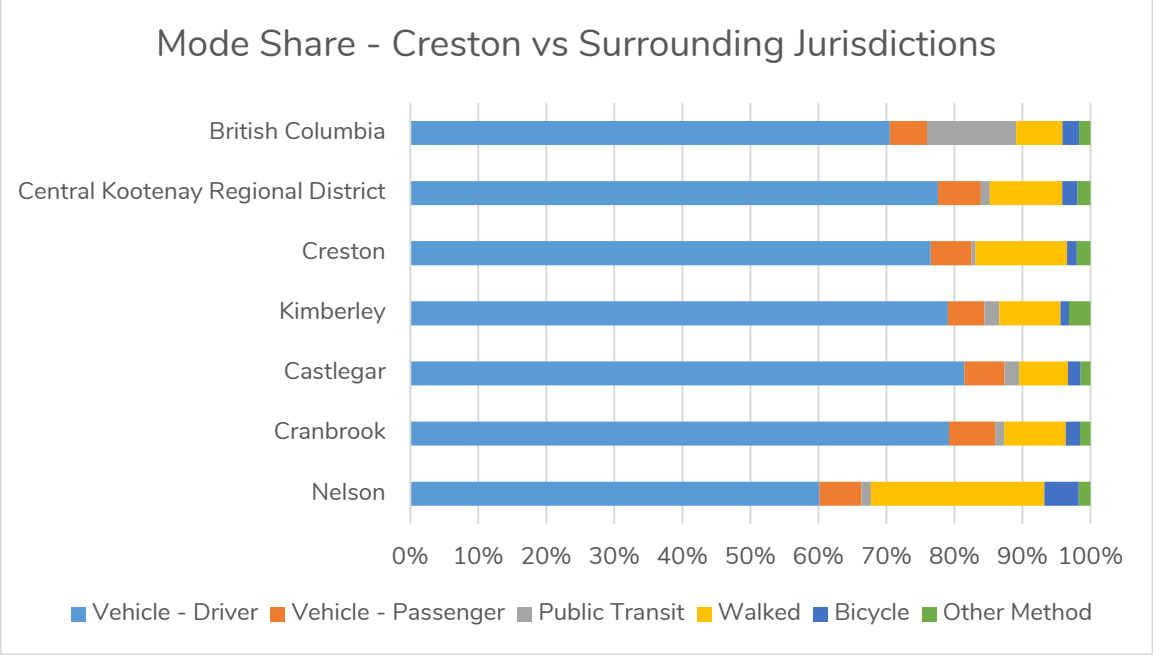


Figure 2: Mode Share - Creston VS. Surrounding Jurisdictions[2]

[1] *Data Retrieved From Statistics Canada on September 28, 2021.*
[2] *Data Retrieved From Statistics Canada on September 28, 2021.*

Over time the mode share for Creston has shifted more towards the automobile. **Figure 3**, shows this trend. In 1996, the vehicle mode share was 77% and in 2016 the corresponding mode share is now 83%, and an increase of 6%. It is theorized that this increase is due to sprawl outside the Town's core coupled with the ageing population. Statistics Canada indicates that the median age in Creston has increased from 49 in 2001 to 58 in 2021, an increase of 9 years. Providing more accessible active transportation routes may serve to lower this ratio for those individuals not comfortable mixing in traffic or for those not in the downtown area.

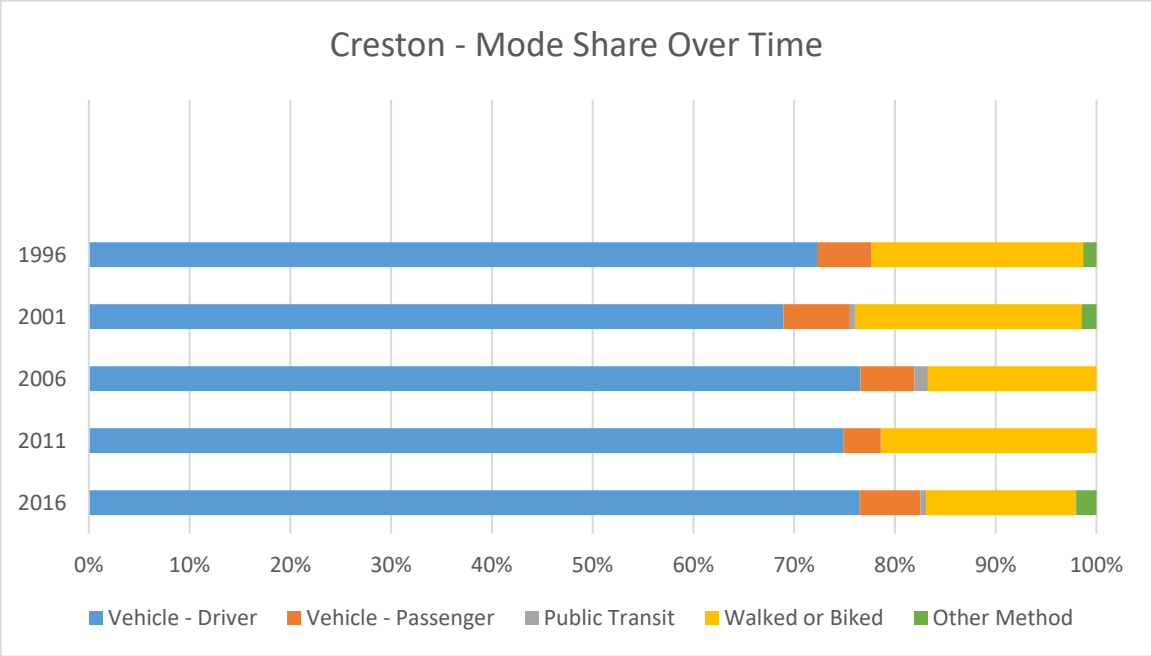


Figure 3: Creston Mode Share Over Time[3]

2.4 LAND USE AND KEY DESTINATIONS

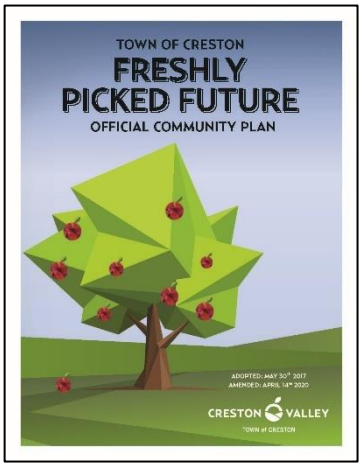
A robust MMTP must have a complete understanding of both current and future land uses. Understanding where residents want to travel to / from are important for understanding how well the transportation network serves residents who may be trying to access these destinations by a sustainable mode (e.g., walking, cycling, transit). Land use zoning and key destinations are illustrated in **Map 1**.

[3] Data Retrieved From Statistics Canada on September 28, 2021.

Map 1 – Land Use & Key Destinations

2.5 SUMMARY OF RELEVANT LOCAL AND REGIONAL PLANS + TECHNICAL STUDIES

Creston Official Community Plan (2017 OCP)



The Official Community Plan (OCP) is a land-use planning tool that is used to guide Town Council in its decisions about growth and development, zoning, and services. The OCP was developed with extensive public consultation between 2016-2017. The OCP presents a vision where "Creston is made up of walkable and connected neighbourhoods, including a pedestrian-friendly Downtown Core that acts as a social and economic hub".

The OCP articulates the following set of Creston Experience Principles that matter to the community:

- Place-based: Rooted in local context
- Principled: Driven by local values
- Pragmatic: Informed, sensible, and effective
- Balanced: Geared towards sustainability
- Inclusive: Designed to benefit all
- Collaborative: Carried out in a spirit of joint responsibility

Six Community Goals emerged from the OCP community engagement process:

- Valley Collaboration;
- Quality of Life & Inclusive Local Identity;
- Neighborhood & Housing;
- Connectivity;
- Economic Prosperity; and
- Downtown Vibrancy.

Connectivity was a focal element of the OCP engagement process, and the Walkability Checklist exercises conducted gathered input on the experience of walking around the community. The OCP speaks to a variety of connectivity and transportation themes and policies, including the completion of the MMTP, that are relevant to the MMTP planning process. While transportation-related policies are incorporated throughout the OCP, such as in Community Goals & Policies and Energy & GHG Emissions sections, **Table 2** summarizes Land Use policies that apply to the MMTP. A full summary of the policies can be found in the draft of the Community Connectivity Master Plan.

TABLE 2: TRANSPORTATION-RELATED INFRASTRUCTURE LAND USE POLICIES

Actions	
1. General Policies	
1.3	Prepare a *Multi-Modal Transportation* Plan that prioritizes active transportation and provides for safe and efficient circulation
2. Active Transportation Policies	
2.1	Develop appropriately sized and linked trails, paths and *Greenways* in accordance with the *Greenways* & Trails Master Plan
2.2	Include bike travel when developing off-street trail systems
2.3	Design unpaved trails with a surface material that compacts and provides a hard surface to accommodate bikes, scooters and strollers
2.4	Include adequate signage (e.g. "share the road") to promote bike safety along major roads and highways, working with the Ministry of Transportation & Infrastructure when appropriate
2.5	Consider installation of lighting on trails and sidewalks to promote public safety, where practical and feasible
2.6	Encourage the Ministry of Transportation & Infrastructure to provide public access to the lands dedicated for the *Arrow Mountain Highway Bypass*
2.7	Encourage and support the establishment of linkages for alternative modes of transportation between the Town of Creston, the Lower Kootenay Band Community, Erickson, Wynndel and other regional amenities
3. Road Way Policies	
3.1	Develop sidewalk and boulevard standards to promote safe, efficient, accessible and enjoyable passage
3.2	Apply traffic calming techniques and strategies to reduce vehicular traffic speeds and to enhance road safety for pedestrians, scooters and cyclists
3.3	Install additional empty conduits when undertaking municipal roadway and sidewalk construction, to allow for easy installation of future infrastructure improvements and amenities, within the *Public Realm*
3.4	Enhance crosswalk visibility through a fiscally sustainable combination of lighting, pavement markings, curb extensions and clear sight lines
3.5	Prepare *Alternative Development Standards* for roadways that are consistent with the *Multi-Modal Transportation* Plan objectives
3.6	*Complete Streets* Guidelines shall be incorporated into the Town of Creston Works and Services Bylaw
3.7	Transform roads designed exclusively for cars into roads that serve *Multi-Modal Transportation* including bikes and scooters

Several transportation-related implementation recommendations were outlined in the OCP, including prioritizing one key sidewalk in the municipal work plan and budget, per year to construct or significantly upgrade as well as working with neighboring local governments to develop a robust *Wayfinding Strategy.*

Greenways and Trails Master Plan (2018 Draft)
The Greenways and Trails Master Plan (GTMP) is intended to serve as the Town's long-term strategy for creating a connected and walkable community. The community engagement process undertaken for the 2017 OCP was the impetus for the GTMP, and the draft builds off the results of the Trails & Connectivity Workshop held in July 2016. The work already undertaken for the GTMP draft will lead into and directly inform the MMTP.

The GTMP articulates high-level strategies for eight aspects of connectivity for consideration:

- Accessibility, Safety & Comfort;
- Green Streets;
- Sidewalks;
- Trails;
- Cycling & Shared Streets;
- Parks & Greenspace;
- Neighbourhood Connectivity; and,
- Connectivity Corridors.

The plan also presents key design standards to support good connectivity that should be incorporated into the MMTP:

- Universal Design Standards;
- Green Streets Standards;
- Sidewalks Standards;
- Trails Standards;
- Cycling & Shared Streets Standards;
- Neighbourhood Connectivity Standards; and,
- Connectivity Corridor Standards.

The draft GTMP includes an extensive implementation section where specific action items and locations are proposed for the following networks:

- Pedestrian Network
    - proposed sidewalks/trails, identified sidewalks/roads with accessible barriers, challenges and possible solutions, identified priority locations for improved street lighting;
- Cycling Network
    - proposed cycling route;
- Recreation Network
    - proposed recreation trails and improvements to intra-valley trails; and
- Parks and Green Space Network
    - proposed improvements.

Strategic Community Energy Efficiency Plan (2016)

The Strategic Energy and Emissions Plan (SCEEP) is Creston's comprehensive, long-term plan to improve energy efficiency, reduce greenhouse gas (GHG) emissions, and foster local green energy solutions. Mandated by the Local Government Statutes Amendment Act Bill 27, a SCEEP evaluates a community's existing energy use and GHG emissions to set local targets for reductions.

In 2010, the total community annual energy expenditure was approximately $20.3 million, and GHG emissions were approximately 37,500 tonnes. The Plan acknowledges that while it is estimated that the plan will result in significant reductions to GHG emissions beyond Business As Usual, there is still a considerable gap to the GHG target, summarized in **Table 3**, that may require further Federal and Provincial actions as well as technological changes.

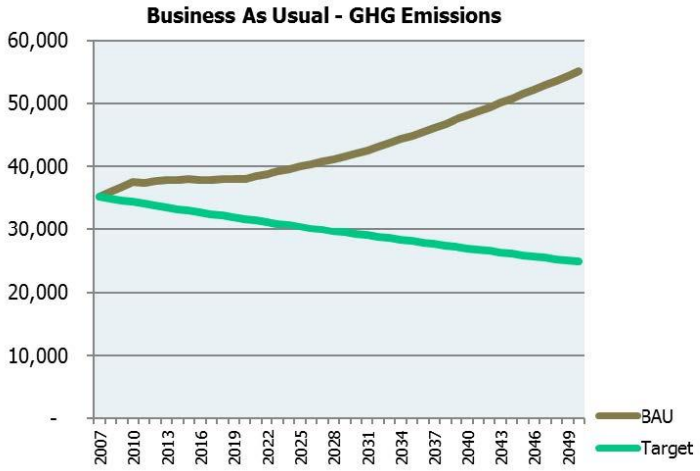


TABLE 3: EMISSIONS TARGET SUMMARY

Mode	2016	2020	2030	2050
Total Reduction	-7.1%	-10%	-17%	-30%
Per-Capita Reduction	-19%	-26%	-41%	-63%
Total GHG	32,784	31,734	29,256	24,864
Per-Capita GHG	5.7	5.2	4.1	2.6

The major actions for Creston, listed by impacts in terms of annual GHG savings in the year 2020 are:

- 5.2 – Land use suite "enhanced": 613 tonnes / year
- 1.2 – District Energy / Renewable energy systems: 488 tonnes / year
- 5.5 – Variable DCC's to encourage infill development: 392 tonnes / year

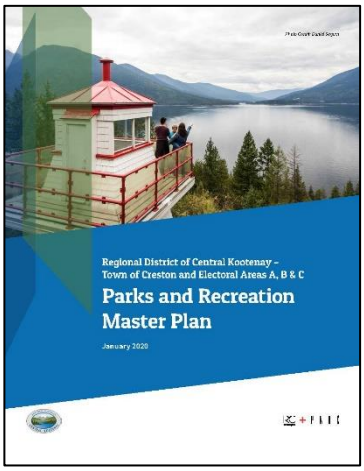
Notably, approximately 58% of Creston's 2010 GHG emissions are generated by transportation (passenger and heavy-duty vehicles using gasoline and diesel fuel) and about 38% from residential, commercial, institutional, and industrial buildings. Given this

breakdown, actions to reduce GHG emissions in the community are heavily focused on changes to transportation and buildings. The key transportation-related action items relevant to the MMTP policy framework are highlighted in **Table 4**.

TABLE 4: TRANSPORTATION-RELATED ACTION ITEMS

Actions	
4. Light Duty Vehicle Transportation – Urban Form	
5.1/5.2	Land use suite lite and enhanced
5.3	Street design
5.4	Implement 30km/hr speed limit in parts of the community
5. Vehicle Transportation – Infrastructure & Collaboration	
6.1	Active transportation planning
6.2	Improve active transportation infrastructure
6.3	Anti-idling campaign
6.4	Special event planning
6.5	Collaborate with major employers on work-related transportation
6.6	Transit suite
6.7	Intercommunity transit services
6.8	Support car share cooperatives
6.9	Raising awareness of ride sharing and guaranteed ride home programs
6.10	Low carbon and electric vehicle fuelling / charging stations
6.11	Electric vehicle & e-bike awareness event
6.12	Natural gas vehicle collaboration

Parks and Recreation Master Plan for the Town of Creston and Electoral Areas A, B and C (2020)



Regional District of Central Kootenay recently developed the Parks and Recreation Master Plan to guide the provision of parks, recreation, culture, and trail services for the next ten to fifteen years. The vision of the Parks and Recreation Master Plan is that residents live active and creative lifestyles through quality parks and recreation opportunities. In achieving this vision, the desired outcomes of the Parks and Recreation Master Plan are as follows:

- Residents are living a healthy lifestyle;
- Residents have access to and participate in recreational and parks activities both indoors and outdoors; and
- Communities are strong and caring.

High-level research and engagement findings from the planning process revealed that 11% percent of respondents to the household survey identified transportation as a barrier to participation in recreational opportunities in the study area. Additionally, expanding the trail network within the study area was ranked the highest in the preliminary list of infrastructure priorities. The trail network is used for health purposes, as recreation outlets and as active transportation corridors for non-motorized means of transport. Therefore, it is important that the Town's MMTP addresses its network and improvements in a way that provides continuity and complements the Parks and Recreation Master Plan.

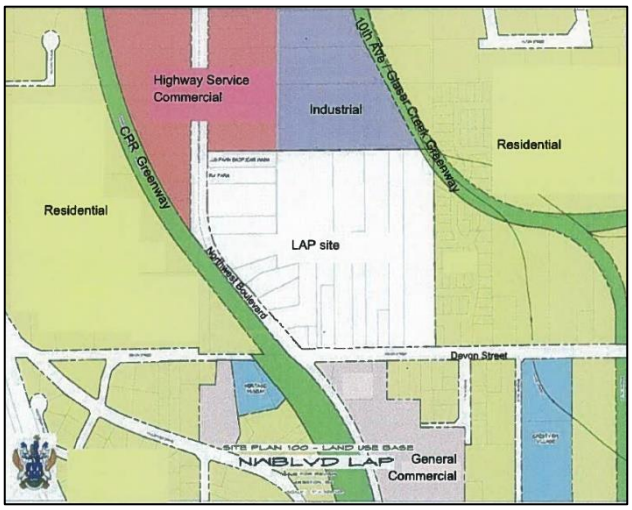
Of the 19 key recommendations developed under the three core themes of: 1) programming and events; 2) parks and recreation infrastructure; and 3) service delivery,
Recommendation 11: Enhance the Existing Non-Motorized Trail Network in the Area is of particular importance to the MMTP. The following considerations should be incorporated into the transportation planning process:

- Ensure the existing trail system is mapped and this map is shared with the community and tourists;
- Utilizing community feedback, identify the priority areas that need enhancing. This could mean gaps in existing trail connections in town, from town to rural, from community to community or in the wilderness;
- Develop a priority list for addressing the needs and solicit partners to help.

- While the Creston Valley Wildlife Management Area has a network of trails, its mandate of wildlife and habitat conservation is paramount to its recreational use; and
- Meet with members of the Lower Kootenay Band to discuss opportunities for cooperation in trail siting and development.

Northwest Boulevard Local Area Plan (2016)

The Northwest Boulevard Local Area Plan (LAP) is part of a larger neighbourhood in northern Creston centered on the Creston Valley Mall. The vision for this community is a mix of land uses with commercial along Northwest Boulevard and then transitioning to mixed-use and residential further from the highway. The plan sets out and describes four key sustainability principles including:
resiliency, connectivity, complete & compact neighbourhoods, and sense of place.



It is envisioned as a compact, walkable, community with active transportation corridors along the linear parks and connections to the surrounding network. One of those key connections is made to the Glaser Creek Greenway, just east of the study area. New local roads are proposed as well as improvements to the Devon Street intersection with Northwest Boulevard. The document provides specific guidelines designing the public realm for pedestrian comfort and safety, which includes the following:

- Sidewalks are located on both sides of the streets and are wide enough to accommodate mobility scooters / strollers;

- Curb bulbing and crosswalks at all intersections encourages pedestrian safety because traffic is slower; and
- Sidewalks and trails connect throughout the site, and to the wider community.
- The guidelines are specific to the Northwest Boulevard Neighbourhood, they provide design guidance for the Town as a whole and have benefits for the MMTP.

Cultivating Creston: Integrated Community Sustainability Plan (2013)

Cultivating Creston articulates the community's shared vision for a successful and sustainable future to the year 2030. At the time of its development, Cultivating Creston served as the community's highest-level policy and decision-making framework that ultimately laid the groundwork for the community's 2017 OCP.

The Plan developed four core sustainability objectives for reducing and eliminating local contribution to:

- Socio-cultural and economic conditions that undermine people's ability to meet their basic needs;
- The ongoing physical degradation of nature;
- The ongoing build-up of synthetic materials produced by society; and
- The ongoing build-up of materials extracted from the earth's crust.

Five local priorities provide a high-level focus on what must be achieved to create a successful future for the Creston community

At the time, 81% of the employed labour force in Creston used private vehicles as their primary transportation mode. Additionally, citizen satisfaction regarding transportation and traffic in 2009 had an average rating of 56 on the 100-point scale, lower than the average rating of 81 points placed on the importance of these services. In order to bridge the gap between the current transportation realities, the following desired outcome statements describe what success and sustainability in transportation will look like in Creston by the year 2030 and provides direction for

more detailed transportation planning and decision making:

- Creston prioritizes preferred modes of transportation in the following order: 1) pedestrian, bike, scooters and strollers; 2) transit and movement of goods; 3) private vehicles (high occupancy and low-impact technologies); 4) private vehicles (single occupant and traditional technologies);
- Transportation options are convenient, reliable, innovative, safe, affordable, and accessible, meeting the needs of residents and visitors;
- Creston's streets are people friendly, accessible, safe, visually appealing and enjoyable, offering places for people to rest and interact with others;
- The transportation system is transitioning toward the use of renewable energy sources and non-motorized options, eliminating emissions into the natural environment, and maintaining ecosystem integrity;
- Creston is connected to the valley, neighbouring communities and non-local health services by affordable, convenient, comfortable and accessible transportation options;
- The transportation system is cost effective and supports the local economy by enabling efficient and affordable movement of people and products to and from Creston and the region; and
- Communications infrastructure is affordable and available for use as a convenient alternative to transportation.

Age-Friendly Action Plan (2013)

The Age-Friendly Action Plan process was undertaken as a complementary process to the Integrated Community Sustainability Plan to apply an age-friendly lens to the development of Cultivating Creston planning. The Plan is built around the World Health Organization (WHO) Checklist of Essential Features of Age-friendly Cities' eight "age-friendly themes" including Transportation. While transportation is a key factor influencing active ageing, WHO's checklist of Essential Features of Age-Friendly Cities highlights items that would benefit the wider community including:

- Roads are well-maintained, with covered drains and good lighting;
- Traffic flow is well-regulated;
- Roadways are free of obstructions that block drivers' vision;
- Traffic signs and intersections are visible and well placed;

- Parking and drop-off areas are safe, sufficient in number and conveniently located; and
- Priority parking and drop-off spots for people with special needs are available and respected.

Two transportation-specific age-friendly actions were recommended as a result:

- Transportation Service for Seniors
- Explore needs, funding, and options for a specialized seniors transportation service in the Creston Valley that is affordable, is offered evenings and weekends, and includes trained drivers that can assist seniors.
- Public Transit between Creston and Trail
- Explore the need for public transit service to Trail

Cultivated Creston and Age-Friendly Action Plan (Update – 2014 ICSP)

In 2014, the Town hosted a participatory planning process to update the action plans developed as part of the ICSP and Age-Friendly Action Plan. Three focus areas were determined to be most important within the 2014 context:

- Economy;
- Food and agriculture; and
- The age-friendliness of the Creston Valley.

The SWOT analysis undertaken for this update highlighted that transportation remains a challenge for seniors in the community. The following additional transportation-specific recommendations were developed:

- Seniors Carpooling
- Develop a registration system for seniors carpooling (in and out of town)
- Snow Clearing in Rural Areas for Seniors
- Explore how to provide snow clearing services to seniors in rural areas
- Medical Bus Frequency
- Increase the trip frequency of the 'medical bus' for medical appointments Regional District of Central Kootenay.

Creston and Area Youth Strategy and Action Plan (2015)

The Youth Strategy and Action Plan engaged local youth (between 13 to 19 years of age) to provide a series of recommendations for a new, positive, and inspiring vision for their community. The results of the Youth Strategy and Action Plan complements plans for supporting older residents and highlights the need to involve youth and their unique transportation needs in future transportation planning efforts.

Throughout the planning process, reflections on Creston's community assets as well as the barriers and challenges that youth face were explored. Of the main themes that emerged, one of the top four priorities identified among youth was "Transportation and Active Transportation to Enhance Youth Safety". While many Creston citizens experience geographic isolation, it is felt acutely by youth who are often unable to transport themselves and are affected by limited transit service. Surveys and key informant interview results revealed the following key takeaways related to transportation:

- 42% of youth noted they would like to see improved lighting, crosswalks, and sidewalks;
- 19% of youth expressed they could not participate in events because of transportation issues;
- Youth want to participate in development of trails for biking, skateboarding or horses;
- 31% of service providers noted transportation was the top issue that impeded youth participation; and,
- Many parents and adults agreed with the youth assessment of safety and focused on the need for new walking trails and sidewalks (31%); as well as installation of crosswalks and lights (13%).

Greenways and Trails Masterplan (2003)

In response to the 2001 Official Community Plan policy direction, the Town of Creston prepared a Greenways and Trails Master Plan in 2003 with the goal to:

- To establish a comprehensive network of greenways and trails to benefit the environment and citizens of Creston;
- To promote alternative modes of transportation by providing adequate facilities;
- To foster economic development by linking key economic generators within the community; and
- To protect environmentally sensitive areas by enhancing their profile and by directing pedestrian access to appropriate areas only.

The plan determined a recommended list of priority projects based on the analysis of criteria including land ownership, existing conditions, community support, and trail profile. Several trails, such as the Millennium Trail, were completed based on this 2003 Master Plan. This work preceded and informed Creston's new 2017 OCP and draft Community Connectivity Master Plan where residents' desire for a robust greenways and trails network was strongly reaffirmed.

Market Park Plan Sunset Lot – Farmers Market (2022)

Market Park is a public space, which provides a permanent home for the Farmers' Market, green space, and recreational features. Its focus is to create a place of distinction within the community where people are motivated to stop, linger, and explore the site and the Valley.

There are opportunities within the linear nature of the park to include a multi-use path along the rail corridor for active transportation use and connection to the existing Millennium Trail to the south. The park will serve as a major hub for the active transportation network.

Vertical grade is a challenge of the site for pedestrians and active transportation users as there is a 1.5m step down from the Canyon Street / Cook Street /10th Avenue intersection and

a rail crossing to the south that has stairs. Provisions for an accessible multi-use pathway connection down from the intersection are included in the plan that will facilitate access for all ages and abilities. Improvements for the rail crossing should also be considered to provide an alternative to the stairs.

Section 3 – Public Engagement

3.0 PUBLIC ENGAGEMENT

3.1 OVERVIEW

A two round engagement process was followed for the MMTP that included a variety of ways for stakeholders and the public to get involved. Online tools such as the *Let's Talk Creston* engagement website and Microsoft Teams video conferencing were used to gather feedback via public surveys, ideas forums, and virtual interviews. Additionally, in Round 1, community members had the opportunity to fill out a paper activity sheet that allowed them to map out and describe an active transportation trip they took in town.

Round 1 Engagement took place from September 15 to October 17, 2021, and was focused on informing the community about the MMTP process, gathering current transportation experiences, and understanding community priorities and visions for the future.

Round 2 Engagement spanned from February 15 to June 19, 2022, and was focused on presenting preliminary findings and recommendations, receiving feedback on those recommendations, and hearing from stakeholders about the key issues facing the transportation network. Stakeholders included Summit Cycles and Sports, Creston Valley Cycling Club, Creston Climate Action Society, the Ministry of Transportation and Infrastructure, Nexus Community Support Society, Therapeutic Activation Program for Seniors (TAPS), and Town of Creston staff.

The full summary of the engagement process is found in the **Creston MMTP Engagement Summary Report**. A summary of the engagement process—and key findings—is provided on the following pages.

3.2 WHAT WE DID

A summary of the engagement process—and its key activities—are summarized in the table below.

ROUND 1 ENGAGEMENT
September 15 to October 17, 2021
Activities included:

- Public Online Survey no.1, made available to all members of the public on the Let's Talk Creston engagement website
- The opportunity to ask questions and provide additional ideas on the Let's Talk Creston engagement website
- Do it Yourself ("DIY") Mobility Mapping activity sheets that allowed community members to map out an active transportation trip they took in town and provide details about the experience

ROUND 2 ENGAGEMENT
February 15 to June 19, 2022
Activities included:

- Multi-stakeholder workshop conducted via Microsoft Teams that focused on the Town's active transportation network but was also open for feedback on all other aspects of the multi-modal transportation network
- Public Online Survey no.2, made available to all members of the public on the Let's Talk Creston engagement website
- One-on-one stakeholder interviews (building on the multi-stakeholder workshop) conducted via Microsoft Teams

Engagement by the numbers:


1.2K engagement site visitors


629 total survey submissions


22 DIY Mobility Mapping activity sheets completed


8 stakeholders engaged through workshop and interviews

3.3 WHAT WE HEARD

The public and key stakeholders provided feedback throughout both rounds of the engagement process on a variety of topics including the active transportation network, road network, transit, public parking management, emerging mobility, and the draft vision and goals for the MMTP. A detailed summary of the feedback is available in the **Creston MMTP Engagement Summary Report**. The key takeaways from both rounds of engagement, which ultimately informed and confirmed the recommendations in the MMTP, are as follows:

1. The biggest barriers to transportation in Creston include the lack of safe pedestrian and bicycle infrastructure, as well as lack of access to reliable transit.
2. There is a strong desire from the public for more sidewalks, paths, and trails, and there is broad support for implementing multi-use pathways.
3. The highest priority pedestrian facility improvements are (see **Section 6.2** for more information):
    a. Crosswalk improvement by adding flashing beacons at the 20th Avenue N / Canyon St intersection
    b. New multi-use pathway on Pine Street to Creston & District Community Complex (between 16th Ave N and 19th Ave N)
    c. New accessible ramp in Market Park down from the 10th Avenue N / Canyon St intersection
4. The highest priority cycling facility improvements are (see **Section 7.2** more information):
    a. Multi-use pathway on north side Canyon St (Highway 21 to Railway Boulevard)
    b. Multi-use pathway on south side of Hillside St (16th Ave to 20th Ave N)
    c. Protected bike lanes on both sides of Hillside St (9th Ave to 16th Ave)
5. Maintenance of sidewalks, paths, and trails is important – including snow clearance and trimming foliage that obstructs visibility.
6. There is a desire for more short- and long-term bike parking that is secure and can accommodate all types of bikes and locks.

7. Vehicle speeds are a common community concern, and there is a desire for more traffic calming / safer streets.
8. Accessibility is a critical element of the multi-modal network and the MMTP should cater to all ages and abilities, especially vulnerable road users such as seniors, youth, and people with disabilities.
9. Maintaining accessible parking stalls and upgrading them to be van-accessible is strongly supported. There is also support for increasing the number of commercial and passenger loading spaces downtown, as well as implementing one-hour time restrictions on select blocks.
10. There is general support for implementing digital on-demand transit, as well as a desire to make the transit system easier to use and understand.

Section 4 – Looking Ahead

4.0 LOOKING AHEAD

The Town already has several foundational plans in place as outlined in **Section 2.5**. These plans provide a common vision for what the community aspires to be in the future. To articulate the future state of transportation in Creston, a vision statement was created and builds on the Town's foundational plans. It provides the overall direction for how transportation can contribute to Creston's environmental, economic, community, and cultural fabric.

4.1 VISION

Getting to, from, and around Creston, and into the natural beauty that surrounds our community, should be safe and enjoyable for all people. Living in and visiting our small town should come with the advantages of being able to get around conveniently, especially by active transportation modes. Our residents do not need to rely on a vehicle to commute to school or work, or for going to the grocery store and social outings. Similarly, recreational destinations are easy to access. A well-connected Town of Creston also means safer roads for all road users, which reduces Creston's climate impacts and improves quality of life for the community.

4.2 GOALS

Ease of Mobility for All Modes

Travel in Creston is accessible, convenient, comfortable, and connected for all modes of transportation.

Road Safety for Vulnerable Users

Creston's roads are repurposed and redesigned to make travel safe for all, especially more vulnerable users such as those walking, rolling, and cycling.

Climate Impacts

Creston's transportation network becomes less reliant on fossil fuels with significant reductions in greenhouse gas (GHG) emissions over time

Section 5 – Major Road Network

5.0 MAJOR ROAD NETWORK

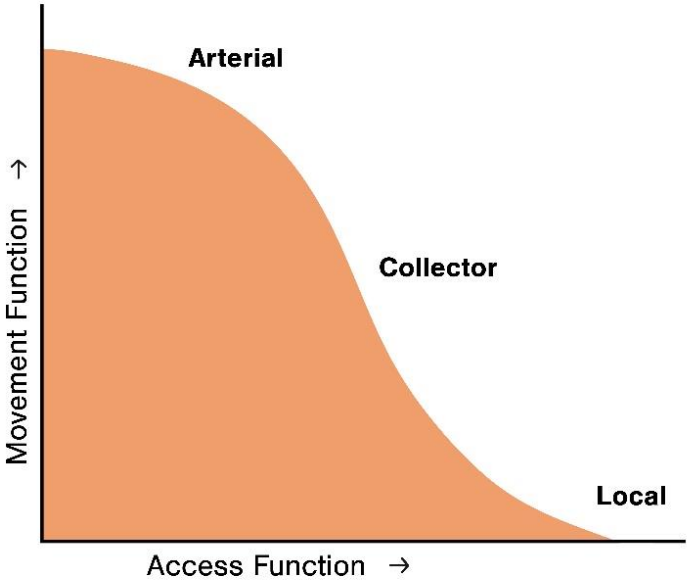
5.1 ROAD NETWORK TODAY

5.1.1 ROAD CLASSIFICATIONS

The vehicle transportation system is based on a hierarchy of roadways with each type of road classification serving a function in moving people around the Town. Some streets provide direct access to properties and is least concerned about maintaining free flow / mobility of vehicles, while others balance direct access with mobility and provide better traffic flow. To the right is a diagram identifying the function of the street classifications in providing movement and access across the Town.

NETWORK LENGTH

There is a total of 62 km of roads within the Town's boundaries.



Map 2 shows the existing road network including road classifications within the Town's jurisdictional boundary. Road classification is based on adjacent land use, service function, traffic volumes, traffic flow characteristics, vehicle types, vehicle speeds, and connections with intersecting roads. **Table 5** describes the existing road classifications in the network.

Example of a collector roadway. Looking south on 15th Ave N

TABLE 5: ROAD CLASSIFICATIONS

Road Classification	Description	Length (km)
Provincial Highway (Highway 3 & 21)	Traffic movement is the primary function of highways with speed limits of between 50 and 80km/h in and around the town limits. The typical range for Provincial highways is 10,000 to 30,000 vehicles per day. Roads of this nature tend to prioritize vehicle movement over pedestrian and cycling infrastructure. However, it is not uncommon to see all transportation modes meeting and mixing at key intersections and near highway commercial areas.	9.0
Arterial (includes Erickson Rd)	Traffic movement is an important function of arterials to connect vehicles from collectors to highways. In Creston, these roads carry vehicle volumes in the range of 2,000 to 10,000 vehicles per day with a speed limit of 50 km/h. The volumes are lower than is typical for arterial roads, but this is expected in a smaller municipality. Heavy vehicles can also be expected on these types of roads.	5.9
Collector	Collector roads intend to balance direct access to adjacent properties while maintaining traffic flow and connecting local roads and arterials. In Creston, these roads carry vehicle volumes in the range of 1,000 to 5,000 vehicles per day and have posted speed limits between 30km/h and 50 km/h. The typical range for collectors is 1,000 to 12,000 vehicles per day, and heavy vehicles may be permitted on these roads.	10.1
Local	The primary function of local roads is to provide direct access to properties over easy traffic flow. Vehicle volumes on these roads are typically less than 1,000 vehicles per day in rural neighbourhood settings, while in denser urban settings, vehicle volumes can range up to 3,000 vehicles per day. Traffic flow on local roads is usually interrupted with on-street parking and driveway access activity. Due to lower volumes, pedestrian and bicycle infrastructure can be integrated with vehicles through bicycle boulevards and sidewalks.	29.8

Map 2 – Road Classification

5.1.2 ROAD STANDARDS & EXISTING CROSS-SECTIONS

The Town's road standards and specifications are based on consolidated bylaw 1170: Works and Services originally published in 1990. Road construction is covered in Part B of this bylaw. Standard cross-sections are illustrated in Appendix "A" of the bylaw.
Most pavement widths in the residential areas of Creston seem generous and likely contribute to higher vehicles speeds. Having lane widths wider than 3.5m in lower volume roads (lower classification roads) can increase speeding. Reallocating road space is a crucial element needed to adapt Creston's roads to be more multi-modal friendly.

Table 6 shows typical cross-section width allocation for the Town's current road standards, including specifications for local and collector in rural and urban settings and for lanes, cul-de-sacs, and four-lane undivided arterials. When comparing the current road classifications to the identified cross-sections in the bylaw, we see that many of the Town's cross-sections are not used today, as such, these should be updated to meet today's standards for multi-modal accommodation.

TABLE 6: EXISTING ROAD CROSS-SECTION STANDARDS

Classification	ROW (m)	Roadway Width (m)	Road Edge	Sidewalk Width (m)	Cycling Facilities
Paved Lane	8	6.0 min.	None	None	None
Cul-de-Sac	15	9.0	Curb & Gutter*	1.5 One side	None
Urban Local	15	11.0	Curb & Gutter*	1.5 One side	None
Urban Collector	20	14.0	Curb & Gutter*	1.8 One side**	None
Major Collector	22	16.0	Curb & Gutter*	3.0 Both sides	None
Arterial – 4 Lane Undivided	25	16.0	Curb & Gutter*	1.8 One side^	None
Rural Local	18	8.5	0.75m Gravel Shoulder	None	None
Rural Collector	20	9.0	1.5m Gravel Shoulder	None	None

*Rollover curb in residential areas, barrier curb in other areas.
** Sidewalk one side only or both sides where multiple residential front both sides of street.

^Sidewalk installed on both sides in commercial areas.

5.1.3 TRAFFIC VOLUMES

Map 3 shows daily two-way traffic volumes in the Town of Creston. The volumes are based on a combination of intersection turning movement counts, roadway tube counts, and data collected by WATT in August 2021, and past data provided by the Town.

Table 7 highlights traffic volumes of the higher volume corridors (3,000 veh/day) were compared with existing roadway classifications to determine any discrepancies in the existing function of the roads to their current classification. Functional classifications are per TAC guidelines. That said, the need for truck routes necessitates the need for an arterial roadway network regardless of volume.

TABLE 7: RANKING OF HIGH VOLUME ROADS (AADT ABOVE 3,000 VEH/DAY)

Road Segment	Daily Volume	Existing Classification	Functioning Classification	Truck Route
Northwest Boulevard *(MoTI - Hwy 3)*	11,000	Provincial Hwy	Arterial	Yes
Canyon Street *(MoTI - Hwy 3)*	8,000	Provincial Hwy	Arterial	Yes
Cook Street	5,800	Arterial	Collector	Yes
16th Avenue S	4,500	Arterial	Collector	Yes
Erickson Road *(MoTI)*	3,700	Arterial	Collector	Yes
Highway 21 *(MoTI)*	3,200	Provincial Hwy	Provincial Hwy	Yes

Map 3 – Annual Average Daily Traffic (AADT)

5.1.4 GOODS MOVEMENT

The Town of Creston's heavy vehicle routes are shown in **Map 4**. It is composed of the following arterial roads to facilitate goods movement:

- Northwest Boulevard (Highway 3)
- Canyon Street (Highway 3 Section)
- Cook Street
- 16th Avenue S
- Erickson Road

The heavy vehicle routes provide a spine network that covers the Town. Trucks can deviate from the truck route to reach their destination / delivery location; however, they can only take the shortest path from the truck route to reach their destination. The restriction of trucks on routes should be based on the need to restrict trucks due to weight concerns and to limit heavy truck traffic from mixing with vulnerable road users. Canyon Street west of the railway is not designated as a truck route, as such, trucks are to stay on the highways or use Erickson Road and 16th Avenue N to transition between Highway 21 and Highway 3. Columbia Brewing has a high truck demand and is located at the corner of Erickson Road and 16th Avenue S.

Map 4 – Goods Movement

5.1.5 TRAFFIC OPERATIONS AND SAFETY

Traffic operation Level of Service (LOS) was analyzed at key intersections within the Town. Synchro analysis results indicate that all intersections reviewed provide an excellent overall LOS A (delay less than 10 seconds / vehicle) and all movements on the minor street operating at a LOS C or better (delay of 15-25 seconds / vehicle). The only exception is the intersection of Northwest Boulevard / Valleyview Drive / Murdoch Street, where vehicles turning left from Murdoch Street experience a LOS D and delay of 27 seconds; however, there is minimal traffic on this road, and it does not impact the overall network.

Northwest Boulevard / Valleyview Drive / Murdoch Street intersection

5.1.6 TRAFFIC COLLISIONS

Traffic collision data can be one indicator of a safety issue at a location. Collision statistics are obtained from Insurance Corporation of British Columbia (ICBC). **Map 5** shows the total number of collisions at intersections in Creston from 2016-2020. **Table 8** shows the intersection collision locations on the Town's roads, which average over one accident per year.

TABLE 8: COLLISION LOCATIONS IN CRESTON

Ranking	Location	5-year Total Collisions	Average Collisions per year
1	Cook St / Canyon St (Hwy 3) / 10 Ave N	14	2.8
2	Highway 21 / Erickson Rd	12	2.4
3	Canyon St (Hwy 3) / 11 Ave	9	1.8
3	Canyon St (Hwy 3) / 16 Ave	9	1.8
3	Canyon St (Hwy 3) / 20 Ave	9	1.8
3	Northwest Blvd (Hwy 3) / Cavell St	9	1.8
7	Northwest Blvd (Hwy 3) / Devon St	7	1.4
7	Northwest Blvd (Hwy 3) / Highway 3a	7	1.4
9	Canyon St / Highway 21	6	1.2
9	Northwest Blvd (Hwy 3) / Helen St	6	1.2
9	Northwest Blvd (Hwy 3) / Pine St	6	1.2
9	Northwest Blvd (Hwy 3) / Valleyview Drive	6	1.2
9	Vancouver Street / 10 Ave N	6	1.2

Many of these locations are at intersections along Canyon Street (Highway 3) and Northwest Boulevard (Highway 3), where they have highway traffic and pass-by volume travel through.

Map 5 – Total Collisions

5.1.7 TRAFFIC SPEEDS

Travel speed is a very important factor for active transportation users' comfort and safety. The BC AT Design Guide states that there is only a 15% survival rate for a pedestrian in a collision when a vehicle is travelling 50km/hr. This improves greatly to a 90% survival rate when a vehicle travelling just 20km/hr slower (30km/hr). As such, vehicle speed is a very important factor when considering on-street active transportation facilities. When traffic calming efforts to slow vehicle traffic or reduce volumes are achieved, the roadway is generally much safer and more comfortable for active transportation users and the AT infrastructure capital costs may be reduced.

30km/hr speed limit on 10th Avenue N

Existing vehicle speeds were analyzed by comparing posted speed limits with the 85th percentile speeds of roadway segments. The 85th percentile speed is generally acknowledged in the industry as the speed at which a reasonable driver travels and indicates the typical speed that drivers feel comfortable driving on the corridor. **Table 9** shows a summary of roadways in town where speed data is available for routes under consideration for traffic calming or active transportation or pedestrian improvements.

TABLE 9: EXISTING TRAFFIC SPEEDS

Roadway	Posted Speed Limit (km/h)	85th Percentile Speed NB/EB (km/h)	85th Percentile Speed SB/WB (km/h)	85th Percentile Speed Average (km/h)	Difference (km/h)
10th Ave N (70m North of Hillside St)	30	47	44	46	+16
10th Ave N (20m South of Scott St)	30	42	37	40	+10
20th Ave N (30m South of Vancouver St)	30	43	44	43	+13
Canyon St (Near 6th Ave N - Midway Up Hill)	50	52	55	54	+4
16th Ave (Near Library)	50	50	48	49	-1
16th Ave (Near Millennium Park)	50	46	50	48	-2
Cavell St (180m East of Northwest Blvd)	50	40	44	42	-8
Hillside St (30m East of 12 Ave N)	50	45	45	45	-5
Devon St (40m West of 7 Ave N)	50	41	35	38	-12
Payne St (160m East of Northwest Blvd)	50	28	41	35	-15
11th Ave S (50m North of Erickson Rd)	50	28	42	35	-15
9th Ave S (130m South of Cook St)	50	42	40	41	-9
Valleyview Dr (70m East of Hawkview Dr)	50	61	64	62	+12
Erickson Rd (Near Centennial Park)	50	63	63	63	+13

Valleyview Road and Erickson Road have a high 85th percentile speed of ~63km/hr. This is not unexpected as they are wide rural roads. The roads with a 30km/hr posted speed limit show an excess of drivers travelling over the speed limit. These roads have a wide paved width and have not undergone traffic calming measures to match the lower posted speed limit. Typically, a reduction in speed limit is not enough to affect driver behaviour if the road's design allows for drivers to travel at a high rate of speed while feeling comfortable. Traffic calming can be an important tool for these situations. Specific road segments are discussed further in **Section 5.2.4**.

5.1.8 TRAFFIC CALMING APPROACH

The Town of Creston currently has a high-level calming traffic policy. Typically, traffic calming policies are useful in providing guidance and streamlining the decision-making process. Traffic calming was identified several decades ago as a method to retrofit roadways that were originally overbuilt / over-designed and were not functioning as intended. The original focus was on local roads that were built to have a default speed limit of 50km/h in BC. However, since collector and arterial streets have also been overbuilt, requests for traffic calming are received for all road classifications. Implementing traffic calming on collector roads typically requires a higher threshold than local roads as the function of these roads is to balance access with mobility of traffic. Arterial roads do not typically receive traffic calming as the goal (function) of these roads is to not impede traffic flows / speeds. Traffic calming for arterial roads is more about speed management than traffic control devices as the volume of traffic on an arterial is rarely an issue.

Creston has received a steady flow of requests from individuals for traffic calming, speed management, and general corridor safety improvements. The current process of all individual requests for traffic calming has created a backlog and requires significant amounts of staff time to review and evaluate each request. In addition, with many locations being identified for traffic calming there is no process to rank or prioritize the locations. Not all locations identified for traffic calming will be able to be studied immediately nor implemented due to the number of requests.

5.1.9 FOCUS INTERSECTIONS

The following focus intersections were reviewed further to identify potential issues using the information and data collected for the traffic volumes, collisions, and speeds. These intersections have been chosen for analysis based on geometric or operational issues as well as higher collision rates.

COOK STREET / CANYON STREET (HWY 3) / 10 AVENUE N

This is a signalized intersection with four legs. ICBC data indicates that the pedestrian crossing on the east leg has a poor sightline due to the building on the southeast corner. The building has no setback from the sidewalk. The eastbound right from Canyon Street onto Cook Street is also of concern due to alignment. It has a yield condition but vehicles making this movement can drive straight onto Cook Street without reducing speed to make the maneuver. This puts pedestrians crossing to the splitter island, as well as bicycles and vehicle

traffic southbound on Cook Street, at risk for a side impact collision. The sidewalk ramps on the splitter islands do not have a proper smooth transition or yellow tactile warning strips.

Cook Street / Canyon Street (Hwy 3) / 10 Avenue N intersection looking west. Building on left side of photo creates a sightline concern for northbound traffic and the pedestrian crossing on the east leg.

NORTHWEST BOULEVARD (HWY 3) / DEVON STREET N

This is a stop-controlled tee intersection, where Devon Street is the stop-controlled approach. Although ICBC data does not indicate an issue, there is an existing driveway in very close proximity to the intersection on Devon Street for the popular Tim's Fish and Chips restaurant, which creates conflicting turning movements in very close proximity to the intersection. Devon Street also intersects Northwest Boulevard (Hwy 3) at a skew angle which could be improved. There is also a pedestrian desire line at this intersection across the highway that has no formalized infrastructure.

NORTHWEST BOULEVARD (HWY 3) / HILLSIDE STREET / 7TH AVENUE

This is a stop-controlled intersection for the approach from the east, where Hillside Street and 7th Avenue intersect Northwest Boulevard (Hwy 3) very close to each other and at a skew. This creates a very large swath of asphalt in the intersection and makes turning movements awkward westbound on Hillside Street or southbound on 7th Avenue as vehicles need to queue in the middle of the intersection, which has led to a couple of collisions. The pedestrian crossing on the west leg is also very long. This makes crossing the intersection as a pedestrian unsafe since westbound queuing vehicles need to pull quite far into the

intersection to gain an adequate sightline of Northwest Boulevard (Hwy 3), which could block the view of pedestrians hidden behind queuing vehicles.

NORTHWEST BOULEVARD (HWY 3) / HELEN STREET / COLLIS STREET

This is a stop-controlled four-legged intersection, where Helen Street / Collis Street are the east and west legs of the intersection respectively and are both stop-controlled. There is a busy Tim Horton's location on the east leg that results in westbound left queuing during the morning rush. There is also the potential for a McDonald's location on the west leg. ICBC data does not indicate any trends in vehicle collisions. Pedestrian crossing distances on the east and west leg are long as the corner radii are large.

NORTHWEST BOULEVARD (HWY 3) / MURDOCH STREET

This is a stop-controlled tee intersection, where Murdoch Street is the stop-controlled approach. Murdoch Street intersects Northwest Boulevard (Hwy 3) at an extreme skew angle at grade and allows for both westbound left and right turns to be made. The extremely large skew angle makes it difficult for stopped vehicles on Murdoch Street to shoulder check properly while checking their blind spot for vehicles and bicycles and to make the right turn onto Northwest Boulevard as the turning radius is extremely tight and may require vehicles to over track into the oncoming southbound lane to make the maneuver. The angle of the approach makes it difficult for those with mobility challenges to manage the side slope at the northeast sidewalk letdown. A residential driveway is also located in very close proximity to the intersection, which has caused an accident due to turning conflicts. That coupled with the northbound left turn bay for Valleyview Drive overlapping the intersection and the rail yard driveway west of Northwest Boulevard all add up to an intersection with many conflicting movements.

NORTHWEST BOULEVARD (HWY 3) / REGINA STREET

This is a stop-controlled tee intersection, where Regina Street is the stop-controlled approach. Regina Street intersects Northwest Boulevard (Hwy 3) at an extreme skew angle at grade, however, notably less of a grade than that of Murdoch Street. The extremely large skew angle makes it difficult for stopped vehicles on Regina Street to shoulder check properly while checking their blind spot for vehicles and bicycles or to turn onto Northwest Boulevard as the turning radius is extremely tight and may require vehicles to over track into the oncoming southbound lane to make the maneuver. The existing sidewalk letdowns for the crossing are adequate for those with mobility issues.

NORTHWEST BLVD (HWY 3) / VALLEYVIEW DRIVE

This is a stop-controlled tee intersection, where Valleyview Drive is the stop-controlled approach. Valleyview Drive intersects Northwest Boulevard (Hwy 3) at a very shallow skew angle. ICBC collision data indicates that 50% of crashes at this intersection are due to the skew angle. The southbound right onto Valleyview Drive is restricted but vehicles still try to make this illegal maneuver, often crossing into opposing traffic to complete the turn. The extremely shallow skew angle also makes it difficult for stopped vehicles on Valleyview Drive to shoulder check properly while checking their blind spot for vehicles and bicycles. Currently, no pedestrian crossings exist however this is one location where the road network crosses the CP Rail tracks and provides a legal crossing of the tracks. Without proper improvements to this intersection to improve the skew and visibility, pedestrians will continue to use the desired lines north of this intersection to cross Northwest Boulevard, where they feel safer and more visible.

NORTHWEST BOULEVARD (HWY 3) / CAVELL STREET

This is a stop-controlled tee intersection, where Cavell Street is the stop-controlled approach. ICBC data indicates that turning vehicle-to-vehicle collisions are the main issue. Sightlines are adequate and the intersection is well laid out with a southbound left turning bay provided on Northwest Blvd (Hwy 3). It is likely no geometry adjustments are required to the existing legs. There is no pedestrian crosswalk on the east leg as pedestrians are accommodated via a midblock crossing further north on Cavell Street. There is also a pedestrian desire line from Valleyview Drive across the railway tracks to the Creston Valley Mall near Cavell Street. Pedestrians are making this crossing present day without any formalized infrastructure.

CANYON STREET (HWY 3) / CRAWFORD STREET (NEAR 20th AVENUE N)

This is a stop-controlled tee intersection, where Crawford Street is the stop-controlled approach. Crawford Street intersects Canyon Street (Hwy 3) at a very shallow skew angle. ICBC data indicates that there have been two rear-ender vehicle-to-vehicle collisions while vehicles were waiting to turn left onto Crawford Street. One possible cause for this is that Canyon Street is very wide and undefined as there is a large area of asphalt on the north side of the road between 20th Avenue N and Crawford Street, as well as on the south side of the road adjacent to the retail parking lot. Concerns have also been raised for westbound traffic on Crawford Street looking to make a right turn onto Canyon Street. Due to the intersection's current configuration, it is difficult for vehicles to shoulder check left with the shallow skew angle and difference in elevation. These vehicles tend to treat the intersection as a merge

condition given the excessive paved width. Just to the west, Canyon Street and 20th Avenue N has a zebra crosswalk with an overhead sign on the west leg of the intersection. This intersection marks the crossing from a rural highway environment to a more urbanized downtown environment. As such, vehicles are travelling at a higher rate of speed westbound and are less likely to notice pedestrians looking to cross the highway.

5.1.10 KEY ISSUES

- Enhancements to the existing overly car-centric road cross-sections are required to address safety, speeding, and accommodation of sustainable modes.
- There is the perceived issue of traffic congestion within the Town. However, Level of Service analysis has indicated that intersections examined operate with an excellent level of service in the PM peak period.
- All focus intersections are on the MOTI managed highways of Canyon Street (Hwy 3) and Northwest Boulevard (Hwy 3). Coordination with MOTI staff will be required to implement intersection adjustments and needed safety improvements.
- Updates to the Town's transportation policies are needed to support and advance the improvements in the road network.

5.2 ROAD NETWORK TOMORROW

5.2.1 ROAD CLASSIFICATIONS

No modifications to the existing roadway classifications are being recommended as part of the MMTP in the immediate term. However, the Town should revisit their road network classifications every ten years to ensure the street network is functioning as desired.

5.2.2 COMPLETE STREET ROAD CROSS-SECTIONS

The following outlines the recommended updates to the Town's existing road cross-sections to improve mobility for all users. These cross-sections would demonstrate ideal complete street elements for roads in Creston if they were to be built as new roads. Complete streets refer to streets that are designed and operated to enable safe and comfortable use for all users irrespective of age or ability. Upon acceptance of these new cross-sections, the Town should update the Works and Services Bylaw 1170 (Appendix A), to reflect the new road cross-sections.

These new cross-sections should be utilized for new roads in subdivisions, for future connections, and when re-building of a corridor is identified. This re-building may not be

solely based on the need for asphalt replacement (assess management) purposes, but also if major sanitary, storm, and / or water replacement projects are required within the road right-of-way.

These complete street cross-sections were developed to meet best practices by reducing the oversized paved width of many of the Town's cross-sections by introducing elements such as landscaping zones, multi-use pathways, and dedicated pedestrian and cycling space while accommodating all modes of transportation in a safe and slower way.
Arterial and collector cross-sections are prefaced by urban and rural with two considerations required to identify the appropriate sub-category: adjacent land use and the presence of curb and gutter versus edge of pavement / shoulders.

What Are Complete Streets?
"A Complete Street is designed for all ages, abilities and modes of travel, where safe and comfortable access for pedestrians, cyclists, transit users and people with disabilities is integrated into transportation planning."
-Complete Streets of Canada

New rural cross-sections should only be in residential areas where the lots are greater than 1,000 m^2 and / or zoned agricultural. For existing residential neighbourhoods with lots less than 1,000 m^2 and a rural cross-section, these roads do not require upgrading unless a major project is considered for the corridor and if there are associated storm sewers planned or in place.

New roads should be constructed as urban when the adjacent land use is single-family residential (lots 1,000 m^2 or less), multi-family residential, institutional (schools, churches, recreation), and commercial (retail/office).

Local roads will have three road cross-sections which will be determined by the adjacent land use:

- Rural cross-sections are for residential areas where the lots are greater than 1,000 m^2 and / or zoned agricultural.
- Residential cross-sections are for single-family residential lots less than 1,000 m^2 These may include residential zones with suites (if permitted) but excludes duplexes and townhouses.
- Urban cross-section is for roads that include a mixture of single-family and multi-family (townhouses / apartment / condominiums), multi-family only, and mixed-use buildings (ground floor commercial with residential above).

Sidewalk tree with approximate 1.2m of space allocated. Image retrieved from: https://en.wikipedia.org/wiki/Tree_grate#/media/File:Tree_guard_-_panoramio.jpg

Landscaped buffer zones with trees should maintain a 2.0m minimum width to give trees the space they need to thrive. Sidewalk trees also need space, 1.2m is ideal. An arborist should be consulted on appropriate species for all road corridor plantings.

Table 10: Road Cross-section Summary**,** shows the various design parameters recommended for new cross-sections.

TABLE 10: ROAD CROSS-SECTION SUMMARY

FACILITY TYPE	Adjacent Land Use	ADT (vpd)	ROW	Travel Lane	Travel Way*	Shoulder (paved)	Multi-use Pathway	Bicycles **	Sidewalk ***	On-Street Parking	Buffer ****
Rural Arterial	Residential > 1,000 m^2	3,000 to 12,000	26.4m	3.5m	n/a	✓ 0.5m	✓ 3.0 to 4.0m	×	×	×	✓ 2.0m to 6.2m
Urban Arterial	Mixed-use; Commercial; Multi-family	5,000 to 30,000	20m to 22m	3.5m	n/a	×	✓ 4.0m (option)	✓ 2.0m	✓ 2.0m to 3.0m	×	✓ 2.0m
Rural Collector	Residential > 1,000 m^2	1,000 to 5,000	25m	3.3m	n/a	✓ 0.5m	✓ 3.0 to 4.0m	×	×	✓ 2.4m on one side	✓ 2.0m to 4.5m
Urban Collector	Mixed-use; Commercial; Multi-family	3,000 to 8,000	20m	3.3m	n/a	×	×	✓ 1.8m	✓ 1.8m	✓ 2.4m on one side	✓ 1.9m
Rural Local	Residential > 1,000 m^2	< 1,000	18m to 19m	n/a	5.0 to 6.0m	×	✓ 1.8m	✓ none	×	✓ 2.4m on one side	✓ 4.4m
Residential Local	Single-family < 1,000 m^2	< 1,000	16m to 17m	n/a	5.0 to 6.0m	×	×	✓ none	✓ 1.8m	✓ 2.4m on one side (alt.)	✓ 2.5m
Urban Local	Mixed-use; Commercial; Multi-family	< 3,000	20m	n/a	5.0 to 6.0m	×	×	none	✓ 1.8 to 3.0m	✓ 2.4m both sides	✓ 1.0 to 2.0m
Lane	Rear access	< 1,000	8m	n/a	6.0m	×	×	none	1.5m	×	×

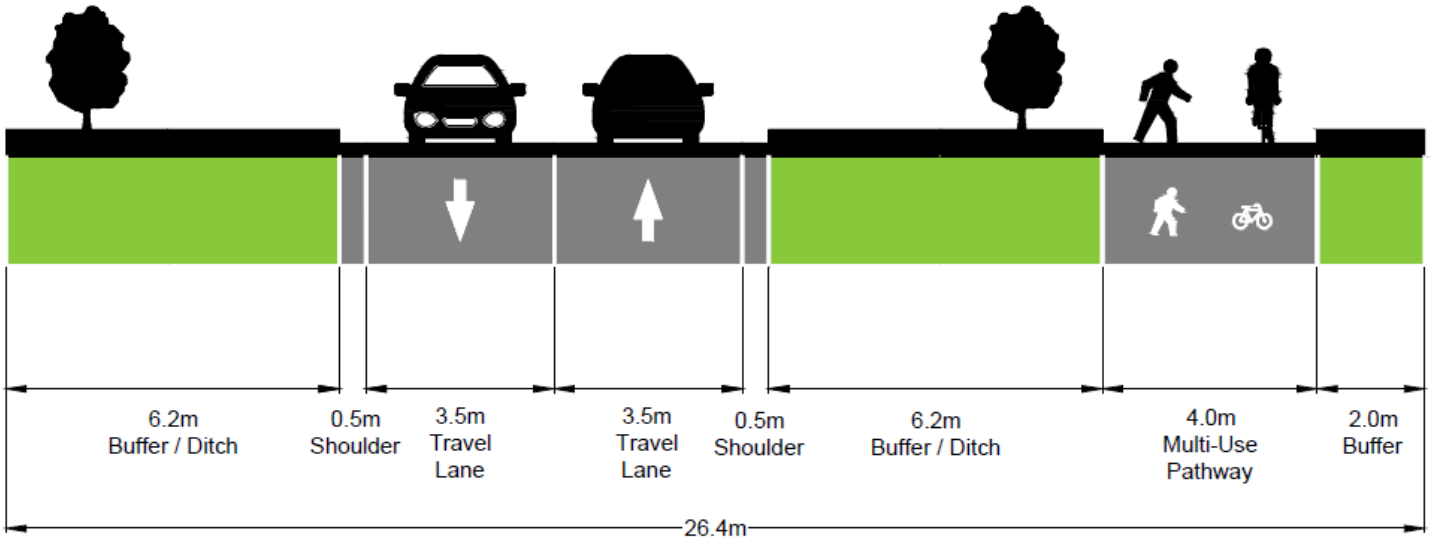
* Travel way is based on two-way traffic and no centerline.

** Excludes buffer width between vehicle lanes and bicycles to create protection on arterial / collectors and between pedestrians and bicycles on arterial roads

*** Excludes curb width.

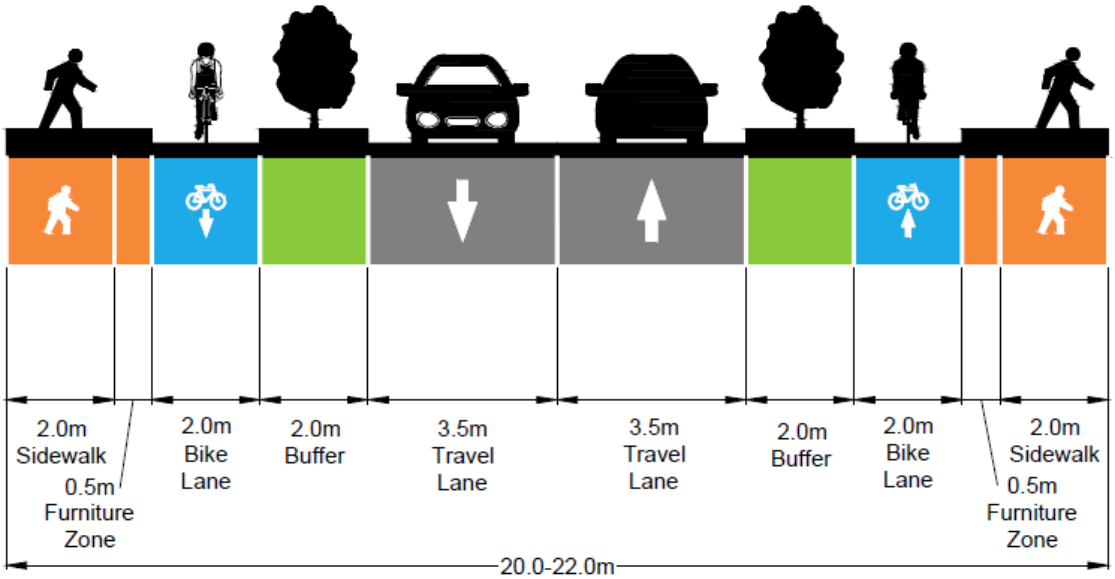
**** Intended to be landscape buffer and space for utilities and lighting.

Rural Arterial



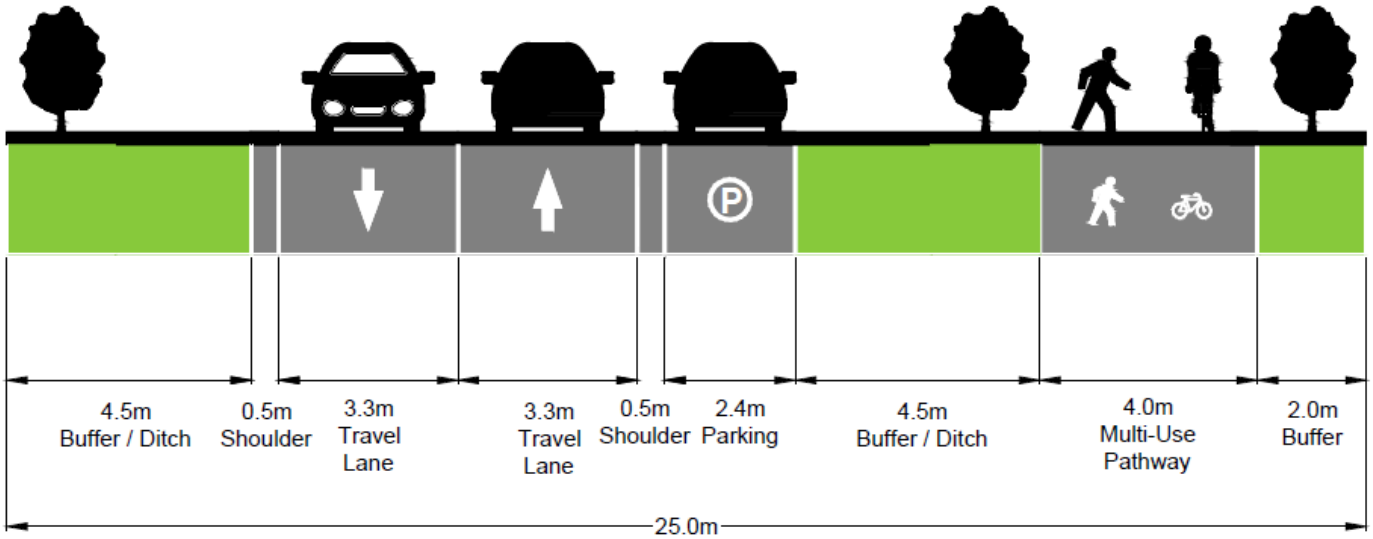
*Minimum buffer between pathway and shoulder is 0.6m.
**For existing 18m ROW reduce buffers
*** Buffers accommodate 0.8m deep ditch with 4:1 side slopes.

Urban Arterial



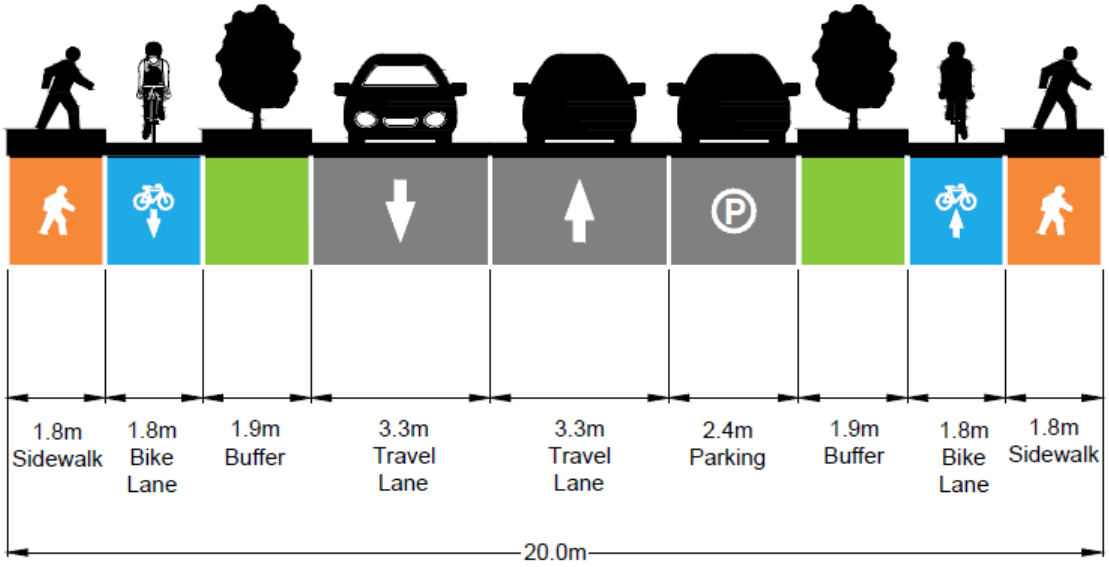
*Add an additional 1.0m to sidewalk and RoW on each side for central business district areas.
**Option to replace sidewalk and bike lanes with a 4.0m MUP on both sides of the road.
***For existing 18m ROW reduce buffers to 1.0m with sidewalk trees or omit bike lanes.

Rural Collector

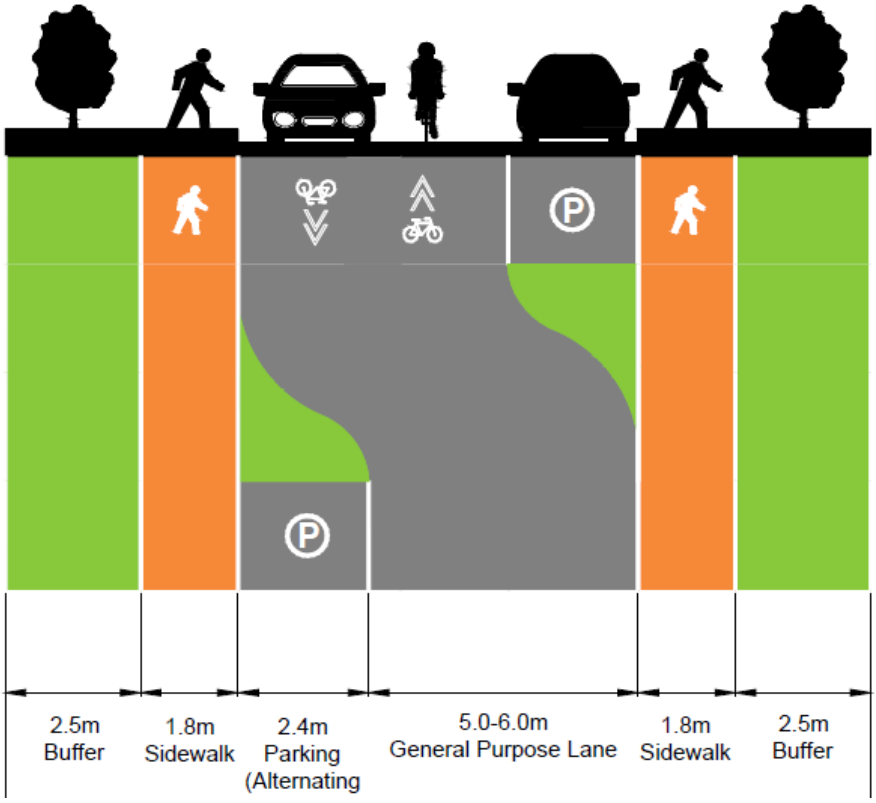


*For existing 18m ROW reduce/remove buffer right of MUP.
** Buffers accommodate 0.6m deep ditch with 4:1 side slopes.

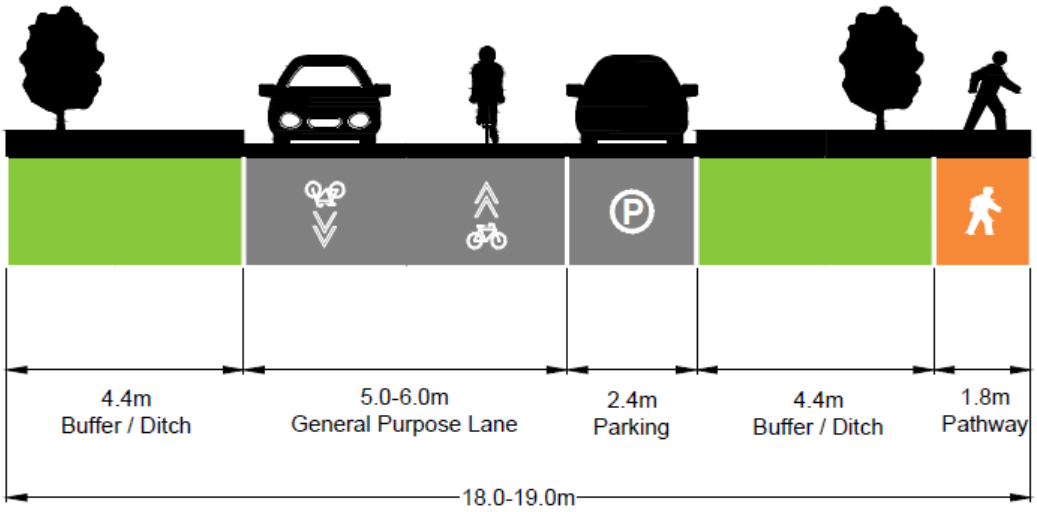
Urban Collector



Residential Local

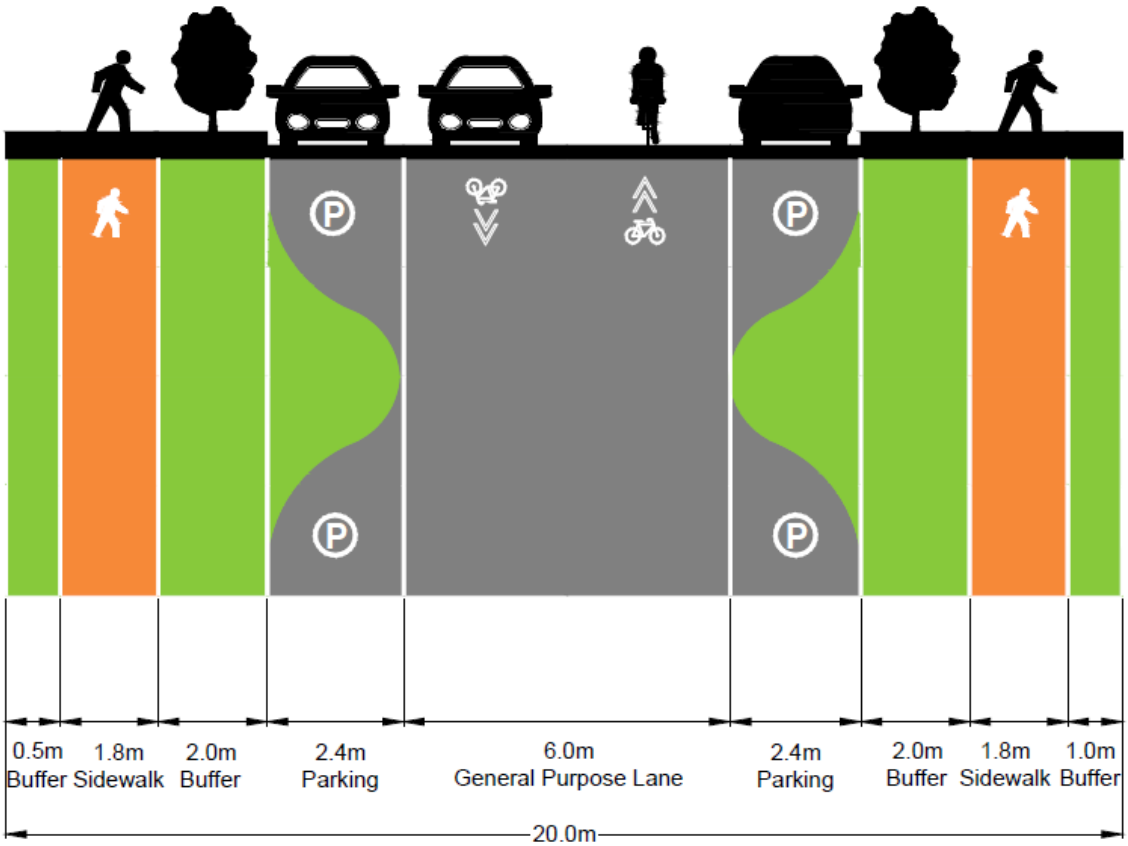


Rural Local



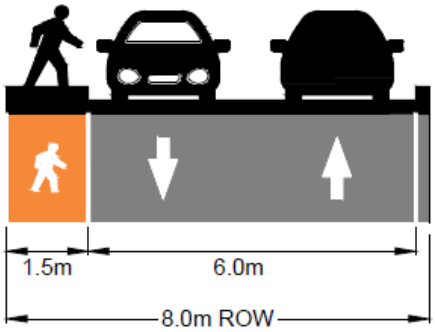
*For existing 13.5m ROW reduce buffer adjacent to parking.
** Buffers accommodate 0.6m deep ditch with 4:1 side slopes.

Urban Local



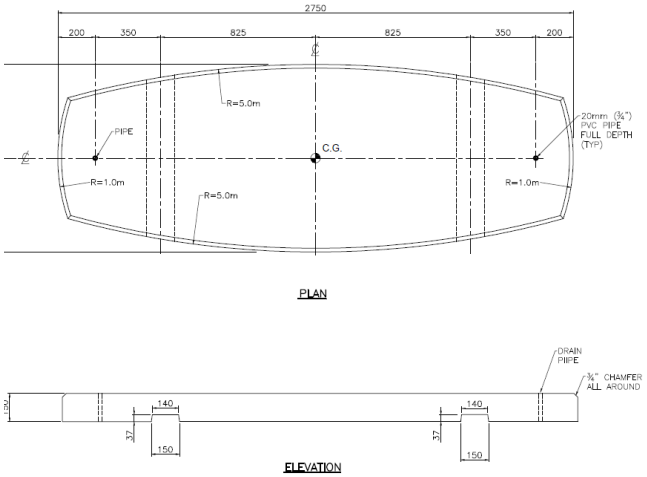
*For existing 18m ROW omit buffer adjacent to parking on one side.

Lane



5.2.3 TRAFFIC CALMING SOLUTIONS

The Town already utilizes traditional traffic calming techniques such as speed humps to slow vehicles or curb extensions to narrow the roadway and reduce corner radius. There are also more temporary or interim traffic calming techniques that can prove valuable as often more permanent materials such as concrete result in high construction costs, or additional drainage work being required that may cause a traffic calming project to be cost prohibitive. Using temporary traffic calming curbs that are designed with the safety of people walking, cycling and driving in mind, have been found to be a cost-effective measure to enforce traffic calming goals, create safer environments for people who walk and cycle. The placement of the traffic calming curbs will narrow the road at key crossings, reducing the crossing distance for people walking and cycling, and in turn, making them more visible to people driving. They can also be used for vehicle diversion or other directional closures. The ability to pilot an improvement before implementing a more permanent option is also a strong reason to consider the use of these curbs. Given this aspect, the Town can implement these as a solution to traffic calming requests in the short term as part of their 1-3 year action plan.



Temporary Traffic Curbs Design Detail

Temporary Traffic Curbs

Temporary Traffic Calming Curbs used to narrow the roadway in Kelowna. BC

Example of corner radius reduction in Calgary, AB.

5.2.4 ROAD SEGMENT ASSESSMENTS

10th AVENUE N (CAVELL STREET TO HILLSIDE STREET)

10th Avenue N is a collector signed for 30km/hr. The road had grade and crests in the middle between the two count locations. Faster speeds are observed in the northbound direction and 85th percentile speeds are 10-16km/hr higher than the posted limit. The roadway is wide (11.2m near Hillside Street, 12.2m near Scott Street) and does not have a painted centerline. Parallel parking is allowed on both sides but is underutilized which results in an effetely wider drive lane. Sidewalk is provided on the east side of the road south of Murdoch St. See photos below. Assuming parking is only on one side, the lane width for each direction is approximately 4.5m. This is wide and allows drivers to be comfortable while speeding. 10th Avenue N between Cavell Street and Hillside Street is not designated as an active transportation corridor as a part of the MMTP. Although, the roadway could benefit from traffic calming to increase pedestrian safety. Speed humps or curb extensions could be utilized along the corridor to reduce vehicle travel speeds. This will make the roadway safer for pedestrians looking to cross the road at intersections that have poor sightlines due to the crest curve geometry.

Looking south on 10th Avenue N near Hillside Street

Looking north on 10th Avenue N Near Hillside Street

Looking north on 10th Avenue N near Scott Street

20th AVENUE N (CANYON STREET TO HILLSIDE STREET)

20th Avenue N is similar to that of 10th Avenue N. It is a collector signed for 30km/hr. The road has grade and crests in the middle with vertical grades up/down on either side. The 85th percentile speed is 13km/hr higher than the posted limit. The roadway is wide (10.2m) and does not have a painted centerline. Parallel parking is allowed on both sides but is underutilized which results in an effetely wider drive lane. Sidewalk is not provided. See photos below. Assuming parking is only on one side, the lane width for each direction is

approximately 4.0m. This is wide and allows drivers to be comfortable while speeding. 10th Avenue N between Cavell Street and Hillside Street is not designated as an active transportation corridor as a part of the MMTP but is designated for the addition of a sidewalk on the west side of the road. Given the sightline concerns due to the crest curve, the roadway could benefit from traffic calming. If the proposed west sidewalk is constructed in the existing paved width, it will narrow the driving width to 6.2m. This is an appropriate width that can serve as a traffic calming measure.

Looking south on 20th Avenue N

Looking north on 20th Avenue N

16th AVENUE S (COOK STREET TO ERICKSON ROAD)

16th Avenue S is an arterial truck route with a 50km/hr posted speed limit. It links Canyon Street (Highway 3) with Erickson Rd. The 85th percentile speeds are 1-2km/hr below the posted limit at the Library and Millennium Park count locations. In these areas, there is a horizontal curve and centerline which aids in slowing vehicle traffic inline with the speed limit. The roadway is wide (9.7-10.0m) and has a painted centerline. Parallel parking is not permitted on either side but sidewalk is provided on both sides near Millennium Park and one side near the library. See photos below. The lane width for each direction is approximately 4.4m. Volumes are 5000 veh/day. Given the 50km/h speed limit, truck route, and higher vehicle volumes, it is not recommended to install traffic calming on this corridor. As a part of the active transportation network plan, a grade-separated MUP is planned for the west side of the road between Cook Street and Cedar Street and between the library and Erickson Road. This will provide an option to separate vehicle and active transportation uses on the corridor.

16th Avenue S looking south near Millennium Park

16th Avenue S looking north near Millennium Park

16th Avenue S looking north near library

16th Avenue S looking south near library

HILLSIDE STREET (10TH AVENUE N TO 20TH AVENUE N)

Hillside Street is a collector signed for 50km/hr. The road has grade and crests in the middle with vertical grades up/down on either side. The 85th percentile speed is 5km/hr lower than the posted limit. The roadway is wide (13.4m between 10th Ave N and 16th Ave N) and does not have a painted centerline. Parallel parking is allowed on both sides but is underutilized which results in an effectively wider drive lane. Sidewalk is provided on the north side of the road west of 16th Avenue N while no sidewalk is available east of the intersection. See photos below. Assuming parking is only on one side, the lane width for each direction is approximately 5.6m. This is wide and allows drivers to be comfortable while travelling 45km/hr. The roadway could benefit from traffic calming since the sightlines at the crest of the hill are poor. Hillside Street between 10th Avenue N and 20th Avenue N is part of the planned quick-build active transportation network. Painted bike lanes are proposed west of 16th Avenue and a separated MUP east. This measure will effectively act as traffic calming since the bike lanes will narrow the paved driving width, which should result in slower vehicle speeds.

Hillside Street looking east near 16th Avenue N

Hillside Street looking east near 10th Avenue N

5.2.5 SAFETY IMPROVEMENTS AT FOCUS INTERSECTIONS

Proposed safety improvements all fall within the 1-10 year tactical plan at key focus intersections, All of the measures discussed below aim to improve comfort and safety for all road users. They are arranged in order of priority and detailed below.

COOK STREET / CANYON STREET (HIGHWAY 3) / 10 AVE N

The crosswalk letdown on the southeast corner of the east leg should be relocated closer to the corner to provide a better sightline between vehicles and pedestrians making the crossing, see **Figure 4**.

Figure 4: Cook Street / Canyon Street (Hwy 3) / 10 Ave N Crosswalk Relocation

Due to alignment, the eastbound right from Canyon Street onto Cook Street is also of concern. It has a yield condition but vehicles making this movement can drive straight onto Cook Street without reducing speed to make the maneuver. This puts other vehicles, pedestrians, and cyclists in danger. Modifying the curb radius between the corner and the channelized right ensures vehicles actually yield as they make their right turn. This is referred to as a smart channel right turn, see **Figure 5**. When the smart channel right turn is constructed, all pedestrian sidewalk letdowns should be upgraded to have proper, smooth, curb transitions with yellow tactile strips added. It is worth noting that any changes to the south-west corner should be coordinated with plans for the Market Park spiral ramp.

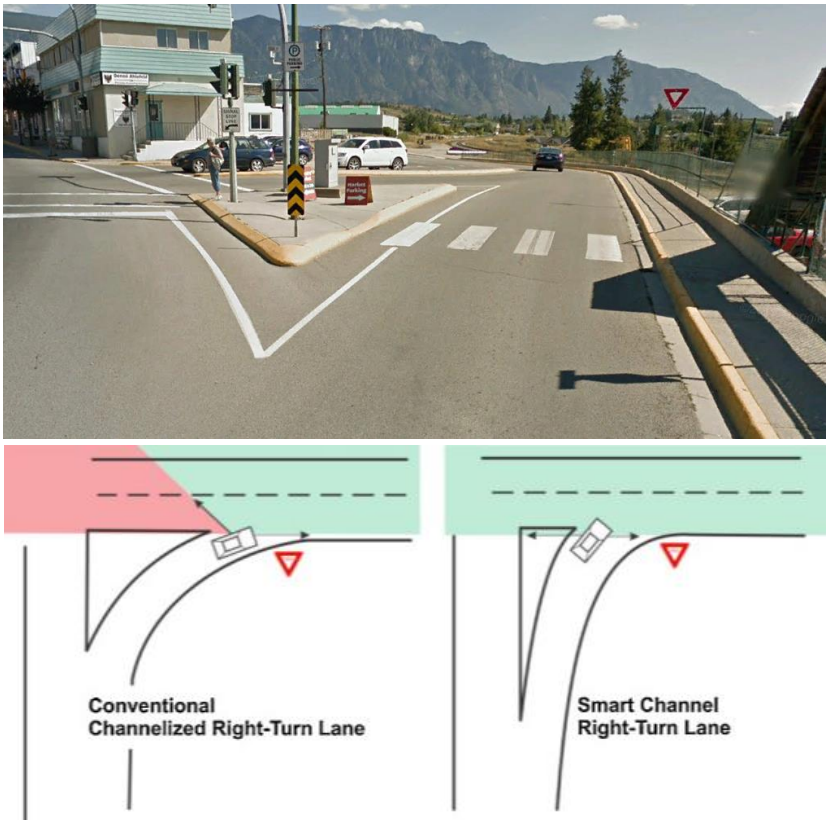


Figure 5: Cook Street / Canyon Street / 10 Ave N Channelized Smart Right Turn

NW Corner re-design / Removal of Channel Island

The north-west leg has an undersized splitter island that cannot accommodate more than one person/bike/stroller. Adjusting the NW corner will also allow the reduction of the offset between the southbound through, and northbound left / splitter island It is recommended to:

- Remove the island to make a 90-degree right turn.
- Build out the corner to allow for multiple users and bikes to transition between multi-use paths (MUP) / Market Park to protected bike lanes.
- Add cross-bikes and crosswalks, see Figure 6.

Channelized island on NW corner of the Cook Street / Canyon Street (Hwy 3) / 10 Ave N intersection can only fit person/bike/stroller

Figure 6: Potential Improvements to the North-West Corner of the Cook Street / Canyon Street (Hwy 3) / 10 Ave N Intersection

NORTHWEST BOULEVARD (HIGHWAY 3) / DEVON STREET N

Devon Street also intersects Northwest Boulevard (Hwy 3) at a skew angle which could be improved. The alignment should be changed such that Devon Street N intersects Northwest Boulevard (Hwy 3) at a 90-degree angle. This would have the added benefit of creating space to route the driveway of the restaurant on the northeast corner further on Devon Street N and away from the intersection. The left turn bay for Devon Street S on Northwest Boulevard (Hwy 3) should be reduced in length and the additional space utilized for a new southbound left from Northwest Boulevard (Hwy 3) onto Devon Street N, see **Figure 7**. Some property acquisition from the corner of #1042 Northwest Boulevard may be required.

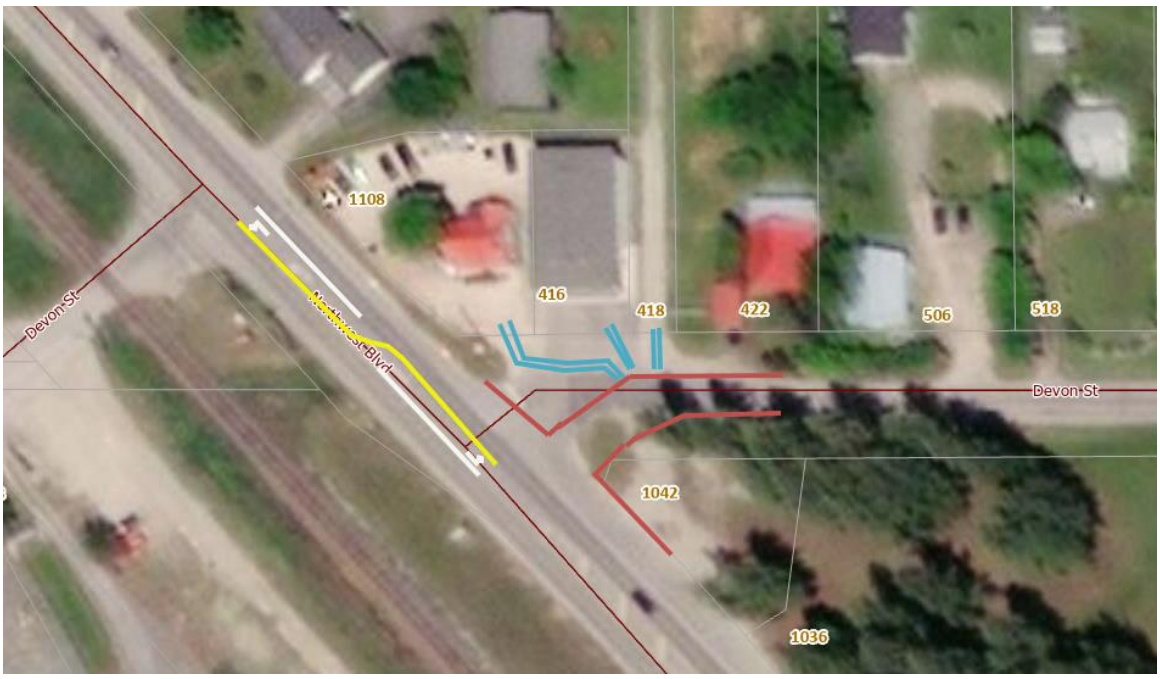


Figure 7: Northwest Boulevard (Hwy 3) / Devon Street N Realignment

NORTHWEST BOULEVARD (HIGHWAY 3) / HILLSIDE STREET / 7TH AVENUE

There is a very large swath of asphalt in the intersection which makes turning movements awkward westbound on Hillside Street or southbound on 7th Avenue. Currently, vehicles need to queue in the middle of the intersection. The low-volume 7th Avenue's access should be restricted to outbound traffic only. This would cut down on the area of the intersection to reduce collisions and make pedestrian crossings safer, see **Figure 8**.

The orange area in the illustration would require a concrete infill, or could be piloted first with the use of traffic calming curbs. Operationally for garbage pickup, homes along 7th Avenue N would need to place their bins on the west or north side of the road.

Figure 8: Northwest Blvd / Hillside St / 7th Ave Intersection Reconfiguration

NORTHWEST BOULEVARD (HIGHWAY 3) / HELEN STREET / COLLIS STREET

Pedestrian crossing distances on the east and west leg are long as the corner radii are large. In the short term, efforts should be made to tighten corner radiuses with paint lines and provide pedestrian crossing markings on the east and west legs. Long-term, development on Collis Street dictates the need for signalization or a roundabout in the future. Pedestrian movements and infrastructure should be included in consideration for each.

NORTHWEST BOULEVARD (HIGHWAY 3) / MURDOCH STREET

Due to the extreme skew angle, grade of the intersection, and close driveway proximity, this low volume access should be restricted to outbound traffic only. This is especially true if active transportation facilities are constructed on Northwest Boulevard (Hwy 3) in the future. This would limit the turning conflicts with the driveway of #438 Northwest Boulevard, eliminate the northbound left turn that is overlapping the intersection and the rail yard driveway and improve the tight right turn radius off of Murdoch Street, see Figure 9. The orange area in the illustration would require a concrete infill or could be piloted first with the use of traffic calming curbs. Operationally for garbage pickup, homes along Murdoch Street would need to place their bins on the west or north side of the road.

Figure 9: Northwest Blvd / Murdoch St Intersection Reconfiguration

Figure 10: Northwest Blvd / Regina St Intersection Reconfiguration

NORTHWEST BOULEVARD (HWY 3) / REGINA STREET

Due to the extreme skew angle and grade of the intersection, this low-volume access should be restricted to inbound traffic only. This is especially true if active transportation facilities are constructed on Northwest Boulevard (Hwy 3). This would eliminate the shoulder check and sightline issues, see **Figure 10**. The orange area in the illustration would require a concrete infill, with the road closed to westbound traffic further upstream at the #609 Regina St driveway. Operationally for garbage pickup, homes along Regina Street would need to place their bins on the south side of the road. A couplet is formed with the reconfiguration of the Northwest Boulevard / Regina Street and Northwest Boulevard / Murdoch Street intersections.

CANYON STREET (HWY 3) / CRAWFORD STREET (NEAR 20th AVENUE N)

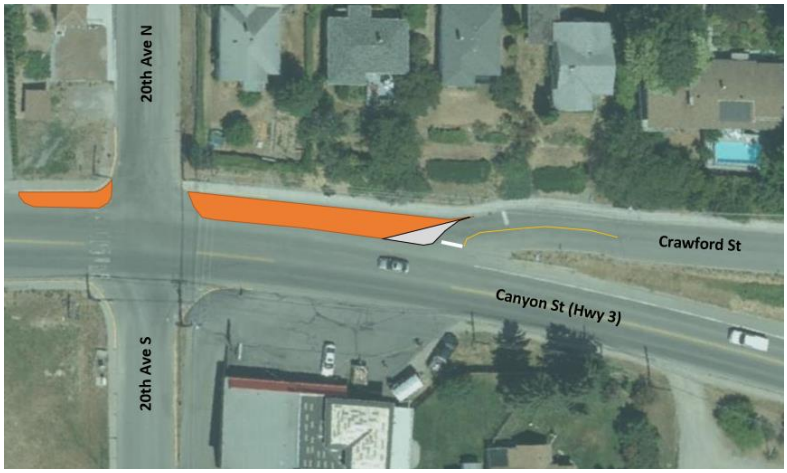


Figure 11: Canyon St / Crawford St Intersection Improvements

Due to the extreme skew angle, large unused asphalt area, and grade change of the intersection, geometric changes could improve the intersection's safety. **Figure 11** illustrates the proposed changes. The orange area is envisioned as a landscaped area and the grey area is a stamped concrete truck apron to allow for their larger turning radius. The improvements will help to define the road cross-section, slow Crawford right turning traffic, and enhance the sightline at the Crawford Street stop sign. A curb extension should also be considered at the 20th Avenue N crosswalk. This will increase the visibility of pedestrians looking to cross the road and decrease the crossing distance on the first crosswalk at the east edge of town.

5.2.6 CANYON STREET RETROFIT

Work began in 2015 on constructing the first step to achieving the overall vision to realign Highway 3 from Canyon Street to Cook Street, with work being completed on the intersection at Pine Street and Northwest Boulevard. The future work is still aimed to allow residents, businesses, and visitors alike to reclaim the commercial core from highway traffic and create a more pedestrian-focused community hub, revitalizing the downtown, and spurring more economic growth for the Town.

People need locations to linger and socialize, to recreate and enjoy the downtown experience, of being on Canyon Street. Expanded patios, street furniture, even wider sidewalks, greenery, bike parking, artwork, and mini plazas are all examples of infrastructure that can enhance the sense of place.

The limited right-of-way width constrains what is possible and creates the need for compromise. Parking is the primary element that will require compromise to put forth

priorities for the pedestrian realm. Although a sufficient parking supply is available downtown, if some parking was removed, it could be supported by the off-street parking lot, which is connected to Canyon Street by a pedestrian walkway at the intersection of 11 Avenue N and Canyon Street.

Parklets (pop-up patios) provide an excellent example of what can be done streetside to help create a vibrate pedestrian atmosphere in a limited space. Typically, they require the space of one or two parking stalls and are built up to sidewalk level by wooden decking or other means. They have been gaining steam in small and large cities around BC in recent years. The City of Vancouver has put together a parklet information sheet with examples for many of the parklets already implemented[4]. Examples include patio seating, parallel park, bike parking, wider sidewalks with landscaping, and public seating for a place the public can relax and enjoy the vibrancy of the street.

> *"If you plan for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places."*
>
> -William H. Whyte (1980)

Parklet examples in Idaho (left) and Vancouver (right). Left exhibits cafe seating in the space of two parallel parking spaces. Right displays the combination of a wider sidewalk, public seating, and greenery along a stretch of previous parallel parking spaces. Images retrieved from: https://www.idahosmartgrowth.org/the-power-of-the-parklet/ and https://robsonstreet.ca/2019/09/vancouver-streets-parklets-onrobson/

[4] City of Vancouver. (2020). Parklet Info Sheet. Retrieved April 4, 2022 from https://vancouver.ca/files/cov/parklet-info-sheet.pdf

In 2022, discussions are still ongoing with the Town and MOTI, and the MMTP is directed to support this dialogue, by providing multi-modal accommodation thought and direction into the equation for both the interim and ultimate configurations of the space.
A high-level assessment of the Canyon Street downtown corridor was undertaken to determine if it could be retrofitted to a complete street standard that puts an equal priority on pedestrian and vehicle users. The goal being to create a corridor that is still a functional thoroughfare but at the same time more inviting for pedestrians.

CANYON STREET RETROFIT (BETWEEN 10TH AVE N AND 16TH AVE N)

Canyon Street improvements have been broken down into an interim stage and an ultimate configuration as the highway re-alignment project progresses. The interim can be implemented with the current highway configuration. The ultimate can occur if/when the highway is rerouted to Cook Street.

Canyon Street through the downtown core is confined by a narrow 18m right-of-way width. The need to balance many roadway functions limits the corridor as tradeoffs need to be made as it currently serves as the main street and highway through town. The paved width is 12.8m and includes parallel parking on both sides and very wide drive lanes. The sidewalks are 2.7m wide but are constrained due to lamp standards, street trees, parking meters, etc. in the furniture zone next to the curb, see **Figure 12**.

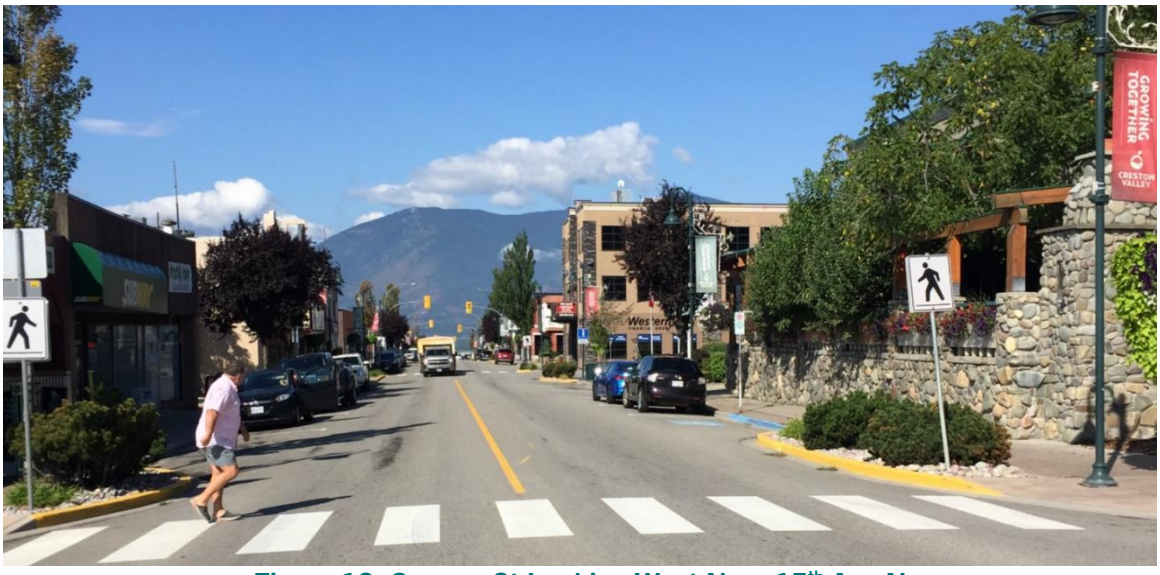
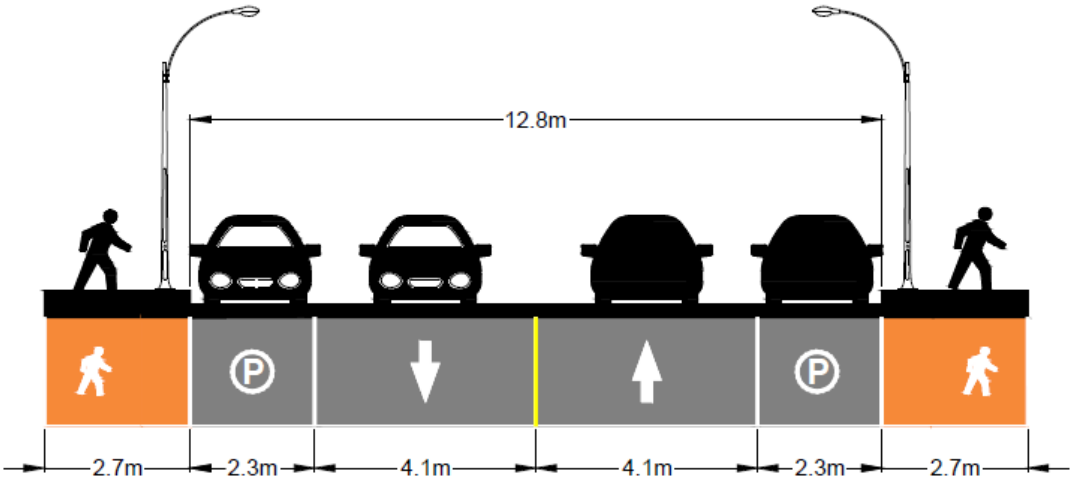


Figure 12: Canyon St Looking West Near 15th Ave N

CANYON ST EXISTING CROSS-SECTION (BETWEEN 10TH AVE AND 16TH AVE)

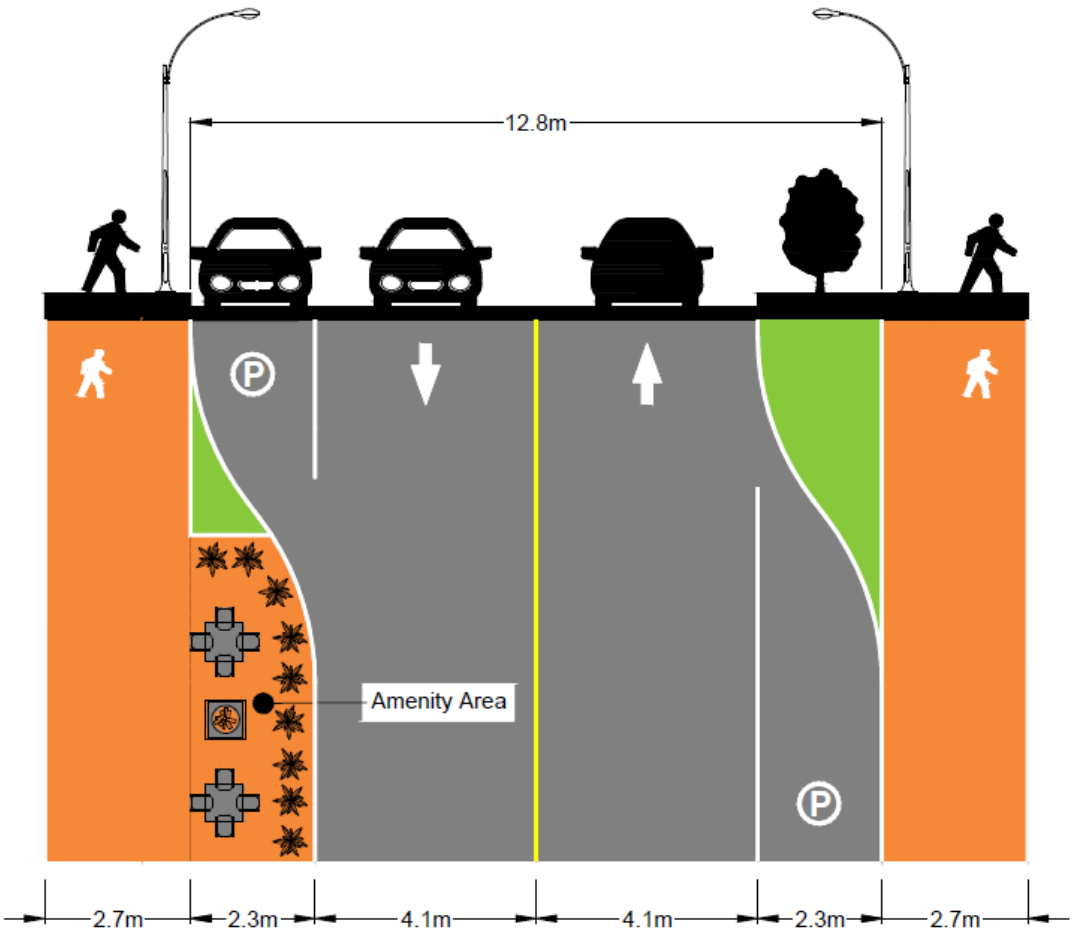


The interim stage maintains the same lane widths and sidewalk width. However, parallel parking is removed from alternating sides of the road to provide for an amenity area, much like parklets, that can be utilized for patio space, street furniture, expanded sidewalk, landscaping, or bike parking among other things. The idea is to alternate the parking/amenity space block to block. This would result in half of the parallel parking being removed from Canyon Street. Additional angle parking can be provided on 12th Avenue S and 15th Avenue S if these two short stretches of road are converted to one-way traffic. The benefits of the amenity space to the pedestrian realm should have a great benefit to creating a sense of place. The character, walkability, and atmosphere of the core will all benefit from the amenity areas provided.

WHAT WE HEARD ABOUT THE CANYON STREET RETROFIT

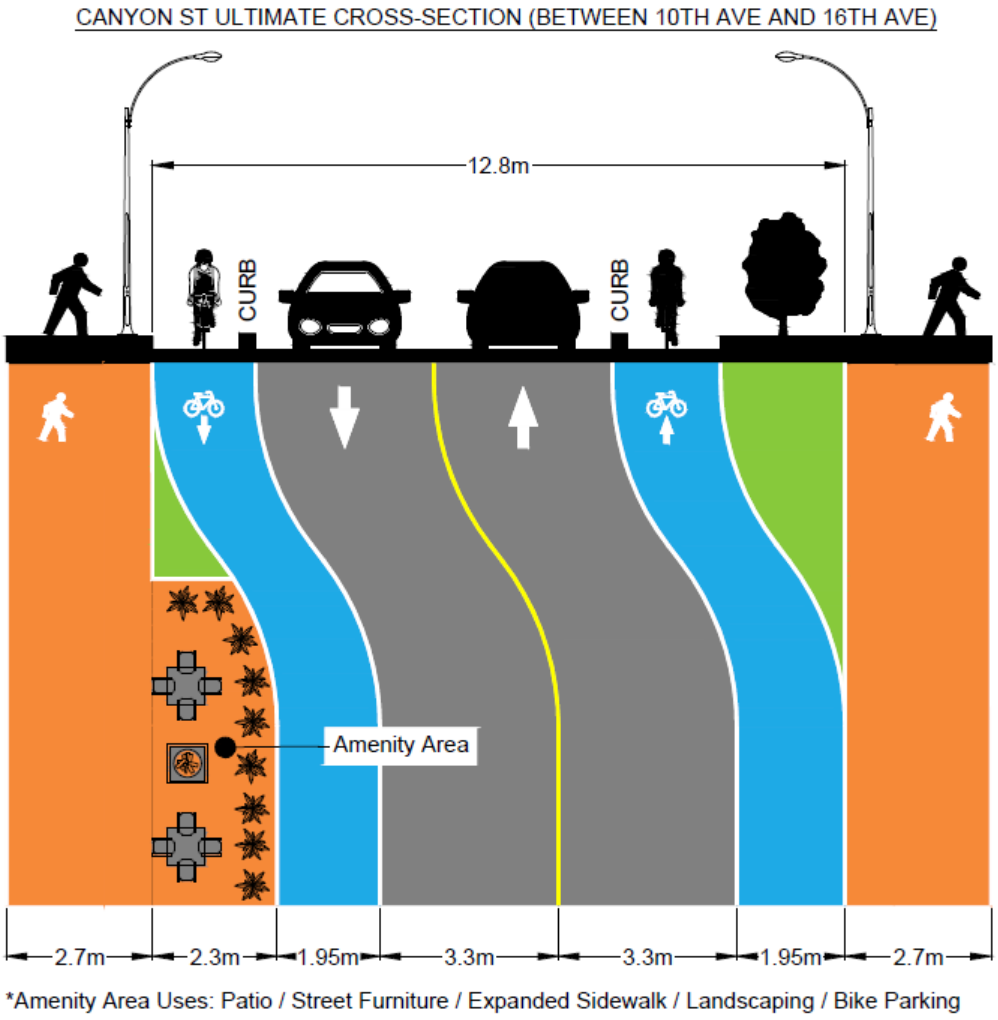
In the online survey no.2, the public was asked about the Canyon Street retrofit and the specific opportunities that could make it more friendly towards people walking, cycling, and for those who want more space to socialize and recreate downtown. Among the 190 responses to this question, the options that were selected the most included 'expanded patios' (67%) 'bicycle parking in the form of bike racks or bike lockers' (64%) and 'parklets with street furniture or benches' (63%).

CANYON ST PROPOSED CROSS-SECTION (BETWEEN 10TH AVE AND 16TH AVE)



*Parking on alternating sides of the road
*Amenity Area Uses: Patio / Street Furniture / Expanded Sidewalk / Landscaping / Bike Parking

The ultimate long-term plan for Canyon Street downtown builds on the proposed interim cross-section. It is only possible when/if highway traffic is realigned to Cook Street in the future. The drive lanes are narrowed to 3.3m and the remaining parallel parking removed. This allows space to provide protected bike lanes on the main street to future enhance the vibrancy of the downtown. The topography along the corridor is mild and suitable for biking. A 30km/hr speed limit and traffic calming elements will reduce the road's function from acting primarily as a vehicle thoroughfare to that with a sense of place where people want to linger and enjoy. The lower speed limit coordinates well with the yellow centerline that will shift from side to side between blocks to act as a traffic calming measure.

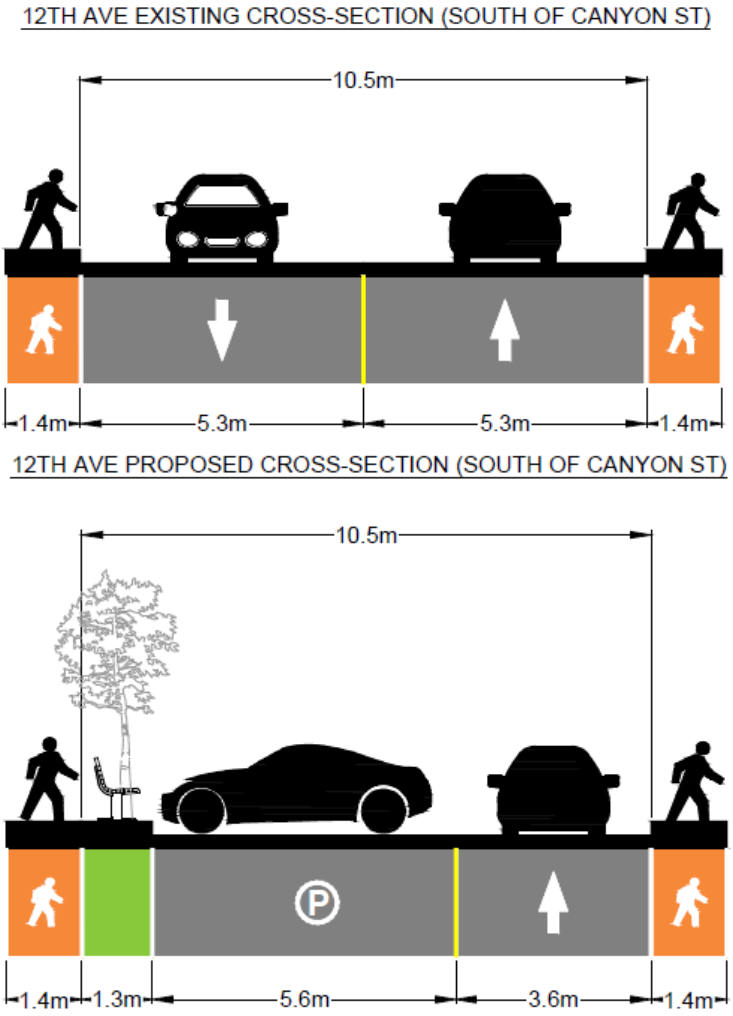


12TH AVENUE S, 15TH AVENUE S (BETWEEN COOK ST AND CANYON ST)

Currently, 12th Avenue S and 15th Avenue S both have a ~10.5m paved width that is underutilized, see **Figure 13**. There is an opportunity to utilize this width better to benefit the downtown. Currently, 12th Avenue S does not have any parking and 15th Avenue S has parallel parking.

Figure 13: 12th Ave S Looking South Near Canyon St

If traffic was limited to one-way operations, direction to be determined, there would be space available to relocate parking from Canyon Avenue for angled parking on 12th Avenue S and 15th Avenue S. Approximately 10 parking spaces can be accommodated on each road segment with 40° parking. Another benefit of converting the streets to one-way operations is that a wider sidewalk or amenity space can be provided next to the angled parking. This wider pedestrian space works in conjunction with Canyon Street improvements to enhance the whole downtown area.



5.3 NEW ROADWAY CONNECTIONS

The Town's roads largely operate at an excellent level of service. LOS concerns are not expected to be a trigger for the road connections north of the highway. Rather, the need for better connectivity and to serve active transportation is impetuous for these projects. From high to low, the priority of the connections is as follows:

- Glaser Drive (Cavell Street – Helen Street) – Community connectivity and vital connection for the active transportation network. (10-30 Years)
- Cavell Street (Valleyview Drive – Northwest Boulevard (Highway 3) - Community connectivity and formalization of an existing active transportation desire line (10-30 Years)
- Devon Street Connector to 16th Avenue N – Community connectivity (10-30 Years)
- 20th Avenue N Connector to 16th Avenue N – Community connectivity. (10-30 Years)

By connecting roads, more parallel routes can be created, which can help reduce congestion by spreading vehicle traffic over other routes and reduce environmental impacts (GHG emissions) due to lower travel distances and reduced time idling in traffic. When parallel routes are created to the highway, the roadway connectivity is increased and more direct and efficient routes can be provided for all modes of transportation. Further, these future roads can provide support for emergency access in case of natural disasters or unplanned events. Coordination between landowners and other jurisdictions may be required to build these connections. It is important for the Town of Creston to plan for future road connections so that when the opportunity to obtain right-of-way becomes available for these routes, it can be acted on when the road, bicycle, and / or pedestrian connection is required. Although these connections are identified as road connections, these routes can be used for pedestrian / bicycle connections before being needed for vehicle traffic.

GLASER DRIVE (CAVELL STREET – HELEN STREET)

Glaser Drive is a key route that enhances connectivity to the north end of town. Its proposed alignment provides an alternative to the highway and would be well suited for active transportation as it would integrate with the proposed network and provides a more direct and less non-mountainous route. Currently, the section north of Devon Street is a marked trail, which connects trail users between Devon Street north to Payne Street. The OCP identified this connection to support its policy to create a well-connected Town[5]. Given the

[5] Town of Creston – Freshly Picked Future – OCP - Connectivity Policy 1.1.3

proposed roadway connection context, it should be suitable for all modes and be built to the urban collector classification, as it will likely be supported by adjacent growth in the Glaser Drive area & Northwest Boulevard ARP lands.

CAVELL STREET (VALLEYVIEW DRIVE – NORTHWEST BOULEVARD (HIGHWAY 3)

There is the potential need for a road extension from Cavell Street / Northwest Boulevard to Valleyview Drive. The existing safety issues due to the intersection skew angle of Valleyview Drive / Northwest Boulevard coupled with the strong pedestrian desire line between Valleyview Drive / 6th Avenue N and the Creston Valley Mall & Cavell Street create that need.

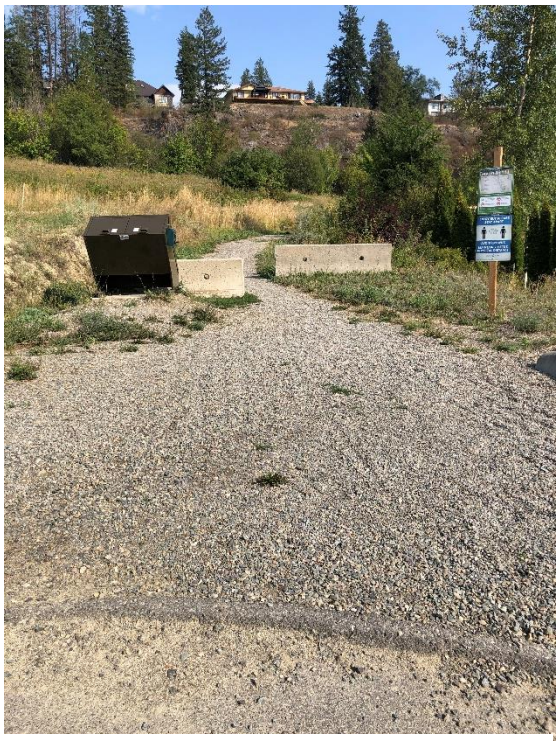
Illegal Rail Crossings Near Valleyview Drive towards the Creston Valley Mall and Cavell Street.

Any realignment of Valleyview Drive is difficult as the railway and grade change are challenging constraints. Closure of this roadway could be favourable if a separate roadway and rail crossing could be constructed (I.e., Cavell St). This would also be a logical location for a pedestrian to cross the highway and railway as it fits the pedestrian desire line. See **Figure 14** for alignment.

Figure 14: Proposed Cavell Rd Extension and Valleyview Dr Closure

DEVON STREET CONNECTOR TO 16TH AVENUE N

This extension would work well with the Glaser Drive extension to enhance connectivity and complete the gap as a parallel route to Northwest Boulevard (Highway 3) between Devon Street and 16th Avenue at the north end. Like the Glaser Drive extension, it is currently the Devon recreational trail, connecting users along the exact proposed alignment of the roadway. Although, in this case, road grades along the extension limit its viability for active transportation outside of walking and electric-powered bicycles and personal mobility devices, it would still formalize this existing recreational trail desire line. Given the proposed roadway connection context, it should be suitable for all modes and be built to the rural collector classification, which would be constructed as adjacent growth happens along the side of Arrow Mountain and the east end of Devon Street.



Devon Trail Trailhead

20TH AVENUE N CONNECTOR TO 16TH AVENUE N

The 20th Avenue N connector would extend eastwards from the south terminus of the Devon Street connector and 16th Avenue N to connect with the north end of 20th Avenue N. It would be considered the lower priority connection, as completing the Devon Street connector with 16th Avenue, the Town would already have a parallel north-south connection between Canyon Street and Devon Street, however, this connection would allow road users to utilize 20th Avenue instead of 16th Avenue. Road grades would also be a challenge along this extension as it must also pass around the side of Goat Mountain. Given the proposed roadway connection context, it should be suitable for all modes and be built to the rural collector classification, which would be constructed as adjacent growth happens along 20th Avenue N, north of Hillside Street and along the side of Goat Mountain.

5.4 SUPPORTIVE PROGRAMS + POLICIES

The Town should consider adopting some of the following policies to improve safety and comfort for all road network users in Creston.

5.4.1 COUNCIL POLICIES

SPEED LIMITS

The Town needs to create a policy around the setting and changing of posted speed limits on roads. Changing a speed limit (either up or down) should not be changed arbitrarily based on requests from the community. Changing a speed limit without any other changes to the roadway will lead to further complaints as posting signage has a limited impact on changing driver behaviours. For example, lowering the speed limit of a road designed for 50km/h to 30km/h will not necessarily reduce the speed of vehicles on the road, but will increase the amount of vehicles travelling over the posted limit.

Therefore, a speed limit policy should be created to allow staff to identify appropriate speed limits for roads. The TAC Canadian Guidelines for Establishing Post Speed Limits provides guidance on evaluating corridors to determine posted speed limits for roads.

There is a current desire to reduce the default speed limits on local / residential roads in BC. Although municipalities can set speed limits within a municipality, they can't change the default speed limit which is in the BC Motor Vehicle Act. The province is allowing for pilot projects (as of Fall 2021) to research, test, and evaluate new regulatory approaches. A pilot speed limit reduction on specific roads or road classifications is eligible. Several municipalities across BC will be participating in assessing the impact of reducing the default speed limit to 30km/h on streets without a yellow centerline (which in Creston are the proposed rural, local, urban local, and residential local cross-sections). The pilot project is expected to run for three years. Town staff should review the results of the pilot project when available and update the Speed Limit policy based on the results.

> *"I think the speed limits in town should be reduced to 30km per hour. Many people tend to drive faster than 50kmh in a 50kmh zone."*
> *– Survey respondent, online survey no2.*

VEHICLE OPERATIONAL THRESHOLDS

A policy should be developed that states that vehicle mobility (LOS, delay, capacity) at peak hours will not be the sole rationale for adding more vehicle infrastructure. The policy should consider the capital cost, maintenance cost, environmental impact, and impact on pedestrian / bicycle safety and operations of the new vehicle infrastructure. It should also consider the impacts of over-built infrastructure in the non-peak periods and whether the infrastructure is only required for a few hours per day.

EMERGENCY ACCESS ROUTES TO NEIGHBOURHOODS

During an emergency, whether a major fire event, earthquake, flooding, or other event, the ability to provide alternative routes or entry/exit points is critical. There may be a requirement to both have residents evacuate during an event, but fire personnel and equipment to be heading into the area. Therefore, roadways may not necessarily be able to be converted to one-way traffic to increase the capacity to move residents. The addition of the future connections will help to support the ability to have alternative routes to various areas of Creston. The Town should adopt a policy identifying when secondary or tertiary accesses may be required for emergencies. The policy should identify when more than one access to a subdivision is required and whether the access(es) are required as general accesses or emergency only accesses. If the Town allows for emergency only access routes, a clear policy on how those emergency only access points are managed is required. E.g., are they all locked with the same key, who / where are the keys located, etc.

The National Fire Protection Association provides the following suggestions for the number of accesses to a neighbourhood for emergencies:

- For 0-100 households one access route minimum is required.
- For 101-600 households there should be a minimum of two access routes
- For greater than 600 households there should be a minimum of three access routes.

CHANNELIZED SMART RIGHT TURN POLICY

Some intersections in Creston utilize channelized right turns. Channelized right turns provide free-flow or nearly free-flowing right turn movements that avoid delaying traffic behind them. However, these high-speed right turn movements can be a significant barrier to bicycles and pedestrians trying to navigate through the intersection, such as at the Cook Street / Canyon Street / 10th Avenue N intersection or at the Canyon Street / 9th Avenue N / 9th Avenue S intersection.

A growing trend in BC cities is the adoption of channelized smart right turns[6]. These smart rights adjust the angle of approach for the right turning traffic. When right turning traffic approaches the intersection at an angle closer to 90 degrees, the driver is better able to Shoulder check for oncoming cyclists and more of a reduction in speed is also required to make the turn which makes pedestrian crossings safer. One consideration for smart rights is the reduction of corner radii, which affects truck turning due to geometry. However, trucks and large vehicles can still be accommodated by providing a truck apron (similar to those constructed in a roundabout).

Truck apron in Vernon, BC at the intersection of two highways.

Often associated with these channelized right turns are right turn lanes or right turn tapers to provide vehicle storage for turning vehicles. However, in many situations, these channelized right turn islands are located for movements into residential neighbourhoods or other locations where a need for right turn storage isn't required. Large tapers add to the intersection area and create a larger zone that is unsafe for pedestrians and bicycles.

It is recommended that these channelized right turn islands be converted to a channelized smart right where:

- Pedestrians or cyclists are expected in the area
- Vehicle turning speeds are high

[6] Traffic safety: City of Kelowna announces 'smart right turns' for select intersections. (2021) Retrieved from: https://globalnews.ca/news/7724072/kelowna-traffic-safe-right-turns/

- Poor sightlines

The reconstruction of these islands would occur during corridor upgrades or intersection works. For all new roadways, channelized right turns should be considered based on the above policy.

ACTIVE TRANSPORTATION CORRIDOR MAINTENANCE

Periodic maintenance of pedestrian and cycling facilities is a critical step that the Town must do to ensure that people riding in these protected facilities can anticipate safe and accessible riding surfaces that are free of hazards. This is especially true for facilities that are separated from vehicle traffic with vertical separation as the regular show clearing and street sweeping operations can not cover these routes. This also includes multi-use paths and protected cycling facilities. Fall time can also be a concern since collecting leaves can cover the riding surface and become extremely slippery when wet. Active transportation corridor maintenance should be written into the Snow Removal Policy and Street Sweeping Procedure. Standard of maintenance and prioritization order should be defined in relation to road routes and sidewalks.

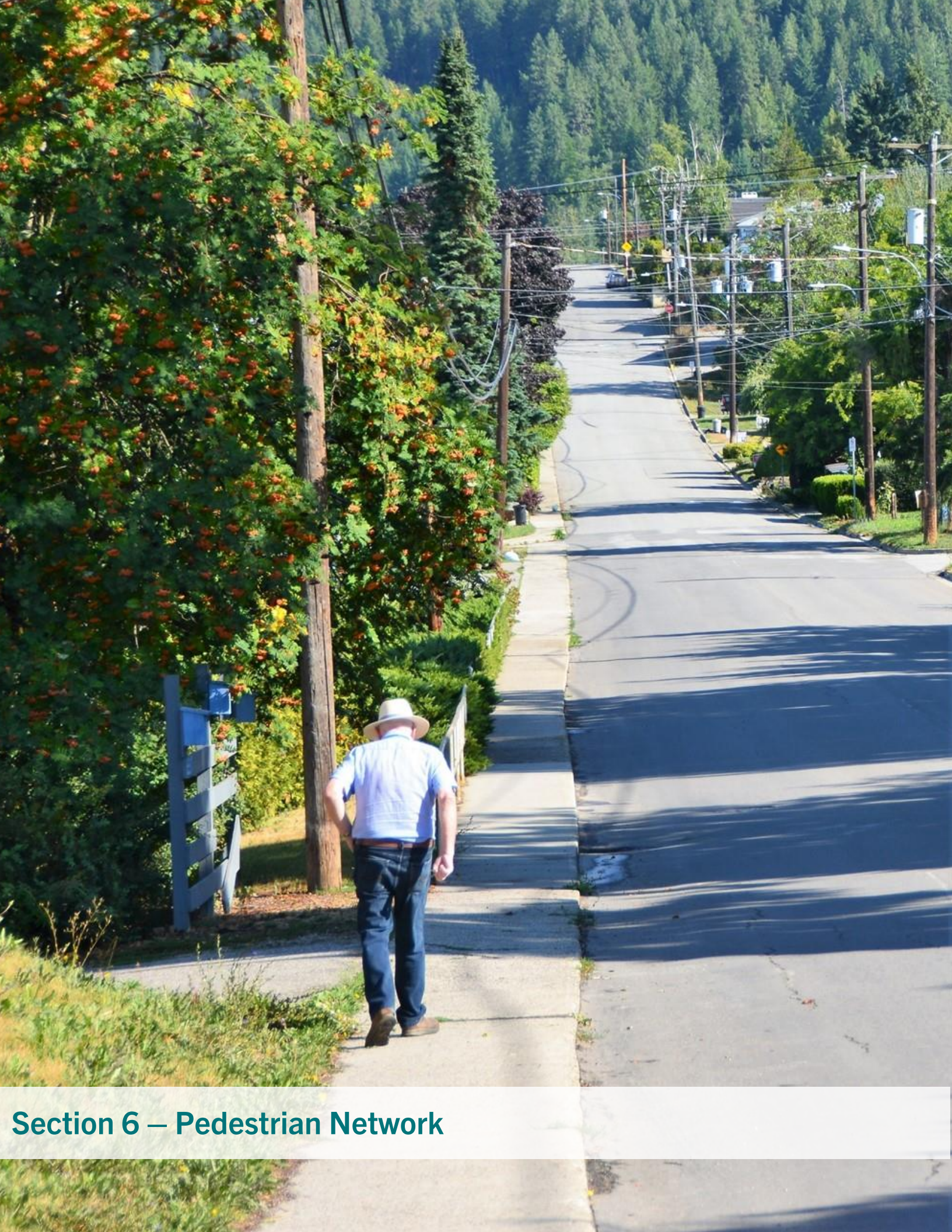
5.5 ACTIONS

The following **Table 11** summarizes the recommended actions for the road network.

TABLE 11: ROAD NETWORK ACTIONS

Action		Description
1A	Undertake Bylaw Updates	Adjust Works and Services Bylaw 1170 (Appendix A) –to reflect new road cross-sections and remove language allowing for mountable curbs. Upon acceptance of new cross-sections, the Town should provide a map detailing road classifications within the Town.
1B	Use Temporary Traffic Calming Measures	Implement this traffic calming solution into the existing traffic calming toolbox to respond to more resident requests, which will allow the ability to pilot roadway safety improvements before making them permanent.
1C	Undertake Safety Improvements at Focus Intersections	Prioritize and implement safety and geometric improvements at the following: • Cook Street / Canyon Street (Hwy 3) / 10 Avenue N • Northwest Boulevard (Hwy 3) / Devon Street N

		• Northwest Boulevard / Hillside Street / 7th Avenue • Northwest Boulevard / Helen Street/ Collis Street • Northwest Boulevard / Murdoch Street • Northwest Boulevard / Regina Street • Safety Improvements at Canyon Street (Hwy 3) / Crawford Street (near 20th Avenue N)
1D	Interim Canyon Street (Highway 3) Retrofit	Utilize the existing street space of Canyon Street right-of-way between 10th Avenue and 16th Avenue N and the blocks of 12th Avenue and 15th Avenue S between Cook Street and Canyon Street. The re-purposed space can facilitate a more pedestrian-focused community hub, allowing for the creation of additional street furniture, expanded sidewalk, landscaping, bike parking, and patio space.
1E	New Road Connections	Continue to pursue right-of-way for future road connections, including: • Glaser Drive (Cavell Street – Helen Street) • Cavell Street (Valleyview Drive – Northwest Boulevard (Hwy 3) • Devon Street Connector to 16th Avenue N • 20th Avenue N Connector to 16th Avenue N
1F	Highway 3 Re-alignment to Cook Street	Continue to work with MOTI by undertaking a feasibility study to re-align Highway 3 to the existing Cook Street right-of-way between 18th Avenue and 10th Avenue N.
1G	Create Policies to Improve the Road Network	Create policies for setting speed limits, acceptable vehicle operation thresholds / considerations, removal and future use of channelized right turns, and emergency access requirements
1H	Develop an Active Transportation Maintenance Plan	Active transportation corridor maintenance should be written into the Snow Removal Policy and Street Sweeping Procedure. Standard of maintenance and prioritization order should be defined in relation to road routes and sidewalks.



Section 6 – Pedestrian Network

6.0 PEDESTRIAN NETWORK

Walking can be a convenient alternative to private vehicles for short trips if suitable conditions exist within the pedestrian network. Providing a well-connected pedestrian network translates into an inclusive, equitable, accessible and safe transportation network for all residents and visitors of Creston. Walking is a healthy, inexpensive mode of transportation and is the first and last part of every trip taken, regardless of the primary travel mode. Creston does have a healthy walking mode share with 13% of the population walking to work.

6.1 NETWORK TODAY

Creston has a good base from which to build its future sidewalk network. The majority of collector and arterial roads within the Town have sidewalks on at least one side of the road. However, some segments of the pedestrian network are still discontinuous, switching from one side of the road to the other, particularly at side street intersections and at some mid-block locations. In addition to sidewalks, Creston offers a network of trails that provide connections within neighbourhoods that reduce walking distances and create a more walkable environment throughout the Town. These paths are a mixture of asphalt, gravel, and worn paths.

6.1.1 SIDEWALK NETWORK

The overall sidewalk network consists of approximately 17 km of sidewalk facilities. As shown in **Map 6**, sidewalks are concentrated

WHAT IS A WALKABLE ENVIRONMENT?

According to the BC Active Transportation Design Guide, the following characteristics can help create comfortable and desirable walking environments:

- **Physical separation** from other road users;
- Adequate **clear width** to allow more than one person walking or using a mobility device to pass each other;
- Firm, smooth, and even surfaces;
- Sufficient **pedestrian crossings** opportunities;
- **Short distances** between destinations;
- **Continuous and direct routes** between destinations that reflect pedestrian desire lines;
- **Buildings** that orient towards the road;
- **Diverse land uses** that create a varied and interesting walking experience;
- **Wayfinding** that makes it easy to navigate between destinations;
- **Street trees** and other vegetation;
- **Weather protection** elements for rain and snow;
- Adequate **lighting** for safety, security, and visibility;
- Pedestrian **amenities** such as landscaping, water fountains, washrooms, garbage and recycling receptables; and
- **Maintenance** of pedestrian facilities throughout the year.

Retrieved From: BC Active Transportation Design Guide Chapter C (Pedestrian Facilities)

mainly in the downtown area and its surrounding neighbourhoods. Even though the Town does not classify its pedestrian facilities, field observations confirmed that Creston's sidewalk network mostly comprises non-separated sidewalks, as shown in the photo below.

Coverage of the network thins out west of Northwest Boulevard, north of Hillside Street, and south of Cayon Street (west of CP Rail tracks). This is in part to narrower roadways, where the existing asphalt would likely be more comfortable for users, and where vehicle volumes and speeds remain relatively low.

Example of a non-separated sidewalk on 9 Avenue N

SIDEWALK NETWORK, BY THE NUMBERS...

6% of the road network has sidewalks on both sides

19% of the road network has sidewalk on one side

75% of the road network has no sidewalk

6.1.2 TRAIL NETWORK

TRAIL NETWORK, BY THE NUMBERS...

6 designated trails

3.5 km off-road trails

The Town of Creston Greenways and Trails Master Plan (2003) provides trail recommendations within the Town for recreational and transportation purposes. Many of these routes have since been completed such as the Millennium Trail & Park Connector, Steve's Ride, Library Loop, and Glaser/Devon Trail. Additional trails that are not part of this plan include Klaus's Korner and the Cavell St – Schikurski Park trail. The current in-town sanctioned trail network consists of 3.5 km of gravel and paved trails. This is exclusive of the sidewalk network. These trails are important as many of them can serve as the backbone of the active transportation network. There is still work to be done. For example, a highly desired route identified in the Greenways and Trails Master Plan is along the rail corridor. Another one is a trail along the since abandoned Creston bypass right-of-way (Truck Route Trail).

Surrounding Creston, there are also many recreational trails in the mountains or along the marsh areas. Potential regional trail connections include south of Erickson Road on 11th Avenue South, east of the Town's boundary on Erickson Road, north of 16th Avenue North (to Goat Mountain), and west on the dike near Kootenay River Road and west on Highway 3.

Map 6 – Existing Active Transportation Network

6.1.3 CROSSINGS

The Town has approximately 34 zebra crosswalks (mid-block locations) and 19 Parallel Crosswalks at intersections (total is approx. 50). Furthermore, there are also approximately another 35 additional crosswalks on Hwy 3, Hwy 21 or Erickson Road on Town crossroads. The total number of crosswalks in Creston is 85, including those crossing or adjacent to MOTI roads within Creston. Most of the crosswalks are marked crossings, which means they include pavement markings ("zebra crossing") and signage.

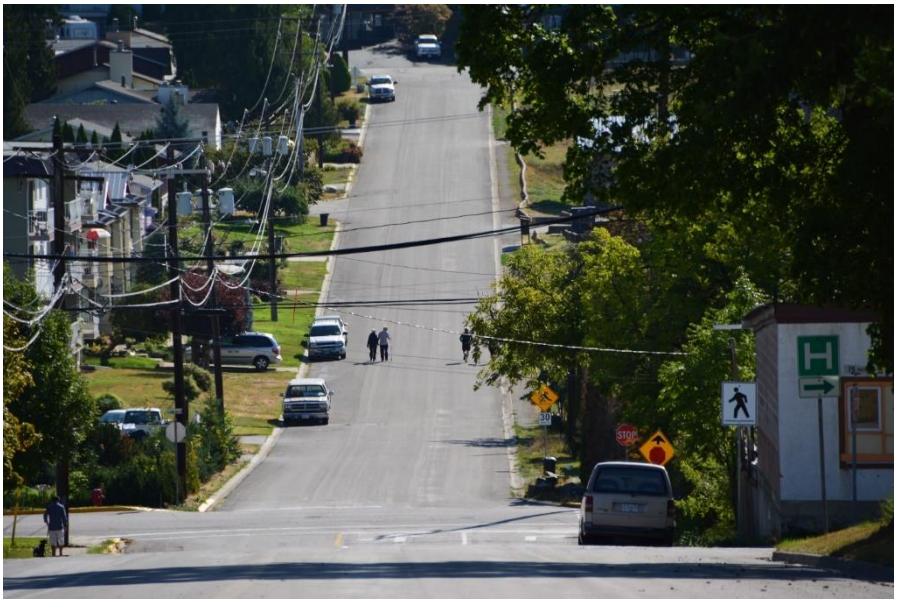
Examples of crossings in the Town with a raised crosswalk (top) on 20 Avenue South and a standard crosswalk (bottom) on 11 Avenue North and Canyon Street.

6.1.4 BARRIERS TO WALKING

Barriers in the pedestrian network are broadly defined as facilities that do not meet the needs of all ages and abilities (AAA). AAA facilities make access to transportation more equitable by allowing active modes to travel safely and comfortably. They are inclusive, age-friendly, accessible, and safe.[7]

MISSING LINKS

The base sidewalk network in the core is relatively comprehensive. Further from the core, there are some key gaps or missing links in the pedestrian network. These gaps can make it difficult to get from point A to point B if the route feels incomplete or unsafe. Connecting some of these links would have the added benefit of reducing vehicle trips and reducing GHG emissions as more people would have a viable option to travel more directly to their destination and leave their car at home, especially for shorter trips. An example would be Hillside Street (16th Avenue N to 20th Avenue N), which serves as an important connection to the Creston and District Community Complex.



Hillside Street shown above, where pedestrians are using the roadway due to missing sidewalk links

[7] *Government of BC. (2019). British Columbia Active Transportation Design Guide. Chapter B: Setting the Context. Available online at: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide-low-res/2019-06-14_bcatdg_section_b_rfs.pdf*

SIDEWALK STANDARDS

The Town's existing standard road cross-sections in Bylaw #1170: Works and Services, originally published in 1990, do not take into account modern sidewalk standards that reflect current trends and best practices Features such as width, separated buffers, and landscaping (beatification) are absent. All of these factors are incorporated into the new cross-sections proposed in **Section 5.2.2**.

INACCESSIBLE INTERSECTIONS OR CROSSINGS

The Town also has several inaccessible intersections that may result in barriers for people using mobility devices such as wheelchairs, walkers, and strollers. An example of an inaccessible intersection is Canyon Street / 10th Avenue North. There are two main barriers at this intersection, as follows:

- The cut-through median / island at the northwest part of the intersection does not have an adequate curb ramp. The curb ramp width is on the lower side (1.5 metres based on a coarse estimate) and the cross slope is too steep. Further, the top landing area is also constrained, making it difficult for more than one person using a mobility device to stand on the island; and
- The sidewalk at the southeast corner of the intersection is too narrow, especially for persons who are using a mobility device.

Narrow sidewalk at southeast corner of Canyon Street and Cook Street (left) and poorly designed cut through median / island at the northwest corner (right).

TOPOGRAPHY AND STAIRWAYS

Creston, like many communities in the Creston Valley, has mountainous topography. This can pose challenges in providing an accessible and connected pedestrian network. Even though Creston residents are largely accustomed to the community's steep topography, some residents may avoid walking altogether because of the hilly terrain, lack of ramps, and challenging staircases.

6.2 NETWORK TOMORROW

The Town recognizes that an integrated approach to transportation planning is critical for supporting all modes of transportation, including walking trips. The Town currently builds out new sidewalks and trails through their trail budget line item in their five-year capital plan, and typically looks to construct one project per year amounting to an average of $60,000 - $100,000 / year. Locations are identified by Town Staff, based on trial & sidewalk connectivity gaps, public safety concerns and resident requests.

A FRESHLY PICKED PEDESTRIAN NETWORK – OCP POLICY DIRECTIONS

Creston's Official Community Plan contains - but is not limited to – policy direction that is focused on accommodating pedestrians:

- Policy 2.1 (Connectivity) | Adopt and implement an updated Greenways & Trails Master Plan;
- Policy 2.2 (Connectivity) | Target enhanced community connectivity by improving and completing road, sidewalk and trail connections between residential areas, the Creston Valley Library, the Creston & District Community Complex, the Creston Valley Mall, businesses along Northwest Boulevard, the Downtown Core, schools and parks;
- Policy 2.3 (Connectivity) | Encourage pedestrian trails and sidewalk routes between residential neighbourhoods and schools to be efficient and prioritized in neighbourhood development;
- Policy 2.4 (Connectivity) | Consider development of Glaser Drive as a safe pedestrian route, in order to facilitate an alternative to walking on Northwest Boulevard;
- Policy 2.5 (Connectivity) | Encourage Residential Infill Development within the Residential Growth Containment Area (RGCA) to increase the proportion of residents living within walkable distances of work, school, recreation facilities, and other services; and
- Policy 4.2 (Connectivity) | Encourage the construction of continuous sidewalks to provide ease of pedestrian passage.

The following sections provide a list of priority-ranked pedestrian infrastructure—based on technical analysis and feedback from the multiple rounds of engagement—along with a list of supportive programs and policies that can be considered to encourage pedestrian travel in Creston.

The future pedestrian infrastructure improvements have been split between the planning horizons as follows:

- **1-10 Year Tactical Plan** – Considered higher value to the Town, which would be constructed within the existing right-of-way to fill in a missing link in the sidewalk network where existing desire lines exist. As an example, these may include new sidewalks or multi-use pathways, improvements to making a crossing safer, or the removal of stairs to create a needed accessibility improvement. The improvements are grouped in High-Medium-Low level priority.

- **10-30 Year Strategic Plan** – The longer-term horizon improvements may have larger capital costs, require additional land acquisitions, or need collaboration with municipal partners such as MOTI, CP Rail, or the RDCK. Some of these improvements likely would be built out when neighbouring land redevelops, or if/when an opportunity presents itself.

The quick-build infrastructure, which also provides accommodation for pedestrians and other active transportation users, is highlighted in further detail in **Section 7.2.1.**

6.2.1 1-10 YEAR PEDESTRIAN INFRASTRUCTURE

The 1-10 year sidewalk improvements are predominantly missing links within the existing roadway network. The improvements ideally should be built out as a separated sidewalk if space is available in the existing right-of-way, however, can be constructed as non-separated sidewalks with a width of 1.8m-2.0m, including the curb. In the context where a road has no curb and gutter, and no new development is imminent, repurposing the existing roadway width by providing a painted shoulder wide enough to provide a dedicated space for pedestrians can be more cost effective and utilize the existing ditch drainage versus requiring new curb and gutter. Some of the missing links are better provided for by the implementation of multi-use pathways, in which case, an asphalt 3-4m wide pathway has been recommended.

Map 7 – Ultimate Pedestrian Network

Table 12 lists the high priority improvements that will vastly improve the pedestrian network. They are also shown on **Map 7**, in the Ultimate Pedestrian Network Map. All of these facilities are broken down by type of improvement, and additional rationale is provided to give context on why they are given the highest priority. Further, prioritization was informed by what we heard from the public and key stakeholders.

WHAT WE HEARD ABOUT DESIRED PEDESTRIAN IMPROVEMENTS

Based on feedback in online survey no.2, the most desired pedestrian improvements included:

- A crosswalk improvement by adding flashing beacons at the 20th Avenue N / Canyon St intersection
- New multi-use pathway on Pine Street to Creston & District Community Complex (between 16th Ave N and 19t Ave N)
- New accessible ramp in Market Park down from the 10th Avenue N / Canyon St intersection

"When walking to town becomes safe, I will feel so much better, calmer, and joyful to take a walk with my children." – Survey respondent, online survey no.1

"In general, we need more pedestrian friendly streets with sidewalks. We also need playground zone signs much more visible- with flashing lights."
– Survey respondent, online survey no.2

Map 7 – Ultimate Pedestrian Network

TABLE 12: HIGH PRIORITY PEDESTRIAN IMPROVEMENTS (1-10 YEAR)

Location	Type of Improvement	Rationale
20th Avenue N (between Canyon St (Hwy 3) and Hillside St)	1.8m sidewalk on west side of the road.	Currently identified in the Creston 2021-2025 Capital Plan, it will complete a missing gap north of Canyon Street (Highway 3), and allow for a continuous sidewalk from Erickson Road, north to Hillside Street.
20th Avenue N / Canyon St (Hwy 3) Pedestrian Crossing	Crosswalk improvement by adding an amber Rectangular Rapid Flashing Beacons (RRFBs)	To facilitate the strong pedestrian connection between Erickson Rd and Hillside St, upgrading this crossing to be a pedestrian-activated amber rapid flashing beacon will improve pedestrian visibility and safety crossing the highway. This improvement was ranked highest in online survey no.2.
18th Avenue N / Canyon St (Hwy 3) Pedestrian Crossing	Crosswalk improvement by adding an amber Rectangular Rapid Flashing Beacons (RRFBs)	To facilitate the strong pedestrian connection between the Secondary School and north of the highway, upgrading this crossing to be a pedestrian-activated amber rapid flashing beacon will improve pedestrian visibility and safety crossing the highway.
Vancouver Street (between 15th Ave N and 16th Ave N)	1.8m sidewalk on south side of the road.	This connection completes a missing link to provide a continuous sidewalk on Vancouver Street between Northwest Boulevard and 16th Avenue North. This would enhance walkability for residents walking from/to Downtown and the Creston Valley Community Centre.
Pine Street to Creston District Community Complex(between 16th Ave N and 19th Ave N)	4.0m Multi-Use Pathway	This MUP connection on the north side of Pine Street cuts behind baseball diamonds for a direct route to the community centre and tie into the new sidewalk on Vancouver Street on the west end. This improvement was ranked second highest in online survey no.2.
West side of Creston District Community Complex building and parking lot (between 19th Ave N and Hillside St)	4.0m Multi-Use Pathway	This MUP connection would be located on the west side of the Creston District Community Complex Building and Parking lot, and would provide an alternative north/south connection between the recommended quick-build MUP on Hillside Street and the recommended MUP on Pine Street and tie into these improvements to complete the pedestrian corridor along Vancouver Street.

Location	Type of Improvement	Rationale
9th Avenue N (between Regina Street and Cavell St)	1.8m sidewalk on west side of the road.	There are no sidewalk connections north of Regina street, east of Northwest Boulevard. This missing link completes a desire line from Adam Robertson Elementary north to Cavell Street and the Creston Valley Mall Shopping Centre.
8th Avenue N (between Cavell St and Devon St)	Painted 2.0-2.4m paved shoulder on east side of the road	This potential connection would make use of the existing roadway width on 8th Avenue just west of Crest View Village, north of Cavell Street and continue the north-south pedestrian corridor from Adam Robertson Elementary through to the existing trail connection just south of Devon Street. Removal of angled parking on the west side may allow the ability to widen this marked shoulder to an acceptable width to allow for people to cycle.
10th Avenue N to Market Park Pedestrian Ramp	Accessibility (removal of stairs)	The stairs between Cook Street and the Railway corridor connecting pedestrians with the existing railway crossing are inaccessible to wheeled users. Creating an accessible connection alleviates the need for users to travel across a gravel parking lot to cross the tracks. As part of the Market Park planned work, a pathway connection northwest from the 10th Avenue N / Canyon Street intersection will allow for the accessibility needs of all active transportation users. This improvement was ranked third highest in online survey no.2.
Market Park to Railway Boulevard Pedestrian Ramp	Accessibility (addition of ramp)	The stairs between the Railway corridor and Railway Boulevard, which connects pedestrians between the western neighbourhoods and downtown via the existing railway crossing, are inaccessible to wheeled users. Adding an accessible ramp similar will work well with the improvements planned for Market Park. A switchback ramp on the hillside west of the existing stairwell would allow for the accessibility needs of all active transportation users. Coordination with CP Rail will be necessary as the ramp is entirely in the rail right-of-way.

MEDIUM AND LOW PRIORITY PEDESTRIAN IMPROVEMENTS

The following tables are a more exhaustive list of improvements that would also be in the 1-10 year tactical plan. However, they do not serve as an immediate need and will likely take more planning and capital investment. They have been identified as either medium priority improvements - **Table 13** or low priority improvements -**Table 14** and are broken down by location and type of improvement. They are also shown in **Map 7**, the Ultimate Pedestrian Network Map.

TABLE 13: MEDIUM PRIORITY PEDESTRIAN IMPROVEMENTS (1-10 YEAR)

Location	Type of Improvement
Cook Street *15th Avenue S and 16th Avenue S*	2.0m sidewalk on north side of the road.
Birch Street *8th Avenue S and 11th Avenue S*	1.8m sidewalk on south side of road. adjacent to Centennial Park.
Birch Street *18th Avenue S and 20th Avenue S*	1.8m sidewalk on north side of road.
Birch Street MUP connection *Millennium Trail and 16th Avenue S / Birch Street intersection*	3.0m MUP connection south of the RCMP lot
11th Avenue S *Erickson Road and Birch Street*	1.8m side on west side of road.
6th Avenue N *Canyon Street and Valleyview Drive*	Painted 2.0m paved shoulders on both sides of the road for pedestrian use.
Library MUP connection *Library and Erickson Road*	3.0m MUP along the south edge of library parking lot and continuing to Erickson Road.
Devon Street *#836 Devon Street and Glaser Trail*	4.0m MUP connection on south side of road.
16th Avenue *Canyon Street and Cedar Street*	3.0m MUP connection on west side of road.

TABLE 14: LOW PRIORITY PEDESTRIAN IMPROVEMENTS (1-10 YEAR)

Location	Type of Improvement
Cedar Street *22nd Avenue S and 25th Avenue S*	1.8m sidewalk on south side of road.
Dogwood Street *School parking lot entrances*	Formalize a 1.8m sidewalk in front of the school's three parking lot entrances on north side of road.
9th Avenue N & Canyon Street *West and south legs*	Accessible sidewalk ramps at intersection
Pine Street *Northwest Boulevard (Hwy 3) and 10th Avenue N*	Connect missing piece of sidewalk link on north side of road.
10th Avenue N *Murdoch Street and Cavell Street*	1.8m sidewalk on east side of road.
Cavell Street *10th Avenue N and 11th Avenue N*	1.8m sidewalk on north side of road.
Valleyview Connection *between 6th Avenue N and Cavell St extension*	1.8m sidewalk on the east side of the road.
Cavell Street *Northwest Boulevard and Mall Entrance*	1.8m sidewalk on north side of road.
Cavell Street and Northwest Boulevard (Hwy 3) Pedestrian Crossing	Crosswalk improvement by adding a zebra crosswalk and an amber Rectangular Rapid Flashing Beacons (RRFBs)
8th Avenue N to railway Boulevard Pedestrian Ramp	Accessibility (addition of ramp)
Cook Street *10th Avenue to 16th Avenue*	4m MUP to be co-ordinated with work from the planned market park (phase 2)

6.2.2 ULTIMATE (10-30 YEARS) PEDESTRIAN NETWORK

The long-term—or ultimate—pedestrian network buildout will be supported by projects that have been strategically identified to support the Town in the longer term. In some cases, new pedestrian infrastructure will be constructed as the road network grows and re-development happens in areas on the outskirts of the Town's core where there is existing low-density highway commercial, industrial, and rural land uses. As new infrastructure and roadways are planned, the intention is to provide people walking with even more separation and protection from motor vehicles. The following outlines the pedestrian facility connections that should be strategically considered to achieve Creston's ultimate pedestrian network goals.

TABLE 15: ULTIMATE NETWORK PRIORITY PEDESTRIAN FACILITIES

Location	Facility Type	Rationale
Northwest Boulevard *Pine Street to Helen Street*	Multi-Use Pathway	To encourage more active transportation trips and recreational trips by foot or by bike, a future (long-term) active transportation connection along this alignment should be considered to better connect the northern areas of Creston to the key destinations in and around Downtown. In sections with an existing sidewalk and curb, they would be removed and replaced with a paved 3.5m wide multi-use pathway to allow for travel in both directions on the east side of the roadway for people walking and cycling. Engagement and collaboration with MOTI will be required to undertake this improvement.
Devon Street *Northwest Boulevard (Highway 3) to Devon Trail Trailhead)*	Separated Sidewalk	The Northwest Boulevard Local Area Plan provides directions on pedestrian accommodation that state they should be wide enough (1.5m) to accommodate scooters and strollers. As Devon Street builds out to how it was initially planned, the Town should consider upgrading this design guidance to be a 2.0-3.0 m separated sidewalk on the street to coincide with the future planned redevelopment in the area.
Glaser Drive *Cavell Street to Helen Street*	Separated Sidewalk	Currently, the section north of Devon Street is a marked trail, which connects trail users between Devon Street north to Payne Street. Given the proposed roadway connection context, it should be built to the urban collector classification with separated sidewalks, as it will likely be supported by adjacent growth in the Glaser Drive area & Northwest Boulevard ARP lands.
Erickson Road *Highway 21 to 25th Avenue S*	Multi-Use Pathway	Currently, no sidewalk exists on either side of MOTI controlled Erickson Road. The introduction of a pathway on the north side of the road will support an active transportation connection that improves regional connections and enhance walkability for the community. Engagement and collaboration with MOTI will be required in consideration of this improvement. Focus on 11-20th as first phase. Following phase would be to the east and west.

6.3 DESIGN GUIDELINES

The following sections outline the relevant design guidelines that should be considered as the Town implements the pedestrian improvements. The guidelines below are largely derived from Chapter C (Pedestrian Facilities) and Chapter G (Intersections + Crossings) in the BC Active Transportation Design Guide.

6.3.1 PEDESTRIAN FACILITY TYPES (SIDEWALKS, WALKABLE SHOULDERS & MULTI-USE PATHS)

The BC Active Transportation Design Guide identifies five distinct pedestrian facilities, as shown in **Figure 15** & **Figure 16** below. Some pedestrian facilities meet the criteria for "all ages and abilities" while others are considered supporting facilities. The pedestrian facility selection decision support tool (next page) illustrates that most road types in an urban environment should be candidates for a separated sidewalk, when space is available.

Figure 15: Pedestrian Facility Types
Retrieved From: BC Active Transportation Design Guide

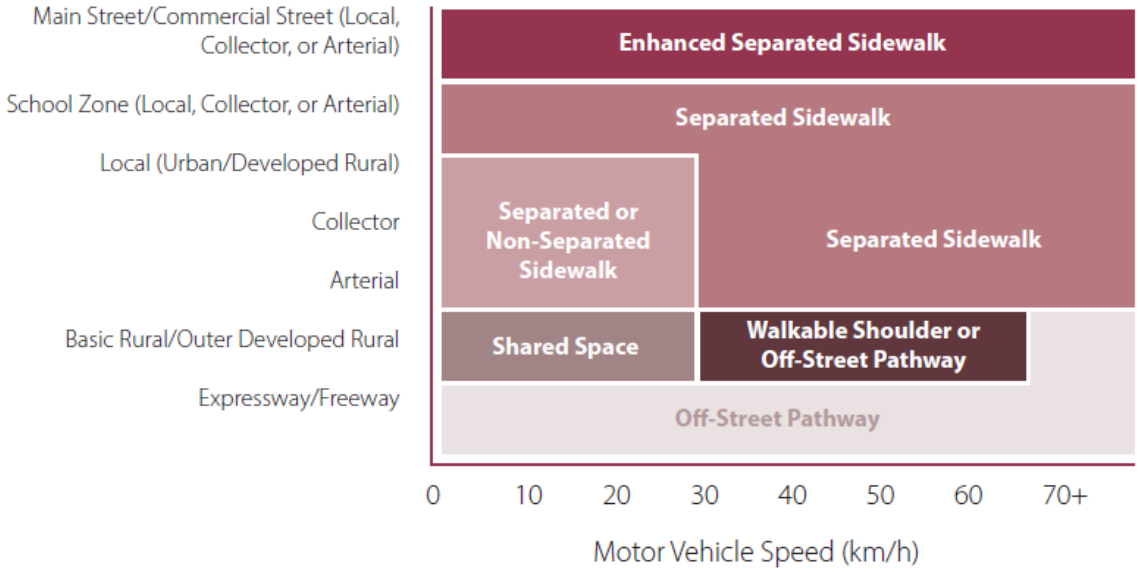


Figure 16: Pedestrian Facility Selection Decision Support Tool
Retrieved From: BC Active Transportation Design Guide

SEPARATED SIDEWALKS

Most of the sidewalks in the Town are considered "non-separated", which is where the walking surface is separated only by a curb from the vehicle lanes and parking lanes. Non-separated sidewalks are found on most of Creston's Arterial and Collector roads including Canyon Street, Cook Street, 15th Avenue North, 20th Avenue South, 16th Avenue North, and 10th Avenue, among others.

Separated sidewalks take up more right-of-way and can also be more expensive to construct and maintain due to the addition of a furnishing zone. However, the lack of these facilities in Creston may impact the overall pedestrian experience and result in less walking as a result.

The BC Active Transportation Design Guide advises against non-separated sidewalks on collector, arterial, or industrial roads with motor vehicle speeds greater than 30 km/h. On these roads, a separated sidewalk is recommended. Higher motor vehicle speeds and volumes can negatively impact pedestrian safety and comfort.

The Design Guide defines a separated sidewalk as one where the furnishing zone (which provides space for utilities, street, furniture, landscaping, street trees, etc.) separates the sidewalk from the roadway. It provides a buffer and enhances pedestrian safety and comfort while providing space for sidewalk amenities and utilities.[8] The guide indicates that separated sidewalks:

- Increase the safety and comfort for people walking due to the larger buffer from motor vehicles;
- Provide space in the Furnishing Zone for utilities and sidewalk amenities such as benches, bicycle racks, street trees, and landscaping, while maintaining an unobstructed sidewalk; and
- Provide an adequate slope area for driveway ramps between the curb and sidewalk.

As the Town builds new roadways, such as Glaser Road (between Cavell St and Devon St) or Devon Street (between Northwest Boulevard and Devon Street Extension), it should follow the new cross-section of the Urban Collector identified in **Section 5.2.2**, which includes a separated sidewalk. Similarly, as the Town looks to retrofit existing sidewalk facilities through the development process, it should consider the pedestrian facilities and widths in alignment with the Design Guide, see **Table 16** below includes the recommended widths for the sidewalk facilities based on OCP land use designation.

Example of a separated sidewalk on Cedar Street west of 16th Ave S

[8] *Government of BC. (2019). Active Transportation Design Guide, Chapter C: Pedestrian Facilities. Available online at: https://tinyurl.com/y298s6lq*

TABLE 16: SIDEWALK RECOMMENDED WIDTHS

OCP Land Use Designation	Road Class	Separation	Desirable (m)	Constrained (m)
Commercial (Downtown Core)	Urban Arterial / Urban Collector / Urban Local	Separated	2.0-3.0	1.8
Commercial (General)	Urban Arterial / Rural Arterial	Separated	3.0	1.8
Commercial (Highway Service)	Rural Arterial	Separated	2.4-3.0	1.8
Industrial	Urban Local	Separated	1.8- 3.0	1.8
Institutional	All	Separated	2.0-3.0	1.8
Residential	Residential Local / Rural Local	Non-Separated or Separated	1.8	1.8m

OFF-STREET PATHWAYS & MULTI-USE PATHWAYS

Off-street pathways or multi-use paths (MUP) are of particular interest within the Town as they provide a space for both people walking and cycling in an off-street environment. A pathway shared by people walking and cycling, separated from motor vehicle traffic, achieves a similar goal to separated sidewalks. Pathway users will feel more comfortable than if the pathway was adjacent to travelling vehicles alongside a busy roadway. Multi-use pathways may be installed in a variety of land-use contexts and environments, including but not limited to:

- Parallel to an adjacent roadway or highway
- Within utility corridors;
- Within railway corridors; or
- Other contexts such as within park sites or other green spaces

The Town has successfully implemented off-street pathways such as the Millennium Trail & Park Connector or the Library loop among others. These facilities separate users from motor vehicles, are comfortable to travel on, and are critical for facilitating recreational travel in the active transportation network. Sometimes these recreational connections do not provide the most direct link for their users, nor pass by all the key destinations and locations that are located directly on the commercial streets of the road network. Pathways parallel to adjacent roadways or highways can have multiple advantages, including being more direct, can

provide multi-modal access to the most popular destinations in the Town and, in the case of Creston and Highway 3, be on some of the flattest grades. Further design guidance for the MUPs has been provided in **Section 7.3.**

The Millennium Trail is an example of a multi-use pathway.

WALKABLE SHOULDERS

Walkable shoulders should be considered in the context where a road has no curb and gutter and operates as a rural roadway. In these cases, concrete sidewalks have not typically been provided due to prohibitive costs. On these roadways today, pedestrians and vehicles would share the same space on the road, with pedestrians naturally gravitating to the edge of the roadway. The BC AT Design Guide does provide guidelines to allow for a dedicated pedestrian space in a rural road context.

It recommends separating (paint, buffer, curb, etc.) pedestrian space for roadways with motor vehicles operating at a speed of more than 30 km/h. Other locations that have done this type of separation in a rural context include Thacker Drive West Kelowna, shown below.

An example of this type of proposed improvement for Creston is on 6th Avenue between Canyon Street and Valleyview Drive, where a clear pedestrian connection can be made that parallels the west side of Northwest Boulevard (Highway 3).

6.3.2 CROSSWALKS

As per the BC Motor Vehicle Act (MVA) pedestrians have the right-of-way over vehicles at intersections. No signage or markings are required to make it a legal crossing point; however, many people are unaware of this regulation and the public 'feel' safer with additional features, such as signs, pavement markings, and flashers, to identify crosswalks.

Motor Vehicle Act Definition of a Crosswalk

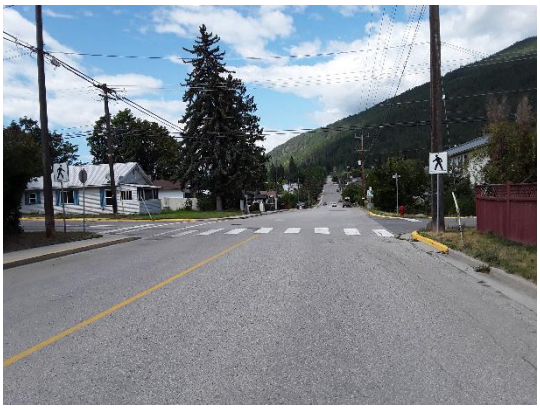
"(a) a portion of the roadway at an intersection or elsewhere distinctly indicated for pedestrian crossing by signs or by lines or other markings on the surface, or
(b) the portion of a highway at an intersection that is included within the connection of the lateral lines of the sidewalks on the opposite sides of the highway, or within the extension of the lateral lines of the sidewalk on one side of the highway, measured from the curbs, or in the absence of curbs, from the edges of the roadway"

Currently, the Town uses the Pedestrian Crossing Control Manual for BC (2nd Edition, 1994) to evaluate requests for crosswalks in the community. This document has been used since 2010, and previously, did not have a standard policy to determine the need for the installation of signed and marked crosswalks. As a result, many crosswalks are installed inconsistently. The Transportation Association of Canada (TAC) Pedestrian Crossing Control Guide (3rd Edition) provides a decision support tool to determine the level of pedestrian crossing facilities warranted. The Town should develop a crossing policy that is based on TAC, but with considerations for Creston conditions to systematically install crosswalks at required locations and ensure consistent messaging for improved conspicuity.

The following crosswalk types are recommended in Creston, which are based on best practices from TAC and the BC Active Transportation Design Guide.

Unmarked Crossing

At the intersection of any two roads with pedestrian facilities, all legs of the intersection are legally considered to contain crosswalks, regardless of whether or not they are marked with signage or pavement marking.



Marked Crossing

A marked crossing typically includes twin parallel lines that delineate the crossing or zebra markings (wide white parallel lines perpendicular to the road) Zebra markings are used across uncontrolled legs and parallel lines for controlled legs (signal or stop sign)

Rectangular Rapid Flashing Beacon / Pole Mounted Flashers

Rectangular Rapid Flashing Beacons (RRFBs) and Pole Mounted Flashers have flashing amber lights that alternate back and forth to attract motorists' attention and thereby increase yield behaviour. The signage and flashers may be side mounted, or side mounted and overhead.

6.3.3 UNIVERSAL DESIGN

The BC Active Transportation Design Guide defines universal design as a built environment that is "accessible to people of all ages and abilities, regardless of any type of physical or cognitive impairment." Creston residents may have a range of challenges that make it harder for them to move around the community. This can include mobility impairments but also include a broader range of challenges including vision, hearing, strength and dexterity, and comprehension. Data at the national level has found that one in seven Canadians currently lives with a disability that impacts their mobility, vision, or hearing and this is projected to rise to one in five as the population continues to age.[9]

There are still parts of the pedestrian network where sidewalk distresses are present, which makes it harder for those with mobility impairments to move around. Further, there are many intersections in the Town where existing active transportation facilities are not meeting the definition of universal design. The following design elements should be considered as part of the minor and major intersection improvements recommended in **Section 5.2.4** The elements are derived from the "Universal Accessibility Design Toolbox" in Chapter B of the BC Active Transportation Design Guide.

[9] Rick Hansen Foundation. (No date). Accessibility Matters. Available online at: https://www.rickhansen.com/become-accessible

MOBILITY

- To meet the needs of people using mobility devices such as wheelchairs, walkers, canes, and mobility scooters:
- Providing accessible slopes and grades, with appropriate landing areas and resting spots
- Providing accessible ramps where applicable
- Ensuring that surfaces are smooth, firm, slip resistant, and free of tripping hazards
- Providing curb ramps for road access
- Maintaining the sidewalk and ensuring it is clear of vertical and horizontal obstructions
- Providing benches for resting at logical intervals along ramps and stairways
- Providing year-round monitoring and maintenance

VISUAL

Visual tools can include signage, pavement markings, and wayfinding. Countdown timers could also be considered as part of Major Intersection Reviews to show pedestrians how long they have to cross the road.

AUDIBLE

Very few intersections in the Town have audible pedestrian signals, which are designed to make sounds to indicate when to cross a road to help visually impaired people safely navigate intersections.

6.3.4 ACCESSIBILITY AT INTERSECTIONS

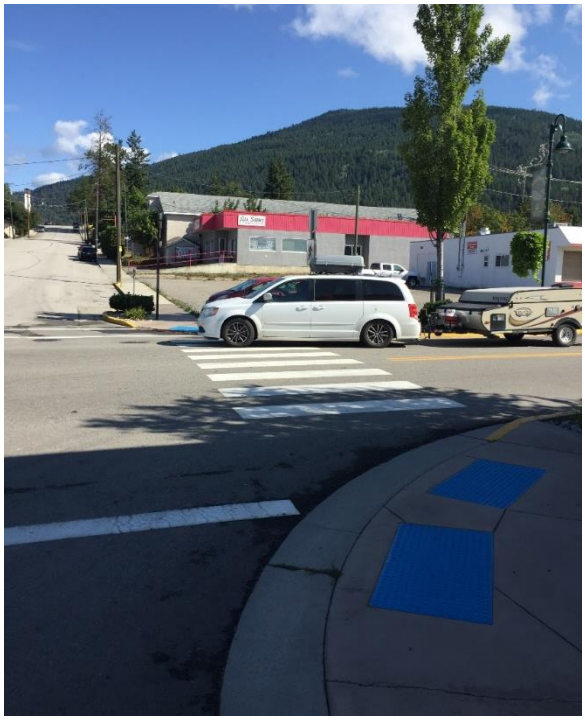
The Town's sidewalk network and relatively short distances between destinations in the downtown area help create a walkable environment. While some sidewalks require more separation (as discussed in **Section 6.3.1**), people walking can still access their destinations safely and efficiently.

An important part of the walking experience is navigating through a safe and accessible intersection. As shown below, the Town and MOTI have already taken steps to enhance the accessibility of the intersections along Canyon Street in the downtown area. For example, the Canyon Street and 12th Avenue intersection has the following accessibility features:

- **Double curb ramp** | Provides a dedicated curb ramp for each individual crossing. They also provide full universal access by landing pedestrians directly in the

crossing area and in the desired direction of travel, rather than entering the road at an angle and having to reorient themselves;

- **Marked Crossings** | all legs of the intersection have pavement markings which makes the crosswalk more visible to all road users. This can increase motorist yielding behaviour and help guide pedestrians across the road in the safety and most direct location;
- **Tactile Attention Indicator** | all corners of the intersection have a blue tactile attention indicator that alerts people of an impending change in elevation, conflicts with other transportation modes, and/or other potential hazards; and
- **Audible Pedestrian Signal** | signals that make sounds to indicate when to cross a road. They help visually impaired people safely navigate intersections.



Example of a marked crossing at Canyon Street & 11th Ave (top) and a double curb ramp with tactile attention indicators at Canyon Street and 15th Avenue (bottom)

6.3.5 CURB RAMPS

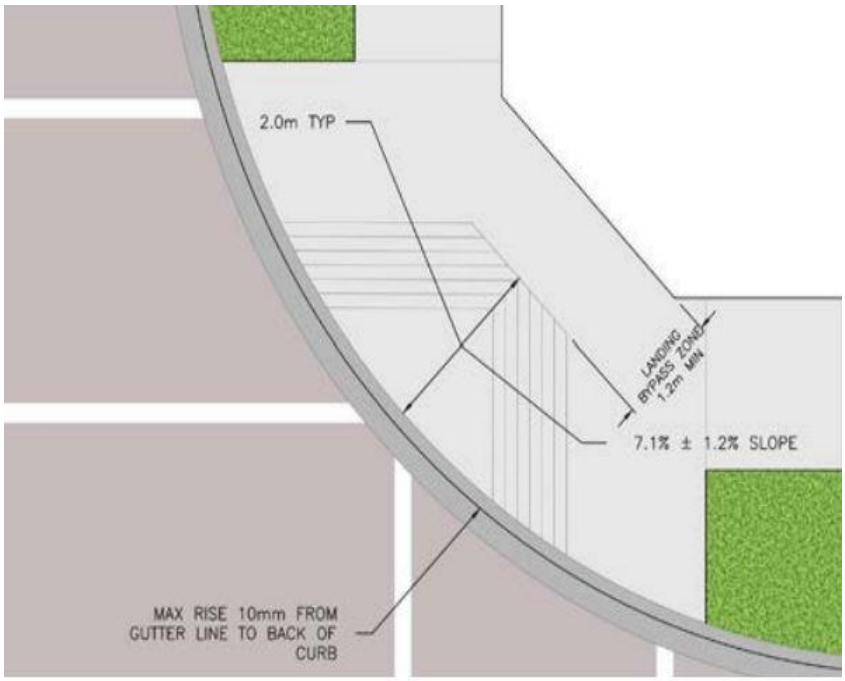
Deficient curb ramps were identified as one of the barriers to accessibility in the MMTP *Scoping Report*. A curb ramp, also referred to as "curb cuts", "accessibility ramps", and "sidewalk letdowns" are a smooth, graded transition from the sidewalk to the road and are required for people using wheelchairs, power scooters, and other mobility devices, but also benefit people with strollers, baggage, and delivery carts. They are also used as a navigational tool by people with visual impairments.[10]

Example of curb ramp in the Town that has been modified (foreground), an unmodified curb ramp on the channelized island and a vertical curb with no ramp on the far side of the intersection located at 9 Avenue and Canyon Street

While curb ramps are provided at most intersections in the Town, there are some that do not meet the recommended design guidance in the Design Guide. For example, some of the critical components of curb ramp design that are outlined in the Design Guide include:

[10] Government of BC. (2019). Active Transportation Design Guide, Chapter G: Intersections + Crossings. Available online at: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide-low-res/2019-06-14_bcatdg_section_g_rfs.pdf

- The desired curb ramp width (exclusive of flared sides) is 1.8 metres, with a constrained limit width of 1.5 metres. The absolute minimum curb ramp width is 1.2 metres.
- The bottom landing area is the receiving space in the road at the base of a curb ramp. Steep counter slopes can be difficult to navigate for wheelchair users, as the counter slope may catch footrests or cause a loss in wheel traction. The maximum recommended counter slope is 1:20 (5%). The bottom landing area should be prioritized for maintenance to ensure that the surface remains in good condition and to prevent the accumulation of debris such as gravel and leaves.
- To provide full universal access, changes to the curb ramp design used in Creston will be required.



Example of a combined curb ramp. They allow people using wheelchairs to enter the crosswalk along a straight trajectory, unlike a single curb ramp that is located at an angle to the road.

Source: BC Active Transportation Design Guide.

6.3.6 TOPOGRAPHY, RAMPS & STAIRCASES

The Town has stairways in place, which help maintain connectivity in the network. Further, they are effective in traversing significant vertical distances in a limited horizontal distance, making them a space-efficient means of accessing grade-separated facilities.[11] As outlined in the BC Active Transportation Design Guide, stairways can be made more accessible by increasing stairway width, stair rise and run, handrails, and the provision of landing areas. In addition, where possible, pedestrian ramps should be provided to allow those using a mobility device to comfortably access grade-separated facilities and crossings.

The BC Active Transportation Design Guide includes several mitigation strategies[12] for communities with steep topography, as follows:

- **Maintenance**: ensuring sidewalks are clear of snow, ice, gravel and wet leaves as they can create more dangerous slipping hazards;
- **Rest Areas**: providing frequent flat landing areas with benches and seating to allow people to walk uphill in stages;
- **Railings**: adding railings to help people when navigating steep slopes;
- **Circulating Shuttle**: a shuttle that connects to key destinations can lessen the impact of steep topography;
- **Adding Switchbacks**: curves or switchbacks can be added to the pedestrian facility if space permits to help minimize grade;
- **Accessible Ramps**: if the grade is steeper than 8.3%, an accessible ramp may be provided;
- **Ladder Sidewalks**: this includes concrete bars in the sidewalk on some of the steepest roads to provide additional traction for pedestrians; and
- **Stairways**: stairways can maintain connectivity where standard sidewalks or accessible ramps are not feasible. While they are not accessible for people using mobility devices, they provide railings and intermittent landing areas that allow people to rest.

Example of a ladder sidewalk. Retrieved From: BC Active Transportation Design Guide

[11] *Government of BC. (2019). Active Transportation Design Guide, Chapter G: Intersections + Crossings. Available online at: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide-low-res/2019-06-14_bcatdg_section_g_rfs.pdf*

[12] *Government of BC. (2019). British Columbia Active Transportation Design Guide. Chapter B: Setting the Context. Available online at: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide-low-res/2019-06-14_bcatdg_section_b_rfs.pdf*

6.4 SUPPORTIVE PROGRAMS + POLICIES

The Town should pursue several policies and programs to make walking a more accessible mode of transportation, including education, programming, and policy changes to help promote walking and reduce the dependency on vehicles to undertake shorter trips.

6.4.1 SAFE ROUTES TO SCHOOL

A Safe Routes to School program is a multi-stakeholder and multi-staged process that involves a municipal / regional district partner, the school community (e.g., parents, teachers, staff, students), and other organizations to identify barriers and solutions for active travel and strategies to address traffic safety concerns. The structure and process of a safe routes to school program differs depending on the jurisdiction; however, in general, it generally includes five phases:

1. Program Set-up
2. Data Collection & Analysis
3. Planning
4. Implementation
5. Evaluation

There are several different activities that a school—and its supportive partners—can implement to encourage more active modes of travel to/from school. For example, the Regional District of Central Okanagan's Safe Routes 4 Schools Program[13] was developed to help improve air quality at schools by reducing motorized vehicle emissions near school buildings. Each participating school develops an action plan that addresses safety concerns and identifies necessary infrastructure improvements to encourage students to use active transportation if they live 2.5 km or less from their school. The RDCO has partnered with smartTRIPS[14], who provide additional resources and programs to support this initiative, along with other programs that reinforce the uses of these safe routes developed to continue to encourage children to participate in active travel for part of their everyday trips to and from school.

[13] Regional District of the Okanagan Safe Routes 4 Schools Program to School website. Available at: https://www.rdco.com/en/environment/safe-routes-4-schools.aspx

[14] smartTRIPS Schools Program website. Available at: https://www.smarttrips.ca/programs/school-programs-resources

In collaboration with surrounding towns, Lower Kootenay Band, and the Regional District Central Kootenays, it is recommended that the Town look to establish a similar program and pilot it at select schools every year.

6.4.2 PEDESTRIAN FACILITY AND CROSSWALK PRIORITIZATION POLICY

Section 6.2 identifies the recommended pedestrian facilities for the network. Many missing links, pedestrian crossings, and accessibility improvements are recommended over the next 10 years, however, providing a ranking for potential facilities in the 10-30 year time frame is more challenging as the community continues to grow and as priorities shift.
All of these facilities are critical for enhancing the connectivity and safety of the network; however, the Town should adopt a pedestrian infrastructure prioritization policy to determine the future order of priority.

The following criteria could be utilized to determine facility priority when considering the sequencing of pedestrian facilities:

1. Routes to school.
2. Streets with connections to recreational amenities including parks, community / recreation centres, trails, and other facilities.
3. Streets and locations with transit facilities (e.g., bus stops).
4. Streets with the "Urban Road' classification including arterial, collector, and local.
5. Streets with the Residential Local classification

Similar to sidewalks, crosswalks implementation could also be prioritized and confirmed where warranted. Fortunately, the current version of the TAC Pedestrian Crossing Control Guide. (3rd Edition is current at the time of this plan), provides the decision-making tools necessary to undertake this work, which includes a treatment selection matrix to determine if a crosswalk should be installed and the type of treatment. The Town should adopt a crosswalk policy that will be utilized to confirm if a crosswalk is warranted and if warranted what level of crosswalk is to be implemented.

6.5 ACTIONS

The following **Table 17** summarizes the recommended actions for the pedestrian network.

TABLE 17: PEDESTRIAN NETWORK ACTIONS

Action		Description
2A	Construct New Pedestrian Facilities	Prioritize and implement pedestrian facilities in the 1-10 Year Tactical Plan for the High, Medium and Low-Level Priority List
2B	Plan and Build Pedestrian Improvements in the Ultimate Pedestrian Network	As part of the ultimate pedestrian network, separated sidewalks are recommended to align with best practices. These facilities can be paid for through the development process and/or through capital planning.
2C	Undertake a Feasibility Study of the Northwest Boulevard Pathway Alignment and Erickson Road	In partnership with MOTI undertake a study to determine the feasibility of a MUP that runs parallel to these key highway segments to provide a direct north/south connection and east/west connection for pedestrians and cycles.
2D	Establish a Safe Routes to School program	Establish a Safe Routes to School Program and pilot it at select schools every year.
2E	Develop a Pedestrian Facility and Crosswalk Prioritization Policy	Develop a pedestrian facility and crosswalk prioritization policy to indicate the order of priority for new pedestrian facilities.

Section 7 – Cycling Network

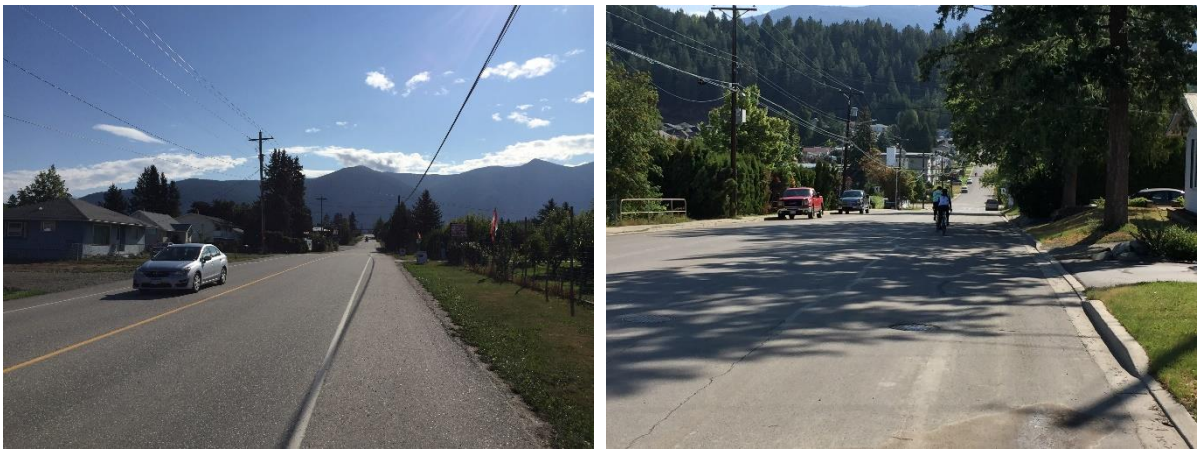
7.0 CYCLING NETWORK

Even though Creston has a compact geography with key destinations within cycling distance for most residents, cycling only represents a small percentage of trips within the Town today. According to the 2016 census, 1% of residents biked to work. Cycling mode share for all trips has the potential to increase with improvements to the overall network and with supportive policies and programs.

7.1 NETWORK TODAY

The Town's existing cycling network has two facility types: (1) shoulder bike lanes and (2) shared lanes. Shared lanes are found on several roads including Hillside Avenue, 9th Avenue, and 11th Avenue as identified in the 2018 Community Connectivity Master Plan.[15] Shared lanes are general purpose roadways that have sufficient width to facilitate both motorists and people cycling.[16] Currently, there are approximately 2.9 kilometres of shared lane facilities within the Town's active transportation network.

The Town also has 2.7 kilometres of shoulder bike lane facilities. They are found on Valleyview Drive north of 6th Avenue, Railways Boulevard between Northwest Boulevard to Canyon Street, and along Erickson Road along the town boundary.



Example: shoulder bike lane on Erickson Road (left) and a shared lane facility on Hillside Street (right)

[15] *Map 2: Cycling Network – Town of Creston Community Connectivity Master Plan – Draft Copy – February 23, 2018*
[16] *Transportation Association of Canada. (2017). Geometric Design Guide for Canadian Roads: Chapter 5 Bicycle Integrated Design.*

7.1.1 STRAVA DATA

Strava is an increasingly popular exercise and tracking app that incorporates social network and GPS features. Data from publicly shared activities – such as cycling or running– are mapped out displaying elevation change and route, and are categorized by activity. This data may be used to identify desire paths, network gaps, and help communities improve their active transportation infrastructure.[17] Even though Strava data is more representative of recreational trips, research has indicated that the app is becoming more representative of the general bicycling population. Further, in some BC municipalities, there is higher usage of Strava among women and older adults.[18] Based on information gleaned from Strava. the following routes have been identified as being the most active corridors (**Figure 17**):

- Canyon Street
- Cook Street
- 16th Avenue
- Hillside Street
- Vancouver Street
- 10th Avenue

Although the number of trips will not capture all cycling activity, it still provides an indication of cycling utilization and preferred travel corridors.

[17] *Ferster, C. & Nelson, T. & Laberee, K. & Winters, M. (2021). Mapping bicycling exposure and safety risk using Strava Metro. Applied Geography. Vol 127. Retrieved From: https://doi.org/10.1016/j.apgeog.2021.102388*

[18] *Fischer, J. & Nelson, T. & Winters, M. (2022). Changes in the Representativeness of Strava Bicycling Data during COVID-19. Transport Findings. Available online at: https://findingspress.org/article/33280-changes-in-the-representativeness-of-strava-bicycling-data-during-covid-19*

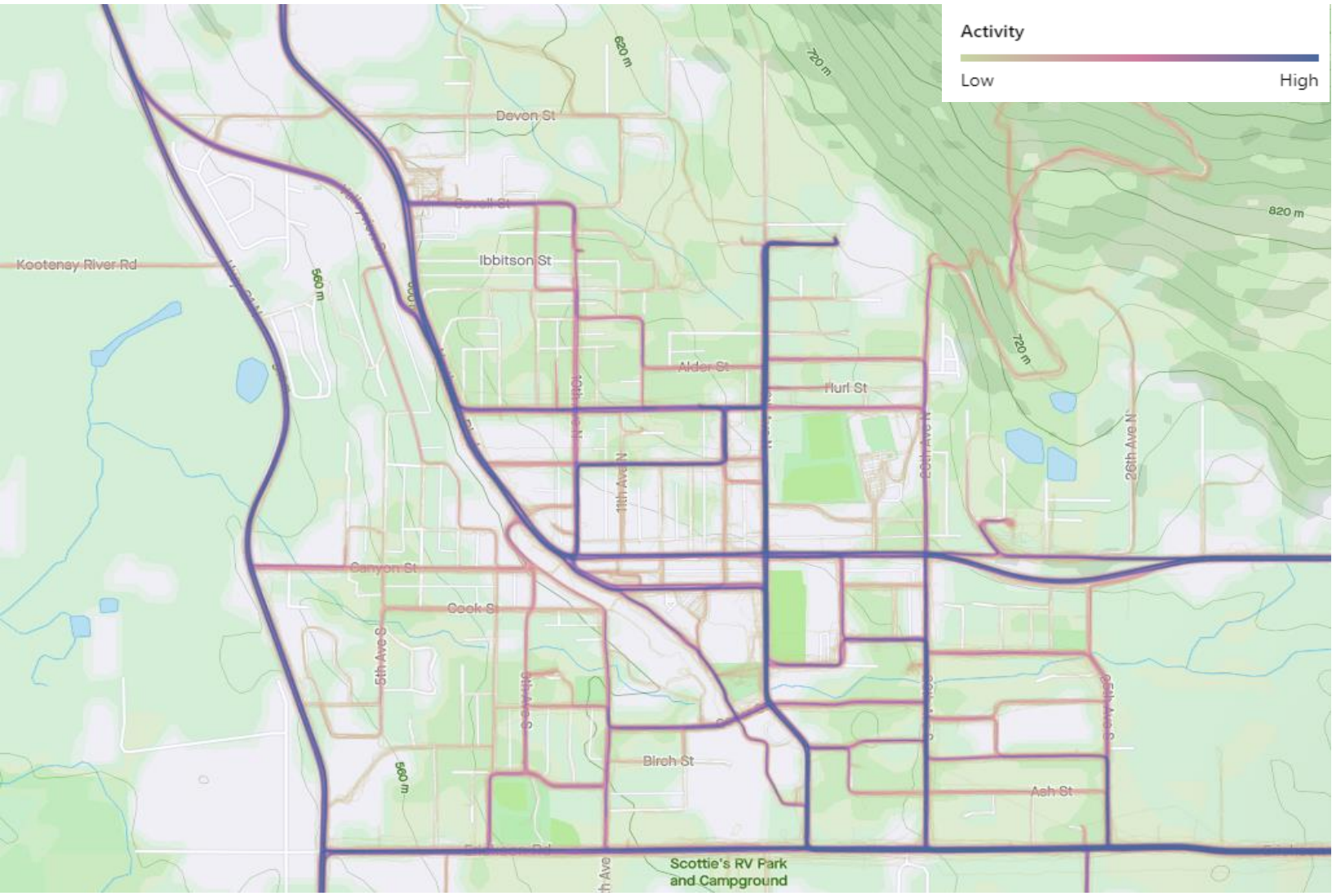


Figure 17: Strava Heatmap in Creston (September 2020 - August 2021)

7.1.2 BARRIERS TO CYCLING

EXISTING FACILITIES

At the current time, Creston's cycling facilities do not meet the standards within the BC Active Transportation Guide for All Ages and Abilities (AAA) networks. AAA cycling facilities offer a greater degree of safety and comfort for users of this transportation mode.

Creston's current network is primarily "shared lanes" which – according to TAC – require motor vehicle speed limits of 30 km/h or less, a relative bicycle to vehicle speed differential of no more than 10-20 km/h for average daily roadway volumes of less than 2,500 vehicles, and for fewer than 10 heavy vehicles to use the road during peak hour traffic.[19]

Hillside Avenue has over 2,500 vehicles per day. Currently, people cycling have to share the road with vehicles, which is not comfortable for most users. A better facility is required on this corridor to align with best practices.

There are several streets in the Town that have traffic volumes greater than 2,500 vehicles per day with posted speed limits of 50 km/h. Based on the bicycle facility selection decision matrix in the BC Active Transportation Design Guide, these streets should be upgraded from shared lanes to painted bicycle lanes at the minimum. These streets include 16th Avenue N (north of Canyon Street) and Hillside Street. 16th Avenue S (south of Canyon Street) and Cook Street have over 4,500 vehicles per day and would justify a facility such as a protected bicycle lane to make the corridor suitable for all ages and abilities.

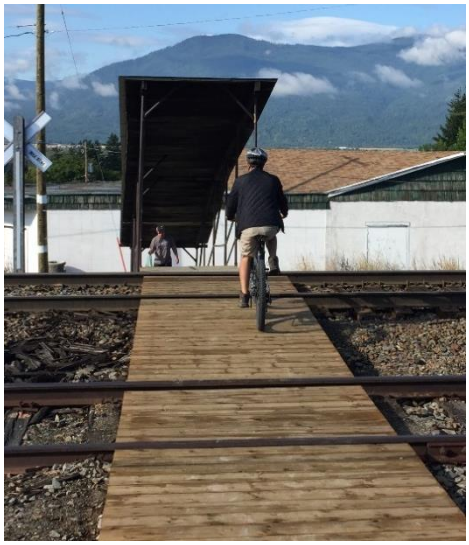
[19] *Transportation Association of Canada. (2017). Geometric Design Guide for Canadian Roads: Chapter 5 Bicycle Integrated Design.*

TOPOGRAPHY

Topography can be a barrier to cycling for some users, especially those residing at the base of Arrow Mountain. Staircases are available, however, due to Creston's topography, they are not designed to accommodate people cycling as they lack bicycle channels. Bicycle channels can be provided along staircases to make them accessible for strollers and dismounted bike users (more information about bicycle channels is found in **Section 7.3**). According to the BC Active Transportation Design Guide, grade changes greater than 13% should be avoided when transitioning between the ramp and the road or gutter. Even though electric bicycles help address topography challenges, steeper grades and inaccessible staircases still pose a barrier to people cycling. More information about electric bicycles and their potential in Creston is available in **Section 10.2**.

Intersections & Rail Crossings

Intersections, road crossings, and rail crossings are points where people cycling come into contact with motorists and other transportation modes. According to ICBC, four out of five cycling collisions happen at intersections.[20] Creston currently has many unsignalized intersections that do not facilitate safe cycling and should be upgraded when building out the bicycle network. Of note, the following intersections are signalized but currently do not adequately facilitate cycling and will require upgrades to accommodate their integration within the Creston Bicycle Network.



Person cycling approaching a staircase with no bicycle ramp.

- **Canyon Street//10th Avenue North & Cook Street** | This intersection has the highest rate of traffic collisions within the Town. It has westbound and southbound channelized right turns that post hazards to people cycling.
- **Canyon Street//16th Avenue North** | Another intersection with a higher rate of traffic collisions. There is uneven pavement at the shoulder of each of these roads that

[20] *ICBC. (2020). Cycling Safety. Available online at: https://www.icbc.com/road-safety/sharing/Pages/cycling-safety.aspx*

may force people cycling to ride into traffic. Furthermore, the large width of the roadways accommodates more reckless driving behaviours and higher speed.

- Northwest Boulevard & Canyon Street/Pine Street & 9th Avenue |
  The largest intersection within Creston, this intersection was designed for high vehicle traffic volumes with four channelized right turns. Channelized right turns are intended for higher volume, higher speed roadways to facilitate motor vehicle movements. These higher speed right turns can lead to conflicts with other user groups and drivers who are not paying attention to other user groups. A person cycling on Northwest Boulevard or on Pine Street / 9 Avenue North who is wanting to turn left has to cross from the curb across the wide right turn area to access the left turn lane.

7.2 NETWORK TOMORROW

In line with the vision in this plan, Creston's future cycling network will be implemented over time. In the short-term horizon, the Town will prioritize a series of 'quick build' facilities followed by the larger build-out of the network within the 1-10 Year Tactical Plan and the 10-30 Year Strategic Plan. The goal of this is to offer greater short and long-term protection from motor vehicle traffic so that all trips—regardless of purpose— can be done safely and comfortably by people cycling.

A FRESHLY PICKED CYCLING NETWORK – OCP POLICY DIRECTIONS

Creston's Official Community Plan contains - but is not limited to - the following policies directly related to the creation and enhancement of cycling infrastructure:

- Policy 2.2 (Infrastructure) | Include bike travel when developing off-street trail systems;
- Policy 2.3 (Infrastructure) | Design unpaved trails with a surface material that compacts and provides a hard surface to accommodate bikes, scooters and strollers;
- Policy 2.4 (Infrastructure) | Design unpaved trails with a surface material that compacts and provides a hard surface to accommodate bikes, scooters and strollers;
- Policy 2.5 (Infrastructure) | Include adequate signage (e.g. "share the road") to promote bike safety along major roads and highways, working with the Ministry of Transportation & Infrastructure when appropriate;
- Policy 5.1 (Connectivity) | Improve the design of new and retrofitted streets to: enhance Connectivity; allow multiple modes of travel; and, promote enhanced pedestrian, scooter and cycling opportunities and safety;
- Policy 5.2 (Connectivity)| Work with MOTI to include bike lanes and appropriate signage along Northwest Boulevard and Cook Street in any street re-design or improvements; and
- Policy 3.3 (Downtown Vibrancy) | Provide a range of transportation options and facilities in the Downtown Core such as enhanced sidewalks, trails and bike lanes.

7.2.1 QUICK-BUILD (1-3 YEAR) CYCLING NETWORK

A 'quick-build' cycling network refers to cycling facilities that are temporary in nature and can be implemented quickly. Quick-build materials are flexible and inexpensive, which allows adjustments to be made after implementation if the need arises. This could make it easier for residents and businesses to test infrastructure changes before the Town pursues more permanent infrastructure, which has higher capital costs.

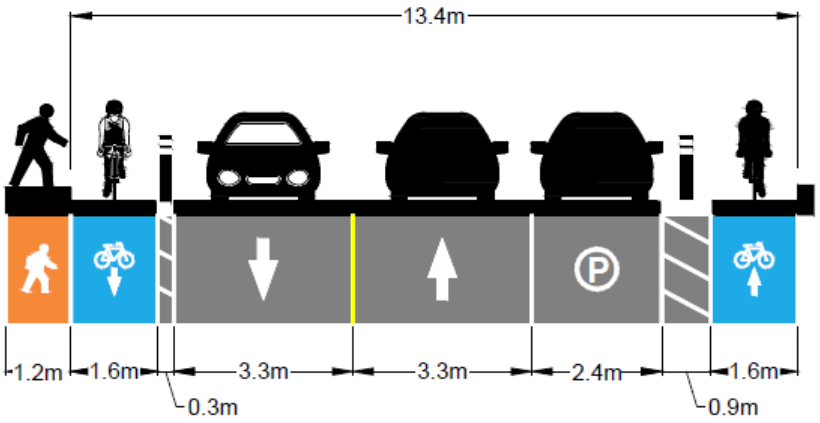
Map 8 identifies the Quick-Build cycling network with more information about each facility provided below.

HILLSIDE STREET (9TH AVENUE TO 16TH AVENUE N)

Hillside Street between 9th Avenue N and 16th Avenue N has a wide 13.4m pavement width with no lane markings to define the laning on the roadway. Further, there are 4,500 vehicles per day on this corridor and it is signed at 50 km/h, which makes it less comfortable for people cycling. Hillside Street also has a significant amount of grade on either side of the plateau near 12 Avenue N, which may deter some from taking this route as a main east-west connection. However, it does provide a direct connection from Northwest Boulevard to the Creston and District Community Complex.

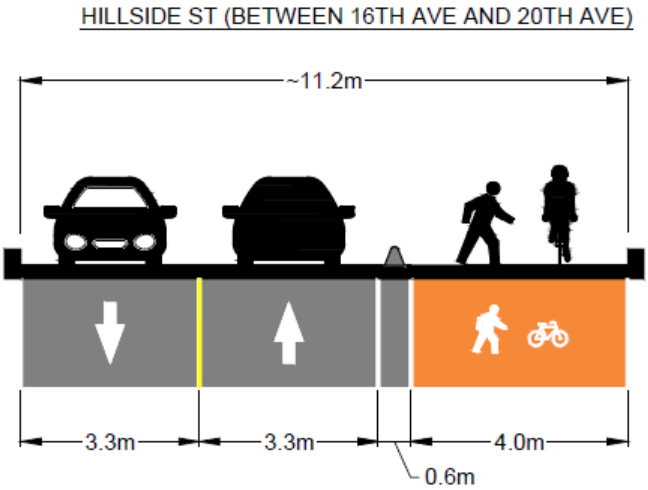
The recommended quick-build facility includes a defined road space with road paint and flexible delineator posts. Parking could be provided on one side of the road and bike lanes would be provided on either side of the roadway.

HILLSIDE ST (BETWEEN 9TH AVE AND 16TH AVE)



HILLSIDE STREET (16TH AVENUE TO 20TH AVENUE N)

Hillside Street from 16th Avenue N and 20th Avenue N is also wide with no pedestrian or cycling facilities. The proposed quick-build facility includes a 0.6m buffer space, which would provide separation by a combination of jersey barriers and planter boxes to protect people walking and cycling. A wide 4.0m multi-use pathway (MUP) is recommended to allow for travel in both directions on the south side of the roadway. Parking is removed in this cross-section to make room for the recommended multi-use pathway. The Town may also consider transitioning the MUP behind the curb in the green space to retain some parking on the north side of the road. The recommended quick-build facility defines the road space with road paint and a combination of 0.6m jersey barriers and planter boxes.

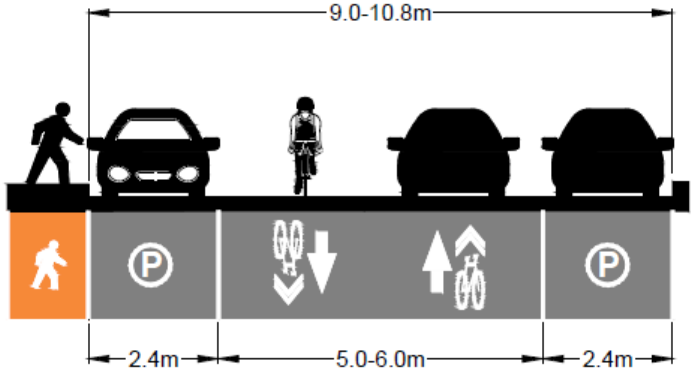


VANCOUVER STREET (NORTHWEST BOULEVARD AVENUE TO 16TH AVENUE N)

Vancouver Street from Northwest Boulevard to 16th Avenue is another important east-west corridor. Narrower than Hillside Street, it ranges from approximately 9.0-10.8m pavement width with no lane markings to define the laning on the roadway. There is a sidewalk on the north side along with parallel parking but no bike facilities. As Vancouver Street heads towards 16th Avenue N, it makes a jog to the south on 15th Avenue N before continuing east and connecting to 16 Avenue N. Given it requires less of a climb to make it to Vancouver Street from downtown than Hillside Street, it is anticipated that people who bike will use this as an alternative to the east-west corridor further north along Hillside Street.

The recommended quick-build facility includes a bicycle boulevard with pavement markings, a bicycle route sign, and a 30 km/h posted speed limit for the length of the corridor.

VANCOUVER STREET PROPOSED CROSS-SECTION (BETWEEN NORTHWEST BLVD AND 16TH AVE)



*Remove parking opposite to sidewalk when paved width below 9.8m.

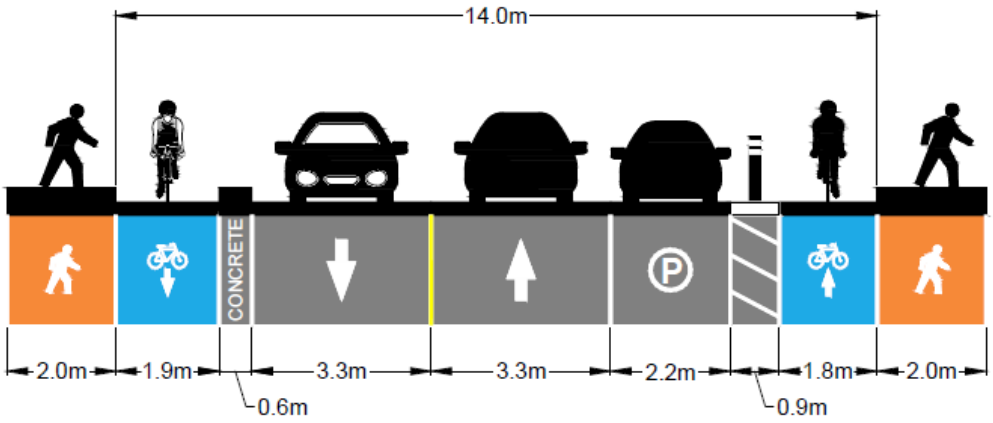
10th Avenue N (Canyon Street to Hillside Street)

10th Avenue N from Canyon Street to Hillside Street has a very wide 14.0m pavement width between Canyon Street and Vancouver Street and a 12.0m pavement width between Vancouver Street and Hillside Street. The peak parking utilization on the west side of 10th Avenue is 89% (Pine St to Vancouver St) and 50% (Canyon St to Pine St), which indicates that parking occupancy varies considerably along 10th Avenue. There are no lane markings to define the laning on the roadway. 10th Avenue falls into the urban collector roadway classification and can become the western edge of downtown's north-south cycling network's spine. It would complete the desire line between the future Market Park to the south and Hillside Street and Vancouver Street to the north.

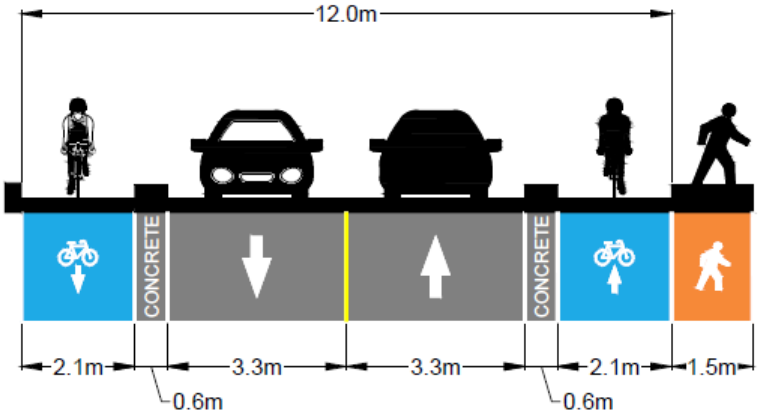
The recommended quick-build facility removes parallel parking from one side of the road to accommodate a protected bike facility. A raised concrete buffer is provided on the west side of the road where parking is removed, and a painted buffer with flexible delineator posts on the side where other next to the parallel parking is retained. Currently, Town Council is looking at an option to add a centre median with planters from Vancouver Street to Canyon Street. This street beautification effort could still be included in this project, through the addition of planter boxes in the buffer spaces between the bike lanes and the travel and parking lanes.

Further north on 10th Avenue N between Vancouver Street and Hillside Street, it is recommended that parallel parking be removed from both sides of the road due to the narrowing of the roadway down to 12m. It is replaced with protected bike lanes and raised concrete buffer on each side of the road and provides a continuous segment of protected bike lanes between Canyon Street and Hillside Street.

10TH AVE N PROPOSED CROSS-SECTION (BETWEEN CANYON ST AND VANCOUVER ST)



10TH AVE N PROPOSED CROSS-SECTION (BETWEEN HILLSIDE ST AND VANCOUVER ST)



10th Avenue looking north between Canyon Street and Pine Street. The recommended quick-build cycling facility would remove on-street parking on the west side of the street, amounting to a loss of 19 parking spaces. The parking analysis found that on-street parking conditions in the downtown are under-utilized. Therefore, the loss of parking along the west side of 10th Avenue from Canyon Street to Pine Street would have a minor impact on the overall parking conditions in the downtown and allow for safer and more convenient cycling activity to/from the downtown core.

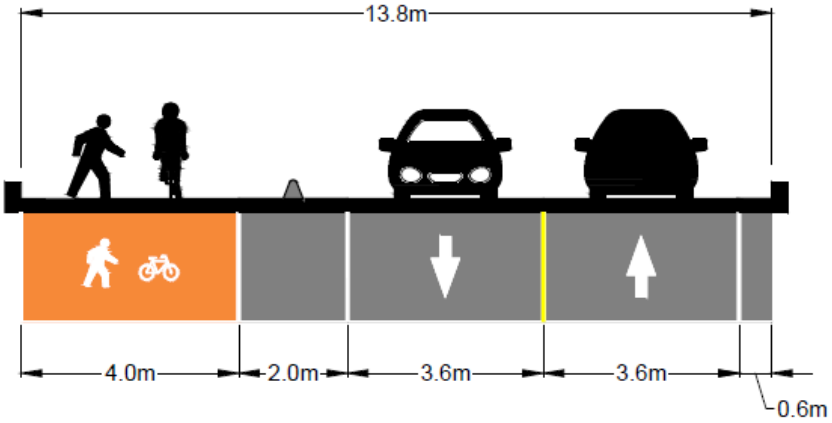
Canyon Street (Highway 21 to Railway Boulevard)

Canyon Street from Highway 21 and Railway Boulevard has a very wide 13.2m pavement width with no sidewalk and no lane markings to define the laning on the roadway. The recommended quick-build facility includes a multi-use pathway that would provide an east-west route for residents living north and south of Canyon Street (west of the CP Rail Tracks). There is room for parallel parking within the existing cross-section, although parking utilization is low and is therefore not critical to retain.

The recommended facility includes a 2.0m buffer space, which would provide separation by a combination of jersey barriers and planter boxes to protect people walking and cycling. A

wide 4.0m MUP is recommended to allow for travel in both directions on the south side of the roadway. Parking is removed in this cross-section to make room for the MUP, however, space exists to reduce the travel lanes (to 3.5m), buffer width (to 0.6m) and the MUP width to 3.5m, to preserve parking space (2.1m) on the southside between 5th Avenue and 8th Avenue on Canyon Street. This facility would provide residents living in the area with a viable cycling (and pedestrian) connection to/from the Downtown Core.

CANYON ST (BETWEEN HWY 21 AND RAILWAY BLVD)



WHAT WE HEARD ABOUT THE QUICK-BUILD CYCLING NETWORK

Based on feedback in online survey no.2, there is strong support for all five of the recommended quick-build cycling facilities; the level of support (both somewhat and strongly support) ranged from 71% to as high as 86% for the facilities. Respondents ranked the facilities in the following order of priority:

1. Multi-use pathway on north side Canyon St (Highway 21 to Railway Boulevard)
2. Multi-use pathway on south side of Hillside St (16th Ave to 20th Ave N)
3. Protected bike lanes on both sides of Hillside St (9th Ave to 16th Ave)
4. Protected bike lanes on both sides of 10th Ave N (Canyon St to Hillside St)
5. Bicycle boulevard on Vancouver St (10th Ave to 16th Ave)

Feedback from stakeholders was largely supportive of the quick-build cycling facilities; however, there was consistent commentary about the need to ensure that snow clearing is a priority in the winter months to remove snow in the cycling network.

"A cycling safe transportation route around Creston is important to encourage non motorized safe choices - safety, good for the environment, health/exercise are important reasons to choose non motorize options."
– Survey respondent, online survey no.2

7.2.2 BIKE FACILITY TYPES

The quick-build network includes three facility types shown below. **Section 7.3** includes more details about the design parameters of each facility.

MULTI-USE PATHWAY

The BC Active Transportation Design Guide defines multi-use pathways as off-street facilities that are physically separated from motor vehicle traffic and can be used by any non-motorized user.

A quick-build MUP in Creston's context would be on the street to utilize the existing width but have a temporary barrier treatment such as flexible delineator posts, rubber curbs, extruded curbs, concrete barriers and planter boxes, for example.

PROTECTED BIKE LANE

Protected bike facilities provide a vertical deflection that works to separate people cycling from motor vehicles. A quick-build protected facility can include a range of temporary materials similar to that of a quick-build MUP. Depending on the chosen temporary barrier treatment, the Town should expect to conduct regular inspections and replace the barrier materials as necessary.

BICYCLE BOULEVARD

Streets with low motor vehicle volumes and speeds that are suitable for motor vehicles and people cycling to share the road. A "level 1" bicycle boulevard is a quick-build facility that would include the Bicycle Route sign (IB-23), a 30 km/h posted speed limit, and pavement markings.

Map 8 – Quick-Build Cycling Network

7.2.3 MAINTENANCE OF THE CYCLING NETWORK

The benefits of a cycling network quickly disappear if it is not adequately maintained throughout the year. For the quick-build cycling network to be successful and a viable option for people cycling, it will require regular maintenance and snow removal. Bicycle planning research has found that icy/snowy conditions, debris, potholes, and uneven paving all have negative impacts on cycling as they pose hazards to people cycling and are potential causes for crashes.[21]

The Town does not currently have the proper equipment required to maintain the recommended cycling facilities. This is especially the case for protected bicycle facilities and multi-use pathways where smaller machinery would be required to access the lanes for snow removal and clearing of debris. The overall maintenance of the network includes several components, as follows:

- Sweeping and removing gravel, debris, and leaves; trimming adjacent vegetation; and adjusting bollards and other elements related to protected bike lane delineators.
- In the fall and winter months, it is critical to clear and remove debris and snow and treat and remove ice or slippery conditions (see **Section Council Policies 5.4.1** for recommendations on the Town's Snow Removal Policy and Street Sweeping Procedure)
- There are also asset management activities, which can include repairing pavement surfaces and other road surface appurtenances such as utility covers; replacing worn pavement markings, signs, and signals; mitigating locations with pooling water or drainage issues; replacing broken delineators; maintaining street and path lighting; and repairing and maintaining equipment that is used to maintain cycling facilities.

[21] Winters, M., Davidson, G., Kao, D., Teschke, K., 2011. Motivators and deterrents of bicycling: comparing influences on decisions to ride. Transportation (38), 153-168.

Example of a John Deere tractor from the City of Calgary clearing snow in a protected bike lane. This tractor has different attachments (brush, bucket, sprayer on the back) that can be used to clear snow, leaves, and other debris from a cycling facility.

Even though there are several maintenance activities involved in maintaining cycling facilities, the following specific activities are recommended for the quick-build cycling network:

- All of the recommended cycling facilities should be swept to remove leaves, gravel, glass, sticks, and other debris on a regular basis.
- Vegetation along cycling routes should be seasonally trimmed with horizontal clearances from the edge of the cycling facility to ensure adequate sightlines are provided at intersections.
- Establish a minimum winter width for a cycling facility to direct the timing of snow removal operations.
- Treat all cycling facilities with anti-icing and de-icing materials to reduce and eliminate slippery conditions.

7.2.4 1-10 YEAR CYCLING NETWORK

The 1-10 year cycling improvements are primarily focused on developing new cycling corridors to grow the cycling network and support the 'quick build' facilities in the core area of the Town. Given that people cycling can also use the existing multi-use pathway network, some of the high priority improvements also focus on connecting these crucial pieces to provide a robust future network. Most of the 1-10 year cycling network will utilize existing roadway widths (when possible), and be located on lower volume / lower speed local streets, where sharing the lane with other roadway users is possible.

HIGH PRIORITY CYCLING IMPROVEMENTS

The corridors below list the high priority improvements that will support the 'quick-build' cycling network the greatest. These facilities are broken down by type of improvement and have accompanying cross-sections. They are also shown on **Map 9**, the Ultimate Cycling Network Map.

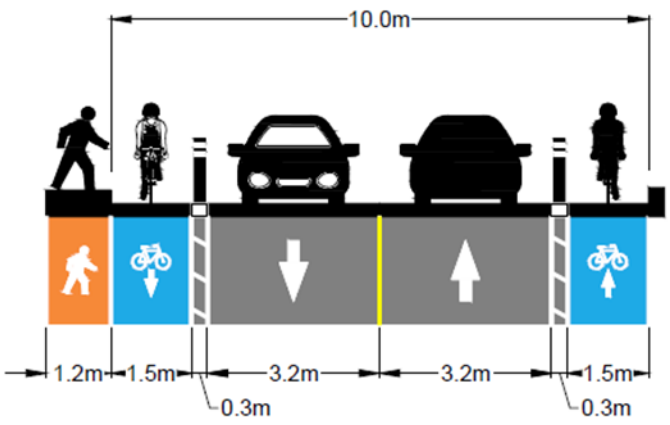
16th Avenue (Canyon Street to Hillside Street)

16thAvenue N from Canyon Street and Hillside Street has a narrow 10.0m pavement width with a sidewalk on the east side and a painted centerline. No parallel parking is available.

A cycling facility is warranted on this road as vehicle speeds and volumes are too high for people cycling to share the road with motorists. Even though there are grade challenges on 16th Avenue, a cycling facility in this location would provide a viable north-south cycling connection allowing residents to access the Downtown Core, the Creston Valley Hospital & Health Centre, and the Creston and District Community Complex, among other destinations.

The recommended cycling facility includes a painted buffer area complete with delineator posts, which provides people cycling with separation from vehicles.

16TH AVE N (BETWEEN CANYON ST AND HILLSIDE ST)

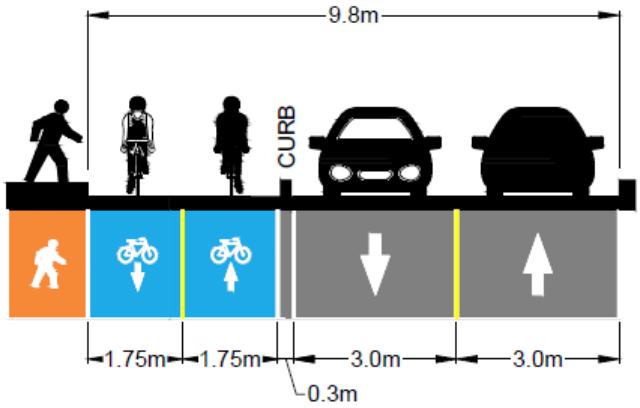


Cavell Street (Northwest Boulevard to 10th Avenue N)

Cavell Street from Northwest Boulevard and 10th Avenue N has a narrow 9.8m pavement width, sidewalk on the north side, and no lane markings to define the laning on the roadway. A cycling facility is warranted on this road as vehicle speeds and volumes are too high for people cycling to share the road with motorists. A cycling facility in this location would provide a viable east-west cycling connection and provide people cycling with access to the Creston Valley Mall.

The recommended cycling facility includes road paint and a parking barrier curb, which could provide separation from vehicles to protect people cycling. A 3.4m bi-directional bike facility is recommended alongside the sidewalk to allow for bike travel in both directions on the north side of the roadway. Parking is removed in this cross-section to make room for the bike lanes.

CAVELL STREET (BETWEEN NORTHWEST BLVD AND 10TH AVE)

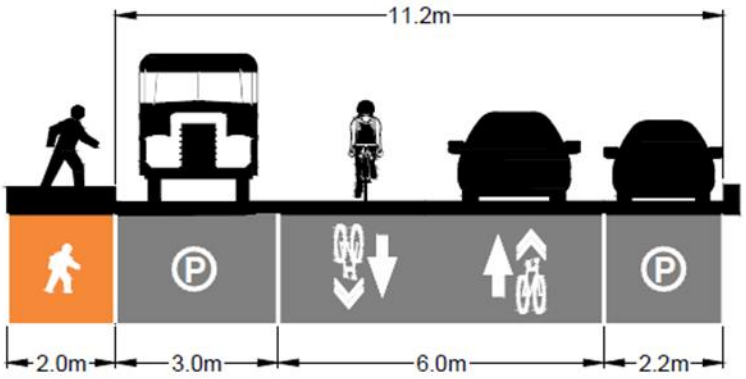


9th Avenue N (Hillside Street and Cavell Street)

9th Avenue N between Hillside Street and Regina Street has an 11.2m pavement width, with a sidewalk on the west side where school kids are picked up by school buses. There is parallel parking on the east side and no lane markings to define the laning on the roadway. As 9thAvenue N heads towards Ibbitson Street, it makes a jog to the east on 15th Avenue N before continuing north and connecting to Cavell Street. It is at this point the cross-section narrows, without existing sidewalks on either side of the roadway. In the proposed cross-section between Hillside Street and Regina Street, bus parking and parallel parking are maintained.

The recommended facility includes a bicycle boulevard with pavement markings, a bicycle route sign, and a 30 km/h posted speed limit for the length of the corridor.

9TH AVE N PROPOSED CROSS-SECTION (BETWEEN MURDOCH ST AND HILLSIDE ST)



MEDIUM AND LOW PRIORITY CYCLING IMPROVEMENTS

The following tables are a list of improvements that would also be in the 1-10 year tactical plan. However, they are located outside the main core of the network, and some of these corridors could also fit into the long-term buildout (10-30 years) based on how cycling uptake progresses with the completion of the 'quick-build' network and high priority improvements. They have been identified as either medium priority improvements (**Table 18**) or low priority improvements (**Table 19**) and are broken down by location and type of improvement (when applicable). They are also shown on **Map 9**, the Ultimate Cycling Network Map. Rationale is provided for each medium priority cycling improvement. All of the low priority cycling improvements include bicycle boulevards that are intended to "fill in" the gaps in the larger network and make it easier for Creston residents to cycle from residential areas to key destinations.

TABLE 18: MEDIUM PRIORITY CYCLING IMPROVEMENTS (1-10 YEAR)

Location	Facility Type	Rationale
8th Avenue S *Erickson Road to Canyon Street*	Bicycle Boulevard	A bicycle boulevard on 8th Avenue S would provide residents in the southwest quadrant of Creston with easier connections to the Downtown Core and other destinations like Centennial Park. Together with 6th Avenue N, it would form a desirable north-south connection between Erickson Road and Valleyview Drive.
6th Avenue N *Canyon Street to Valleyview Drive*	Bicycle Boulevard	A bicycle boulevard on 6th Avenue N provides a flat north-south route on the west side of the railway tracks and provides residents living in the residential areas north and south of Valleyview Drive an alternative to crossing Northwest Boulevard to access the cycling network. Together with 8th Avenue S, it would form a desirable north-south connection between Erickson Road and Valleyview Drive.
Valleyview Drive *Highway 21 to Northwest Boulevard (Highway 3)*	Painted Bike Lane	Formalizing the existing shoulder bike lane facilities on Valleyview Drive, north of 6th Avenue and completing the connection west to Highway 21 will be achieved by providing sufficient width bike lanes to connect the two north-south Highways in Creston. Segments of this facility type could be enhanced in the future if/when Valleyview Drive was re-aligned and a future connection made to Cavell Street.

TABLE 19: LOW PRIORITY CYCLING IMPROVEMENTS (1-10 YEAR)

Location	Facility Type
Devon Street *Northwest Boulevard (Highway 3) to Valleyview Drive*	Bicycle Boulevard
Cavell Street *10th Avenue N to Devon Street*	Bicycle Boulevard
Cedar Street *8th Avenue to 25th Avenue*	Bicycle Boulevard
25th Avenue S *Erickson Road to Cedar Street*	Bicycle Boulevard

Location	Facility Type
Pine Street *19th Avenue to 20th Avenue*	Bicycle Boulevard
Railway Boulevard /11 Avenue S *Canyon Street to Erickson Road*	Bicycle Boulevard
Birch Street *8th Avenue to 11th Avenue*	Bicycle Boulevard

7.2.5 ULTIMATE (10-30 YEARS) CYCLING NETWORK

Following the implementation of the recommended quick-build cycling network, and the priority 1-10 year, the Town can move toward building out the larger ultimate cycling network. The ultimate cycling network seeks to create permanent and safe bicycle infrastructure separated from motor vehicles over the course of 30 years. It will revisit temporary facilities with potential upgrades to make them permanent and create new facilities that provide greater safety and connectivity for people cycling throughout the Town and region. The network is intended to attract people already riding a bicycle, but also prospective users who are interested but have concerns**. Table 20** details the ultimate cycling network with more details and rationale of some of the key facilities included in it. **Map 9**, provides the layout of the Ultimate Cycling Network.

The new multi-use pathway in Tofino is an example of an active transportation facility that meets the ultimate standards. With signage, asphalt, pavement markings, and drainage ditches, this 25 kilometre multi-use pathway will make it much easier for people to walk, roll, and cycle within and around Tofino.
Photo credit: Hike, Bike, Travel.

Map 9 – Ultimate Cycling Network

TABLE 20: ULTIMATE NETWORK PRIORITY CYCLING FACILITIES

Location	Facility Type	Rationale
Canyon Street *10th Street to 16th Avenue South*	Protected Bike Lane	Canyon Street is the heart of Creston's downtown core. It is the major destination point for people wishing to access shops and employment. Protected bike facilities are recommended to make it easier and safer for people cycling to access the Downtown Core, to coincide with the potential re-alignment of highway traffic onto Cook street.
Devon Street *Northwest Boulevard (Highway 3) to Devon Trail Trailhead)*	Protected Bike Lane	The Northwest Boulevard Local Area Plan remains quiet on accommodation for cyclists, however, does make mention of providing separation for active transportation modes like walking. As Devon Street builds out to how it was originally planned, the Town should consider this great opportunity to provide protected bike lanes on the street to connect with some of the future planned re-development. By providing AAA facilities in this part of Creston, it will motivate residents to prioritize cycling over taking a vehicle trip to the mall or Downtown.
Glaser Drive *Cavell Street to Helen Street*	Protected Bike Lane	Currently, the section north of Devon Street is a marked trail, which connects trail users between Devon Street north to Payne Street. Given the proposed roadway connection context, it should be built to the urban collector classification with protected bike lanes, as it will likely be supported by adjacent growth in the Glaser Drive area & Northwest Boulevard ARP lands.
The Creston Connector Rail Trail	Rail Trail / Multi-Use Pathway	The rail trail is an existing north/south connection route between downtown Creston and the commercial/industrial region in the north of the town. As the "spine" of the network, it provides safe travel for people cycling that is separated from motor vehicles. The rail trail is recommended to be upgraded to meet the standards outlined in the BC Active Transportation Design Guide.

Devon Street looking east towards Goat Mountain, which is proposed to be upgraded to a new cross-section as new development happens in the future and could feature protected bicycle lanes on both sides of the roadway to connect residents to Creston Valley Mall

7.3 DESIGN GUIDELINES

The following sections provide design guidelines for the Town as it implements the ultimate cycling network. **Table 21** below illustrates each facility type.

TABLE 21: ULTIMATE NETWORK CYCLING FACILITY DESIGN PARAMETERS

Facility Type	Design Parameters
Multi-use Pathway	**Width** – 4.0m (desirable) or 3.0m if constrained. **Street Buffer Zone Width** – ideally 2.0m; 0.6m if constrained. **Signage** – Shared Pathway sign **Surface Material** – asphalt is preferred but compact gravel is acceptable in rural and low-volume environments
Protected Bike Lane	**Width** – depends on whether it is a uni-directional or bi-directional facility. The desirable width of a **uni-directional** facility is 2.5m to accommodate passing and side-by-side travel or 1.8m if constrained. The desirable width of a **bi-directional** facility is 4.0m (2.0m in either direction) or 2.4m (if constrained) for the bicycle lane portion of the facility. **Signage** – Reserved Bicycle Lane (MUTCDC RB-90, RB 91) Reserved Bicycle Lane Ends (MUTCDC RB-92) **Separation** – a concrete / landscaping with barrier curb. Minimum width 0.6m unless using alternative type. For retrofitting alternative types of separation (e.g., flexible delineator posts, planter boxes, etc.) can be used in constrained or on roads with lower volumes and speeds.
Painted Bike Lane	**Width** – 1.8m (desirable) or 1.5m if constrained. 100-200 mm solid white longitudinal line required. **Signage** – Reserved Bicycle Lane (MUTCDC RB-90, RB 91) Reserved Bicycle Lane Ends (MUTCDC RB-92)
Bicycle Boulevard	**Width** – 5.0 to 6.0m **Vehicle Speed** –30 km/h or less if it is to be considered an all ages and abilities bike facility. **Signage** – Bicycle Route sign (MUTCDC IB-23) **Pavement Markings** – Shared use lane pavement markings (i.e., “sharrows”) could be used to indicate the positioning of bicycle users, although this is not required for all bike boulevards.

Example of a bi-directional protected bike lane (top) and a uni-directional facility (bottom).

7.3.1 TOPOGRAPHY

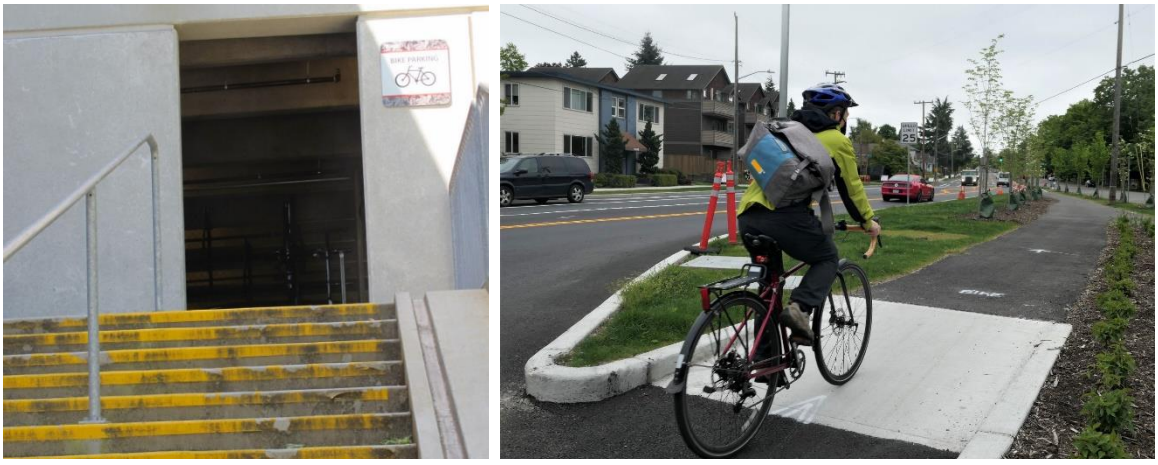
The BC Active Transportation Design Guide provides direction on how communities can address topography challenges within their cycling networks. The most relevant design considerations for Creston are shown below.

BICYCLE RAMPS

Bicycle ramps enable users to transition from cycling facilities that are at different grades without having to dismount. Grade changes greater than 13% should be avoided when transitioning between the ramp and the road or gutter. The guide considers a maximum ramp slope of 8% and a maximum counter cross slope of 5% in the gutter and/or road. Ramps will need to be considered in locations where a multi-use pathway transitions to an on-street cycling facility.

BICYCLE CHANNELS

Bicycle channels and stroller push ramps can be provided along stairways to make them accessible for strollers and dismounted bicycle users. They allow for transitioning between facilities, accessing services, and bicycle access at intersections where there is a large vertical grade difference and where grades do not allow for a gradual approach or ramps. Consideration will need to be given to retrofitting existing staircases in the Town to accommodate a bike channel.



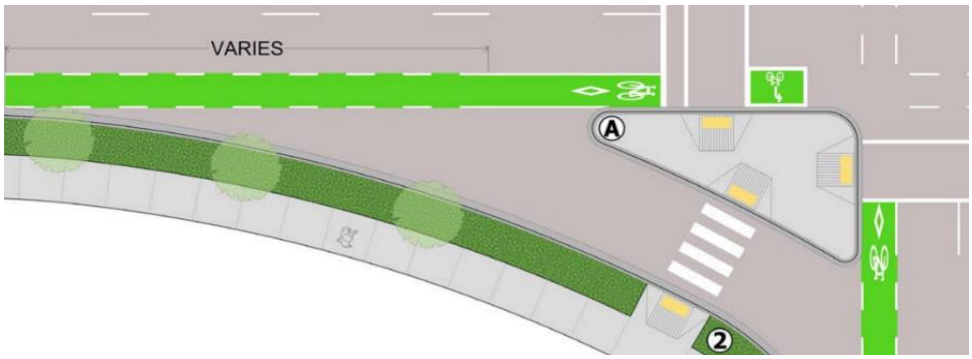
Example of a bike channel (left) and a bicycle ramp (right). Image credit: BC Active Transportation Design Guide and Washington Bikes.

7.3.2 CROSSINGS & INTERSECTION IMPROVEMENTS

In addition to providing cycling facilities alongside roadways, it is equally important to ensure that the intersections are designed to accommodate people cycling.

CHANNELIZED RIGHT-TURNS

Channelized right turns can be challenging and inconvenient for people walking and cycling due to the higher speed of the turning vehicles and the yield-controlled (unsignalized) nature of the turn. Channelized right turn intersections should be removed in Creston as part of the ultimate cycling network. Where channelized right turns are determined to be appropriate, they should be retrofitted to a smart right turn to improve cyclist safety as shown in **Figure 18** below.



Example of a bicycle lane with a channelized right-turn island. Use of coloured conflict zone pavement markings applied bicycle lane conflict area and the use of a Smart Right turn can delineate cyclist space and improve safety.

Figure 18: Protected Bicycle Lane Crossing at Channelized Right Turn Island. [23]

[23] Retrieved From: BC Active Transportation Design Guide, Chapter G – Intersections + Crossings.

7.3.3 SIGNAGE + PAVEMENT MARKINGS

The BC Active Transportation Design Guide contains various design treatments for protecting people cycling at intersections including specific measures that reduce conflict between users via conflict markings, turn movement restrictions, and signal phase separation.[24]

Cross-ride markings (or elephant's feet) are a recommended form of pavement marking indicating that people cycling have the right-of-way over turning motor vehicles. A 'Turning Vehicles Yield to Bicycles Sign' is required. Cross-ride markings are best used in environments where sightlines for both cyclists and motorists are appropriate and motor vehicles are expected to yield to oncoming cycling traffic.

Cross-ride and conflict zone marking in Kelowna, BC

Examples of appropriate implementation areas are stop or signal controlled crossings, driveways, lanes, and other crossings whereby motor vehicle traffic is legally required to stop before turning or entering the road. Yield lines can also be used for driveways and laneways to indicate the edge of the bicycle facility. Cross-rides and crosswalks should be separated,

[24] Government of BC. (2019). Active Transportation Design Guide. Chapter G (Intersections + Crossings). Available online at: https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide-low-res/2019-06-14_bcatdg_section_g_rfs.pdf

but if that is not possible, signage indicating that faster active transportation modes must yield the right-of-way to pedestrians should be included.

Conflict zone markings (often green coloured pavement) can be used to both raise awareness of people cycling, but also make cycling movements more predictable. The application of green pavement markings should be reserved for specific areas where a conflict may occur or where the design guides people cycling through intersections or complex cycling facilities (e.g., connecting two bicycle facilities, two-stage turn box).

Green pavement marking treatments are not recommended for:

- Bicycle lanes where motor vehicles are expected to merge approaching the intersection, in order to turn right.
- At combined cross-rides and crosswalks, as green should be reserved for bicycle-only applications.
- Bicycle crossings with no conflicts, due to signal phasing and high compliance by motor vehicles.

7.3.4 SUPPORTIVE POLICIES & PROGRAMS

There are several policies and programs that the Town should pursue to make cycling a more attractive mode of travel, especially for those that are interested in cycling but concerned about riding.

BICYCLE SKILLS TRAINING

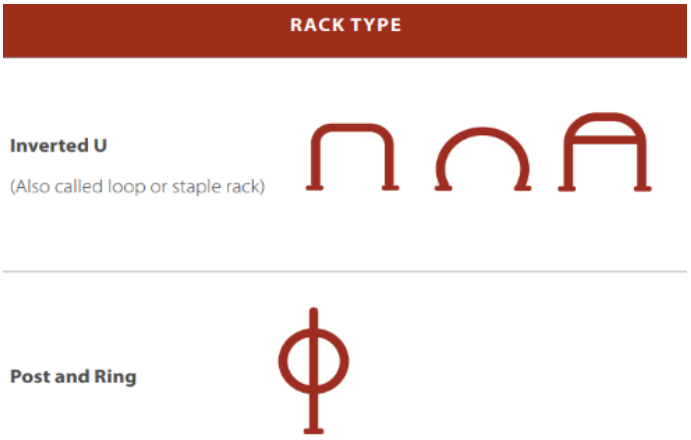
Building a network of all ages and abilities cycling facilities will be critical for enhancing overall bike safety. However, given the low rates of cycling in Creston today, bicycle skills training courses would aid in increasing confidence among interested but concerned parties. The Town could partner with or provide funding support to local cycling advocacy organizations to offer bicycle skills training courses throughout the year in different locations in Creston. These could also be beneficial to offer to all grade-school children.

PUBLIC BICYCLE PARKING

High-quality, convenient, and secure bicycle parking is integral to enable people in using cycling as their mode of transportation. Research has shown that lack of bicycle parking is one of the key deterrents to using cycling as a mode of transportation.

There are limited short-term bicycle parking facilities in Creston. Moving forward, it is recommended that the Town consider the following approaches for publicly accessible bicycle parking:

1. For all existing bike racks in the Town's public right-of-way (including downtown streets such as Canyon Street / 10th Avenue and public facilities), ensure they are meeting best practices. As shown below, the BC Active Transportation Design Guide recommends two rack types for short-term bicycle parking: (1) inverted-U and (2) post and ring. These racks can accommodate more than one bicycle (including oversized bikes) and can fit efficiently within a furnishing zone or public right-of-way.



Recommended bike racks in the BC Active Transportation Design Guide.

2. In certain locations in the Downtown Core, the Town could consider on-street bike corrals as shown below. On-street bike parking corrals can be a low-cost way to provide parking for 10 or more bicycles in the same space that would otherwise be occupied by a vehicle. A simple bicycle rack may house two bicycles at a time and takes up 1/6 of the space of a vehicle parking space.[25] This treatment is beneficial as it moves bicycle storage off the sidewalk, leaving more space for pedestrians and sidewalk furniture. The conversion of 1-3 vehicle parking stalls will accommodate a bicycle corral of 6 two-bicycle racks each.

Example of a bicycle corral in Memphis, Tennessee. Image credit: City of Memphis

[25] *Government of BC. (2019). British Columbia Active Transportation Design Guide. Chapter H: Amentities + Integration. Retrieved From:* https://www2.gov.bc.ca/assets/gov/driving-and-transportation/funding-engagement-permits/grants-funding/cycling-infrastructure-funding/active-transportation-guide-low-res/2019-06-14_bcatdg_section_h_rfs.pdf

LIGHTING

Lighting is a critical component of cycling infrastructure. Lighting both enhances the aesthetics of the built environment and increases the comfort and safety of users. The most important areas for lighting are intersections, which need to be illuminated to allow a person cycling to see - and be seen - granting enough time to appraise the situation at an upcoming intersection and take appropriate precautions in advance of entering the crossing.

The Town does not currently provide any design guidance on bike-specific lighting; as such, the Town should update their existing lighting standards / policies to include specific lighting design standards for cycling facilities in the Town, including:

- Illuminance levels
- Type of lighting (e.g., pedestrian-scale lamps) including location, placement, and height.
- Colour and Uniformity including specific hues of LED lighting for personal safety and maximizing visibility.

7.4 ACTIONS

The following **Table 22** summarizes the recommended actions for the cycling network.

TABLE 22: CYCLING NETWORK ACTIONS

Action		Description
3A	Implement Quick-build Cycling Facilities	Prioritize and implement quick-build all ages and abilities cycling facilities to address the missing links and gaps including: • Hillside Street (9th to 16th) • Hillside Street (16th to 20th) • 10th Avenue N (Canyon to Hillside) • Canyon Street (Highway 21 to Railway Blvd) • Vancouver Street (Northwest Blvd to 16th).
3B	Maintenance of Quick-build Cycling Network	The quick-build network will require regular maintenance to ensure they provide safe cycling conditions. Leaves, snow, and ice can be hazardous to people on two wheels. The purchase of small equipment may be necessary to accomplish this.
3C	Implementation of the 1-10 year Cycling Network	The 1-10 year cycling improvements are primarily focused on developing new cycling corridors to grow the cycling network and support the 'quick build' facilities in the core area of the Town. The high priority locations include: • 16th Avenue (Canyon Street to Hillside Street) • Cavell Street (Northwest Boulevard to 10th Avenue N) • 9th Avenue N (Hillside Street and Cavell Street)
3D	Implementation of the ultimate cycling network	The recommended cycling facilities in the ultimate network include: • Canyon Street (10th St to 16th Ave) • Devon Street (Northwest Blvd to Devon Trail) • Glaser Drive (Cavell St to Hellen St) • The Creston Connector Rail Trail Given the longer term horizon of the ultimate network cycling facilities, each one will require further review and engagement before implementation.
3E	Offer Bicycle Skills Training	Partner with or provide funding support to local cycling advocacy organizations to offer bicycle skills training courses throughout the year in different locations in Creston including schools.
3F	Install New Public Bicycle Parking	Short-term public bike parking should be retrofitted to align with best practices. Further, the conversion of one to three vehicle parking spaces into bicycle corrals could accommodate anywhere from 12 and 36 bicycle parking spaces.
3G	Update Lighting Standards	Update existing lighting standards to ensure bicycle lighting is provided for all cycling facilities.

Section 8 – Transit Network

8.0 TRANSIT NETWORK

8.1 NETWORK TODAY

8.1.1 SERVICE OVERVIEW

The Town of Creston is currently served by the Creston Valley Transit System, which offers fixed route and HandyDART services. In addition to the Town, the transit system also serves other communities in the surrounding Regional District of Central Kootenay, as well as Health Connections service to Cranbrook.

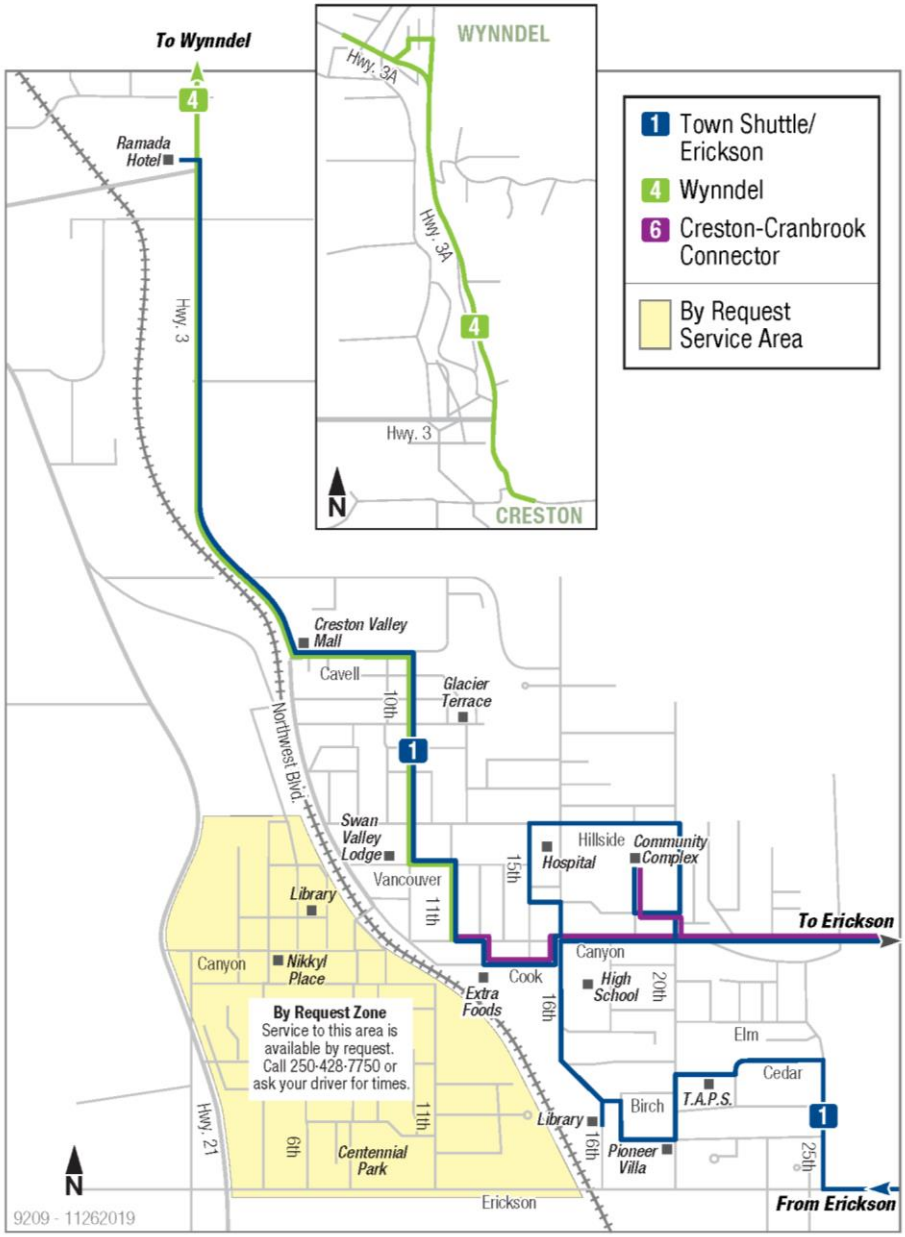
The transit system operates as a partnership, with cost-sharing for service shared between the Regional District of Central Kootenay and BC Transit and operating costs met by a combination of farebox revenues and joint regional district and provincial funding. The service is operated through contract by NextGen Transit Inc., with additional funding for the Health Connections service also provided by Interior Health in partnership with the Kootenay East Regional Hospital District. While the Town can provide input into the system, decisions on fares, routes and service levels are made by the entire Regional District Board based on public feedback and information provided by BC Transit.

At the time of preparing the Multi-modal Transportation Plan, BC Transit was undertaking the Creston Valley Transit Future Service Plan (completed in late 2021) and findings from that plan have been integrated into the MMTP where applicable.

The transit system provides three fixed routes, as follows:

- **Route 1** – Town Shuttle/Erickson
- **Route 4** – Wynndel
- **Route 6** – Creston-Cranbrook Connector

The map below illustrates the three routes in the Creston Valley Transit System.



Route 1 provides service to several key destinations within the Town including the Creston Valley Mall, downtown, the hospital, and the library. It also provides service to Erickson. It operates on weekdays only with hourly service from 9:30 am to 2:30 pm.

Route 4 provides service from Creston to Wynndel with stops including downtown Creston and the Creston Valley Mall. Service on the Route 4 is limited; it operates on Tuesday and Friday only with two round trips per day.

Both **Route 4** and **Route 6** also offer "by request service" at select times by booking 24 hours ahead. This service is in effect at the following times:

- Mondays from 8:50am to 9:30am and 3:10pm to 3:45pm
- Thursdays from 8:00am to 9:30am and 3:10pm to 3:45pm

For **Route 1**, transit users can request service in the Centennial Park By Request Zone (shown in yellow on the map). This service provides a bit more flexibility to users who require transit service closer to their destination.

Lastly, **Route 6** provides Health Connections service from Creston to the City of Cranbrook. Health Connections provides communities with accessible transportation options to non-emergency medical appointments. Although medical appointments have priority, everyone is eligible to use this service if space is available. Destinations on this route include downtown Creston, the Creston Community Complex, the East Kootenay Regional Hospital, and the Cranbook Tamarack Mall, among others. The service is limited to Tuesdays and Thursdays only, with one trip departing Creston in the morning, and one trip departing Cranbrook in the afternoon.

HANDYDART

There is also handyDART service available, which provides door-to-door service for people with permanent or temporary disabilities that prevent them from using fixed-route transit without assistance from another person. As described in the 2012 Creston Valley Transit System Service Review, the handyDART service has historically been the "bread and butter" of the Creston Valley Transit System, accounting for two-thirds of overall transit ridership in 2010/2011. Since that time, handyDART service has generally continued to perform better than conventional fixed-route service and carried approximately half (50%) of total ridership in 2019/2020. A more detailed discussion of the transit system's ridership is presented below.

Retrieved From: www.bctransit.com

8.1.2 RIDERSHIP SUMMARY

Ridership data was obtained from BC Transit to understand the performance of the fixed-route service in the Town**. Table 23** below shows the total ridership by leave time for the Route 1 indicating that a total of 427 passengers used the service in the months of January and February 2021.

TABLE 23: TOTAL RIDERSHIP, ROUTE 1 (JANUARY AND FEBRUARY 2021)

Time	Total Ridership
8:50 am	6
9:30 am	60
9:46 am	57
10:40 am	66
10:56 am	23
11:40 am	50
11:56 am	35
1:10 pm	54
1:26 pm	14
2:10 pm	46
2:26 pm	12
3:20 pm	2
3:36 pm	2
Total	**427**

Table 24 below shows the total ridership by leave time for Route 1 (by request service). The data indicates that a total of 7 transit users utilized Route 1 by request service in January and February. A total of 58 passengers utilized Route 4 over that same period of time (see **Table 25**).

TABLE 24: TOTAL RIDERSHIP, ROUTE 1 BY REQUEST (JANUARY AND FEBRUARY 2021)

Time	Total Ridership
9:10 am	0
10:30 am	0
11:30 am	2
2:00 pm	4
3:10 pm	1
Total	**7**

TABLE 25: TOTAL RIDERSHIP, ROUTE 4 (JANUARY AND FEBRUARY 2021)

Time	Total Ridership
8:14 am	0
8:50 am	17
9:07 am	18
3:10 pm	19
3:27 pm	4
4:40 pm	0
Total	**58**

Data was also obtained from BC Transit summarizing the ridership of all three transit services available in the Town of Creston including (1) fixed-route service Routes 1 and 4 (2) handyDART and (3) Healthy Connections Route 6. See **Figure** 19 and **Figure** 20 below.

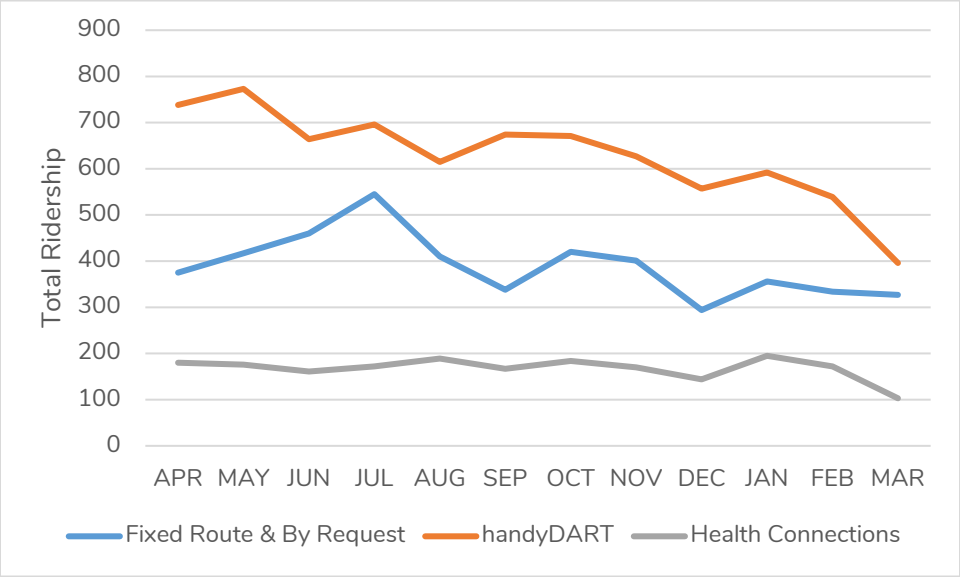


Figure 19: Total Ridership by Transit Service, 2019/2020

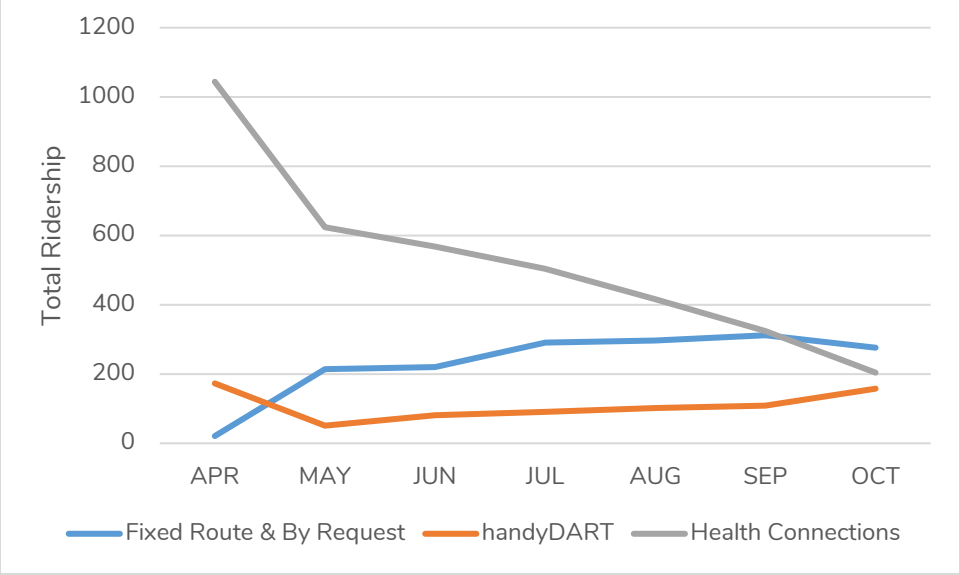


Figure 20: Total Ridership by Transit Service, 2020/2021

Overall, the ridership data indicate that in 2019/2020 (prior to the pandemic), handyDART carried approximately half (50%) of the total ridership in the system. All three transit services started to see a decrease in February / March 2020, which coincides with when Covid-19 was declared a pandemic.

The ridership data in 2020/2021 show less of a difference in ridership between fixed-route / by request service and handyDART, although the data are less representative of a typical year due to the pandemic. Overall, the data suggest that services like handyDART performed better than conventional fixed-route services prior to the pandemic. This type of on-demand transit service may be more suitable in the Town moving forward, described in more detail in **Section 8.3.1**.

One thing that is notable about the current services is there is a lot of overlap between the current markets served and their days and hours of service. For instance, there is less opportunity for youth (who may be in school for much of the day) and working adults to use the fixed route service because it is focused mainly during non-commuting periods in the centre of the day, when seniors and non-working adults and families may be travelling, many of whom may be already eligible for handyDART.

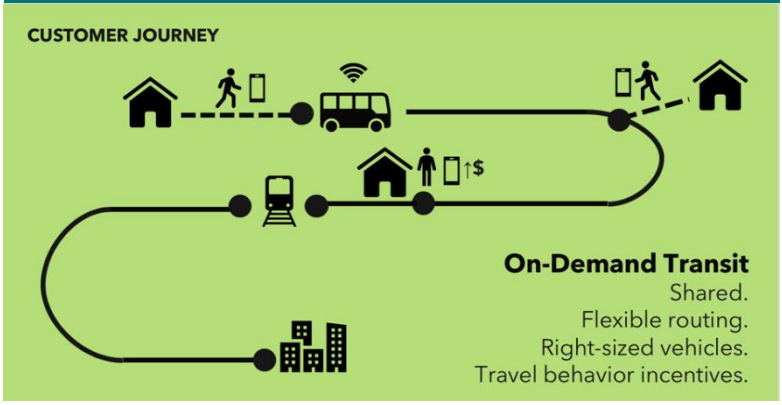
Meanwhile, there are few trips available before or after typical work/school times on weekdays and no service on weekends. The overlap between times and services of the daytime fixed route and handyDART services indicates the potential to consider combining them through a digital on-demand service.

Another key challenge for the existing fixed route service is its lack of consistency between schedules operated on the various days of the week, which can make it harder to use.

What is Digital On-Demand Transit?

Digital On-Demand Transit (DODT) is IT-enabled private multi-passenger transportation services, such as that serve passengers using dynamically generated routes, and may expect passengers to make their way to and from common pick-up or drop-off points. Vehicles can range from large SUVs to vans to shuttle buses.

DODT has gained popularity in the past few years, across the world. Agencies are using this technology in combination with existing fixed route to expand their network and improve customer experience.



8.1.3 BUS STOP INFRASTRUCTURE

There are a total of 16 bus stops in the Town of Creston. However, the type and quality of bus stops range across the municipality with only a few stops offering passenger amenities and others only a sign and pole. Bus stop amenities are important to the transit user experience and can enhance the overall transit experience.[26] An assessment was completed to document the amenities available at each bus stop. This included documentation of six criteria:

1. Bus stop signage
2. Garbage can
3. Bench
4. Shelter
5. Accessible curb letdown
6. Sidewalk connection

Bus stop 162015 (left) only provides a sign pole. It lacks a sidewalk, accessible curb ramp, and other amenities, which impacts the transit user experience. Bus stop 162007 (right) includes all six amenities.

[26] *BC Transit. (2018). BC Transit Infrastructure Design Summary. Available online at: https://www.bctransit.com/documents/1507213895398*

The assessment found the following:

- Only one bus stop (162007) provides all six amenities
- Four bus stops provide a shelter and bench
- Five bus stops provide an accessible curb letdown and sidewalk connection
- Half of the bus stops (8 total) only provide signage and no other amenities

8.2 NETWORK TOMORROW

The Creston Valley Transit Future Service Plan[27] was completed in 2021 and presents several short- and long-term priorities for the Creston Valley Transit system. These priorities are shown in the tables below.

09 Service Priorities 2022-2026

Priority	Description	Expansion Resources*
Introduce service between the East Shore and Creston	Introduce a new route that provides service between Riondel, Kootenay Bay, Crawford Bay and Creston on Thursdays to connect with route 6 Creston – Cranbrook Connector	700 service hours, 1 bus
Extend service span on 1 Town Shuttle/Erickson	Add 8:50 a.m. trip and 3:20 p.m. trip that currently operate Wednesdays only Monday through Friday	200 hours, 1 bus
Monday through Friday by-request service	Operate by-request service Monday through Friday, with a trip window in the morning 8:00 – 10:00 a.m. and trip window in the afternoon 2:00 – 4:00 p.m.	1,000 hours, 1 bus
Additional service days for route 4 Wynndel	Add service on Monday, Wednesday and Thursday (Friday service levels)	300 service hours, 1 bus

*vehicle resources are calculated separately for each priority, and may change as other priorities are implemented

Creston Valley – Transit Future Service Plan 17

[27] *BC Transit (2021). Creston Valley Transit Future Service Plan. Available online at: https://www.bctransit.com/documents/1529715917049*

10 Other Transit Priorities 2022-2026

Priority	Description	Resources / Partners
Improve information and promote the transit system	Add additional information in the Rider's Guide about by request service, promote travel training within the community	BC Transit, Regional District of Central Kootenay
Invest in bus stop infrastructure	Improve accessibility, safety and provide additional amenities • Seek investment in shelters through the BC Transit Shelter Program • Seek investment through RDCK capital planning • Minor betterments funding	BC Transit, Regional District of Central Kootenay, Town of Creston, Ministry of Transportation and Infrastructure

11 Beyond 2026 Service Priorities

Priority	Description	Estimated Resources
Additional service day – East Shore/Creston	Add service on Tuesdays to connect with route 6 Creston – Cranbrook Connector	**700 service hours**
Earlier weekday service on 1 Town Shuttle/Erickson	Add an additional trip before 8:50 a.m.	**200 service hours**
Earlier weekday service on 4 Wynndel	Add 8:14 a.m. trip that currently operates Tuesdays only to all weekdays	**100 service hours**
Later weekday service on 4 Wynndel	Add 4:50 p.m. trip that currently operates Tuesdays only to all weekdays	**100 service hours**
Later weekday service on 1 Town Shuttle/Erickson	Add an additional trip to extend service span to approximately 5:00 p.m.	**200 service hours**

Image credit: Creston Valley Transit Future Service Plan

Table 26: Recommended Bus Stop Improvements

Bus Stop ID	Location	Photo of Current Conditions	Recommend Improvement
162002	Cavell St at 7th Ave N (WB)		Install bus stop signage
162006	11th Ave N at Canyon St (SB)		Install shelter and bench due to the stop's location in a key commercial area
162008	Cook St at 12th Ave S (EB)		Install bus stop signage
162010	Hillside St at 16th Ave N (EB)		Construct sidewalk connections to align with future multi-use path along Hillside

Bus Stop ID	Location	Photo of Current Conditions	Recommend Improvement
162012	16th Ave S at Cook St (SB)		Install shelter and bench due to the stop's location outside of the high school and College of the Rockies
162013	16th Ave S at Birch St (SB) – bus pulls into library parking lot		Install bus stop signage (at minimum)

There are two types of BC Transit signage: strip signs (narrow vertical signs) and flag signs (rectangular signs approximately 10" x 14-16". If possible, the Town may wish to consider the flag style sign and incorporate additional messaging on them. Installing this type of signage helps promote transportation options in the area as well as reinforces that they are potentially available for any resident. Information on the sign would include a "call to action" title of some kind (e.g. "Find out more: local transportation options by and for residents") and then include a website URL and phone number to access information. This signage is useful even in on-demand areas.

Initial discussions are ongoing between the Regional District and Creston regarding the Town's ability to undertake the maintenance contact of the existing transit stops and amenities. An opportunity to ask for additional funding through a cost-share agreement or the like would help leverage the purchase and upgrade of the current stops to provide some assistance in purchasing some of the priority amenities outlined above.

8.3 PROGRAMS + POLICIES

To support the service and infrastructure improvements outlined above, the Town can implement programs and policies that align with strategic goals and help the Creston Valley Transit System achieve longer term, comprehensive success. Opportunities for supporting measures are outlined below.

8.3.1 DIGITAL ON-DEMAND

One of the ways that the Town can continue to improve transit is the exploration of Digital On-Demand Transit (DODT). While by-request transit already operates in Creston, DODT is yet to be adopted by BC Transit and the Creston Valley. BC Transit is currently in the process of conducting a feasibility study to determine the applicability of On-Demand technology in BC Transit systems and evaluating the impacts of the adoption of this technology on various areas of its business: fleet, technology, customer perception and Local Government partner agreements.

The Town should work with the RDCK and BC Transit to consider the opportunity to implement DODT services as they become available. This may involve work by the Town to map out "virtual" stops for the service.

WHAT WE HEARD ABOUT DIGITAL ON-DEMAND TRANSIT

In the online survey no.2, the public was asked to indicate their level of support for digital on-demand transit being implemented in the Town of Creston to complement existing transit service. About 80% of the respondents either somewhat or strongly support the implementation of digital on-demand transit, which further confirms the importance of further exploring this opportunity with RDCK and BC Transit.

8.3.2 PUBLIC AND TRANSIT USER EDUCATION

One of the priorities in the Creston Valley Transit Future Service Plan is to improve information and promote the transit system, including adding information in the Rider's Guide about by-request service and promoting travel training within the community. Providing user-friendly information and resources will make it easier for existing and future transit users to understand the transit system and the changes that are implemented. This could include:

- Creating a “How to Take Transit” section for new users on the transit system website and in printed materials.
- More formally setting up a travel training process or role to help orient new users to taking the bus (which can also be done through a contract with an outside organization that may already be undertaking similar work with seniors or people with a disability).
- Outreach to major employers and at special events. Some systems have created a “Transit Ambassador” role that creates a small team of transit operator staff to assist with outreach, while other systems have posted a student work-study position.
- Creating maps that show how the transit system aligns the Town’s active transportation network (such as walking and cycling paths in proximity to bus stops) to support multi-modal trips.

8.4 ACTIONS

The following **Table 27** summarizes the recommended actions for the transit network.

TABLE 27: TRANSIT NETWORK ACTIONS

Action		Description
4A	Coordinate on the Creston Valley Transit Future Service Plan Implementation	Coordinate with BC Transit and the Regional District of Central Kootenay to support the implementation of the priorities in the Creston Valley Transit Future Service Plan.
4B	New Bus Stop Amenities	Submit a priority list of improvements to be undertaken within the Town of Creston, particularly bus stop infrastructure upgrades.
4C	Maintenance of Existing Transit Amenities	By undertaking the maintenance contract from the RDCK, the Town can leverage this contract as an opportunity to ask for additional funding to upgrade existing stops with upgraded amenities.
4D	Explore Digital On-demand Transit	Work with the RDCK and BC Transit to consider the opportunity to implement DODT services as they become available.
4E	Improve Transit Education	Improve information and promote the transit system, by adding information in the Rider's Guide about by-request service and promoting travel training within the community.

Section 9 – Parking Management & Regulations

9.0 PARKING MANAGEMENT & REGULATIONS

9.1 PARKING MANAGEMENT & REQUIREMENTS TODAY

9.1.1 PUBLIC PARKING SUPPLIES

For the last 10 years, the Town's approach to managing its public parking supplies has been through time restrictions. Currently, the Town has a two hour free parking policy within the downtown core, which applies to both on-street and off-street parking. Historically, the Town relied on parking meters to help manage its parking and generate revenues for the municipality. However, in 2011, the Town introduced and adopted bylaw no. 1107, which effectively repealed the parking meter bylaw (no. 677-1974). Following the repeal of the bylaw, the Town introduced time restrictions to manage its public parking supplies.

Outside of the downtown core, all on-street parking spaces are regulated by the Town's Traffic Regulations Bylaw (no. 1546). The bylaw contains several regulations pertaining to parking on-street; however, the most relevant regulations include:

- Vehicles are not permitted to park on street within a residential area between 1:00 a.m. and 5:00 a.m. unless the vehicle belongs to a residential household on that street
- Vehicles are not permitted to park on any street in the Town for a continuous period greater than 24 hours.

The Town currently manages 174 on-street parking spaces and 101 off-street spaces. The restrictions for these spaces are summarized below.

On-street parking:

- 165 parking spaces have a two-hour time limit, with 155 standard spaces and 10 accessible spaces.
- Six short-term parking spaces with two 10-minute spaces and four 15-minute spaces.
- Two bus-only loading spaces.
- One loading space with a 15-minute time limit.

Off-street parking:

- The Cook Street Lot has 55 two-hour parking spaces (47 standard, four standard spaces with electric vehicle charging, and four accessible spaces) and six spaces that require a monthly permit with no time limit.
- Sunset Seeds Lot contains all-day parking.

To better understand the overall parking conditions of the Town's public parking supplies, a parking occupancy, turnover, and duration survey was completed in August 2021. Observations were conducted at one-hour intervals by recording a snapshot of the number of vehicles parked and their license plate for a seven-hour period from 9:00 a.m. to 4:00 p.m., excluding 12:00 p.m. The detailed results from that survey are available in the ***Creston Multi-Modal Transportation Plan Scoping Report***.

Key findings from the parking survey are included below:

- On both the weekday and Saturday, all streets had a utilization of less than 85% for all hours of the day. However, Northwest Boulevard (Pine Street to 10th Avenue) and 15th Avenue South (Canyon Street to Cook Street), were close to 100% utilization.
- Both the Cook Street Lot and Sunset Seeds Lot had a peak parking utilization of 74% and 33%, respectively (at 10:00 a.m. on a weekday). Both lots have capacity.
- Nine-in-ten vehicles in the study area parked for two hours or less at 90% and 91% on the weekday and Saturday, respectively.
- Canyon Street (10th Avenue to 15th Avenue) was the most productive street in the study area, with a turnover of 4.09 vehicles per parking space (vpps) over the course of seven hours. This suggests that vehicles are turning over quickly, which allows other customers and visitors to utilize parking on Canyon Street.
- The least productive streets (on the weekday) were as follows:
    - 12th Avenue North (from Vancouver Street to Canyon Street) at 1.10 vpps.
    - Pine Street (from Northwest Boulevard to 10th Avenue) at 1.42 vpps.
    - Northwest Boulevard (from Pine Street to 10th Avenue) at 1.50 vpps.
    - 11th Avenue (from Vancouver Street to Canyon Street) at 1.67 vpps.
- On the weekday, the median off-street parking duration was one hour. However, when broken down by location, the Cook Street Lot had a median duration of one hour and the Sunset Seeds Lot had a median duration of four hours. This is

PARKING NOMENCLATURE

To measure downtown Creston's parking conditions, three indicators were explored:

- **Parking utilization** | measures the usage of a parking facility and is calculated by dividing the number of parked vehicles with the number of parking spaces. A occupancy rate of 85% is a typical target used that represents an optimal balance between demand and supply.
- **Parking duration** | measures the duration of time that vehicles use a parking facility and is calculated by counting the number of occurrences of the same license plate throughout the observation period
- **Parking turnover** | the productivity of a parking space and is calculated by dividing the total volume of parked vehicles by the number of parking spaces for a specified period of time, in this case, the seven-hour observation period.

consistent with the restrictions in place, with two-hour parking at Cook Street Lot and all-day parking at Sunset Seeds Lot.

Based on the parking survey results, there are three principal conclusions that have implications for parking management, as follows:

1. Accessible parking utilization was average, however, with an aging community, it may warrant more of these stalls.
2. The Town has very few short-term parking spaces including 10-minute and 15-minute only parking. More short-term parking spaces may be required on streets with lower parking turnover.
3. Given the available parking capacity in the Cook Street lot, consideration could be given to converting some of the spaces to longer-term parking including 3-hour, 4-hour, and all-day parking spaces to accommodate customers, employees, and visitors who require more time to park their vehicles in the downtown.

9.1.2 OFF-STREET PARKING REQUIREMENTS

The Town's off-street parking requirements are regulated by Zoning Bylaw No. 1123.

The off-street parking requirements are an important regulation that can affect the built environment and shape travel behaviour. The provision of too much parking in a new multi-family residential development, for example, can incentivize tenants to own multiple vehicles. Further, the provision of excess parking in commercial developments may also result in more driving behaviour because it makes it more convenient for the customer and/or employee to drive and park their vehicle. Similarly, off-street parking requirements can stipulate how much long-term and short-term bicycle parking is required in new developments, which can influence whether people decide to cycle or not.

Creston's off-street parking requirements currently prioritize vehicle parking and do not reflect best practices or current trends. Section 9.2 contains several recommendations for how the Town can amend its off-street parking requirements to bring them in line with current trends and to support the vision and goals of the MMTP.

9.2 PARKING REGULATIONS TOMORROW

There are several amendments that should be made to the Town's Zoning Bylaw to align regulations with current trends and best practices. To formalize this, it is recommended that the Town undertake a comprehensive review of its off-street parking requirements to identify the changes that are of highest priority to the community. The following amendments are recommended and will require further review.

9.2.1 OFF-STREET PARKING SUPPLY RATES

The existing requirement for 'Multiple-Family Dwelling, Apartment' is 1.25 spaces per unit. This is a blanket rate that does not reflect parking demand factors such as housing tenure (e.g., affordable, market rental, owned condominium) and unit size / number of bedrooms. Both factors are predictors of how much parking is actually needed. Examples are provided below for each:

- **Housing Tenure** | Housing tenure refers to whether a unit in the building is rented or owned (such as a condominium). Housing tenure has been identified as a significant factor in influencing parking demand, where research has shown that rental apartments have lower parking demand than condominiums. A study of 103 Multi-family Residential sites (5,600 units) in the City of Victoria concluded that vehicle ownership among condominium units is approximately 1.5-times higher than in rental apartment units. This finding is consistent with studies from Vancouver, BC and Toronto, On.[28,29,30] Similarly, affordable housing units often do not require as much parking as owned condominium units, for example. Therefore, a blanket parking requirement may result in *too much* parking that is underutilized in the development. The construction of parking stalls (especially underground parking) is costly and adds to the overall housing costs.

  According to the Regional District of Central Kootenay Housing Needs report, Creston is at the top of the list for unaffordable rental units (after Kaslo).[31] As such, any new market rental or affordable housing developments proposed in the Town should be subject to a parking relaxation to [a] reflect the lower parking demand trends exhibited in these housing tenures and [b] lower the overall construction costs for the developer, which can result in the provision of more units for their development. In addition to including a lower parking requirement for rental and

[28] WATT Consulting Group. (2016). City of Victoria, Review of Zoning Regulations Bylaw Off-Street Parking Requirements, Working Paper no.3: Parking Demand Assessment.
[29] Metro Vancouver, *Metro Vancouver Apartment Parking Study*, 2012. Available online: http://public.metrovancouver.org/planning/development/strategy/RGSDocs/Apartment_Parking_Study_TechnicalReport.pdf
[30] City of Toronto, Parking Standards Review: Phase Two Apartment Building/Multi-Unit Block Developments Component, 2007.Available online: https://www1.toronto.ca/city_of_toronto/city_planning/zoning__environment/files/pdf/cansult_final_apart_stds.pdf
[31] https://www.rdck.ca/assets/Government/Documents/2020-09-29-RDCK%20Regional%20Housing%20Needs%20Report-v2.pdf

affordable housing units, the Town could explore parking relations through policies such as density bonusing.

- **Unit Size / Number Of Bedrooms** | Research has also found that parking demand varies by unit size or by the number of bedrooms. Several BC communities have unique off-street parking requirements by unit size / bedroom type including Langford, View Royal, Duncan, Victoria, Central Saanich, and Colwood in its draft off-street parking bylaw.

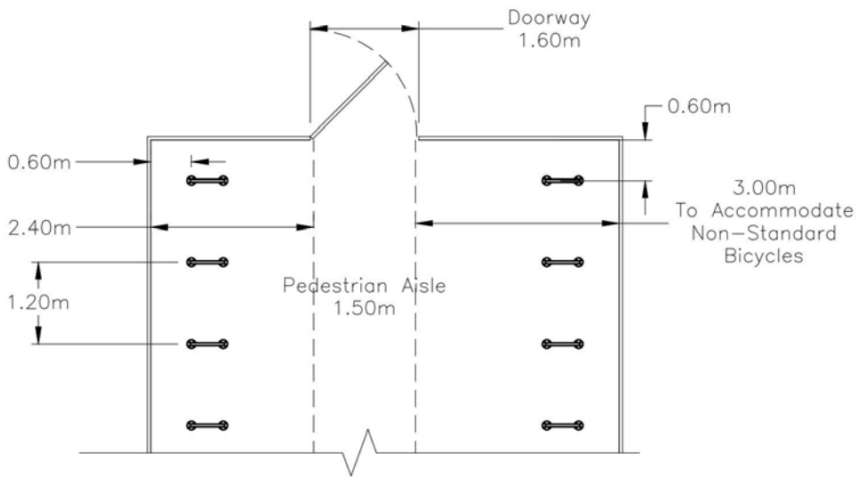
9.2.2 BICYCLE & MOBILITY PARKING

BICYCLE PARKING

New developments in Creston are not required to provide any bicycle parking. As a result, developers may choose to voluntarily include bicycle parking or the Town may request it through the development process. It is recommended that the Town formalize this and include bicycle parking requirements directly in the Zoning Bylaw. The specific off-street supply rates for bicycle parking should be determined through a comprehensive review of its off-street parking requirements. The following design parameters are recommended and will require further review.

- **Long-term & Short-term Bicycle Parking** | both types of bicycle parking should be defined and included in the Zoning Bylaw. The following definitions could be adopted:
    - Long-term Bicycle Parking | also referred to as “Class A” or “Class I” bicycle parking, this refers to a secure weather-protected bicycle parking facility used to accommodate long-term parking, such as for residents or employees, usually within a room or covered, fenced area.
    - Short-term Bicycle Parking | also referred to as “Class B” or “Class II” bicycle parking, this refers to a short-term visitor bicycle parking facility, which may offer some security and be partially protected from the weather.
- **Location & Access** | Long-term parking and short-term parking are distinct and therefore have different parking requirements around location and access. For example, short-term bicycle parking spaces should be as close as possible (15m or less) to the primary entrance of a building so it is accessible to visitors / customers. It should also be located at the surface level and physically separated from vehicle parking facilities. Long-term bicycle parking is intended to offer increased security, weather protection, and higher bicycle parking capacity. As such, it should be in a secure and weather-protected facility.

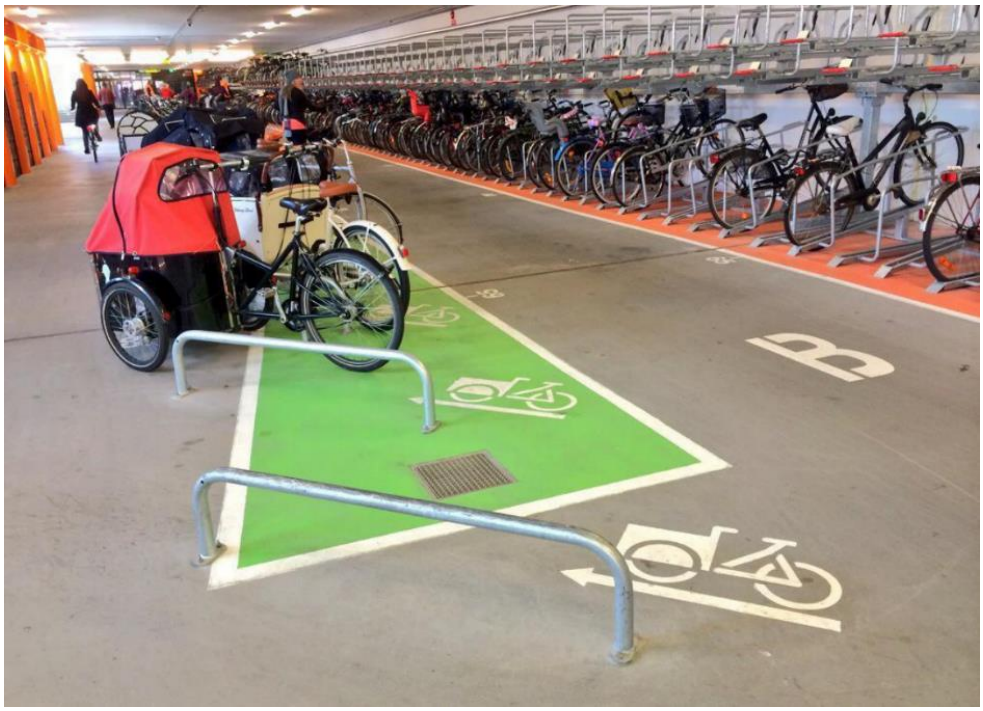
- **Dimensions & Layout** | The BC Active Transportation Design Guide provides detailed design guidance for both long-term and short-term bicycle parking. The dimensions and layout for short-term bicycle parking typically include the rack type, material, dimensions, and placement. For example, most short-term bicycle racks are constructed of carbon steel or stainless steel. The racks should be spaced out 1.8m and 0.9m from the curb. For long-term bicycle parking, consideration needs to be given to ground anchored versus vertical racks and the overall design of the bicycle parking room.



The recommended design from the BC Active Transportation Design Guide for a bicycle parking room intended for long-term bike parking.

- **Non-standard Bicycle Parking** | non-standard bicycles are longer, wider, and heavier than a typical bicycle, which makes them more challenging to park than a regular bike. Non-standard bikes include tricycles, electric cargo bikes, or a bike with a trailer, for example. Because of their size, they require different parking configurations. As electric bicycles and other non-standard bikes become more commonplace, it will be important that new developments provide the right parking to allow users to securely and conveniently park their bicycles. Based on the BC Active Transportation Design Guide, the following is recommended:
    - Oversized (or non-standard) bike parking spaces should have a minimum distance of 3.0m in length and 0.9m in width.
    - At least 10% of the required long-term and short-term bicycle parking spaces should be designed as oversized spaces.

- All oversized bike parking spaces should be provided as ground anchored racks. Oversized bicycles, especially electric cargo bikes, are heavy, long, and challenging to park in a vertical bike rack.
- At least 50% of the required long-term oversized bike parking spaces should have access to a 110V wall receptacle for charging.



Example of a 'half-height' stand in Malmo, Sweden, which is intended to accommodate non-standard bicycles. It provides the space needed for longer bicycles and pavement markings help reduce tripping hazards. Photo credit: Kevin Hickman

MOBILITY SCOOTER PARKING

The current Zoning Bylaw does not provide mobility scooter parking requirements or design standards. As discussed in Section 2.2, Creston, like many communities in BC, has an aging population. An aging population means that a greater share of the community will, at some point, require mobility devices such as a mobility scooter. A mobility scooter is a battery powered three or four-wheeled device that is intended for individuals who have difficulty walking. It is a mobility aid similar to a wheelchair but is designed with a flat area for the feet and handlebars for steering.

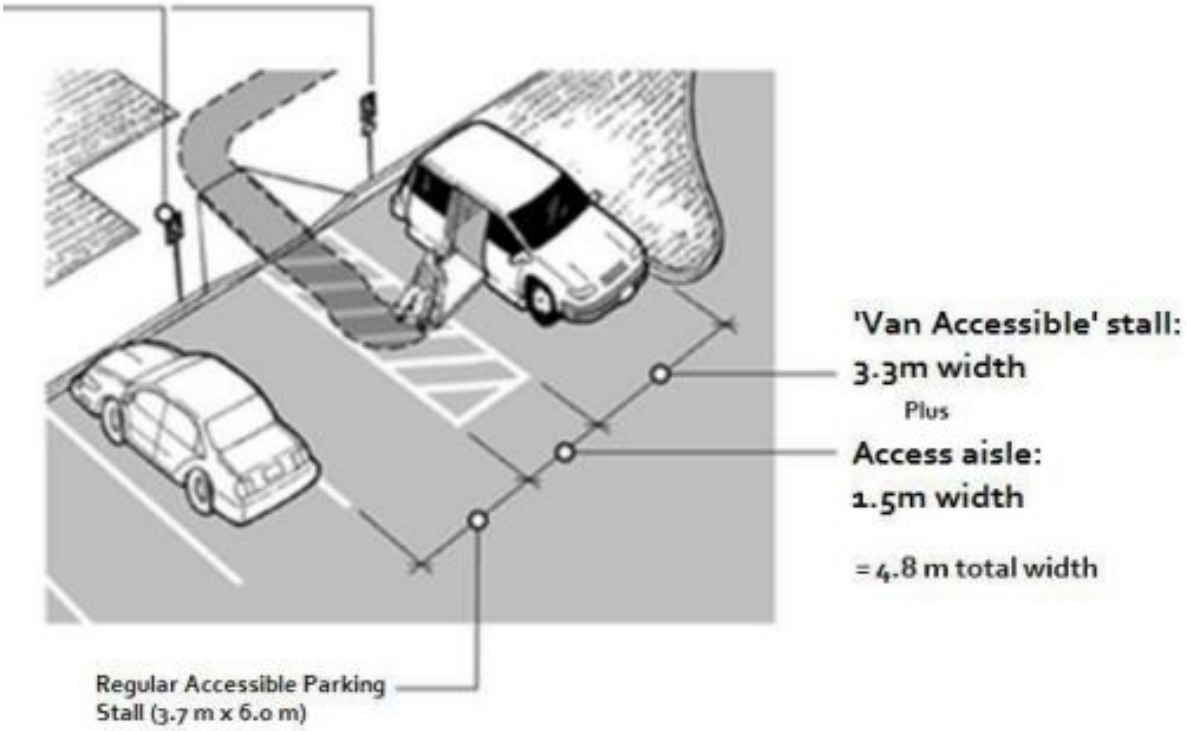
The recommended off-street parking review should include appropriate requirements for mobility scooters including which land uses they would be applied to. The following layout and design parameters should be considered:

- The mobility scooter spaces should be located in proximity to a building entrance and not impede pedestrian access to the building or sidewalk
- The spaces should be designed to be no less than 1 m in width and 1.5m in length
- The spaces should be secured and located within 2m of a 110V outlet for charging

9.2.3 ACCESSIBLE PARKING

Per Section 5.1.7 of the Zoning Bylaw, all new developments must provide one accessible parking space per fifty (50) required spaces, whichever is greater. This is a common requirement in most municipalities in BC. Up until 2018, most municipalities would refer to the BC Building Code for accessible parking requirements. However, in late 2018, the BC government made a regulatory amendment to remove accessible parking requirements from the BC Building Code and allow municipalities to regulate accessible parking through Part 14 of the Local Government Act. While Creston does regulate the number of accessible spaces required, the Zoning Bylaw does not provide any regulatory direction on accessible parking design. The following should be considered and more formally explored as part of the off-street parking requirements review:

- **Dimensions & Layout**: A standard accessible space is typically 6.0m in length and 3.9m in width. A van accessible space—intended for persons who use a wheelchair (manual or motorized) or a mobility scooter—is typically 6.0m in length and 4.8m in width. The 4.8m width comprises 3.3m for the parking space and 1.5m for the access aisle. The access aisle should be a minimum of 1.5m wide and be provided adjacent to all van accessible parking spaces. The access aisle is to be marked with a diagonally hatched pavement marking.



Example of the accessible parking standards in Section 8 of the City of Kelowna's Zoning Bylaw.

- **Signage:** Accessible parking spaces should be marked with a visible sign at the end of the space identifying its intended use by individuals displaying an accessible parking placard. All signage associated with van accessible spaces should include the blue tab sign identifying the space as "Van Accessible".
- **Pavement Marking:** The Town of Creston currently uses the International Symbol of Access pavement marking to denote an accessible parking space in its downtown. It is recommended that the Zoning Bylaw also require pavement markings for all accessible parking spaces to minimize the abuse or misuse of the space.

9.2.4 ELECTRIC VEHICLE CHARGING

As outlined in Section 2.5, in September 2021, Creston became the 11th community in the West Kootenays to commit to transitioning to 100% renewable energy across all energy use sectors by 2050. While the Town's 100% Renewable Energy Plan has not yet been adopted,

it will follow the overall outline and recommendations in the West Kootenay 100% Renewable Energy Plan. One of the strategies in that plan is to "Electrify Personal Vehicles.[32]

The Town's Zoning Bylaw does not currently include a requirement for electric vehicle charging. Requiring electric vehicle charging in new developments can help ensure that residents and employees have a place to charge at home or at work. While the Town will also require improvements to its public EV charging network (see **Section 10.0**), there is an opportunity to increase access to EV charging in private developments through its Zoning Bylaw.

There are two approaches to including EV charging in new developments:

1. Parking spaces in a new development can be 'EV ready', which future-proofs the parking by providing an energized outlet capable of providing Level 2 charging (220/240V plug) or higher to make it easier for future occupants / tenants to install charging stations. This approach is more economical for developers and builders through the construction process and allows for the future installation of EV charging stations when demand dictates. A number of BC communities contain EV ready regulations in their zoning bylaws including Kelowna, Saanich, Nanaimo, Victoria, and Sidney. Other communities such as Kamloops will be introducing these requirements in 2023.

2. Another approach, which is less common, is to require dedicated EV charging infrastructure as part of the new construction. This can include a 110/120V outlet (Level 1) charging or faster charging including a 220/240V plug (Level 2). The Town of View Royal is currently the only community in BC that has this requirement in its zoning bylaw.

The Town will need to determine which approach to follow when conducting its comprehensive review of the parking requirements. However, the first approach (EV ready requirements) is becoming more commonplace in other communities and should be considered in Creston.

[32] https://westkootenayrenewableenergy.ca/the-big-moves/transportation/

9.2.5 CASH IN-LIEU OF PARKING

Cash in-lieu provides an opportunity for a municipality to decrease the private parking supply associated with new development while increasing public parking supply and enhancing sustainable transportation infrastructure. Public parking is of benefit to the broader community as it can more efficiently meet demand from multiple parkers in a single resource and may be managed by the Town for greater community benefit.

The Local Government Act, Section 525 permits British Columbia municipalities to establish a bylaw that allows a prospective developer to pay cash in-lieu of required parking spaces. All funds must be used toward providing public parking facilities or on infrastructure that supports walking, cycling, transit, or other forms of sustainable transportation.

The Town already has a cash-in-lieu regulation in part 8 of the Zoning Bylaw (Off-Street Parking and Loading Requirements). The regulation reads as follows:

> *"Notwithstanding Section 2.0 , an owner or occupier of land located within 500 meters of the Cook Street Parking Lot and who has obtained a Development Variance Permit may, in lieu of providing off-street parking spaces, pay to the municipality the sum of $3,600. per space not provided. Owners and occupiers of buildings within the area designated in the Downtown Revitalization Specified Area (Parking) Loan Authorization Bylaw are exempt from the payment specified in this section"*

The regulation also stipulates that [a] parking spaces be within 100 metres of the subject site, and [b] that the property where the off-street parking will be provided agreed to a covenant that reserves the parking spaces for the owner / occupier of the subject site.

As part of the off-street parking review, it is recommended that the Town revisit its Cash-in-Lieu regulation and consider the following:

- **COST PER SPACE** – The cash in-lieu rates must be carefully considered; rates must be high enough that they allow the Town to provide public parking or sustainable transportation facilities with monies collected but not so high that prospective developers find it prohibitive. In addition, consideration will need to be given to which land uses a cash in-lieu rate applies to. The existing regulation does not provide clear direction on this.

- **GEOGRAPHIC EXTENT** – In some communities, the cash in-lieu regulation is only applicable in certain geographic contexts. It could also be applied in areas that are within proximity to a frequent transit route. Given the size of Creston, the regulation should be applied to the downtown area only given the availability of public parking in the area. This could allow the Town to allocate monies in a reserve fund that could be used toward the provision of public off-street parking or sustainable transportation infrastructure within the downtown area.

- **RESERVE FUNDS** – Per the Local Government Act, cash received in-lieu of parking must be credited to a reserve fund that is established for the purpose of providing either new and existing off-street parking spaces or transportation infrastructure that supports walking, bicycling, public transit or other alternative forms of transportation. The Local Government Act clarifies that if monies are to be used for both public parking and sustainable transportation, separate reserve funds must be created for each. Therefore, the Town could consider two reserve funds:
    - **Off-Street Parking Reserve Fund** – Monies in this fund could be considered specifically for off-street parking facilities in the downtown area including the Cook Street lot and Sunset Seeds lot.
    - **Alternative Transportation Reserve Fund** – The Town could consider establishing an Alternative Transportation Reserve Fund. The bylaws establishing the Alternative Transportation Reserve Fund should indicate that monies may be spent on transportation infrastructure that supports walking, cycling, transit or other forms of transportation, which may include but is not limited to either constructing new or upgrading sidewalks, trails, cycling facilities, bicycle parking, bus stops and related infrastructure, and electric vehicle charging stations. The monies could be prioritized on sustainable transportation within the downtown area.

9.2.6 TDM & PARKING VARIANCE POLICY

Transportation demand management (TDM) refers to policies, programs, and services that influence why, when, where, and how people travel. TDM initiatives typically aim to reduce single-occupant vehicle (SOV) trips and encourage sustainable travel options such as walking, cycling, public transit, and shared rides. Successful TDM initiatives can result in the reduction of parking demand, fewer vehicle trips, and associated benefits of decreased greenhouse gas (GHG) emissions, improved personal health and well-being, reduced traffic congestion, and lower infrastructure costs.

As part of the recommended off-street parking review, it is recommended that the Town explore a TDM variance policy. The purpose of the TDM variance policy is as follows:

- Outline the types of TDM mechanisms that the Town would consider a parking reduction for. This could include transit passes, a carshare vehicle, and additional bike parking, for example.
- Determine whether there are parking reductions for different land uses and locations
- Outline the expectations for a parking variance study including the general scope and terms of reference.

9.3 PARKING MANAGEMENT TOMORROW – PUBLIC PARKING

As discussed in **Section 9.1.1**, the Town currently manages 275 public parking spaces within the downtown area. Even though the Town manages all on-street parking across Creston, the parking spaces in its downtown are the most sought after and impact the experience of customers, visitors, residents, and employees on a daily basis. There are several opportunities to enhance both the management and design of the Town's public parking supplies as outlined below.

9.3.1 ONE-HOUR TIME RESTRICTIONS ON BUSIER BLOCKS

The parking occupancy, duration, and turnover survey concluded that Creston's downtown parking conditions are not overutilized and that parkers generally comply with the time restrictions. However, certain blocks are busier than others and are candidates for shorter-term time restrictions such as a one-hour restriction. Modifying the time limit from two hours to one hour will promote more turnover and allow more people to access convenient parking in the downtown area, which provides a benefit to the downtown businesses. For customers/visitors accessing businesses fronting a block one-hour time limit and require more time, they can either: (1) park on an adjacent block with the standard two-hour time limit or (2) park in one of the Town's off-street parking lots, that are within walking distance. The following blocks are recommended for a one-hour time restriction:

- Canyon Street (south side) from 12th Avenue to 14th Avenue
- Canyon Street (both sides) from 11th Avenue to 12th Avenue
- 12th Avenue North (from Vancouver Street to Canyon Street)
- Pine Street (from Northwest Boulevard to 10th Avenue)
- Northwest Boulevard (from Pine Street to 10th Avenue)
- 11th Avenue (from Vancouver Street to Canyon Street)

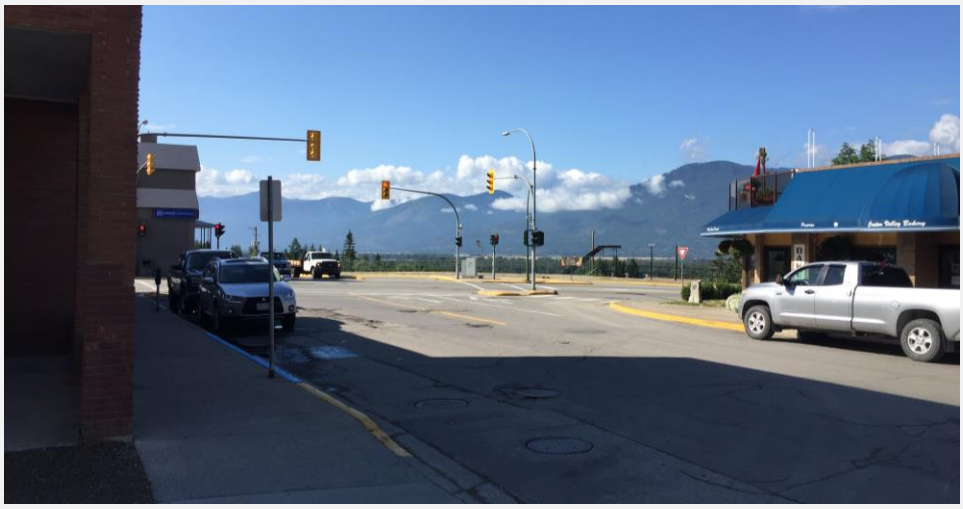
It is further recommended that the Town prioritize targeted enforcement of the one-time restrictions once the change comes into effect to monitor compliance.

WHAT WE HEARD ABOUT PUBLIC PARKING MANAGEMENT

In online survey no.2, the public was asked to provide feedback on the three public parking recommendations:

1. Implementing one-hour time restrictions on select blocks downtown to promote more turnover and allow more people to access convenient parking downtown.
2. Increasing the number of commercial and passenger loading spaces from 7 to 16 new loading spaces in the downtown area to accommodate businesses in the area that require deliveries and/or have customers that only need to stay for 15 minutes or less (e.g., passenger drop-off/pick-up).
3. Converting five of the existing standard accessible parking spaces (on Canyon Street) to van accessible spaces to better meet the needs of the disability community and Creston's aging population.

Overall, and as discussed on the following pages, about three quarters (74%) strongly or somewhat support redesigning the accessible parking spaces to be van accessible; about half (53%) strongly or somewhat support increasing the number of commercial and passenger loading spaces; and half (51%) of respondents strongly or somewhat support implementing one-hour time restrictions on select blocks.



9.3.2 REINTRODUCE PAID PARKING

In the short term, changing the time restrictions to one-hour parking on the busier blocks will help address parking demand. However, in the medium-term, it is recommended that the Town reintroduce paid parking, which was in place until 2011. The primary purpose of paid parking is to manage parking demand, and not to generate revenue. This can help reduce single-occupancy vehicle travel, increase average vehicle occupancy, and increase the availability of short-term parking.[33] The relative advantages and disadvantages of paid parking are summarized below.[34]

Example of a parking metre in downtown Creston in 1957. Photo credit: Creston Museum

Advantages

- Paid parking will address the potential shortfall of parking supply during peak periods by reducing parking demand.
- It can increase turnover of the most convenient spaces. This increases consumer convenience, facilitates deliveries, and reduces cruising for parking (i.e., searching for an unoccupied space).
- Encourages parkers to seek long-term or all-day parking to use less convenient spaces.
- Paid parking can reduce travel demand, encourage alternative modes of travel, and alleviate traffic congestion.
- Paid parking will generate revenue to offset the capital, operating, and management costs of a parking facility. Further, this will shift the cost of a parking facility onto those that use it.

[33] Transportation Research Board. (2005). *Parking Pricing and Fees: Traveler Response to Transportation System Changes, Chapter 13: Parking Pricing and Fees*. Retrieved from: www.trb.org/Publications/TCRPReport95.aspx

[34] Litman, T. (2018). Parking Pricing Implementation Guidelines. Available online at: https://vtpi.org/parkpricing.pdf

Disadvantages

- Paid parking will increase the likelihood of spillover into the surrounding site from drivers avoiding paying for parking.
- Paid parking may be negatively perceived by the community as an opportunity to profit.
- Paid parking will impose a cost to employees and visitors at the site that is not imposed at other sites.
- Paid parking may create a real or perceived barrier to accessing the site.

Even though paid parking is intended to manage demand, the revenues could be used by the Town to help pay for some of the infrastructure improvements recommended in the MMTP. The parking rates will need to be determined by the Town based on an assessment of market rates at the time. However, the Town should consider the following:

- The parking rate should be structured so that on-street parking spaces are more expensive compared to the Town-owned off-street parking lots. This means that those seeking all-day parking options (e.g., employees) will be drawn to off-street parking areas, ensuring there is adequate on-street turnover and availability to preserve premium on-street parking for customers and visitors.
- All on-street parking spaces should be subject to an hourly rate (e.g., $1.00 per hour) and only be in effect during the busier periods (this could include Monday to Friday from 9:00 a.m. to 5:00 p.m., for example).
- For off-street lots, there should be an hourly rate option to accommodate vehicles seeking short-term parking, along with an all-day rate to accommodate those who require more time to park (e.g., employees).

9.3.3 CONDUCT PARKING COUNT SURVEYS ON A BI-ANNUAL BASIS

As part of the MMTP, parking counts were conducted in the Downtown Core to better understand parking conditions. Parking count surveys, if conducted on a bi-annual basis, will provide Creston with a better understanding of how its on-street parking conditions are changing over time due to new development. These data could also help with decision-making for transportation projects. For example, if a street or block has low on-street parking utilization, that data could help justify the removal of on-street parking to allow for an active transportation facility such as a cycling lane.

Similar to the survey conducted in 2021, the parking count surveys should capture data on parking occupancy, duration, and turnover.

9.3.4 MANAGING PASSENGER AND COMMERCIAL LOADING DEMAND

Of the 174 on-street parking spaces in the downtown area, only seven (or 4%) have a short-term time restriction including a 10-minute and 15-minute time restriction and one space designed for loading that has a 15-minute restriction. Loading spaces can serve a variety of businesses in the area that require deliveries and/or have customers that only need to stay for 15 minutes or less (e.g., passenger drop-off/pick-up). This is important for properties that do not have existing on-site commercial or passenger loading facilities, which includes most of the businesses along Canyon Street. Currently, there are no passenger or commercial loading stalls on Canyon Street.

The addition of dedicated on-street loading spaces for commercial and passenger loading demands is needed to reflect recent trends in curbside management, including commercial deliveries, passenger drop-off/pick-up (e.g., ride-hailing), food delivery, etc. These spaces can reduce the need to use standard on-street parking spaces and reduce the overall number of vehicles circling around the block looking for a vacant space to park.

The Town should consider the following recommendations:

- Consolidate the existing seven short-term parking spaces into a single on-street loading space designation with a 15-minute time restriction.
- Designate loading spaces on the following blocks near block-ends:
    - Canyon Street from 10th Avenue to 15th Avenue
    - 10th Avenue from Pine Street to Canyon Street
    - 14th Avenue north of Canyon Street

Converting existing two-hour restrictions to 15-minute loading spaces at block ends for each of these streets would create a total of 16 new loading spaces. Most of the block ends on Canyon Street currently have an accessible parking space. The new loading spaces can be directly behind the accessible parking space, which would provide accessible parking users with even more space when entering / exiting their vehicle.

9.3.5 CREATING VAN ACCESSIBLE SPACES

The Town does not currently designate van accessible parking spaces for on-street parking, which can be a barrier to accessible parking users, particularly those who are in a wheelchair. Providing van accessible parking spaces can better meet the needs of the disability community and Creston's aging population. Even though some of the accessible parking

stalls are longer than others, the design is inconsistent and does not meet best practices. Through the engagement process, stakeholders also confirmed that the Town could benefit from van-accessible parking to better accommodate the different levels of mobility for those visiting the downtown.

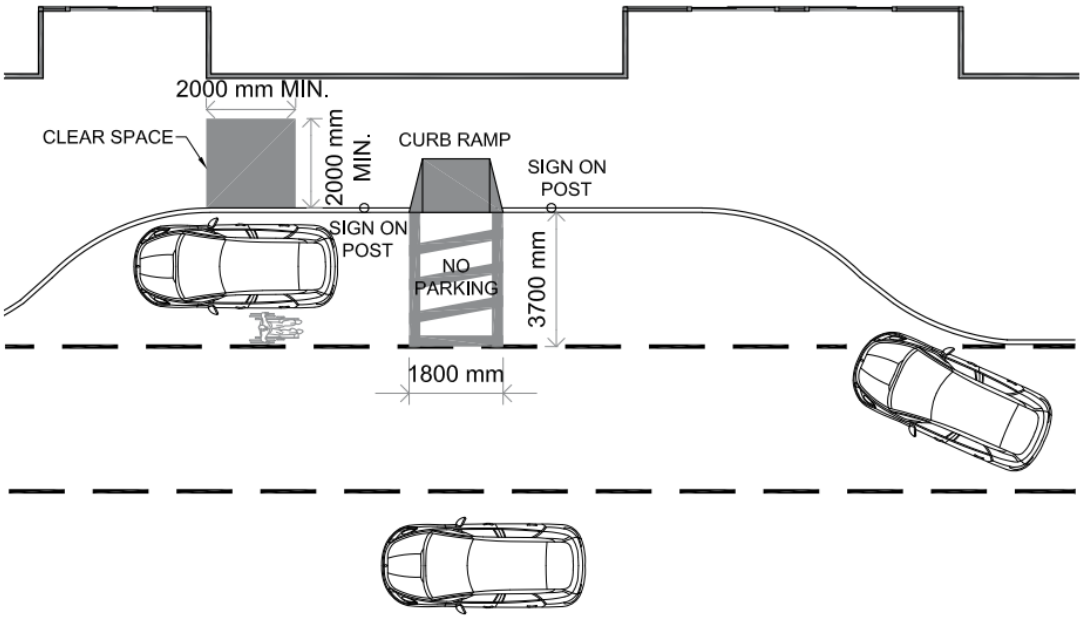
Example of an accessible parking space on Canyon Street. While the space is well marked with signage, a blue painted curb, and a pavement marking, there is no curb ramp and there is limited space for those using a rear lift to enter/exit their vehicle.

Many of the Town's downtown streets already have a constrained right-of-way with little additional width available for on-street parking. However, there are some design changes that could be made to existing accessible parking spaces to make them more van accessible, as follows:

- The stalls could have an access aisle or "no parking zone" behind the vehicle to make it easier for those using a rear lift to enter/exit their vehicle. This will also ensure that persons do not have to pass behind other parked vehicles and increase safety.[35]
- The spaces could be located adjacent to sidewalk curb ramps to make it as easy as possible for a user to access the sidewalk.

[35] City of Edmonton. (2020). Access Design Guide Version 3. Retrieved from: https://www.edmonton.ca/city_government/documents/PDF/AFE-AccessDesignGuide.pdf

- The spaces could be located next to a clear space (free of any obstructions) to make it easier for wheelchair users to enter/exit their vehicle using a side lift.



On-street accessible parking space design standard. Source: City of Edmonton Access Design Guide

Based on the standard above, it is recommended that the Town convert five of its existing standard accessible parking spaces to van accessible spaces and use the following standards:

a. Design and Layout

   i. The length and width of the space could have the same dimensions as a regular on-street stall. However, a no parking zone (access aisle) could be provided behind all van accessible stalls and be a minimum of 1.8 m in width, similar to the City of Edmonton.

   ii. A curb ramp should align with the no parking zone (access aisle) to ensure there is an accessible path of travel from the road to the sidewalk.

   iii. A clear space should be provided adjacent to the van accessible and be a minimum of 2 m in width to make it easier for wheelchair users to enter/exit their vehicle using a side lift ramp.

b. Signage

    i. All signage associated with van accessible spaces could include the blue tab sign identifying the space as “Van Accessible”.

    ii. The identification signs should use the new International Symbol of Access, which is considered a best practice.

c. Pavement Marking

    i. The Town already has pavement markings for its accessible parking spaces, which include a blue background with the International Symbol of Access.

Example of van accessible parking signage in the City of Richmond.

9.4 ACTIONS

The following **Table 28** summarizes the recommended actions for parking regulations and public parking management.

TABLE 28: PARKING MANAGEMENT AND REGULATION ACTIONS

Action		Description
5A	Undertake a Formal Off-street Parking Review	Undertake a formal review of the Town's off-street parking requirements (contained in Part 8 of the Zoning Bylaw) to align regulations with best practices and current trends. Topics to be explored in the review include: • Off-street parking supply rates • Bicycle & mobility scooter parking • Accessible parking • Electric vehicle ready requirements • Cash in-lieu of parking • TDM & parking variance policy
5B	Implement One-hour Time Restrictions on Blocks Downtown with High Demand	Convert the exiting two-hour time restriction to a one-hour time restriction for the blocks that have higher parking utilization (see Section 9.3.2),
5C	Reintroduce Paid Parking Downtown	In the medium term, reintroduce paid parking within the Downtown Core to manage demand and generate revenue.
5D	Conduct Parking Count Surveys Bi-Annually to Understand Changing Downtown Parking Conditions	Parking count surveys should be conducted on a bi-annual basis to understand how parking conditions in the Downtown Core are changing and whether changes to parking management are warranted.
5E	Implement 15-Minute Passenger and Commercial Loading Zones Downtown	A single passenger and commercial loading restriction (15-minute max) is recommended for on-street parking in the Downtown Core.
5F	Provide Van Accessible On-street Parking	Convert five of the existing standard accessible parking spaces to van accessible spaces using the design standards identified in Section 9.3.5.

Section 10 – Emerging Mobility

10.0 EMERGING MOBILITY

New technologies and systems are introduced within transportation that disrupt and evolve the status quo and lead to new perspectives when planning our transportation network. While gas powered vehicles and single-occupancy vehicle travel dominated the 20th century, advances in technology and telecommunications along with societal changes have resulted in a number of new mobility services ranging from carsharing, ride-hailing, micromobility vehicles (e.g., e-bikes/e-scooters), and more. There has also been increasing interest in electric transportation—from electric vehicles to e-bikes and e-scooters—and how these emerging modes of mobility can help, reduce greenhouse gas (GHG) emissions in the transportation sector. All these new mobility options will have some impact on how we move around and should be taken into consideration when planning the future of Creston.

Given Creston's transportation context, there are four emerging transportation trends that are particularly relevant and summarized below:

- Electric vehicles
- Electric bikes
- Micromobility
- Carsharing

10.1 ELECTRIC VEHICLES

Electric vehicles (EVs) are a class of vehicles that run entirely or partially on electricity. These vehicles have a battery instead of a gasoline tank, and an electric motor instead of an internal combustion engine. EVs and other types of zero-emission vehicles can play an important role in reducing community GHG emissions, especially as uptake continues to grow due to more affordable prices—as vehicle production has increased—and government financial rebates. There are two types of electric vehicles—a plug-in hybrid and a battery electric vehicle, shown below.

Battery Electric Vehicles ("BEVs") run exclusively on electricity and need to be plugged into an outlet or charging station to recharge the battery. The typical battery range varies from 100 km to over 450 km.

Plug-In Hybrid Electric Vehicles ("PHEVs") have both an electric motor and an internal combustion engine. The electric motor needs to be charged at an outlet or charging station and typically has a shorter battery range than BEVs, and PHEVs use the internal combustion engine when the battery is low or when extra propulsion power is needed.

Typically, electric vehicles are recharged by plugging into the electricity grid through a charging station. Three distinct charging station types are available:

- Level 1 (120 Volt – Household Outlet) – Approx. Full Charge: 8-12 hours;
- Level 2 (240 Volt – Typical Charging Station) – Approx. Full Charge: 4-6 hours; &
- Level 3 (480 Volt – Fast-Charging Station) – Approx. Full Charge: 0.5-1 hours.

More information about charging station types is found below.

Level 2 Charging Stations have a power level of 220 to 240 volts (3.3-19.2KW) with 30 amps. Drivers can add anywhere from 20-40 kilometres of range in an hour of charging depending on the vehicle. These stations are commonly found in locations where drivers may be parking from 1-4 hours including a parkade, surface parking, on-street parking near commercial destinations, etc.

Direct Current (DC) Fast Chargers have a power level ranging from 200 to 500 volts (25-300KW) up to 200 amps. DCFCs can deliver 80% of a full charge to most EVs. They are commonly found along highway stops or commuting corridors including park and rides, surface parking lots, and in downtown settings.

Photo credit: Getty Images (top) and Ivan Chan (bottom)

There are currently 6 charging stations in Creston[36] with the majority (about 83%) of stations offering Level 2 ports. They are found at the following locations:

- Town of Creston Public Parking, Cook Street (2 x Level 3, 2 x Level 2); and
- Creston Visitor Centre, 121 Northwest Blvd (2 x Level 2).

There are different approaches the Town could adopt to accelerate EV adoption as detailed in the following sections.

Charging Station at Cook Street Parking Lot. Image Retrieved From: chargehub.com

10.1.1 TOWN-OWNED PUBLIC CHARGING

The Town currently has six EV charging stations that are publicly accessible. However, only two of these stations are managed by the Town (in the Cook Street Parking Lot). Further, there are currently only two Level 3 charging stations, which are often more sought after because of the faster charging times.

The Town has an opportunity to increase the number of publicly accessible stations as part of a broader strategy to increase EV adoption. As a first step, the Town should identify

[36] *More information about Creston's EV charging station profile is available online at: https://chargehub.com/en/countries/canada/british-columbia/creston.html*

"opportunity sites", which are defined as locations that are under municipal control including public parks, libraries, recreation centres, on-street (i.e., curbside locations), etc. The Town will need to undertake a facility assessment to determine the optimal electrical system design to accommodate EV charging. The following locations are recommended for the Town:

- Creston Valley Public Library (Level 2 charging)
- Creston and District Community Complex (combination of Level 2 and DCFC fast charging)
- Creston Museum & Archives (combination of Level 2 and DCFC fast charging)
- Canyon Street between 10th Avenue and 14th Avenue (on-street charging, a combination of Level 2 and DCFC fast charging).

10.1.2 ELECTRIFY TOWN FLEET

The Town currently has 40 vehicles in its corporate fleet. To increase the share of electric vehicles within its fleet, the Town should undertake a Green Fleet Plan. The plan would include a fleet assessment to explore opportunities for electrifying the fleet in an effort to reduce emissions.

FUNDING FOR EV CHARGING STATIONS

EV charging stations are expensive but the Town could apply for grants from the following programs:

- **Government of Canada Zero Emission Vehicle Infrastructure Program** | this program offers 50% of the total project costs and varies based on the type of charging infrastructure. For a Level 2 connector, a maximum of $5,000 per connector could be obtained whereas for a Level 3 (fast charger), the maximum ranges from $15,000 to $75,000 per charger depending on charger output.
- **Government of British Columbia cleanBC Public Charger Program** | this program is intended to increase the number of public DC fast charging stations in BC. Rebate amounts range from $20,000 to $130,000 depending on electrical output.

10.2 E-BIKES

Electric bicycles (e-bikes) are bicycles with an electric motor of 500 watts or less, and functioning pedals that are limited to a top speed of 32 km/h without pedalling. Electric bicycles make cycling more attractive for a greater diversity of the population, particularly for seniors, women, and people with disabilities, as they increase the maximum length of bicycle trips, minimize the impact of hills and other terrain challenges, and allow people to bike with heavier cargo loads. Further, electric bicycles can help municipalities achieve their GHG emission reduction targets. With supportive cycling infrastructure in place, e-bikes have the potential to substitute for, or completely replace, a substantial number of trips taken by a gasoline powered car, which could address congestion issues within urban areas.[37]

As discussed in **Section 9.2**, the Town can update its Zoning Bylaw to include requirements for non-standard and electric bicycle parking. This amendment would make it easier for residents and employees in new buildings to own and park their e-bike. However, there are other approaches that can help accelerate e-bike adoption, as discussed below.

10.2.1 E-BIKES IN TOWN FLEET

As part of the recommended Green Fleet Plan, explore the feasibility of introducing e-bikes within the Town's fleet. Staff who are required to travel within 5-7 kilometres could make these trips using an e-bike. Other jurisdictions in BC including the City of Victoria, Capital Regional District, and District of Saanich have taken similar steps by introducing e-bikes into their corporate fleets.

[37] *WATT Consulting Group. (2018). Capital Region Local Government Electric Vehicle + Electric Bike Infrastructure Planning Guide. Available online at: https://www.crd.bc.ca/docs/default-source/climate-action-pdf/reports/infrastructure-planning-guide_capital-region-ev-ebike-infrastructure-project-nov-2018.pdf?sfvrsn=d767c5ca_2*

10.2.2 E-BIKE PROGRAM FOR RESIDENTS

One of the main barriers facing prospective e-bike owners is the price. This has been confirmed in several BC communities / regions in North Vancouver, the City of Kamloops, City of Nelson, and the Capital Regional District and in other jurisdictions in North America. Communities have taken different approaches to lower the cost of obtaining an electric bike. In October 2021, the District of Saanich launched its "Community E-bike Incentive Pilot Program", which offers an incentive for the purchase of new e-bikes by Saanich residents for personal transportation. The pilot program offers incentives to 300 participants, with 120 incentives initially reserved for income-qualified applicants.[38]

The City of Nelson also has an e-bike program[39] in place that is intended to make e-bike ownership more attainable for its residents. Details of the program are as follows:

- It provides low-interest financing for Nelson homeowners who would like to purchase a commuter bike including electric bikes, do-it-yourself conversion kits, non-electric bikes and accessories that are related to safety and commuting
- The loan is applied monthly on the homeowner's BC Hydro electric bill and repaid over the term of the loan.
- The maximum loan amount is $8,000 per household, which can support the purchase of more than one bike. Participants will be able to choose an amortization period of two or five years, with an interest rate of 3.5% (subject to change each year).
- The program is only available to City of Nelson residents who own their own home.

Both the District of Saanich and the City of Nelson have different approaches to making e-bikes more affordable to their communities. As a smaller community with a smaller tax base, the Town of Creston may not be in a position to offer a rebate program similar to these communities, however, it is recommended that the Town explores the opportunities to provide an e-bike program for its residents. In online survey no.2, respondents ranked an e-bike rebate program as the number one emerging mobility option that the Town should explore.

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[38] District of Saanich. (2021). E-bike Incentive Pilot Program. Available online at: https://www.saanich.ca/EN/main/community/sustainable-saanich/climate-change/programs-rebates/e-bike-incentives.html

[39] City of Nelson. (2022). E-Bike Program. Available online at: http://www.nelson.ca/824/E-Bike-Program

10.2.3 PRIORITIZE BUILD-OUT OF QUICK-BUILD CYCLING NETWORK

Even though e-bikes allow users to travel longer distances and access destinations more easily compared to a regular bike, if the cycling infrastructure is unsafe and poorly connected, that user may opt to use their vehicle instead. As a result, it is critical that the Town implements the quick-build cycling network identified in **Section 7.2.1** to further support e-bike adoption.

10.3 E-SCOOTERS AND MICROMOBILITY

Micromobility refers to a range of small, lightweight vehicles operating at speeds typically below 25 km/h by a child or adult. Micromobility is a broad term that includes electric scooters, electric skateboards, hoverboards, solo wheels, e-bikes and even bicycles. This variety of vehicle types has grown in popularity in recent years and is often used in combination with transit or car trips because of their compactness and often their ability to fold. Micromobility has found its niche in the first and last kilometre transportation as:

- It enables citizens to comfortably access transit
- It discourages people from owning a vehicle
- It can support climate change mitigation efforts

Micromobility vehicles are available for purchase at any number of local retailers (e.g., London Drugs, Canadian Tire, bike shops) and online for as little as $500. Higher-end micromobility vehicles exist and feature higher quality components but can also feature powerful motors that allow speeds exceeding 60 km/h. The province regulates the use of these vehicles on-street through the Motor Vehicle Act and is allowing municipalities to apply for a Pilot to allow the private use of low-speed vehicles on-street. Operations on pathways are subject to local regulations.

10.3.1 SHARED MICROMOBILITY

Shared micromobility refers to fleets of micromobility vehicles that are typically owned by a municipality or a company for short-term rentals. Compared to other mobility services, shared micromobility has attracted significant amounts of venture capital from a variety of companies. Shared micromobility is enormously popular around the world, in the U.S. and in recent years in Canada. Shared micromobility has seen two to three times faster growth than car-sharing and ride-hailing.

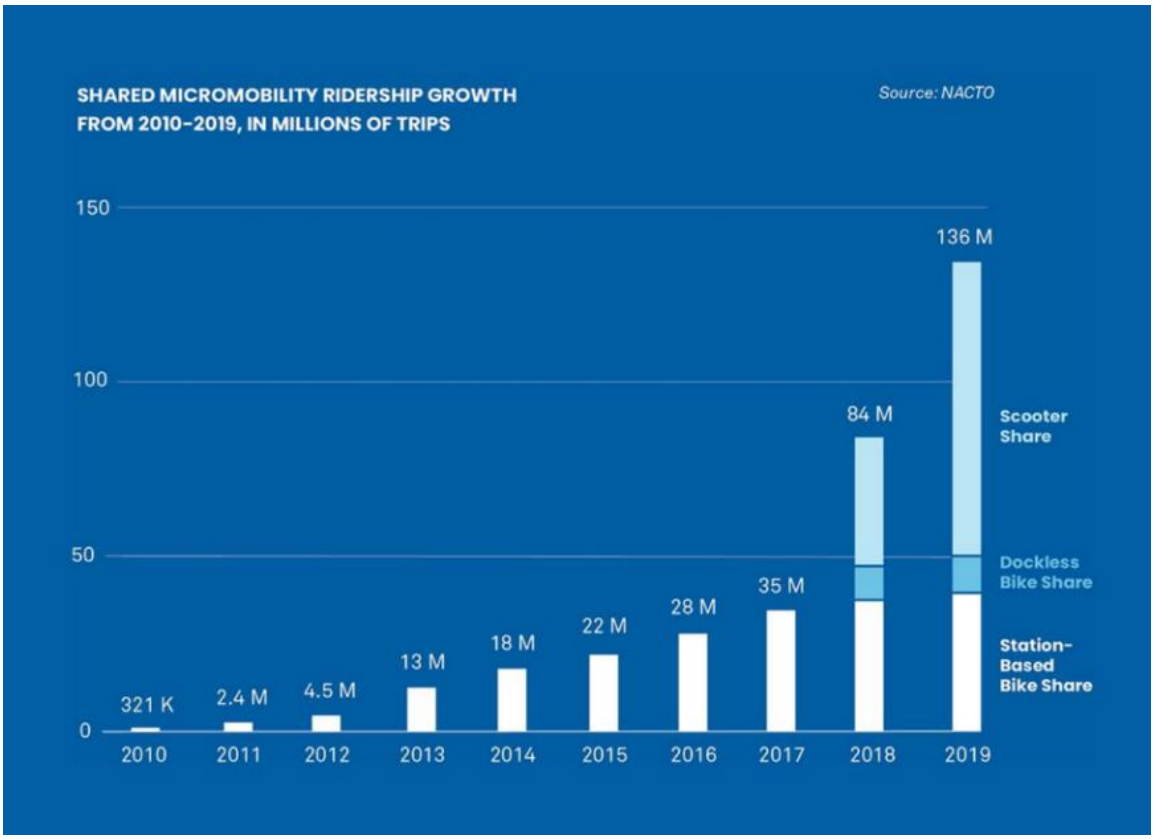


Figure 21 Shared Micromobility ridership growth in the U.S.

Lately, more cities are investing and/or permitting micromobility vehicles for individual use, typically for a short duration, for a price. Apart from the benefits in terms of active transportation, shared micromobility systems should be considered as part of a town's transportation system and an extension of public transit, as it serves the first and last kilometre of trips well. Primarily, there are two distinct types of shared micromobility: docked and dockless.

- **Docked systems** include shared vehicles that are parked in special racks at one of multiple stations where users can unlock vehicles with a membership card, cell phone, or credit card. The user has to return the vehicle to the same or another station. Docking stations are typically found with bike share systems.
- **Dockless systems** include shared vehicles that are parked without a rack in the furniture zone or in designated areas called "havens". This system provides flexibility and efficiency for the user, as it allows them to park very close to their destination. Dockless systems are typically found with electric scooter sharing systems and some bike share systems. Dockless systems require members to have a smartphone in order to locate a vehicle.

It has been observed that most jurisdictions introduce shared micromobility programs and especially e-scooter share programs as pilot projects for a specific time (i.e., less than one year) to assess community reaction before formalizing the program. A pilot e-scooter share is currently underway in six communities across BC but there are currently none operating in the Kootenays. It should be noted that in March 2022, Merritt, BC a city of similar size to Creston has taken the first steps in investigating shared micromobility in their community[40].

[40] Merritt Herald. (2022). *Merritt explores e-scooter pilot project*. Available online at: https://www.merrittherald.com/merritt-explores-e-scooter-pilot-project/

Shared micromobility systems with the right amount of regulation and maintenance protocols can have a number of significant benefits. These include:

1. **Environmentally friendly**
   Shared electric scooters and bike share programs are an environmentally friendly way of travelling. Especially important for the "last kilometre" but also any distance less than 5km (with a sweet spot of 3km) those programs have a significant potential to replace car trips and reduce traffic congestion as well as reduce carbon emissions. In 2019, shared micromobility contributed to a reduction of approximately 65 million pounds of CO_2 emissions in North America by replacing auto trips. [41] In addition, electric micromobility vehicles are significantly cheaper to build, more energy efficient, and more fuel efficient.

2. **Health, wellness and recreation**
   Micromobility includes fully active transportation such as cycling, rollerblading or skateboarding. It also includes partially active modes, for example riding an electric bicycle, which can have significant health benefits. A recent literature review suggested whilst cycling is better for health than riding a pedal-assist electric bicycle, electric bicycles provide a better workout than walking. In addition, recent research papers highlight that people using electric bicycles may double their use of cycling for transport and that physical activity gains are similar between an electric and a conventional bicycle.[42, 43]

Further, there are additionally many micromobility vehicles that are partially active, including electric scooters. These have the potential to provide a useful addition to traveller choice and could help reduce congestion and improve air quality in urban areas if they replace trips by car. E-scooters are not self-balancing, so they still require the person operating them to be

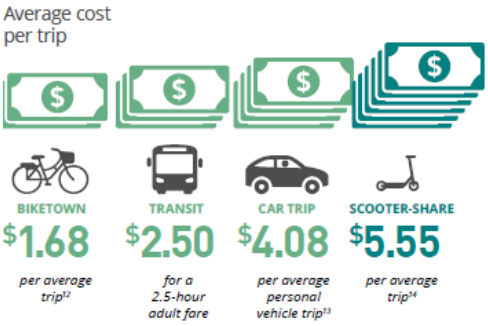
[41] North American BikeShare Association (NABSA) Shared Micromobility State of the Industry Report 2019
[42] Castro, A., et. al. (2019). *Physical activity of electric bicycle users compared to conventional bicycle users and non-cyclists: Insights based on health and transport data from an online survey in seven European cities*. Transportation Research Interdisciplinary Perspectives. Available online at: https://doi.org/10.1016/j.trip.2019.100017
[43] Fyhri, A. & Sundfor, H. (2020). *Do people who buy e-bikes cycle more?*. Transportation Research Part D: Transport and Environment. Available online at: https://doi.org/10.1016/j.trd.2020.102422

nimble and have good hand-eye coordination and even need a kick to get them going from a stopped condition.

A shared micromobility trip usually starts and ends with a walking trip, so even if the act of riding the vehicle is seen as partially active, the user still does more physical activity than jumping in the seat of a car.

3. **Equitable transportation**
   Active forms of micromobility should be made available to everyone, and if prioritized, in turn, promote mixed land use and compact development. Shared electric scooters and bike share programs that are subsidized by a municipality can be affordably priced. Ideally, the cost of a short trip is similar to the cost of a transit trip so that it can function as an extension of transit enabling people to get that last kilometre in 1/3 of the time as walking.

   Most of the e-scooter share systems are run by venture capital or small business start-ups. These companies typically pay fees to operate in a municipality and charge users for the duration of a trip. The cost of these trips are often two to three times more than a transit trip, and more than a trip by car. Despite the trip costs, people across North America have flocked to e-scooters, which account for the lion's share of shared micromobility trips.



Excerpt from PBOT's 2019 E-Scooter Findings Report identifying average cost per trip. The cost of an e-scooter trip run by a private company is far more expensive than a bike share trip which is subsidized by the City of Portland, as well as user fees.

   Due to their ease of use, shared services enable local residents and visitors with an additional transportation option that allows them to easily commute and/or explore the city. A recent report from the City of Portland quantified the average cost per trip by mode and identified that the average trip with the bike-share system is almost 60% cheaper compared to an average personal vehicle trip ($1.68 vs $4.08), however, it also showed that an average electric scooter share trip is 35% more expensive than an average personal vehicle trip ($4.08 vs $5.55). Portland required the e-scooter share operators to

enforce a low-income pricing plan, options for people to use the service without a smartphone and provide printed materials in multiple languages.[44]

4. **Supporting local businesses**

Prioritizing micromobility has been proven to help local businesses as it increases business-bound traffic and makes it easier to access commercial districts from farther distances. Findings from the City of Calgary Shared e-bike and e-scooter Mid-Pilot report show that over 50% of all shared micromobility trips taken as part of their pilot ended up in a Business Improvement Area / Business district (BIA/BD).

An economic impact study of active transportation infrastructure on business activity was commissioned in Toronto, Ontario by the Bloor Annex BIA, the Korea Town BIA, and the Metcalf Foundation in coordination with the City of Toronto and the Centre for Active Transportation in 2015. The study found that the introduction of active transportation infrastructure increased customer counts at the shops on both sides of the road and that the customers were 2.6 times more likely to make shorter distance trips than those coming from farther away. [45]

5. **Reduced congestion**

It is understood that providing a short-range alternative transportation mode such as e-scooters and bicycles can replace vehicle trips that are within a five to eight-kilometer range. A recent example from Calgary's shared electric scooter pilot program found that 33% of the e-scooter trips replaced a car trips.[46] Specifically, it reported that most e-scooter's trips were for errands / appointments. Similarly, in Portland, 19% of shared e-scooter users said that they would have driven a personal car if they had not taken an e-scooter for their most recent trip and an additional 15% would have taken a taxi or used a ride-hailing service.[47]

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[44] PBOT (2020). *2019 E-Scooter Findings Report*. Available online at: https://www.portland.gov/sites/default/files/2020-09/pbot_escooter_report_final.pdf

[45] British Columbia Active Transportation Design Guide 2019 Edition, Case Study on Economic Activity, pg. I23

[46] CBC News. (2019). *1-in-3 Calgary e-scooter trips replaced a trip with a car: report*. Available online at: https://www.cbc.ca/news/canada/calgary/calgary-e-scooter-report-1.5396846

[47] PBOT. (2018). *2018 E-Scooter Pilot User Survey Results*. Available online at: www.portlandoregon.gov/transportation/article/700916

Interest in micromobility is bound to continue to rise. They are seen as improving affordable and environmentally friendly transportation options. Their popularity will inevitably increase the demand for dedicated cycling infrastructure in order to separate those travelling 20 km/h from those walking 5 km/h and those driving 40 km/h or more. Through the development of the ultimate cycling network plan, it will provide more cycling infrastructure to accommodate these vehicles. By adjusting local bylaws to facilitate the use of these vehicles, the Town will support and facilitate the introduction of both privately owned micromobilty growth and promote shared micromobility companies in their jurisdiction to provide another multi-modal trip option to residents and visitors in their community.

Given all the benefits of micromobility above, it is recommended that the Town undertake a micromobility readiness assessment. This would determine what bylaws need to be changed, identify similarities/differences between pedestrians / cyclists, where micromobility vehicles should be allowed, what risks and mitigations exist, summarize best practices in Canada, and provide a framework for what a private shared system could look like if permitted.

10.4 CARSHARING

Carshare is a form of car rental where people can rent vehicles for varying lengths of time. They are usually co-operatives or businesses, and users must sign up as a member to be able to use the vehicles and pay the costs associated with it. Carshare is a good option for those who sometimes need access to a vehicle but may not be able to pay the costs associated with owning a vehicle or do not need to rent for an entire day. This mobility option can be a popular tool for families who cannot afford to own a vehicle and may get around by transit, walking, or cycling, but

KOOTENAY CARSHARE

may need occasionally the use of a vehicle to travel long distances or transport heavy / bulk items (e.g., moving, shopping). The result is users that are less reliant on vehicles. This has a big impact on the overall goals of reducing GHG emissions and encouraging a more active lifestyle.

There are two models of carsharing available in British Columbia:

- One-way carsharing: In this model, the user can start their trip in one location and end it at a different location. For instance, Evo Car Share is a one-way carsharing provider operating in Metro Vancouver and Victoria, where users can end their trips anywhere within an operational area; and
- Two-way or roundtrip carsharing: The difference with this model is that the user must return the vehicle to the same place that the trip originated. A local Kootenay example is Kootenay Carshare which currently operates in Nelson, Kaslo, Revelstoke, and Rossland.

Apart from the carsharing companies, across BC there have been developers that support an "internal" carshare model that operates for the development site's residents. Typically, this has been done to allow for relaxation of the minimum parking requirement of multi-family residential buildings. The Town should be open to hybrid models of carsharing as it is considered a significant transportation demand management (TDM) measure. TDM is the application of strategies and policies to influence individual travel choices, most commonly to reduce single-occupant vehicle travel.

Creston has made efforts regarding support of attracting a carshare program, which is an action item that is also identified in the Strategic Community Energy Efficiency Plan. It is recommended that the Town formally seek strategic partnerships to encourage carshare operators to come to Creston.

10.5 ACTIONS

A list of the key actions that need to be pursued for Emerging Mobility in Creston is shown in **Table 29** below.

TABLE 29: EMERGING MOBILITY ACTIONS

Action		Description
6A	Undertake A Facility Assessment to Accommodate EV Charging and Implement Charging Stations	Undertake a facility assessment to determine the optimal electrical system design to accommodate EV charging. The following locations are recommended for the Town: • Creston Valley Public Library (Level 2 charging) • Creston and District Community Complex (combination of Level 2 and DCFC fast charging) • Creston Museum & Archives (combination of Level 2 and DCFC fast charging) • Canyon Street between 10th Avenue and 14th Avenue (on-street charging, combination of Level 2 and DCFC fast charging
6B	Electrifying Town Vehicle fleet	Undertake a Green Fleet Plan. The plan would include a fleet assessment to explore opportunities for electrifying the fleet in an effort to reduce emissions.
6C	Add E-bikes to the Town Fleet	As part of the recommended Green Fleet Plan, add three e-bikes to the Town's fleet.
6D	Explore an E-bike Rebate Program	Explore the aspects of an e-bike rebate program as a strategy to increase e-bike adoption.
6E	Build-out of Quick-build Cycling network	Prioritize the build-out of the quick-build cycling network to further encourage e-bike adoption.
6F	Shared Micromobility Program	Undertake a micromobility readiness assessment. This would determine what bylaws need to be changed, identify similarities/differences between pedestrians/cyclists, where micromobility vehicles should be allowed, what risks and mitigations exist, summarize best practices in Canada, and provide a framework for what a private shared system could look like if permitted.
6G	Partner with a Carsharing Operator	The Town should formally seek strategic partnerships to encourage carshare operators to come to Creston.

Section 11 – Implementation Strategy

11.0 IMPLEMENTATION STRATEGY

As part of the development of the Creston Multi-Modal Transportation Plan, an Action plan along with a Monitoring and Evaluation program was established to prioritize active transportation trips. These will guide its policy, planning and capital investment decisions as well as ongoing operations and maintenance activities in support for multi-modal accommodation over the next 30 years. As part of the Implementation Strategy, new actions that occur in the short and medium-term (one to 10-year timeframe) and have associated capital costs, were all given a class 'D' cost estimate. Some of these costs can be supported by pursuing external funding from other levels of government, and partnerships with other organizations. Some costs could be shared as development occurs, such as sidewalks and bicycle infrastructure along developing frontages. The timing of improvements may be adjusted as development and new projects occur in Town.

11.1 ACTION PLAN

The Action Plan summarizes all of the recommended actions identified in the multi-modal sections above. Each action is guided by the following:

- **Timeframe**: Is the timeframe for implementation: short-term is within one to five years; medium-term is between five to 10 years, and long-term refers to 10 to 30 years. Some actions will be implemented on an ongoing basis. Determining the timeframe for each action is partly influenced by how important it is to the community in helping to meet the MMTP goals, but also factored in elements of what was heard in the community engagement effort. The overall prioritization of the actions may shift over time depending on how the community's priorities evolve; however, the recommended timeframe should be used as a guiding framework.
- **Method of Implementation**: Identifies how each recommended action will be implemented, which includes [a] capital project; [b] operations and maintenance budgets; [c] policy + regulation; [d] technical study [e] education + programming + advocacy.
- **Partners**: Even though the Town will be responsible for implementation of most actions, other important partners may need to be involved to help support the action. They have been identified in the table.

Road Network Actions

Action		Timeframe	Method of Implementation	Partner
1A	Undertake Bylaw Updates	short-term	Policy + Regulatory	
1B	Use Temporary Traffic Calming measures	ongoing	Policy + Regulation	
1C.1	Safety Improvements at Cook Street / Canyon Street (Hwy 3) / 10 Avenue N	short-term	Capital	MOTI
1C.2	Safety Improvements at Northwest Boulevard (Hwy 3) / Devon Street N	short-term	Capital	MOTI
1C.3	Safety Improvements at Northwest Boulevard / Hillside Street / 7th Avenue	medium-term	Capital	
1C.4	Safety Improvements at Northwest Boulevard / Helen Street/ Collis Street	short-term	Policy + Regulation	MOTI / Developer
1C.5	Safety Improvements at Northwest Boulevard / Murdoch Street	medium-term	Capital	
1C.6	Safety Improvements at Northwest Boulevard / Regina Street	medium-term	Capital	
1C.7	Safety Improvements at Canyon Street (Hwy 3) / Crawford Street	short-term	Capital	MOTI
1D	Interim Canyon Street (Highway 3) Retrofit	medium-term	Capital	MOTI / Creston Chamber of Commerce

Road Network Actions				
Action		Timeframe	Method of Implementation	Partner
1E.1	New Road Connection at Glaser Drive (Cavell Street – Helen Street)	long-term	Policy + Regulation	Developer
1E.2	New Road Connection at Cavell Street (Valleyview Drive – Northwest Boulevard (Hwy 3))	long-term	Policy + Regulation	Developer
1E.3	New Road Connection at Devon Street Connector to 16th Avenue N	long-term	Policy + Regulation	Developer
1F	Undertake a feasibility study for the Highway 3 re-alignment to Cook Street	long-term	Technical Study	MOTI
1G.1	Create policy for setting speed limits	short-term	Policy + Regulatory	MOTI
1G.2	Create policy for vehicle operational thresholds	medium-term	Policy + Regulatory	
1G.3	Create policy for emergency access routes for neighbourhoods.	medium-term	Policy + Regulatory	
1G.4	Create policy for channelized smart right turns	short-term	Policy + Regulatory	MOTI
1H	Develop an active transportation maintenance plan	short-term	Operations and Maintenance budgets	

Pedestrian Network Actions

Action		Timeframe	Method of Implementation	Partner
2A.1	New sidewalk on west side of 20th Avenue N (between Canyon St (Hwy 3) and Hillside St)	short-term	Capital	
2A.2	Crossing improvement at 20th Avenue and Canyon Street (Hwy 3)	short-term	Capital	MOTI
2A.3	Crossing improvement at 18th Avenue N / Canyon Street (Hwy 3) Pedestrian Crossing	short-term	Capital	MOTI
2A.4	New sidewalk on south side of Vancouver Street (between 15th Avenue N and 16th Avenue N)	medium-term	Capital	
2A.5	New pathway along Pine Street to Creston District Community Complex	short-term	Capital	
2A.6	New pathway on west side of Creston District Community Complex	short-term	Capital	Creston District Community Complex
2A.7	New sidewalk on west side of 9th Avenue N (between Regina Street and Cavell Street)	medium-term	Capital	
2A.8	New painted shoulder on the east side of 8th Avenue (between Cavell St and Devon Street)	medium-term	Capital	
2A.9	10th Avenue N to Market Park Accessibility Improvement	short-term	Capital	
2A.10	Market Park to Railway Boulevard Accessibility Improvement	medium-term	Capital	CP Rail

Pedestrian Network Actions

Action		Timeframe	Method of Implementation	Partner
2A.11	New sidewalk on north side of Cook Street (between 15th Avenue S and 16th Avenue S)	medium-term	Capital	
2A.12	New sidewalk on south side of Birch Street (between 8th Avenue S and 11th Avenue S)	medium-term	Capital	
2A.13	New sidewalk on north side of Birch Street (between 18th Avenue S and 20th Avenue S)	medium-term	Capital	
2A.14	New pathway south of the RCMP lot (between Millennium Trail and 16th Avenue)	medium-term	Capital	
2A.15	New sidewalk on west side of 11th Avenue (between Erickson Road and Birch Street)	medium-term	Capital	
2A.16	New painted shoulder on both sides of 6th Avenue (between Canyon Street and Valleyview Dr)	medium-term	Capital	
2A.17	New pathway south of the Library lot (between Library and Erickson Road)	medium-term	Capital	
2A.18	New pathway on south side of Devon Street (between #836 and Glaser Trail)	medium-term	Capital	
2A.19	New pathway on west side of 16th Avenue (between Canyon Street and Cedar Street)	medium-term	Capital	
2A.20	New sidewalk on south side of Cedar Street (between 22nd Avenue and 25th Avenue)	medium-term	Capital	

Pedestrian Network Actions

Action		Timeframe	Method of Implementation	Partner
2A.21	New sidewalk on Dogwood Street (in front of the school's three parking lots)	medium-term	Capital	
2A.22	New accessible sidewalk ramps at the intersection of 9th Avenue N & Canyon Street Intersection	medium-term	Capital	
2A.23	New sidewalk on north side of Pine Street (between Northwest Blvd (Hwy 3) and 10th Ave N)	medium-term	Capital	
2A.24	New sidewalk on north side of Cavell Street (between 10th Avenue and 11th Avenue)	medium-term	Capital	
2A.25	New sidewalk on north side of Cavell Street (between Northwest Boulevard (Hwy 3) and Mall Entrance)	medium-term	Capital	
2A.26	New pedestrian crossing at Northwest Boulevard (Hwy 3) and Cavell Street	medium-term	Capital	MOTI
2A.27	New pedestrian ramp at stairs connection 8th Avenue to railway	medium-term	Capital	CP Rail
2A.28	New pathway on south side of Cook Street (between 10th Avenue and 16th Avenue)	medium-term	Capital	
2A.29	New sidewalk on east side of 10th Avenue N (Between Murdoch Street and Cavell Street)	medium-term	Capital	
2A.30	New sidewalk on east side of Valleyview Road (btw 6th Avenue N and Cavell Street extension	medium-term	Capital	

Pedestrian Network Actions				
Action		Timeframe	Method of Implementation	Partner
2B.1	New pathway along Northwest Boulevard (between Pine Street and Helen Street)	long-term	Capital	MOTI
2B.2	New separated sidewalk (between Northwest Boulevard and Devon Street Trailhead)	long-term	Policy + Regulation	Developer
2B.3	New separated sidewalks (between Cavell Street and Helen Street Trailhead)	long-term	Policy + Regulation	Developer
2B.4	New path along north side of Erickson Road (between Highway 21 and 25th Avenue S)	long-term	Capital	MOTI
2C	Undertake a feasibility study of the Northwest Boulevard pathway alignment and Erickson Road pathway alignment	medium-term	Technical Study	MOTI
2D	Establish a safe routes to school program	short-term	Education / Programming / Advocacy	School District 8 Kootenay Lake and the Regional District
2E	Develop a pedestrian facility and crosswalk prioritization policy	short-term	Policy + Regulation	

Cycling Network Actions

Action		Timeframe	Method of Implementation	Partner
3A.1	New quick-build protected bike lanes on Hillside Street (btw 9th Avenue N to 16th Avenue N)	short-term	Capital	
3A.2	New quick-build path on south side of Hillside Street (btw 16th Avenue N and 20th Avenue N)	short-term	Capital	
3A.3	New quick-build protected bike lanes on 10th Avenue N (between Canyon Street and Hillside Street)	short-term	Capital	
3A.4	New quick-build path on south side of Canyon Street (btw Highway 21 and Railway Blvd)	short-term	Capital	
3A.5	New quick-build bicycle boulevard on Vancouver Street (between Northwest Boulevard and 16th Avenue N)	short-term	Capital	
3B	Maintenance of quick-build cycling network	on-going	Operations and Maintenance budgets	
3C.1	New protected bike lanes on 16th Avenue N (between Canyon Street and Hillside Street)	short-term	Capital	
3C.2	New protected bike lanes on Cavell Street (between Northwest Boulevard (Hwy 3) and 10th Avenue)	short-term	Capital	
3C.3	New bicycle boulevard on 9th Avenue N (between Hillside Street and Cavell Street)	short-term	Capital	
3C.4	New bicycle boulevard on 8th Avenue S (between Erickson Road and Canyon Street)	medium-term	Capital	

Cycling Network Actions

Action		Timeframe	Method of Implementation	Partner
3C.5	New bicycle boulevard on 6th Avenue N (between Canyon Street and Valleyview Drive)	medium-term	Capital	
3C.6	New painted bike lanes on Valleyview Drive (btw Hwy 21 and Northwest Boulevard (Hwy 3))	medium-term	Capital	
3C.7	New bicycle boulevard on Devon Street W (between Northwest Boulevard (Hwy 3) and Valleyview Drive)	medium-term	Capital	
3C.8	New bicycle boulevard on Cavell Street W and 11 Avenue N (btw 10th Avenue N and Devon Street)	medium-term	Capital	
3C.9	New bicycle boulevard on Cedar Street W (between 8th Avenue S and 21st Avenue S)	medium-term	Capital	
3C.10	New Bicycle boulevard on 25th Avenue S (between Erickson Road and Cedar Street)	medium-term	Capital	
3C.11	New bicycle boulevard on Pine Street W (between 19th Avenue N and 20th Avenue N)	medium-term	Capital	
3C.12	New bicycle boulevard on Railway Blvd and 11th Avenue S (btw Canyon Street and Erickson Rd)	medium-term	Capital	
3C.13	New Bicycle boulevard on Birch Street (between 8th Avenue S and 11th Avenue S)	medium-term	Capital	

Cycling Network Actions				
Action		**Timeframe**	**Method of Implementation**	**Partner**
3D.1	New protected bike lanes on Canyon Street downtown (btw 10th Street and 16th Avenue)	long-term	Policy + Regulation	MOTI
3D.2	New protected bike lanes on Devon St (btw Northwest Blvd (Hwy 3) and Devon Trail Trailhead)	long-term	Policy + Regulation	Developer
3D.3	New protected bike lanes on Glaser Drive (between Cavell Street and Helen Street)	long-term	Policy + Regulation	Developer
3D.4	New rail trail along railway (Between Cook Street and Collis Street	long-term	Technical Study	CP Rail
3E	Offer bicycle skills training courses	short-term	Education / Programming / Advocacy	Local bike shops / Creston Valley Cycling Club
3F	Install new public bicycle parking	short-term	Capital	Creston Chamber of Commerce
3G	Update lighting standards	medium-term	Policy + Regulation	

Transit Network Actions				
Action		Timeframe	Method of Implementation	Partner
4A	Coordinate on the Creston Valley Transit Future Service Plan implementation	on-going	Operations and Maintenance budgets	BC Transit
4B	New bus stop amenities at: -Cavell St at 7th Ave N (WB) -11th Ave N at Canyon St (SB) -Cook St at 12th Ave S (EB) -Hillside St at 16th Ave N (EB) -16th Ave S at Cook St (SB) -16th Ave S at Birch St (SB)	short-term	Capital	BC Transit
4C	Maintenance of existing transit amenities	on-going	Operations and Maintenance budgets	RDCK
4D	Explore digital on-demand transit	long-term	Technical Study	RDCK, BC Transit
4E	Improve transit education	on-going	Education / Programming / Advocacy	BC Transit

Parking Management Actions				
Action		Timeframe	Method of Implementation	Partner
5A	Undertake a formal off-street parking review	short-term	Technical Study	
5B	Implement one-hour time restrictions on blocks downtown with high demand	short-term	Policy + Regulation	
5C	Reintroduce paid parking downtown	medium-term	Policy + Regulation	
5D	Conduct parking count surveys bi-annually to understand changing downtown parking conditions	on-going	Technical Study	
5E	Implement 15-minute passenger and commercial loading zones downtown	short-term	Policy + Regulation	
5F	Provide Van Accessible On-street Parking	short-term	Capital	

Emerging Mobility Actions				
Action		Timeframe	Method of Implementation	Partner
6A	Undertake a facility assessment to accommodate EV charging and implement charging stations	medium-term	Technical Study	RDCK
6B	Electrify Town vehicle fleet	long-term	Capital	
6C	Add e-bikes to Town's vehicle fleet	short-term	Capital	
6D	Explore an e-bike rebate program	short-term	Technical Study	Local bike shops
6E	Build quick-build cycling network to encourage e-bike adoption	short-term	Education / Programming / Advocacy	
6F	Undertake a micromobility readiness assessment	medium-term	Technical Study	Industry
6G	Partner with a carsharing operator	medium-term	Policy + Regulation	Industry

11.2 INFRASTRUCTURE IMPROVEMENTS + CAPITAL COSTS

The following sections outline the proposed capital plans to implement the Multi-Modal Transportation Plan. Conceptual order of magnitude costing (Class D) was completed for each of the recommended short-term and medium-term capital infrastructure projects.[48]

Coordination of actions will likely provide cost savings to the Town if improvements happen at the same time. For example, coordinating the repaving of the roadway at the same time as constructing new sidewalks and adding new bicycle infrastructure will mean cost savings and less project time. Each action cost estimate assumes the improvement as its own project and therefore provides a more complete cost estimate. Full detailed cost estimates are provided in **Appendix A.**

The total level of investment required for the short and long-term capital projects is approximately **$6,272,000.00,** and is broken out further in the tables below.

[48] Class D (2022 dollars) cost estimates are based on concept level information using unit rates for linear works and intersection improvements. Cost estimates include 15% engineering, 15% Inflation and 50% contingency. Cost do not include property and other significant impacts and does not include any underground utility relocations, drainage or lighting. Class D cost estimates should not be used for budgeting purposes

11.2.1 ROAD NETWORK IMPROVEMENTS

The total level of investment required for the capital improvements in the short and medium-term in the road network is approximately **$577,000**.

Road Network Actions

Action		Class D Cost Estimate (2022 $)	
1C.1	Safety Improvements at Cook Street / Canyon Street (Hwy 3) / 10 Avenue N	$	92,000.00
1C.2	Safety Improvements at Northwest Boulevard (Hwy 3) / Devon Street N	$	54,000.00
1C.3	Safety Improvements at Northwest Boulevard / Hillside Street / 7th Avenue	$	63,000.00
1C.5	Safety Improvements at Northwest Boulevard / Murdoch Street	$	63,000.00
1C.6	Safety Improvements at Northwest Boulevard / Regina Street	$	63,000.00
1C.7	Safety Improvements at Canyon Street (Hwy 3) / Crawford Street	$	80,000.00
1D	Retrofit 12th Avenue S and 15th Avenue S to 1-way operations with angle parking	$	162,000.00

11.2.2 PEDESTRIAN NETWORK IMPROVEMENTS

The total level of investment required for the capital improvements in the short and medium-term in the pedestrian network is approximately **$4,803,080.**

Pedestrian Network Actions

Action		Class D Cost Estimate (2022 $)	
2A.1	New sidewalk on west side of 20th Avenue N (between Canyon St (Hwy 3) and Hillside St)	$	360,000.00
2A.2	Crossing improvement at 20th Avenue and Canyon Street (Hwy 3)	$	28,000.00
2A.3	Crossing improvement at 18th Avenue N / Canyon Street (Hwy 3) Pedestrian Crossing	$	28,000.00
2A.4	New sidewalk on south side of Vancouver Street (between 15th Avenue N and 16th Avenue N)	$	54,000.00
2A.5	New pathway along Pine Street to Creston District Community Complex	$	350,000.00
2A.6	New pathway on west side of Creston District Community Complex	$	364,000.00
2A.7	New sidewalk on west side of 9th Avenue N (between Regina Street and Cavell Street)	$	207,000.00
2A.8	New painted shoulder on the east side of 8th Avenue (between Cavell St and Devon Street)	$	2,730.00
2A.9	10th Avenue N to Market Park Accessibility Improvement	$	143,000.00
2A.10	Market Park to Railway Boulevard Accessibility Improvement	$	72,000.00
2A.11	New sidewalk on north side of Cook Street (between 15th Avenue S and 16th Avenue S)	$	54,000.00
2A.12	New sidewalk on south side of Birch Street (between 8th Avenue S and 11th Avenue S)	$	180,000.00
2A.13	New sidewalk on north side of Birch Street (between 18th Avenue S and 20th Avenue S)	$	270,000.00
2A.14	New pathway south of the RCMP lot (between Millennium Trail and 16th Avenue)	$	117,000.00
2A.15	New sidewalk on west side of 11th Avenue (between Erickson Road and Birch Street)	$	102,000.00
2A.16	New painted shoulder on both sides of 6th Avenue (between Canyon Street and Valleyview Dr)	$	10,350.00
2A.17	New pathway south of the Library lot (between Library and Erickson Road)	$	221,000.00
2A.18	New pathway on south side of Devon Street (between #836 and Glaser Trail)	$	247,000.00
2A.19	New pathway on west side of 16th Avenue (between Canyon Street and Cedar Street)	$	440,000.00
2A.20	New sidewalk on south side of Cedar Street (between 22nd Avenue and 25th Avenue)	$	204,000.00
2A.21	New sidewalk on Dogwood Street (in front of the school's three parking lots)	$	36,000.00
2A.22	New accessible sidewalk ramps at the intersection of 9th Avenue N & Canyon Street Intersection	$	31,000.00
2A.23	New sidewalk on north side of Pine Street (between Northwest Blvd (Hwy 3) and 10th Ave N)	$	36,000.00
2A.24	New sidewalk on north side of Cavell Street (between 10th Avenue and 11th Avenue)	$	117,000.00
2A.25	New sidewalk on north side of Cavell Street (between Northwest Blvd (Hwy 3) and Mall Entrance)	$	24,000.00
2A.26	New pedestrian crossing at Northwest Boulevard (Hwy 3) and Cavell Street	$	34,000.00
2A.27	New pedestrian ramp at stairs connection 8th Avenue to railway	$	72,000.00
2A.28	New pathway on south side of Cook Street (between 10th Avenue and 16th Avenue)	$	636,000.00
2A.29	New sidewalk on east side of 10th Avenue N (Between Murdoch Street and Cavell Street)	$	192,000.00
2A.30	New sidewalk on east side of Valleyview Road (between 6th Ave N and Cavell S extension)	$	171,000.00

11.2.3 CYCLING NETWORK IMPROVEMENTS

The total level of investment required for the capital improvements in the short and medium-term in the cycling network is approximately **$800,060.**

Cycling Network Actions

Action		Class D Cost Estimate (2022 $)	
3A.1	New quick-build protected bike lanes on Hillside Street (btw 9th Avenue N to 16th Avenue N)	$	42,300.00
3A.2	New quick-build path on south side of Hillside Street (btw 16th Avenue N and 20th Avenue N)	$	100,000.00
3A.3	New quick-build protected bike lanes on 10th Avenue N (between Canyon St and Hillside St)	$	164,000.00
3A.4	New quick-build path on south side of Canyon Street (btw Highway 21 and Railway Blvd)	$	175,000.00
3A.5	New quick-build bicycle boulevard on Vancouver Street (between NW Blvd and 16th Ave N)	$	17,250.00
3C.1	New protected bike lanes on 16th Avenue N (between Canyon Street and Hillside Street)	$	48,000.00
3C.2	New protected bike lanes on Cavell Street (between Northwest Blvd (Hwy 3) and 10th Ave)	$	68,800.00
3C.3	New bicycle boulevard on 9th Avenue N (between Hillside Street and Cavell Street)	$	13,110.00
3C.4	New bicycle boulevard on 8th Avenue S (between Erickson Road and Canyon Street)	$	17,710.00
3C.5	New bicycle boulevard on 6th Avenue N (between Canyon Street and Valleyview Drive)	$	10,350.00
3C.6	New painted bike lanes on Valleyview Drive (btw Hwy 21 and Northwest Boulevard (Hwy 3))	$	33,000.00
3C.7	New bicycle boulevard on Devon Street W (between Northwest Blvd (Hwy 3) and Valleyview Dr)	$	9,890.00
3C.8	New bicycle boulevard on Cavell Street W and 11 Avenue N (btw 10th Ave N and Devon St)	$	8,280.00
3C.9	New bicycle boulevard on Cedar Street W (between 8th Avenue S and 25th Avenue S)	$	39,100.00
3C.10	New Bicycle boulevard on 25th Avenue S (between Erickson Road and Cedar Street)	$	9,200.00
3C.11	New bicycle boulevard on Pine Street W (between 19th Avenue N and 20th Avenue N)	$	2,990.00
3C.12	New bicycle boulevard on Railway Blvd and 11th Avenue S (btw Canyon St and Erickson Rd)	$	19,780.00
3C.13	New Bicycle boulevard on Birch Street (between 8th Avenue S and 11th Avenue S)	$	6,900.00
3F	Install new public bicycle parking	$	14,400.00

11.2.4 TRANSIT NETWORK IMPROVEMENTS

The total level of investment required for the capital improvements in the short-term in the transit network is approximately **$77,000**.

Transit Network Actions

Action		Class D Cost Estimate (2022 $)
4B	New bus stop amenities at: -Cavell St at 7th Ave N (WB) -11th Ave N at Canyon St (SB) -Cook St at 12th Ave S (EB) -Hillside St at 16th Ave N (EB) -16th Ave S at Cook St (SB) -16th Ave S at Birch St (SB)	$ 77,000.00

11.2.5 PARKING IMPROVEMENTS

The total level of investment required for the capital improvements for parking management in the short-term is approximately **$7,500**.

Parking Management Actions

Action		Class D Cost Estimate (2022 $)
5F	Provide Van Accessible On-street Parking	$ 7,500.00

11.2.6 EMERGING MOBILITY IMPROVEMENTS

The total level of investment required for the capital improvements for emerging mobility in the short-term is approximately **$7,500**.

Emerging Mobility Actions

Action		Class D Cost Estimate (2022 $)
6C	Add e-bikes to Town's vehicle fleet	$ 7,500.00

11.3 FUNDING OPPORTUNITIES

With 59 recommended capital action items identified in the short and medium term, totalling $**6,272,140**, the implementation of the MMTP will take significant capital and operational investments. The Town will be responsible for allocating funds from its annual budget process to help support the implementation of the recommendations identified over the 30-year planning horizon; however, there are other funding opportunities available, including provincial and federal programs, that could help pay for the infrastructure solutions identified in this plan. A summary of those opportunities is provided below.

TOWN FUNDING

In 2022, the Town released its municipal budget (2022 – 2026 Financial Plan & Corporate Business Plan). Each year, the Town is required to adopt a five-year financial plan for the municipality, which lays out how Creston will allocate its limited financial resources to achieve Council's strategic goals. The budget includes all the revenues and expenses for each of the Town's services such as Public Works & Engineering. According to the budget, a total of $622,005 has been allocated to roads in 2022 with approximately $2,620,665 projected for 2023 to 2026. Further, the budget for sidewalks and trails is $121,482 in 2022 with $507,748 projected for 2023 to 2026. Even though the projected costs for the road, pedestrian, and cycling networks are far greater than what has been allocated in the 2022 budget, the Town has an opportunity to utilize funds from its roads budget to help pay for the infrastructure improvements recommended in the MMTP.

PRIVATE DEVELOPMENT

As the Town continues to grow and develop, it will be important to leverage active transportation investments during the planning of new development projects. The Town has the ability, through bylaws and policies, to request financial contributions for active transportation infrastructure including sidewalks and cycling facilities, for example. For all new development applications along roads where a pedestrian or cycling facility has been recommended in the medium or long-term (e.g., Actions 2B.2, 2B.3, 3D.2, and 3D.3), the Town should refer the developer(s) to the pedestrian and cycling design guidelines in the MMTP and request a financial contribution to build part of the facility as part of frontage and roadway improvements.

CLIMATE ACTION REVENUE INCENTIVE PROGRAM

The Climate Action Revenue Incentive Program (CARIP) is a conditional grant program that provides funding to local governments that have signed the B.C. Climate Action Charter equal to 100 percent of the carbon taxes they pay directly to support local government operations. The program encourages investment in climate action, which can include a range of topic areas such as buildings, solid waste, and transportation, for example.

The Town of Creston has been receiving grants from the CARIP program since 2012. In the Town's most recent CARIP public report (2018), several corporate actions were identified for transportation ranging from sidewalk repairs to adding new sidewalks and undertaking the MMTP itself. There are opportunities to draw from CARIP revenues to fund some of the actions identified in the MMTP. The program is not prescriptive on the types of programs or infrastructure that must be funded. As long as the funding supports initiatives that reduce GHGs and address climate impacts, municipalities are allowed to spend the monies however they deem necessary. Other communities in BC of similar size to Creston have used CARIP funds to pay for a range of projects including new bus shelters (Harrison Hot Springs), Bike to Work Week (Fort St. James), funding of EV charging stations (Grand Forks), public bicycle parking (Pemberton), and improvements to their trail network (Invermere).

B.C. ACTIVE TRANSPORTATION INFRASTRUCTURE GRANT PROGRAM

The B.C. Active Transportation Infrastructure Grants Program offers two grant options for Indigenous governments and local governments, including municipalities, regional districts, and Islands Trust. Specifically, the Active Transportation Infrastructure Grant allows eligible governments to apply for a maximum of two grants if they satisfy the following criteria (based on the 2021 intake):

- Previously funded active transportation projects (formerly BikeBC) awarded before 2020/2021 are complete by the time of the application submission
- Project is part of an active transportation network plan or equivalent
- Project can begin construction once provincial funding has been announced
- Projects will be completed by March 2023 (projects under $1 million) or by March 2024 (projects over $1 million)
- Projects are open to the public

The grant program typically requires that projects be "shovel-ready". Based on the criteria above, the Town could apply to the grant program to receive funds to pay for up to two of the recommended projects in the short-term. This could include a sidewalk facility as part of the pedestrian network (e.g., Action 2A.1, New sidewalk on west side of 20th Avenue N between

Canyon Street and Hillside Street) and/or a cycling facility identified in the quick-build cycling network (e.g., quick-build protected bike lanes on Hillside Street between 9th Avenue N and 16th Avenue N), for example. The province cost-shares to a maximum of $500,000 per project and the Town would be eligible for 70% of the provincial funding.

ICBC

ICBC provides funding for road improvements including pedestrian and cycling infrastructure to help to reduce crashes, improve safety, and reduce claims costs to ICBC. Funding is available through the following programs:

- ICBC's Road Improvement Program,
- Speed Watch Program (through the Community Policing Centres)
- Speed and Intersection Safety Program
- Counter Attack Program
- Operation Red Nose Program
- Road Sense Speaker Program for Schools.

NATIONAL ACTIVE TRANSPORTATION FUND

The Active Transportation Fund (ATF) is a national, merit-based contribution program intended to support projects that improve active transportation infrastructure across Canada. Announced in March 2021, the Fund will make available $400 million over five years to help build new and expanded networks of pathways, bike lanes, trails and pedestrian bridges, as well as support Active Transportation planning and stakeholder engagement activities.

Contributions are available for capital projects that build new or enhance existing active transportation infrastructure, or which provide ancillary features and facilities that promote active transportation or enhance user safety and security. The maximum program contribution rate from Canada is 60% for municipal projects. The government was accepting applications in 2022 from January 27 to March 31. It is anticipated that the announcement for funding in 2023 will be released later in 2022.

GREEN MUNICIPAL FUNDS

The Green Municipal Fund (GMF) is a program administered by the Federation of Canadian Municipalities intended to help Canadian communities expand their sustainability initiatives. Since 2000, the GMF has deployed $900M in financing to 1,250+ sustainability initiatives and a further $1 billion has been committed to the fund through the Federal 2019 budget.

The specific GMF initiative that is relevant to Creston is the "Capital Project Transportation Networks Commuting Options", which is a combined loan and grant funding program for capital projects that reduce pollution by improving transportation systems and networks. This program covers a number of topics including bike paths, walking and cycling networks that promote accessibility and safety, and evaluation of active transportation infrastructure, among others.

11.4 MONITORING & EVALUATION

The Creston MMTP is only effective if it is actively monitored and evaluated on a regular basis. A Monitoring and Evaluation Program will allow the Town to measure performance to guide investment and ensure the effectiveness of the Plan, and to determine whether the Plan is achieving its goals.

Creston currently utilizes five-year capital plans as a format to coordinate capital spending, which is adopted annually by bylaw. To leverage this valuable planning process, the Town should include some of these monitoring initiatives with the aim to review the MMTP short-term priorities, and re-assess which items should be prioritized ever three to five years. To assist in this process, the Town may consider doing an annual report card that provides a snapshot of its progress and reports back on specific measures and indicators that can be compared to the 2022 baseline. Below in **Table 30** are several examples of progress indicators and measures that Creston could use to determine how well it is meeting the MMTP goals over time.

TABLE 30: PROGRESS INDICATORS AND MEASURE OF SUCCESS

MMTP Goal	Measure of Success	Indicator	Data Source
Ease of Mobility for All Modes	Total length of cycling network (by facility type)	Total km	Town
	Total length of new or improved sidewalks		
	Proportion of streets with a sidewalk on at least one side	% of Town Roads	Town
	Proportion of bus stops that are accessible	%	Town
	Number of van accessible parking stalls	number	Town
	On-street parking occupancy + Public/Off-Street Parking occupancy (% total stalls occupied)	%	Town
	Number of Town owned and operated short bicycle parking stalls	number	Town
Road Safety for Vulnerable Users	% Local and Collector roads posted at 30 km/hr	%	Town
	Number of intersections that receive safety improvements	number	Town
	Number of collisions involving people walking and cycling	#	ICBC / RCMP
	Number of fatal collisions involving people walking and cycling	#	ICBC / RCMP

Climate Impact	Town transportation-related GHG emissions	On-road, tonnes	RDCK GHG Emissions Data /BC CEEI Emissions Data
	Regional transportation-related GHG emissions		
	Walking, Cycling and Transit mode share (commute)	%	Statistics Canada
	Number of Town owned and operated Level 3 charging stations	number	Town
	Annual Transit Ridership	%	BC Transit
	Total Transit Service Hours	number	BC Transit

APPENDIX A:
DETAILED IMPLEMENTATION PLAN COST ESTIMATES