

City of Armstrong Active Transportation Plan MARCH 2023 (DRAFT)



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We would like to acknowledge with respect, that this plan for the City of Armstrong is on land in the traditional, ancestral, unceded territory of the sqilxw/syilx (Okanagan) and Secwépemc peoples.

In collaboration with the City of Armstrong, WATT Consulting Group would like to thank all those community members, elected officials, municipal staff, stakeholders, and service providers who provided their feedback and ideas into this process.

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EXECUTIVE SUMMARY

Introduction

The Active Transportation Plan (ATP) for the City of Armstrong addresses the need for an updated plan to accommodate the community's future growth and regional connections, including the anticipated arrival of the Shuswap North Okanagan Rail Trail. The ATP aims to create a fully connected active transportation network throughout the city, enhancing tourism, sustainable transportation, and GHG reduction goals. It builds upon the previous Active Transportation Plan (2009) and Armstrong Spallumcheen Trails Master Plan (2021).

The plan was developed through a three-phase process: Project Initiation, Network Development & Engagement, and Plan Finalization, which included establishing baseline conditions, engaging with the public and stakeholders, conducting detailed technical analysis, developing design guidelines and cross-sections, providing key directions and recommended actions, incorporating feedback, and presenting to Council.

Community Engagement

Phase 2 of the ATP focuses on strategic direction and community engagement, adhering to the International Association for Public Participation (IAP2) Core Values. Two rounds of consultation were conducted, both online and in-person, to gather diverse input on the community's needs and priorities. Key takeaways from the engagement process identified traffic calming and dedicated cycling infrastructure as major priorities. A public open house will be held in April 2023 to gather feedback on the ATP recommendations and priorities.

Vision Statement & Goals for Active Transportation In Armstrong

Armstrong's active transportation network will empower the residents and visitors of all ages and abilities to move seamlessly and safely within the community. Active transportation facilities connect to public transit and offer protection from motor vehicles where possible to make walking, rolling, and wheeling the preferred choice for trips to local and community destinations. Armstrong is a leader in active mode share in the region and supports and integrates regional active transportation initiatives and connections.

The ATP should prioritize residents' needs while emphasizing infrastructure that improves safety, and accessibility, and promotes healthier lifestyles. The ATP Goals include Fostering a Culture of Active Transportation, Improving Safety and Accessibility, and Establishing an Integrated Active Transportation Network.

Road Network

The Armstrong ATP provides a comprehensive approach to improving the city's active transportation network. The plan identifies the existing barriers to cycling and highlights the safety challenges of cycling within the city, particularly to access the commercial areas of the City. The low percentage of cycling trips in Armstrong suggests the need for dedicated cycling facilities and infrastructure. The city is described as being highly walkable, with 9% of all trips being completed on foot. However, concerns have been raised regarding children navigating the roadways in and around the city's schools.

The plan focuses on implementing Complete Streets, which are designed to enable safe and comfortable use for all users, regardless of age or ability. Several infrastructure improvements are proposed to make the streets and intersections safer for people walking and cycling.

To implement the plan effectively, potential updates to the city's policies and bylaws are identified. The subdivision and development servicing bylaw should be updated to include complete streets approaches that factor in active transportation accommodation. The snow clearing policy and road maintenance policy should prioritize active transportation routes to maintain the cycling network throughout the year. The plan also highlights the importance of regular maintenance and snow removal to ensure safe and clear conditions for users of active transportation infrastructure.

Quick-Build Network Improvements

The proposed **Map 2: Quick-Build Active Transportation Network** is designed to improve connectivity and safety for cyclists and pedestrians. The network includes several segments, with the Shuswap North Okanagan Rail Trail project serving as an important component. The proposed network includes a dedicated cycling infrastructure spine, which will provide safe and comfortable cycling routes. Bicycle boulevards will also be developed to connect important areas such as schools, residential neighbourhoods, and commercial areas.

In addition to these improvements, specific intersection enhancements are proposed to improve pedestrian and cyclist safety. The enhancements will focus on providing adequate space and clear visibility for active transportation users. The Quick-Build approach allows for the implementation of these improvements in a timely and cost-effective manner.

The short-term priorities for the city to consider are as follows:

1. Rail Trail MUP (Armstrong Elementary to Bridge Street)
2. Downtown Two-Way Protected Bike Lanes + MUP connector to the east on PV Road.
3. Intersection Improvements 3x (Pleasant Valley Road / Rosedale Avenue, Okanagan Avenue / Pleasant Valley Boulevard, Mill Street / Pleasant Valley Boulevard)
4. Bicycle boulevards (Fletcher Avenue, Becker Street)

Long-Term Network Improvements

The future connections shown on **Map 3: Long-Term Active Transportation Network** are aspirational and aim to provide active transportation and recreational opportunities. Proposed improvements include protected bicycle lanes, corridor upgrades, and additional trail connections. Long-term priorities include projects on Okanagan Street, Rosedale Avenue, Wood Avenue, and Smith Drive.

The long-term priorities for the city to consider are as follows:

1. Okanagan Street Protected Bike Lanes (Wood Avenue to Rosedale Avenue)
2. Rosedale Avenue Protected Bike Lanes
3. Wood Avenue MUP (Adair Street to Okanagan Street)
4. Smith Drive Protected Bike Lanes (Pleasant Valley Road to Rosedale Avenue)
5. Future Trail Connections

To accompany the network improvements, supporting actions can be taken to encourage active transportation and make it more accessible in the community. Some of the recommended actions include integrating active transportation priorities and recommendations into policy documents, implementing a Safe Routes to School program, promoting active transportation through education and engagement, and adding amenities such as accessible site furnishings, bike racks, and improved wayfinding signage.

Implementation Strategy

The ATP includes an implementation strategy with an action plan, funding opportunities, and monitoring measures. The action plan outlines quick wins, long-term improvements, and supporting actions such as policy updates and education initiatives. Implementation timeframes are provided in **Table 6**, while funding opportunities include provincial and federal grants and programs like the B.C. Active Transportation Infrastructure Grants Program and Green Municipal Fund. Regular monitoring and evaluation will assess the ATP's effectiveness and make necessary adjustments to meet community needs.



Section 1: Introduction

1. INTRODUCTION

1.1 OVERVIEW

The City of Armstrong's current Active Transportation Plan (ATP) was completed in 2009 and is no longer reflective of the community's future growth and proposed regional connections. Specifically, the arrival of the Shuswap North Okanagan Rail Trail and future connection to the Okanagan Rail Trail presents a ripe opportunity to proactively plan for the influx of people who will come to enjoy the future facilities. This timely revision to the Active Transportation Plan will propose a fully connected active transportation network throughout the City, linking the future terminus of the Rail Trail into the city centre and residential areas. There is great potential to increase the sustainable mode share in the community, facilitate tourism and economic growth, as well as advance the City's GHG reduction targets.

This update of the ATP will build off both the previous Active Transportation Plan completed in 2009 and the momentum of the City's recently completed Armstrong Spallumcheen Trails Master Plan completed in 2021. The ATP will also ensure alignment with the City's concurrent update to the Official Community Plan (OCP).

1.2 PLAN PROCESS

The Active Transportation Plan has been developed with the following three-phase process:



Phase 1
Project Initiation



Phase 2
Network Development &
Engagement



Phase 3
Plan Finalization

The first phase, **Project Initiation**, will establish the baseline conditions in Armstrong and includes an analysis of past plans, current policy and an assessment of the existing conditions that affect people walking, biking and rolling in Armstrong.

The second phase, **Network Development & Engagement**, includes engagement with the public and stakeholders to understand the challenges and opportunities that active transportation has or could have in their lives. Utilizing this initial input, a detailed technical analysis will follow to determine ATP network. Design guidelines and cross-sections will be developed to improve AT accommodation on city streets. Key directions and recommended

actions with the specific time horizons (e.g., short, medium, and long term will be provided in a draft of the ATP. The draft ATP will be presented to the community for feedback in an open house.

The third and final phase, **Finalizing**, incorporates public and stakeholder feedback into the ATP and includes a presentation to Council before the network and recommendations are finalized and delivered to the City.



Section 2: Community Profile

2. COMMUNITY PROFILE

2.1 LOCATION

The City of Armstrong is located within the Regional District of North Okanagan (RDNO) along Highway 97A just 25km north of Vernon. Armstrong is an agriculture hub located between the Okanagan and Shuswap regions that serves as the main service centre for the residents of the surrounding Township of Spallumcheen and the surrounding rural area.

Considered the “Heart of Country”, Armstrong is surrounded by a diverse landscape of mountains, Shuswap Valleys, agricultural areas, streams, and lakes that draw a growing number of residents and visitors alike. The city fosters a friendly community brought together by the natural scenery, beautiful trails network, and lively downtown core. The City of Armstrong’s rural setting plays a significant factor in the City’s transportation patterns and has implications on mode choice. Subsequent phases of the Active Transportation Plan will determine context specific active transportation infrastructure that is appropriate for the City’s rural context.

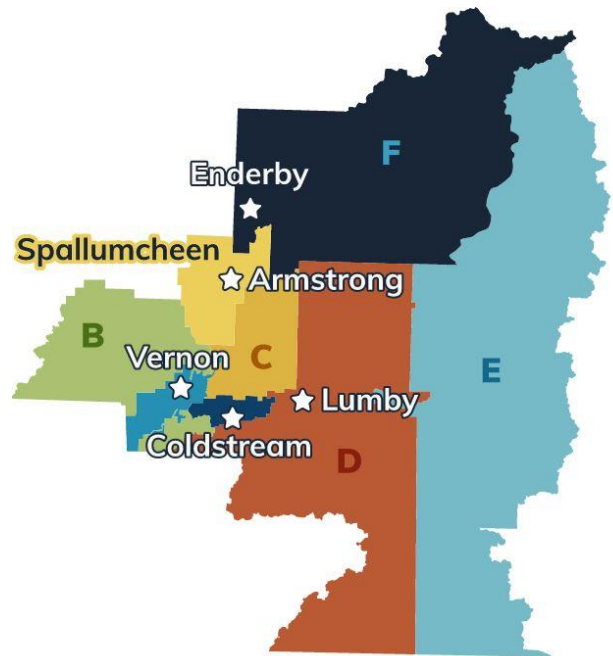


Figure 1: City of Armstrong Context Map

2.2 DEMOGRAPHIC SUMMARY

The Regional District of North Okanagan is the seventh fastest growing regional district in British Columbia (B.C.), growing at a much faster rate than the B.C. average. As seen in **Table 1**, the latest 2021 census released by Statistic Canada shows the North Okanagan’s population has grown by 8.6% since 2016.¹ In 2021, Armstrong had a population of 5,323 and is projected to be the fastest growing community in the North Okanagan during the 2016-2026 timeframe.¹ In recent years, Armstrong has welcomed a higher number of young adults into the community with young families and outdoor enthusiasts settling down in the area. With an estimated population of 6,200 by 2026, there is increasing pressure on the City’s existing transportation infrastructure and network.

¹ Statistics Canada. 2022. (table). Census Profile. 2021 Census of Population. Statistics Canada Catalogue no. 98-316-X2021001. Ottawa. Released December 15, 2022.

TABLE 1: ARMSTRONG'S POPULATION GROWTH (2011 TO 2021)

Census Year	Population	% Change from Prior Census Year
2011	4,815	+13.5%
2016	5,114	+6.2%
2021	5,323	+4.1%

As seen in **Table 2**, between 2016 and 2021, the average and median age for the City increased with over a 4% increase in the distribution of those aged 65 years and over indicating an aging population. The City of Armstrong's demographic trends will influence how we plan for the future of active transportation, including an emphasis on age-friendly, more supportive transportation options. The City will need to ensure that the transportation network provides an array of mobility options that are safe and comfortable for all ages and abilities.

TABLE 2: ARMSTRONG'S AGE DISTRIBUTION (2016 TO 2021)

Age Distribution	2016		2021	
	Count	%	Count	%
0-14 years	795	15.6	845	16%
15-64 years	2,995	58.6	2,915	55%
65 years & over	1,320	25.8%	1,570	30%
Average Age	45.9		47.1	
Median Age	48.7		50	

2.3 COMMUTING MODE SHARE

Today, the majority of Armstrong’s residents drive to work. As seen in **Figure 2**, over 87% of all commuting trips in 2021 were made as an auto driver or passenger. Walking makes up the majority of the sustainable mode share (transit, walk, or bike) trips in the City. As seen in **Table 3**, Armstrong has not experienced any significant gains in sustainable mode share from 2016 to 2021, experiencing a slight decrease from 10.2% to 8.2%. Between 2016 and 2021, walking mode share decreased while cycling mode share experienced a minimal increase.

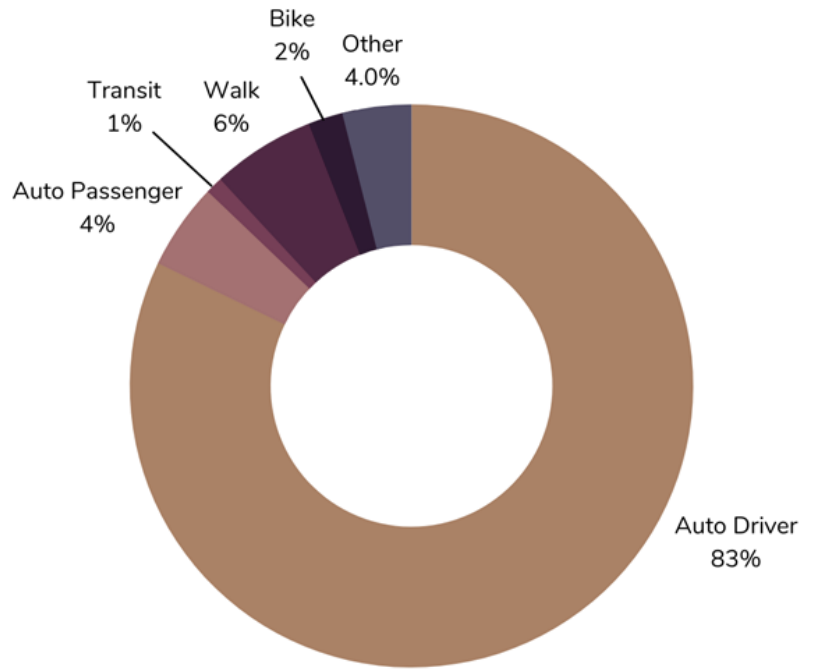


Figure 2: Armstrong’s Commuting Mode Share (2021)

Given the limitations of commuting mode share data, the overall sustainable mode share of the entire community, including key demographics such as youth and seniors, will be undoubtedly higher.

TABLE 3: ARMSTRONG’S COMMUTING MODE SHARE (2016 TO 2021)

Mode	2016	2021	% Change
Vehicle (Driver)	83.0%	83.7%	+0.7%
Vehicle (Passenger)	4.2%	4.3%	+0.1%
Public Transit	1.5%	1.0%	-0.5%
Walk	9.0%	6.5%	-2.5%
Bike	1.2%	1.7%	+0.2%
Other	1.0%	3.8%	+2.8%

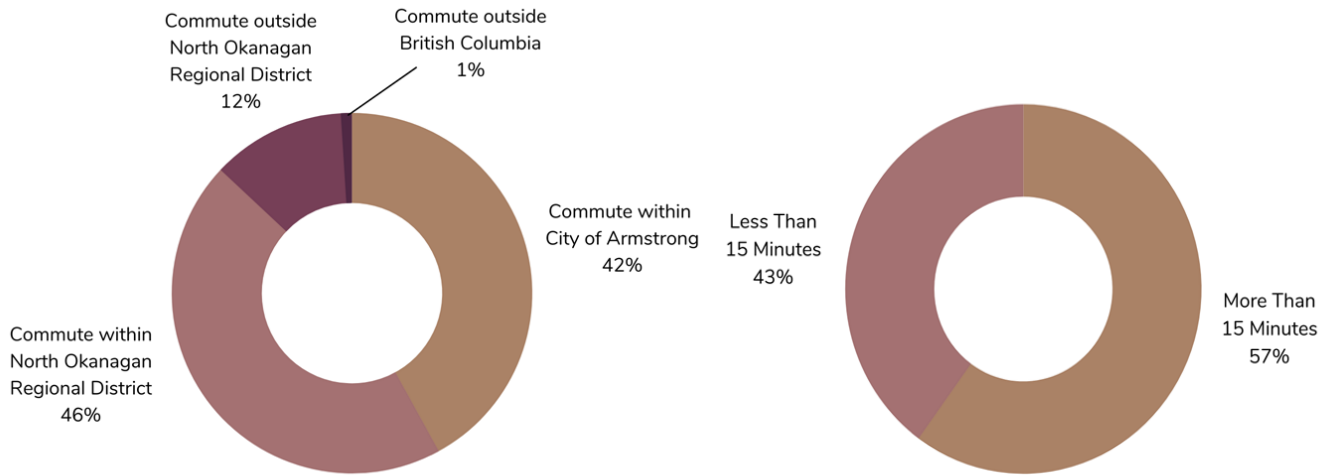


Figure 3: Armstrong's Commuting Profile (2021)

As seen in **Figure 3**, 41.7% of all commuting trips in 2021 were made within the City of Armstrong, while the majority at 45.5% of all commuting trips were made within the RDNO but outside of the City's boundaries. 12.0 % of all commuting trips were outside the RDNO. Further, more than 43% of the commuting trips in 2016 were less than 15 minutes in duration. This highlights the great potential the City of Armstrong has in shifting these shorter distance trips to sustainable modes.

42% ↔

of commuting trips stay within the City of Armstrong

43%

of commuting trips are less than 15 minutes

87% driving mode share



8% active transportation mode share



2.4 LAND USE CONTEXT

Land use and transportation are fundamentally interrelated and the City of Armstrong benefits from being a compact community, with many of the key local destinations within walking distance. As seen in **Map 1: Key Destinations & Sidewalk Network**, Armstrong has several community, commercial, and employment destinations that are considered trip generators. It is also home to the largest Agricultural Fair “The Interior Provincial Exhibition” (IPE) which is hosted on the fairgrounds.

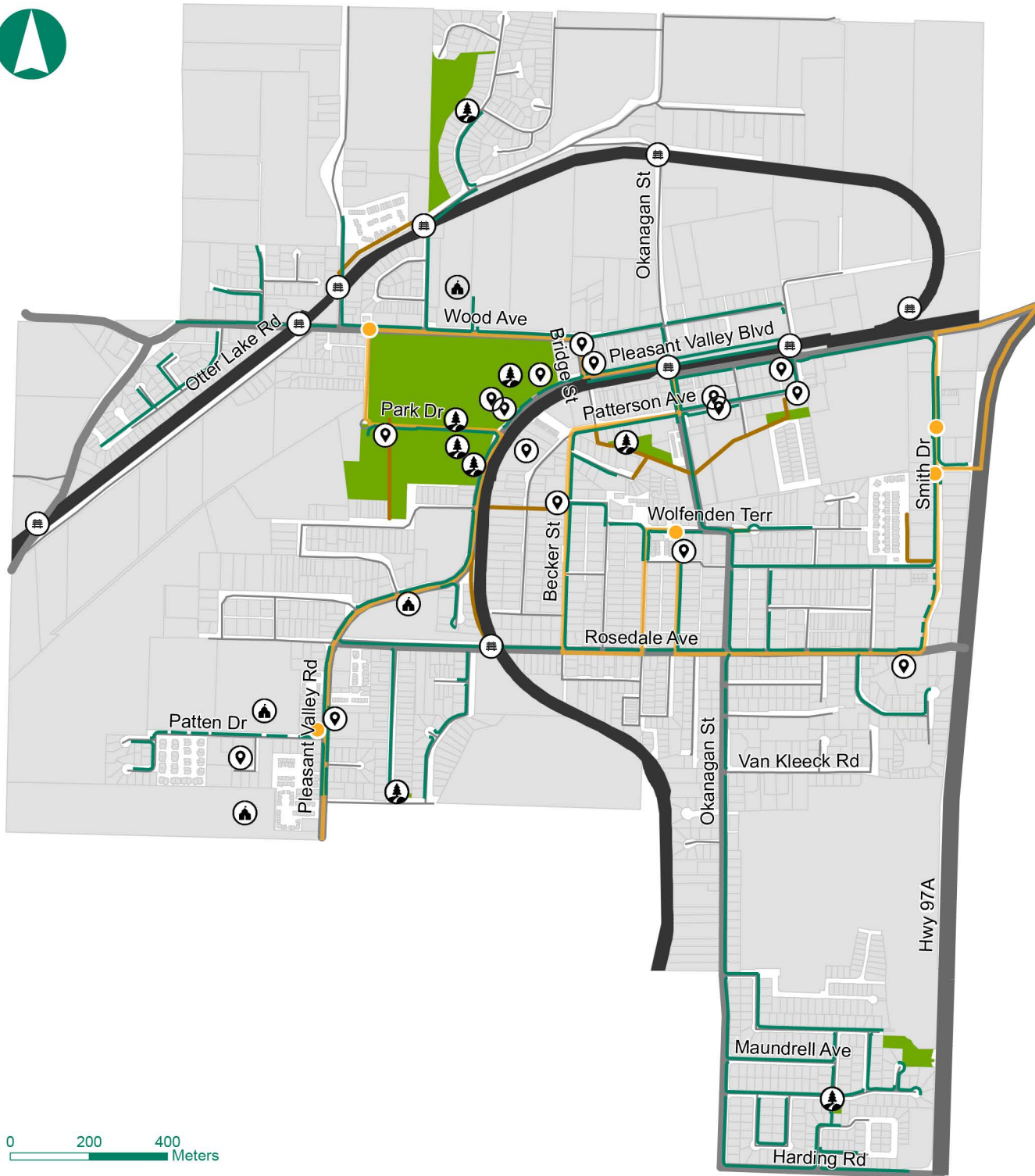
Commercial and Employment Hubs: Armstrong’s downtown core is the City’s principal commercial area encompassing a mix of commercial uses as well as other land uses that generate a significant number of active transportation trips from residents and employees. Pleasant Valley Boulevard and Smith Drive are the two main commercial and employment corridors within the City. Pleasant Valley Boulevard is a historic shopping street with on-street parking while Smith Drive is dominated by auto-oriented commercial destinations with large surface parking lots and drive throughs.

Education: Schools have the potential to generate a significant number of active transportation trips. However, if the active transportation infrastructure is limited, parents often resort to driving for drop-off and pick-ups. Given the potential of increasing the share of trips made to and from school by an active mode, it is critical to ensure that in addition to infrastructure there is ongoing education to school aged children and their parents about the benefits of active transportation.

Arts, Culture, and Recreation: Armstrong has several venues that host various cultural events. Recreation facilities are important community facilities that see a large proportion of active trips from their users. Recreation facilities in the City include:

- Armstrong Spallumcheen Museum and Art Gallery
- Zion United
- St. James Anglican
- Armstrong Bible Chapel
- OK Central Christadelphian
- First Baptist
- St. Joseph Roman Catholic
- Glad Tidings
- 7th Day Adventist Seniors Activity Centre
- Centennial Hall
- Hassen Arena
- Curling Arena
- Nor Val Arena
- Kindale Activity Centre
- Royal York Golf Course

Parks: Armstrong has several parks across the community that attract local and regional trips. Parks contribute positively to residents' quality of life by encouraging active living and fostering community connections and should be accessible to everyone. Parks have great potential to connect locations through their own off-street paths and play a vital role in an active transportation network.



Key Destinations & Sidewalk Network

- Bus Stop
- Bus Route
- Existing Trails
- Existing Sidewalks
- Railway
- 📍 Arts, Culture and Recreation
- 🌲 Park
- 🚶 Railway Crossing
- 🏠 School
- Local
- Collector
- Highway

2.5 PLANNING & POLICY CONTEXT

Official Community Plan (2008)

The City of Armstrong is currently in the process of reviewing its Official Community Plan (OCP) to account for future growth and the prosperity of the community. The OCP acknowledges the numerous benefits of improved connectivity including increased vehicle and active transportation safety, reduced kilometres driven, increased levels of active transportation, improved health for residents, reduced greenhouse gas emissions, and overall, a more resilient economy. The OCP identifies the following goals that will be reflected upon in the ATP:

- To achieve an increase in non-vehicular modes of transportation within an intermodal system.
- To reduce Green House Gas emissions related to the transport of goods, services and personal transportation.
- To investigate sources of funding for transportation infrastructure projects.

Additionally, in order to “reinforce the distinctive commercial areas by addressing parking issues, increasing vehicle safety and promoting walking, shopping and social gathering” the OCP provides direction to “consider developing Smith Drive and Pleasant Valley Road and Boulevard as distinct areas with beautification upgrades that include improved pedestrian linkages and traffic flows and safe, dedicated infrastructure for scooter users and cyclists”.

Active Transportation Plan (2009)

The City of Armstrong prepared the City’s first Active Transportation Plan in 2009 facilitated through the Built Environment and Active Transportation (BEAT) planning grant. Intended to act as a guide for further refinement, the ATP identified a list of projects that were grouped into three categories: 1) Policy & Planning; 2) Programs & Services; 3) Infrastructure. The list includes projects such as:

- Extending school zones
- Installing sidewalks in priority locations
- Designing and constructing dedicated cycling infrastructure

In addition to reviewing the existing trails network, the ATP incorporated consultation, and technical assessments were used to identify major corridors for wheeled active transportation. Notably, the Primary Cycling Network does not identify Smith Drive or Pleasant Valley Boulevard as a bike lane, due to the high traffic volumes, significant turning activity in and out of driveways, and the use of the roadway for three vehicle lanes.

Armstrong Spallumcheen Trails Master Plan (2021)

More recently April 2021, the Armstrong – Spallumcheen Parks and Recreation Commission supported the development of an Armstrong Spallumcheen Trails Master Plan in conjunction with a broader planning exercise Parks and Recreation Master Plan. In recognizing the increasing demand for trail-based opportunities and gaps in the current network, the plan identified the following six desired outcomes with recommendations to achieve the vision for a high-quality trail network:

- Increased Access and Connectivity;
- Enhanced Experience;
- Expanded Network;
- Sufficient Funding and Support;
- Structured Roles and Responsibilities; and
- Reduced Environmental Impacts.

The trail classification system and design guidelines developed for the Trails Master Plan will be incorporated into the ATP.

BC Active Transportation Design Guide (2019)

The BC Active Transportation Design Guide (BC ATDG) was released in June 2019. The guide is a comprehensive set of planning and engineering guidelines offering recommendations for the planning, selection, design, implementation, and maintenance of active transportation facilities across the province. It contains engineering principles and best practices from the municipal, provincial, national, and international levels. These two efforts call for more protected cycling facilities generally using motor vehicle speeds and volumes as the primary way to determine what sort of facility should be provided. As part of the funding acquired from the BC Active Transportation Infrastructure Program, the ATP is required to provide infrastructure recommendations that align with the Design Guide.

Shuswap North Okanagan Rail Trail (Ongoing)

In 2014, Splitsin te Secwépemc (Splitsin) leadership successfully negotiated with CP Rail to purchase the discontinued railway corridor between Sicamous and Armstrong. As the leading partner, Splitsin leadership brought the Columbia Shuswap Regional District and Regional District of North Okanagan through a jointly signed Memorandum-of-Understanding to construct a 50km non-motorized greenway trail for walking and cycling along the rail corridor between the communities of Sicamous and Armstrong. The future Shuswap North Okanagan Rail Trail will connect the communities of Sicamous, Electoral Area E of the CSRD, Electoral Area F of the RDNO, Enderby, Grindrod, Splitsin, Spallumcheen, and Armstrong through Splitsin Territory. In the long-term, the trail will connect with the Okanagan Rail Trail between Vernon and Kelowna and establish a viable route between Sicamous and Osoyoos.

The Shuswap North Okanagan Rail Trail will serve as a conduit for regional connectivity in the region for active travellers.



Figure 4: Trail Concept Maps

The timing for construction and opening of the initial phase of the trail is contingent on funding availability. The Shuswap North Okanagan Rail Trail Development Plan was completed in 2021 and estimated full funding could see the trail completed within two years, and staged funding over three to four years. As seen in **Figure 4**, The proposed primary access is located along Pleasant Valley Road and the ATP will consider connectivity to the future rail trail in its network planning.



Section 3: Strategic Directions

3. STRATEGIC DIRECTIONS

3.1 WHAT WE HEARD

Hearing from a diverse cross section of the community is essential to creating a plan that accurately reflects the unique needs and priorities of the community. The overall engagement process for the ATP uses diverse consultation techniques to involve the public and stakeholders and to generate and refine recommendations in alignment with the International Association for Public Participation (IAP2) Core Values for Public Participation. Stakeholder and community engagement will be included with participation targeted to fulfill the “Involve” and “Collaborate” aspects of the IAP2 Spectrum of Participation.

The following rounds of engagement were undertaken within Phase 2 of the wider ATP project schedule with a mix of online and in-person opportunities to maximize accessibility and participation amongst a diverse demographic:

Round 1: Spring/Fall 2022

Round 1 of engagement focused on targeted engagement through stakeholder interviews and a youth mapping activity to:

- better understand where people travel to by foot and bike, the barriers, and key issues in the active transportation (AT) network, and the types of solutions desired; and
- understand the principles, values, and overall vision the community would like to see for the Active Transportation Plan

Round 2: Spring 2023

Round 2 of engagement will focus on presenting the key recommendations from the draft ATP to the wider Armstrong community. Through a public open house we will provide the opportunity for a “deeper dive” into the specific recommendations and what might need to be adjusted based on community preferences and desires.

3.1.1 STAKEHOLDER INTERVIEWS

Over the summer, we heard directly from key stakeholders who may be involved in active transportation and/or who represent a group that is directly impacted by active transportation including Armstrong Spallumcheen Trail Society, Armstrong Chamber of Commerce, Interior Health Authority (IHA) – Armstrong Community Services, Ministry of Transportation Infrastructure (MoTI), RCMP Safe Communities Unit and RCMP Armstrong Detachment, and the Township of Spallumcheen.

A summary of the key takeaways from these discussions are provided below:



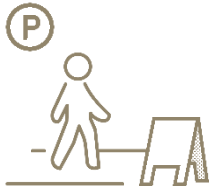
FOCUS ON KEY ACTIVE TRANSPORTATION CORRIDORS

Pleasant Valley Boulevard (PVB), Smith Drive, Rosedale Avenue, Okanagan Street, Wood Avenue, and Otter Lake Road were identified as the key AT corridors within the City of Armstrong that connect key destinations within the City as well as to the surrounding Township.



DESIRE FOR TRAFFIC CALMING

Traffic calming through design interventions are needed along the key AT Corridors, particularly near Pleasant Valley Secondary School.



KEY OPPORTUNITIES ALONG PLEASANT VALLEY BOULEVARD

The two-lane sections of PVB in the Town Centre are currently underutilized. Narrow sidewalks in the Town Centre make it hard for businesses to hold sidewalk sales and have sandwich boards outside. On-street parking is well utilized, often by the business owners along PVB, while the surface parking lots in the Town Centre remain underutilized.



KEY OPPORTUNITIES ALONG SMITH DRIVE

While the turning lane serves a vital function along the northern portion of Smith Drive, the parking lane along the southern portion was identified as having potential to be reallocated for people walking and cycling. The current on-street parking along Smith Drive is causing sightline issues and hazards for active travellers accessing businesses.



DESIRE FOR DEDICATED CYCLING INFRASTRUCTURE

There is a growing cycling culture in the community and recognition that cyclists are a revenue source in the historic Town Centre. However, many community members do not feel safe cycling on the roadway, which often leads to sidewalk riding. The lack of buffer from vehicular traffic was stated as the primary concern. The on-street parking lane on the southern portion of Smith Drive and along PVB near Memorial Park were identified as candidates for reallocating space for those walking and cycling.

3.1.2 YOUTH MAPPING ACTIVITY

In the fall, over 70 students from Len Wood Middle School participated in a Youth Mapping Activity to gather the experiences, concerns and ideas youth in Armstrong have for establishing safer active transportation routes to school. As illustrated by the following quotes, speed was one of the primary concerns captured through this activity:

“I don't walk or bike but I know a lot of people that do so I think that they should add more bike lanes and in some parts of Armstrong maybe lower the speed limit”

“I usually walk to school with friends but sometimes I get driven. It's okay most of the time but the intersection by the school makes me nervous because there are corners where people zip past”

As seen in **Figure 5**, we also heard from Armstrong youth about their desire for more dedicated space for active travel to school:

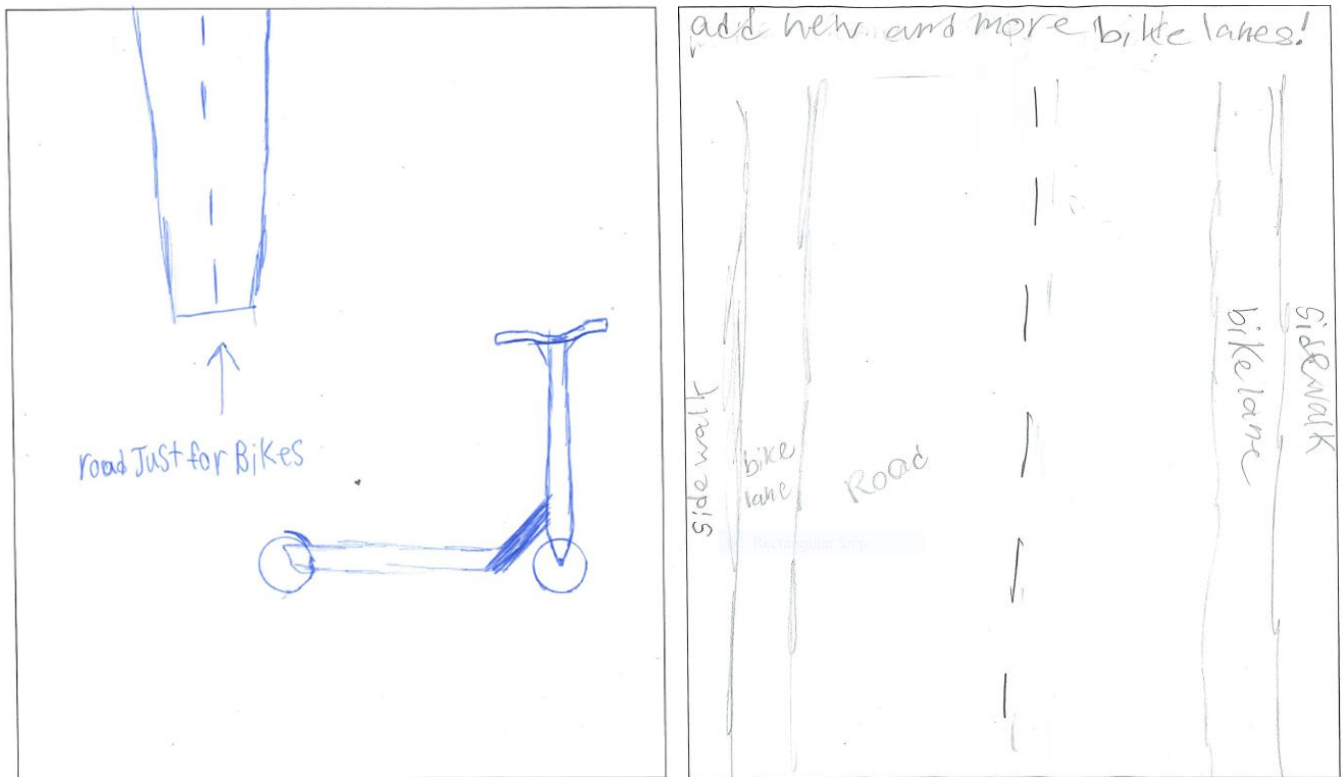


Figure 5: Responses to "What's your BIG IDEA for how the City can better support kids in choosing to walk or bike more often?"

“To make fun and safe bike routes and lanes on the roads to go to school”

**“If you ride a bike maybe have bike lanes so it’s safer for the walkers,
drivers and bikers”**

3.1.3 PUBLIC OPEN HOUSE

The public open house is planned to occur in April 2023 and will provide an opportunity for the wider Armstrong community to review and provide feedback on the key recommendations of the draft ATP. The open house will be a crucial element of the engagement process, as it will allow for a "deeper dive" into the specific recommendations and potential adjustments based on community preferences and desires. This section will be updated with a summary of outcomes from this engagement event.



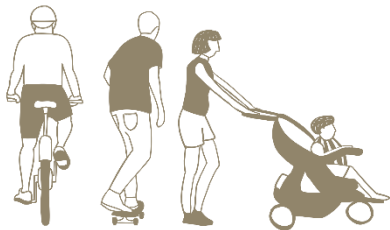
Section 4: Looking Ahead

4. LOOKING AHEAD

4.1 VISION

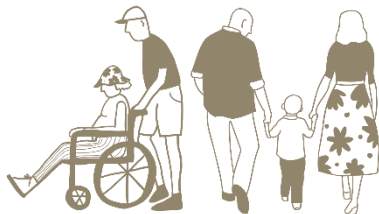
Armstrong’s active transportation network will empower the residents and visitors of all ages and abilities to move seamlessly and safely within the community. Active transportation facilities connect to public transit and offer protection from motor vehicles where possible to make walking, rolling, and wheeling the preferred choice for trips to local and community destinations. Armstrong is a leader in active mode share in the region and supports and integrates regional active transportation initiatives and connections.

4.2 GOALS



FOSTER A CULTURE OF ACTIVE TRANSPORTATION TO PROMOTE HEALTHIER LIFESTYLES

Walking, rolling, and wheeling is the preferred choice for residents by creating an environment that promotes active transportation for short trips that connect local and community destinations and reduces the overall climate impact of the community.



IMPROVE SAFETY AND ACCESSIBILITY TO ENCOURAGE MODE CHOICE

Building a safe, accessible, and inclusive active transportation network that prioritizes the needs of all ages and abilities, implements Vision Zero principles, and offers increased protection from motor vehicles will benefit more sustainable future mode splits.



ESTABLISH AN INTEGRATED NETWORK

Integrate the active transportation network with regional connections, including the Rail Trail, to provide seamless access to destinations beyond Armstrong and utilize existing planning efforts and resources to create a more efficient and effective solution to meet the community’s needs moving forward.



Section 5: Street Network

5. STREET NETWORK

5.1 ISSUES & OPPORTUNITIES

In 2016, only 1.2% of all commuting trips in Armstrong were made by bicycle, decreasing by 3.6% from 2011. This is likely indicative of the existing barriers to cycling in Armstrong and the lack of dedicated cycling facilities in Armstrong. People biking in Armstrong share the road with vehicular traffic or sharing the paved shoulder with other active travellers.

Public engagement undertaken for the 2009 ATP highlighted the safety challenges of cycling within Armstrong – particularly along Smith Drive and Pleasant Valley Boulevard. Despite the lack of dedicated cycling facilities and the limitations of the Census data, many residents and visitors do cycle in Armstrong and there are many desire lines and a need for more cycling infrastructure. As seen in the Strava cycling heat map, despite the lack of designated cycling infrastructure in Armstrong, cycling appears to be popular. Cycling activity is highest along the City's collector streets, including Pleasant Valley Boulevard, Wood Avenue, Rosedale Avenue, and Okanagan Street as well as the commercial area along Smith Drive.



Pleasant Valley Boulevard is well built out for pedestrians and vehicles but not for cyclists.

Armstrong is a highly walkable community, as evidenced by the fact that 9% of all trips within the City are completed by foot. This is due to the City's compact geography, proximity of key destinations, and well-connected sidewalk network with safe crossings on busy roads, making it an attractive transportation mode for both recreational and commuting purposes.

Concerns have been raised regarding children navigating the roadways in and around the City's schools. This is a topic explored in **Section 0** Safe Routes to School. There is also an engineering safety study (Armstrong Road Safety Review) that is occurring concurrently with this plan and one of its main focuses are to detail specific crossing improvements near schools to be considered by the City.

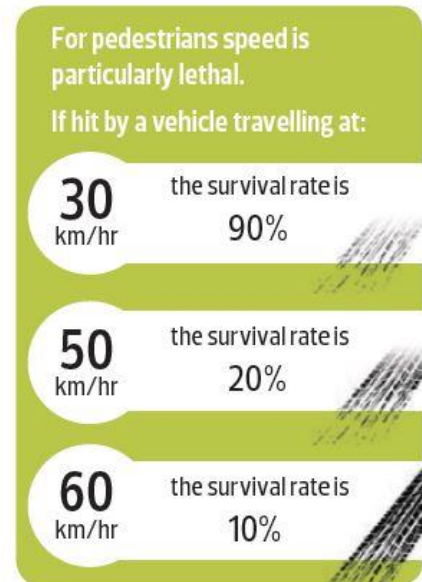
5.1.1 SPEED & ROAD SAFETY

The City collects data on vehicle speeds. This data provides information about vehicle speeds and the level of compliance with the posted speed limits. Vehicle speeds provide valuable context for active transportation planning as moderating vehicle speed is a major factor in creating pedestrian and bike friendly environments. Even though vehicle speed does not always cause crashes, it usually determines the severity of a crash. A small difference in speed can mean the difference between life and death, especially for pedestrians, motorcyclists, and cyclists.²

Active transportation projects should prioritize safety by tracking vehicle travel speeds on corridors of concern before and after enhancements are implemented. This type of data collection provides a clear indication of progress in improving safety for vulnerable road users, and can also serve as evidence to support future active transportation initiatives.



With the many user group and busy nature of Rosedale Road, vehicle speed is often highlighted as a concern in the City.



Source: City of Edmonton

² City of Edmonton. (No date). Speed Limit Reduction. Available online at: https://www.edmonton.ca/transportation/traffic_safety/residential-speed-limits

5.1.2 INTERSECTION CONSIDERATIONS

According to ICBC³, almost four out of five (78%) pedestrian accidents take place at intersections. The same is true for people cycling who are also at higher risk of a collision at intersections. The pie chart in **Figure 6** illustrates injury collisions by travel mode for the past five years in Armstrong.

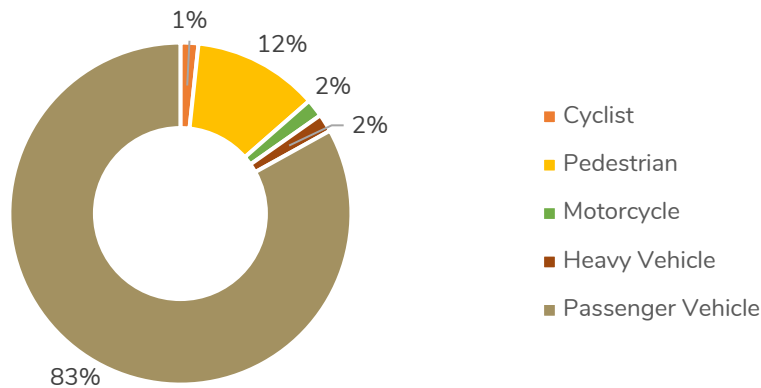


Figure 6: Injury Collisions by Mode in Armstrong (ICBC 2016-2020)

Of all collisions that occur in Armstrong, 12% of them involve a pedestrian. This highlights the need for increased safety measures for active transportation along corridors, at intersections, and in close proximity to schools. Of all the intersections within City limits, the following in **Table 4** rank highest for the number of collisions over the past five years.

TABLE 4: TOP 5 COLLISIONS INTERSECTIONS IN ARMSTRONG (ICBC 2016-2020)

Ranking	Intersection	Collisions	Collisions with Vulnerable Road Users
1	Okanagan St/Wood Ave	5	1
2	Fraser Rd/Wood Ave	3	1
3	Okanagan St/Rosedale Ave	4	0
4	Wood Ave/Highland Park Rd	2	1
5	Fletcher Ave/Smith Dr	2	1

³ ICBC (2020). *Facts behind pedestrian crashes infographic*. Available online at: <https://www.icbc.com/road-safety/sharing/pedestrian-safety/Pages/pedestrian-infographic.aspx>

Intersections are often where pedestrians and cyclists feel most vulnerable, and this makes it important not to forget about the intersection at each end when considering improvements along a corridor. Protected intersections are one tool that can be utilized to have this effect. According to the BC Active Transportation Design Guide, protected intersections can be applied on any road where enhanced comfort for people of all ages and abilities is desirable. Further, they are used predominantly where protected bicycle lanes reach an intersection.⁴



Protected intersection separates vehicles, cyclists, and pedestrians with physical barriers in Vancouver, BC. Image Retrieved from the BC AT Design Guide (2019).



Important elements to be considered as part of protected intersection design. Numbering reflects list of design elements below. Image retrieved from Figure G-90 of the BC AT Design Guide (2019).

Key design elements for a protected intersection with uni-directional protected bike facilities according to the BC Active Transportation Design Guide are as follows:

⁴ 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

- **Corner Refuge Island (1)** | The corner refuge island is a physical element that defines the protected queuing space for bicycle users waiting to proceed through the intersection. can be used to create a smaller corner radius, helping to slow the speed of turning motor vehicles.
- **Forward Bicycle Queuing Area (2)** | the area where people cycling wait before proceeding through the intersection. The forward bicycle queuing area shortens the crossing distance and enables people cycling to enter the intersection before motor vehicles, making them more visible to motorists.
- **Setback Bicycle and Pedestrian Crossings (3)** | these crossings create queuing space for right turning motor vehicles, which significantly improves motorist sightlines.
- **Cross-Ride Markings (3)** | Cross-rides should be painted across the intersection to guide bicycle users and raise awareness of people cycling.
- **Pedestrian Refuge Island (4)** | provides a protected waiting area for pedestrians and shortens the crossing distance.
- **Signal Operation (5)** | Protected bicycle signal phases may be used to further reduce conflicts between people walking, cycling, and driving.
- **Pedestrian Crosswalk over Bicycle Facility (6,7)** | people cycling must yield to pedestrians who are crossing the bicycle facility to wait in the pedestrian refuge area. This crosswalk must be marked and a Bicycle Yield To Pedestrian sign (MUTCDC RB-39) may also need to be provided.
- **Tapered Approach to Intersection (8)** | The protected bicycle facility may be required to move away from the motor vehicle travel lane when approaching the intersection in order to align cyclists with the setback crossing and provide larger queuing areas for bicycles and motor vehicles.



The Rosedale Ave / Okanagan St intersection is a candidate to be upgraded to a protected intersection as two sets of protected bike lanes will cross at the intersection in the long term vision.

More detailed guidance on protected intersections can be found on page 64 of Chapter G (Intersections + Crossings) in the BC Active Transportation Design Guide.

5.2 COMPLETE STREET CROSS-SECTIONS

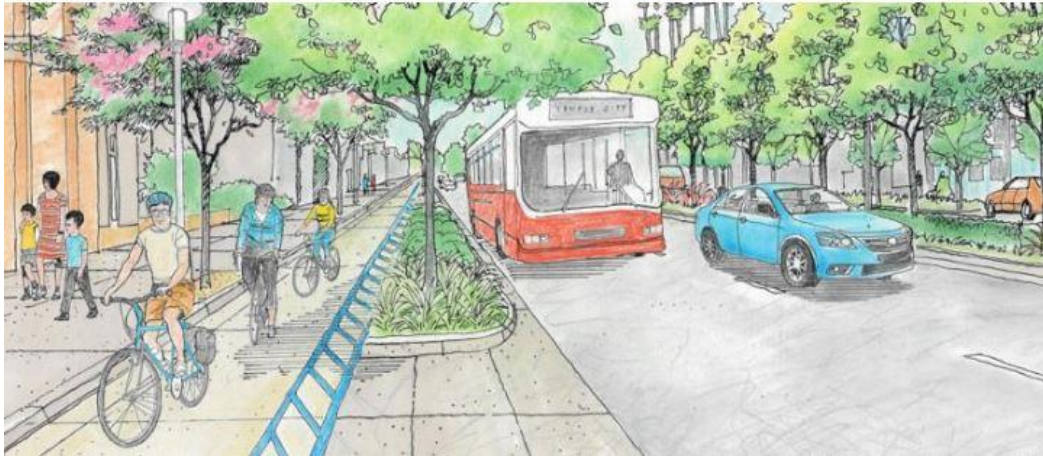
Complete streets refer to streets that are designed and operated to enable safe and comfortable use for all users irrespective of age or ability. A complete street provides important quality of life elements such as⁵:

- Increases safety
- Promotes a more active lifestyle
- Decreases carbon dioxide emissions
- Encourages a sense of community
- Supports local businesses

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



Conceptual illustration of a complete street. Source: City of Durango

By applying a complete streets lens, the City should consider prioritizing several infrastructure improvements to make its streets and intersections safer for people walking and cycling.

The following outlines the recommended updates to the City’s existing road cross-sections to improve mobility for all users. These cross-sections outlined in **Figure 7, Figure 8, Figure 9, and Figure 10** would demonstrate ideal complete street elements for roads in Armstrong if they were to be built as new roads. Upon acceptance of these new cross-sections, the City should update Subdivision and Development Servicing (Bylaw #1570), to reflect the new road cross-sections. For example, none of the existing road cross-sections provide space for people who cycle in their current form, whereas new arterial and collector roads most likely should provide this dedicated space.

⁵ City of Nanaimo. (No date). Complete Streets: Updated Engineering Standards & Guidelines. Available online at: <https://www.nanaimo.ca/your-government/projects/projects-detail/complete-streets-guidelines>

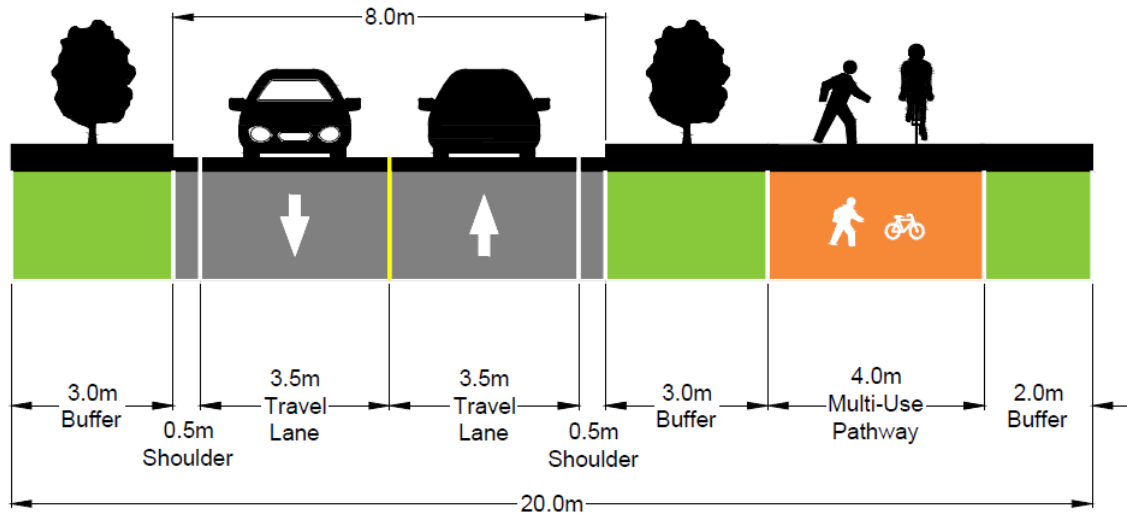
These new cross-sections should be utilized for new roads in subdivisions, for future connections, and when the re-building of a corridor is identified. This re-building may not be solely based on the need for asphalt replacement purposes (asset management), but also if major sanitary, storm, and/or water replacement projects are required within the road right-of-way.



Wood Avenue is a candidate for a complete street cross-section that integrates a multi-use path.

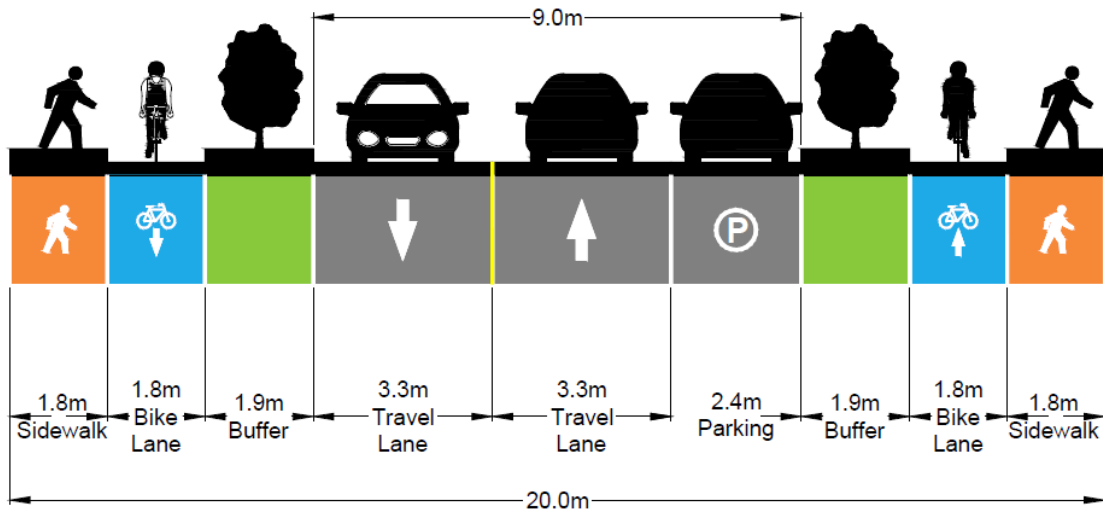
New rural cross-sections should be limited to residential areas with lots greater than 1,000 m² or zoned for agricultural use. For existing residential neighbourhoods with smaller lots and a rural cross-section, upgrading should only be considered as part of a larger project for the corridor if there are also associated storm sewer improvements planned or in place.

New roads in areas with single-family residential (lots 1,000 m² or less), multi-family residential, institutional (schools, churches, recreation), and commercial (retail/office) land uses, should be constructed with the urban cross-section standards.



*For narrow RoW's, reduce buffers adjacent to roadway.
 **Minimum buffer between MUP and shoulder is 0.6m.

Figure 7: Complete Street: Rural Collector Multi-Use Path

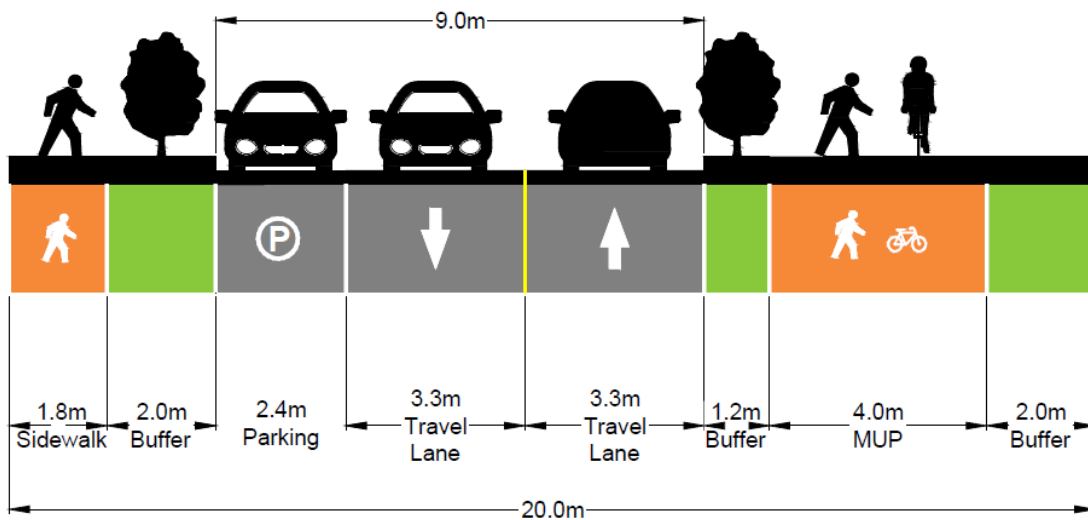


*For area's with limited RoW width available, reduce buffer opposite from parking to 0.6m or omit parallel parking.

**For collector with centre turning lane, omit parking and reduce buffer widths to suit.

***In areas with low traffic volumes and speeds, buffer area may be replaced with 0.3m painted buffer & parking omitted.

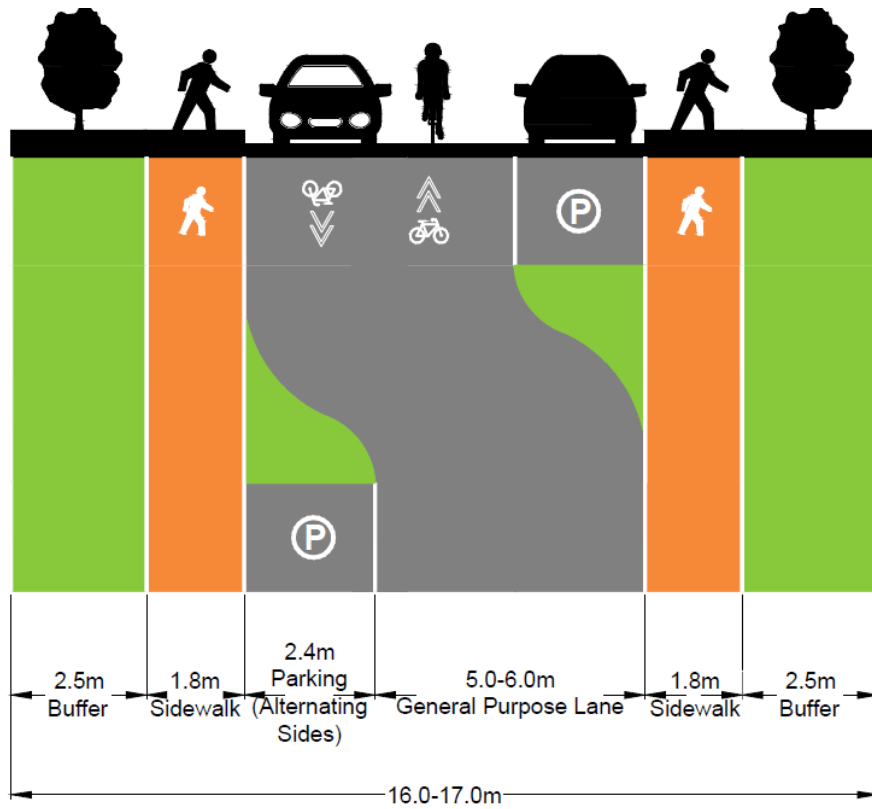
Figure 8: Complete Street: Urban Collector Protected Bike Lanes



*For area's with limited RoW width available, reduce buffer adjacent to parking or omit parallel parking.

**In areas with low traffic volumes and speeds, omit parking, sidewalk & reduce buffer width opposite to MUP.

Figure 9: Complete Street: Urban Collector Multi-Use Path



*For narrow RoW, omit buffer from one side.

Figure 10: Complete Street: Residential Local

5.3 SUPPORTING ACTIONS

5.3.1 ROADS BYLAW

Adjusting City policies and bylaws to align with the Active Transportation Plan will create the framework necessary to move forward with the slated network improvements and the overall vision for active transportation as a part of this plan.

Potential updates include:

Subdivision and Development Servicing Bylaw #1570

- Update road cross-sections to incorporate a complete streets approach which factors in active transportation accommodation. For example, none of the road cross-sections provide space for people who cycle in their current form, whereas new arterial and collector roads most likely should provide this dedicated space.

Traffic and Parking Regulation, Bylaw #1370

- Develop Snow Clearing Policy / Maintenance Policy further to incorporate active transportation routes.

For Armstrong to be a destination where active transportation users can use and experience the network the majority of the year, a Snow Clearing Policy and Road Maintenance Policy should be further developed to prioritize active transportation routes in the snow clearing process and give guidelines on street sweeping (gravel and leaves), as well as tree trimming when necessary.

5.3.2 MAINTENANCE

The benefits of a cycling network quickly disappear if it is not adequately maintained throughout the year. For the 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.⁶

Active transportation infrastructure, such as protected bicycle facilities and multi-use pathways, require specialized maintenance to ensure safe and clear conditions for users. This includes snow removal and debris clearing using small machinery. The maintenance of the network should encompass various components including:

- Regularly maintaining the cleanliness of the facility by sweeping, removing debris, and trimming vegetation

⁶ Winters, M., Davidson, G., Kao, D., Teschke, K., 2011. Motivators and deterrents of bicycling: comparing influences on decisions to ride. *Transportation* (38), 153-168.

- Ensuring safe winter conditions by removing snow and ice, and treating surfaces for slippery conditions.
- Regularly inspecting and maintaining the infrastructure including repairing pavement surfaces and road appurtenances, replacing worn pavement markings, signs, and signals, addressing drainage issues, maintaining lighting, and maintaining equipment.
- Remove temporary barriers to allow snow plows to clear the full width of the road during winter months



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.



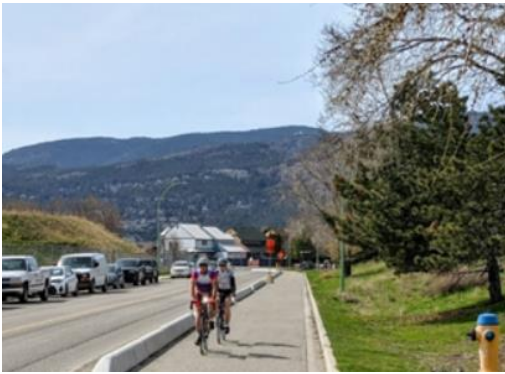
Section 6: Network Improvements

6. NETWORK IMPROVEMENTS

Armstrong’s network improvements include infrastructure upgrades to create the envisioned active transportation network and travel corridors. These improvements are summarized in the section below and illustrated on the Quick-Build Active Transportation Network **Map 2** and Long-Term Network **Map 3**.

6.1 ACTIVE TRANSPORTATION FACILITY TYPES

In addition to sidewalks, the quick-build and long-term active transportation networks include the three facility types shown below.



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 Armstrong’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

A protected bike facility that provides a vertical deflection that works to separate people cycling from motor vehicles. Options include a two-way or uni-directional facility. Buffer options include a physical barrier or a painted buffer with gore markings where appropriate. 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 City should expect to conduct regular inspections and replace the barrier materials as necessary.



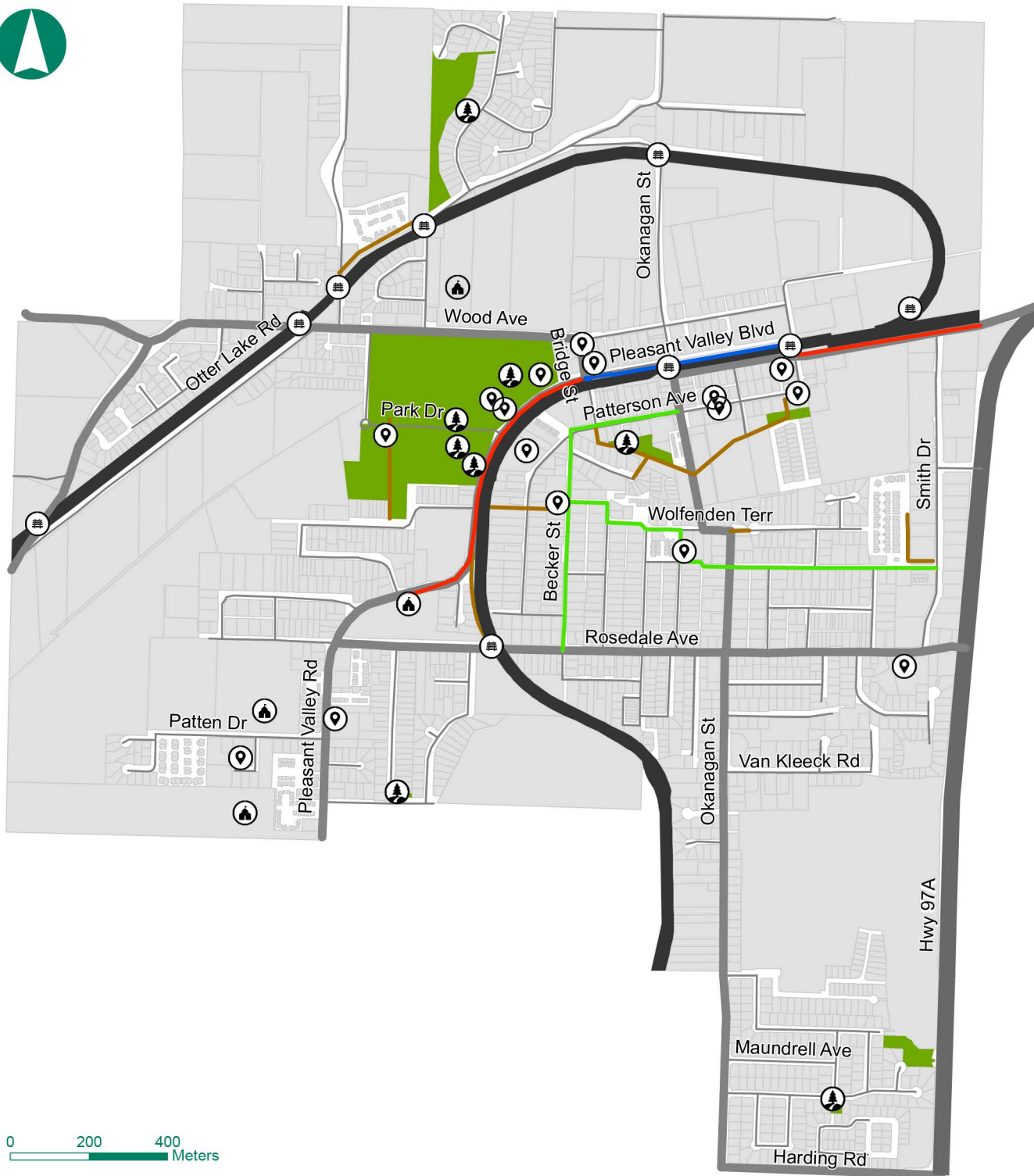
BICYCLE BOULEVARD

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.

6.2 QUICK-BUILD ACTIVE TRANSPORTATION NETWORK

The short-term **Map 2: Quick-Build Active Transportation Network** illustrates potential enhancements that can be achieved within the next 1-5 years by utilizing a cost-effective and efficient quick-build approach. This approach maximizes the use of existing infrastructure and road width, reducing the need for costly and disruptive road reconstruction, and providing improved accommodation for both vehicle traffic and active transportation users.

The first step in creating a cohesive active transportation network is to establish the spine of the network. Currently, the city lacks dedicated cycling infrastructure. To address this, initial improvements will be focused on the railway corridor to provide connections between residential areas, schools, the downtown area, existing trail shortcuts, and the planned Shuswap North Okanagan Rail Trail. Bicycle boulevards on Fletcher Avenue and Becker Street will also be developed to provide safe and comfortable routes through neighbourhoods and tie into the spine of the network.



Quick-Build Active Transportation Network

- Bike Boulevard
- Protected Bike Lane
- Multi-Use Path
- Two-Way Protected Bike Lane
- Existing Trails
- Future Connections
- Railway
- Arts, Culture and Recreation
- Park
- Railway Crossing
- School
- Local
- Collector
- Highway

6.2.1 QUICK-BUILD BUFFER TREATMENT OPTIONS

There are various barrier types that can be used to separate vehicle traffic from pathway users. The following **Table 5** summarizes some of the materials that are used typically in quick-build infrastructure and are considered appropriate for Armstrong’s context. Flexible delineators are often a low-cost option that yields positive results from users in terms of actual and perceived safety. There is also the opportunity to mix and match barrier types to shape a solution. A couple of examples include jersey barriers & planter boxes or parking stops & delineators.

TABLE 5: QUICK-BUILD MATERIALS

Type	Flexible Delineators	Plastic Planters	Parking Stops	Precast Curbs	Concrete Jersey Barriers	Timber Logs
Height	90 cm	60 – 90 cm	10 cm	10 – 15 cm	30 – 80 cm	30 – 50 cm
Installation	Epoxy surface mount OR Sub-surface base, twist lock delineator	Placed on the surface, filled with soil and plants	Steel bolts or rebar with plastic or metal shield OR Construction adhesive	Forklift placement with rebar pin	Forklift placement	Direct forklift placement or placed on log pedestals (to create a taller barrier)
Cost	Low	High with routine maintenance	Low	Moderate	Moderate	Low
Safety / Comfort	Moderate	Moderate	Low / Moderate	Moderate	High	Moderate

Quick-build retrofit cross-sections have been developed that reflect the improvements in the quick-build active transportation map. These cross-sections aim to better utilize the paved width by redistributing the space between the road’s vehicles and active transportation users.

6.2.2 RAIL TRAIL DEVELOPMENT AND CONNECTIONS

The Shuswap North Okanagan Rail Trail project is currently in the planning stage with goal of a 2026 opening date. This project will provide immense value to the connected communities by utilizing the abandoned railway corridor to enable residents and visitors to move in a healthy sustainable way throughout the region. With the rise of ebikes, the rail trail enables people to travel further than ever before by active modes.

The terminus point for the rail trail is at the north entrance to Armstrong near the Pleasant Valley Road / Smith Drive intersection. However, since the railway remains active to the south, a different construction approach is needed to seamlessly integrate the corridor through the city. A route has been selected for this purpose and is an important part of the quick-build active transportation network. It primarily runs along Pleasant Valley Road from Smith Drive to Armstrong Elementary.

In the long term, it is envisioned that both the railway corridor to Vernon and the other to Kamloops will have space allocated to allow for a multi-use path within the railway right-of-way. A coordinated and collaborative approach with the representative rail companies is essential in realizing a rail trail vision along an active railway. Special consideration is needed at intersections and at active transportation rail crossings. A sample cross-section is provided in **Figure 11**.

SHUSWAP NORTH OKANAGAN Rail Trail (SICAMOUS TO ARMSTRONG)



Image Retrieved From:
<https://shuswapnorthokanaganrailtrail.ca>

Shuswap North Okanagan Rail Trail

“Together, with your help, we are building a world-class rail-trail that connects people while building healthier communities, resilient economies, and active lifestyles for generations to come”.

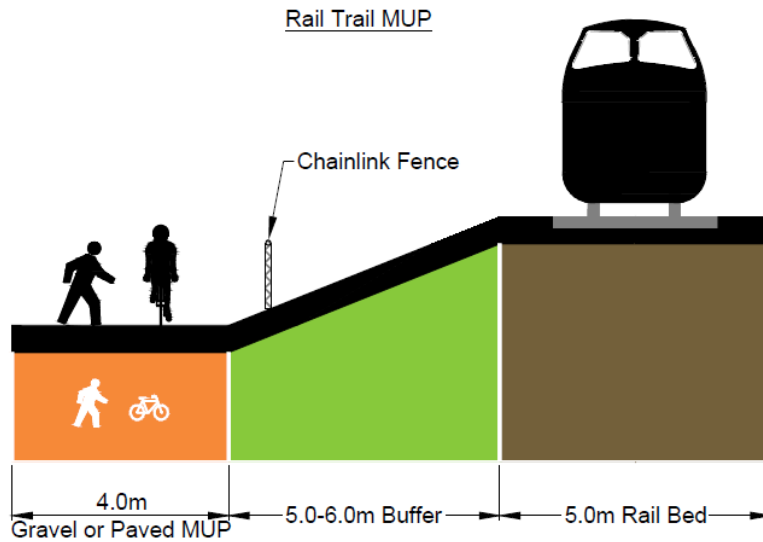


Figure 11: Rail Trail Sample Cross-Section

	Asphalt	Concrete	Cartpath	Granular
Accessibility	Green	Green	Green	Yellow
Cost	Yellow	Pink	Yellow	Green
Comfort	Green	Yellow	Green	Yellow
Safety	Green	Green	Green	Yellow
Natural Feel	Pink	Pink	Green	Green
Maintenance	Yellow	Green	Yellow	Pink

The multi-use path has a few options for surface material choice based on anticipated user mix, volume, and trip type. Options include concrete, asphalt, crushed gravel, or cart-path gravel. A sample of surface treatment matrix comparing the pros and cons of various options for a specific context is shown in **Figure 12**.

Figure 12: Sample Surface Treatment Matrix

MUP Retrofit on Pleasant Valley Road from Smith Drive to Mill Street:

This section of road ties into the Shuswap North Okanagan Rail Trail at the east end and the proposed two-way protected bike lane on the one-way section of Pleasant Valley Road at the west end. The on-street MUP is proposed to be constructed on the north side of the road and is separated from traffic by a buffer with horizontal separation. Various options are possible for the buffer treatment such as a combination of concrete barriers + planter boxes, a barrier system of extruded curb, or flexible delineators. Whichever option is chosen, it must be balanced with snow clearing and maintenance in mind. See **Figure 13** for the proposed quick-build cross-section.



Example of a quick-build MUP in Kelowna, BC using line painting and pre-cast concrete barriers.

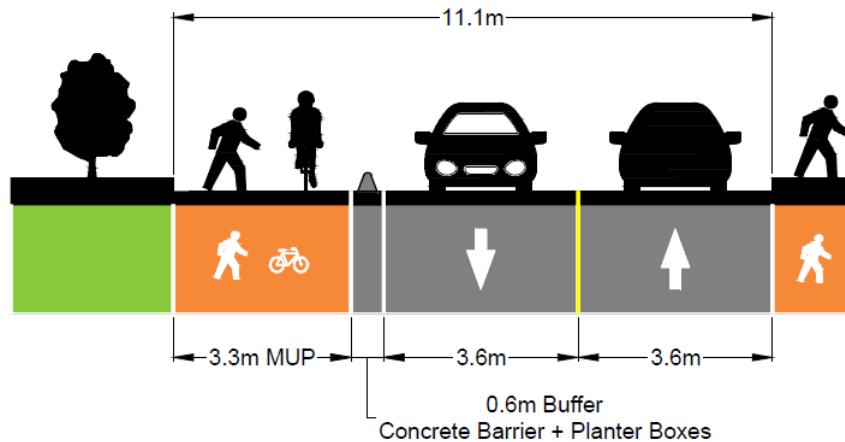


Figure 13: MUP Retrofit (Pleasant Valley Rd Near Smith Dr (Looking East))

Two-Way Protected Bike Lane Retrofit on Pleasant Valley Boulevard from Mill Street to Bridge Street:

This section runs along the westbound portion of the one-way couplet through the downtown on Pleasant Valley Boulevard through to Bridge Street. The east end ties into the proposed MUP retrofit detailed above at Mill Street and a proposed MUP on the west end at Bridge Street. The main feature of this retrofit cross-section is the two-way protected bike lane which is proposed between the sidewalk along Armstrong Station Park and the travel lane on the south side of the road. The low vehicle volumes on the street present an opportunity for retrofitting the road by reallocating space to accommodate active transportation users, such as pedestrians and cyclists, within the existing paved width. This can be achieved by removing a travel lane and minimizing the cost of road reconstruction while maintaining the wide sidewalk and 45-degree angle parking. To delineate the buffer space between the two-way protected bike lane and parking, the use of planter boxes and concrete barriers is suggested as shown in **Figure 14**.



Example of a quick-build two-way protected bike lane in Kelowna, BC using line painting, planter boxes, and jersey barriers.

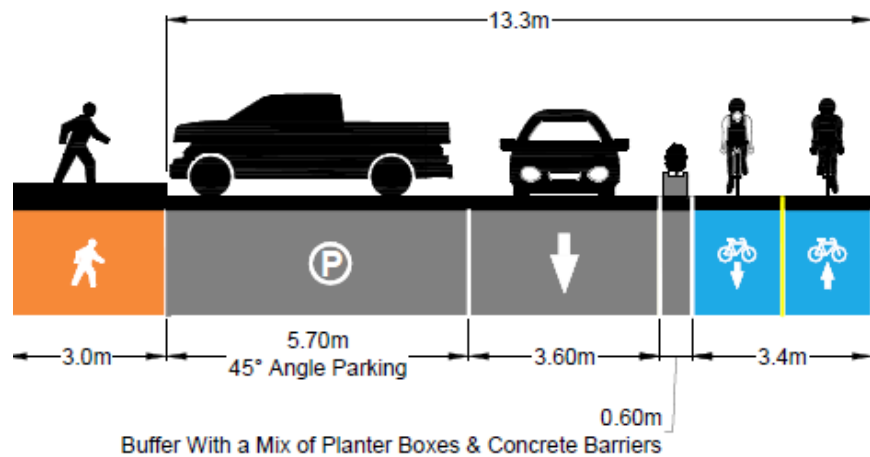


Figure 14: Two-Way Protected Bike Lane Retrofit on Pleasant Valley Boulevard from Mill Street to Bridge Street (Looking East)

The routing for the two-way protected bike lane is shown in **Figure 15**. It is of note that west of Okanagan Street on Pleasant Valley Road has two-way traffic vehicle traffic so removing a vehicle travel lane is not an option for this section. As an alternative, curb extensions could be removed and parking reconfigured to fit the two-way protected bike lane on the south side of the road. The preferred parking treatment would maintain angled parking on the north side of the

road and remove the parallel parking on the south side. This configuration maintains the important parking close to businesses adjacent to the sidewalk and by removing south side parking, discontinues the need for those vehicle occupants to jaywalk to get to their destination.



Figure 15: Two-Way Protected Bike Lane Routing Through Downtown

Operational considerations for the intersections the two-way protected bike lane crosses in **Figure 15** are as follows:

- Pleasant Valley Road / Bridge Street could be converted to an all-way stop to allow for bike crossings.
- The two-way protected bike lane would cross the southern portion of the Pleasant Valley Boulevard / Okanagan Street and Pleasant Valley Boulevard / Mill Street intersections. Due to the confusing nature of each of these intersections, the protected bike lane approaches should be stop controlled.
- Some existing sidewalk curb extensions will need to be removed to make way for the protected bike lane.
- The removal of one of the westbound lanes benefits intersection operations at Pleasant Valley Boulevard / Okanagan Street. This intersection operates as a six-way intersection as the railway separates two four-way stop controlled intersections. As such, the intersection can be confusing for vehicles to identify who has the right of way and having one fewer input lane aids in simplifying the intersection slightly.
- Special attention will need to be given to this facility, as it will have cyclists heading both westbound and eastbound (contra-flow direction). Proper signage like the RB-37 (Turning Vehicles Yield to Bicycles), will enhance safety and alert drivers that are turning across the cycling facility to yield to bicycles when accessing business driveways and alleyways.



RB-37 (Turning Vehicles Yield to Bicycles) Signage

The City has a concurrent planning project underway for the downtown revitalization plan between Mill Street and Okanagan Street. Depending on grant funding and timelines, this is a great opportunity to add active transportation infrastructure with more robust material types to the affected block as a cycling corridor through the downtown is an essential piece to the downtown's redevelopment.

MUP Retrofit on Pleasant Valley Road from Bridge Street to Armstrong Elementary:

This section of road ties into the improvements detailed above for Pleasant Valley Boulevard downtown and extends south between Pleasant Valley Road and the railway corridor towards Armstrong Elementary. There is an opportunity to repurpose some of the wide gravel areas to provide a multi-use path in front of the parking vehicles along the base of the railway embankment.



The existing cross-section has a generous amount of space between the railway and Pleasant Valley Road that could be repurposed (looking south).

90-degree pull-in parking is proposed to be converted to 45-degree angle parking and the vehicle travel lanes are narrowed slightly to fit the MUP with separation provided from the parking. A barrier along the edge of the parking and the pedestrian space, such as that of timber logs could be considered as a natural feature that blocks the overhang of vehicles into the active transportation travel zone. See **Figure 16** for the proposed cross-section.

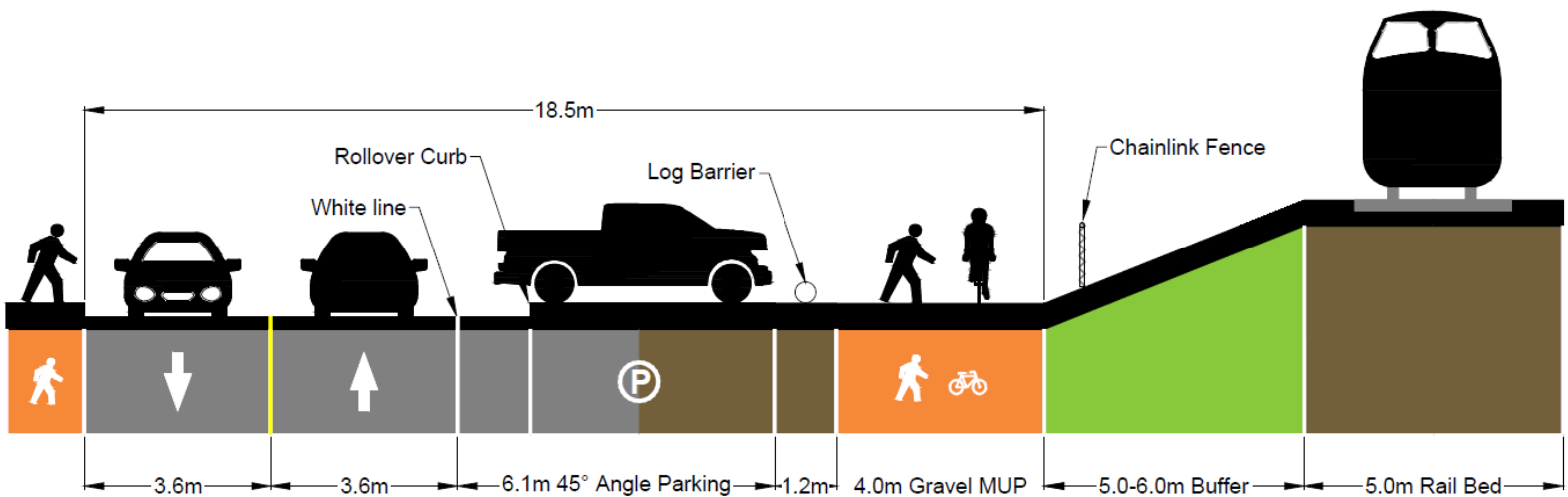


Figure 16: MUP Retrofit on Pleasant Valley Road from Bridge Street to Armstrong Elementary (Looking North)

This is a cost-effective treatment that keeps the natural look and feel of Armstrong and has been a successful approach elsewhere to define a dedicated active transportation space as shown in the example photo.

This MUP section ties into the existing trail across the rail tracks to Patterson Road and Becker Street near the First Baptist Church. A second existing spur cuts off near Heal Court as a shortcut access to Rosedale Avenue. These two access trails provide the connectivity needed to allow the MUP to become part of the active transportation network's spine.



Iona Beach in Richmond, BC recently converted angled parking to parallel parking and added walkway separated by a row of logs sourced from a local beach to separate vehicles and active transportation users.

Bicycle Boulevard Retrofits on Fletcher Avenue (east-west) and Becker Street (north-south):

In addition to the spine active transportation network on Pleasant Valley Road, secondary cycling routes that are safe, convenient, and comfortable are needed to provide additional network coverage and connection routes to the main spine.

Ideally, Rosedale Avenue would have an active transportation facility on it but due to the narrow road width and higher traffic volumes a quick-build approach is not appropriate on that route. As an alternative, the east-west Fletcher Avenue bicycle boulevard route is proposed. This route runs between the trail connecting Becker Street to Pleasant Valley Road near the First Baptist Church to the west and Smith Drive to the east.

Becker Street is proposed as a north-south bicycle boulevard between Rosedale Avenue at the south end and continuing north onto Patterson Avenue and then ending at Okanagan Street as the north extent. Along the way, the route crosses the Fletcher Avenue bicycle boulevard to provide east-west connectivity.



Residential streets in the core area of Armstrong are generally 6.2-7.9m width curb to curb. This allows for a configuration where parallel parking on one side of the road can be permitted if the shared lane width remains above 4.0m. See **Figure 17** for cross-section.

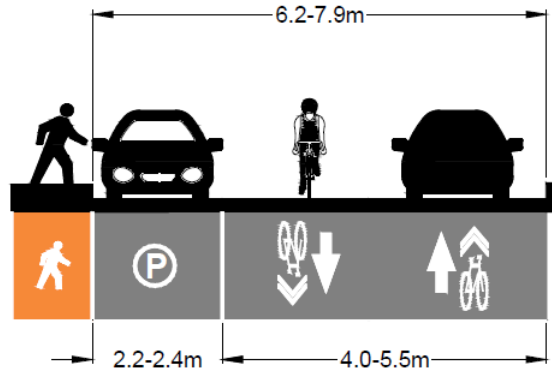


Figure 17: Bike Boulevard Retrofit Cross-Section

There are two main elements of these quick-build bicycle boulevards: sharrow pavement markings and share the road signage.

Sharrow pavement markings are used to indicate to bicyclists where they should be riding on the roadway. They are typically placed in the center of the lane and are used to provide guidance to bicyclists on where they should be positioning themselves in relation to the lane. They also serve to remind drivers that the road is also used by bicyclists.

Share the road signage is used to inform drivers that they are sharing the road with bicyclists. These signs are typically placed at the beginning and end of a bicycle boulevard, as well as at intersections and other key locations along the route. They serve to remind drivers that they need to be aware of bicyclists on the roadway and to give them enough space when passing.

Both sharrow pavement markings and share the road signage are important components of bicycle boulevards as they help to create a safe and comfortable environment for bicyclists. They also help to educate drivers and bicyclists about how to safely share the road with each other.

6.2.3 INTERSECTION IMPROVEMENTS

There are a few intersections within the City that could have their safety improved with a pedestrian and cyclist focus. This section highlights specific deficiencies and active transportation considerations for concept designs that are expected to be included in the ongoing Armstrong Road Safety Review engineering study.

Pleasant Valley Road / Rosedale Avenue:



The crosswalk on the north leg of the intersection (zebra crossing) is heavily used by school children. The Pleasant Valley Road / Rosedale Avenue intersection. (looking north)

There have been ongoing concerns regarding the speed of vehicles on Pleasant Valley Road and the limited sighting in the northbound direction. To remedy these concerns, efforts should be made to future increase the visibility of the crosswalk. One way this could be accomplished is to provide a pedestrian refuge in the centre of the road with the option for an overhead amber pedestrian activated flasher directly over the crosswalk.



Pedestrian refuge example in Kelowna that includes overhead flashers. Source: Google Streetview.

Okanagan Avenue / Pleasant Valley Boulevard:

Crosswalks should be kept to the perimeter of the 6-way intersection and not run through the middle of the intersection adjacent to the tracks, since if a pedestrian decides to cross after a vehicle has already started their turning maneuver they may need to dangerously stop in the middle of the intersection or on the tracks. There is one crosswalk, as shown in the photo below that should be removed. To compensate for the removal of this crosswalk, a sidewalk should be constructed that crosses the tracks on the west side of the crossing. Another consideration is that the proposed two-way protected bike lane crossing the north leg of the intersection should be stop controlled for cyclists considering the complexity of the intersection.



Okanagan Avenue / Pleasant Valley Boulevard intersection with crosswalk for removal denoted with an X and proposed sidewalk rail crossing with a star.

Mill Street / Pleasant Valley Boulevard:

To improve the intersection for active transportation, considering its existing conditions, the implementation of stop controls for the two-way protected bike lane crossing the south leg is highly recommended. This measure, along with extending stop controls to the approaching legs north and south of the tracks, will enhance safety for cyclists navigating the complex, 6-way stop-controlled intersection. With daily train crossings, a high volume of vehicular traffic, and pedestrian crossings on the north, west, and south legs, it is imperative to prioritize safety for all road users. Furthermore, the addition of hatch markings at the rail track will prevent vehicles from lingering on the tracks, mitigating potential hazards. Collectively, these measures will create a safer, more efficient environment for cyclists, pedestrians, and motorists at this multifaceted intersection.



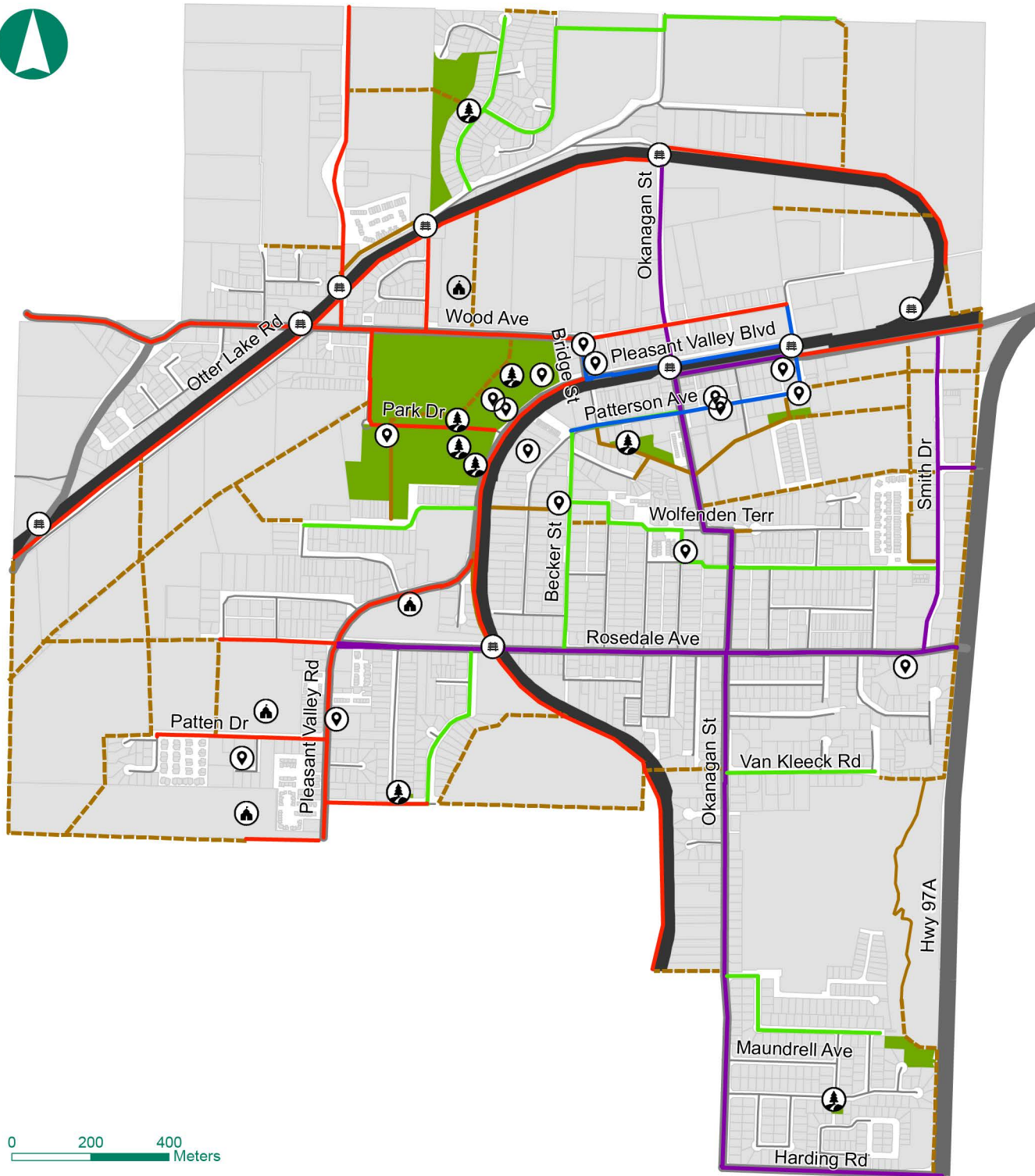
Mill Street / Pleasant Valley Boulevard intersection (looking south)

6.2.4 SHORT-TERM PRIORITIES

5. Rail Trail MUP (Armstrong Elementary to Bridge Street)
6. Downtown Two-Way Protected Bike Lanes + MUP connector to the east on PV Road.
7. Intersection Improvements 3x (Pleasant Valley Road / Rosedale Avenue, Okanagan Avenue / Pleasant Valley Boulevard, Mill Street / Pleasant Valley Boulevard)
8. Bicycle boulevards (Fletcher Avenue, Becker Street)

6.3 LONG-TERM NETWORK

The **Map 3: Long-Term Active Transportation Network** is more aspirational in nature and serves as a guiding framework to work towards for the 5-30 year time period. On the map, desirable future active transportation connections are shown with the dashed line. Whereas solid lines represent defined active transportation routes to help complete the network where road or rail corridors are already in place. The most important of those are the ones in addition to the quick-build routes that help form the spine of the network on Okanagan Street, Rosedale Avenue, Wood Avenue, and Smith Drive. For facility guidance, the complete street principles and cross-sections detailed in **Section 5**, provide the values in which the long-term network should be built.



Long-Term Active Transportation Network

- Bike Boulevard
- Protected Bike Lane
- Multi-Use Path
- Two-Way Protected Bike Lane
- Existing Trails
- Future Connections
- Railway
- Arts, Culture and Recreation
- Park
- Railway Crossing
- School
- Local
- Collector
- Highway

0 200 400 Meters

6.3.1 FUTURE CONNECTIONS

Future connections are shown with the dashed brown line type on the long-term map. These routes often reflect desirable corridors that do not currently have a property right-of-way in place. As such, they are aspirational in nature and efforts should be made to work towards establishing them to provide active transportation and recreational opportunities for the community. Many of these future connections reflect future off-street routes that are fully separate from vehicle traffic and their respective facility type is still to be determined in relation to their desired use. Outside connections to the communities that surround Armstrong are also vital and are shown with arrows on the map to connect with other trail networks outside of the city limits.



The two active rail corridors that run through Armstrong provide potential for future rail-with-trails paths.

6.3.2 PROTECTED BICYCLE LANES

Protected bicycle lanes identified in the Long-Term Network, are proposed to be built as permanent infrastructure that use materials such as curbs, or new asphalt and concrete as a grade separated travel way to create a physical separation between bicyclists and motor vehicle traffic. These types of protected bike lanes are designed to be long-term solutions that provide the highest level of safety and comfort for bicyclists. They are often more expensive to install than quick-build protected bike lanes but offer a more durable and visually appealing solution that is expected to last for several decades.

One of the main benefits of protected bicycle lanes is increased safety for bicyclists. The physical separation of these lanes from motor vehicle traffic can reduce the number of crashes and injuries involving bicyclists. Additionally, the added safety can make cycling a more attractive option for people of all ages and abilities, leading to increased ridership. The increased ridership also helps in reducing congestion on the road and improving air quality. However, when planning and building protected bicycle lanes, there are some considerations to keep in mind. One of the main considerations is cost, as protected bicycle lanes can be more expensive to construct than other types of bike infrastructure, such as painted bike lanes. Additionally, protected bicycle lanes often require more right-of-way than other types of bike infrastructure, which can be challenging to



acquire in areas with limited right-of-way. There is also an impact on motor vehicle traffic, parking and businesses while implementing protected bicycle lanes.

6.3.3 CORRIDOR CONSIDERATIONS

Okanagan Street Protected Bike Lanes (Wood Avenue to Rosedale Avenue):

This corridor should be upgraded to the **Figure 8: Complete Street: Urban Collector Protected Bike Lanes** cross-section. The section through the downtown between Patterson Avenue and Wood Avenue is constrained by the facades of the commercial buildings built along the property line. For this specific segment, parking will need to be omitted and the buffer widths reduced. South of this segment the existing is less constrained as shown in the photo below.



Okanagan Street looking north towards the downtown.

Rosedale Avenue Protected Bike Lanes:

This corridor should be upgraded to the **Figure 8: Complete Street: Urban Collector Protected Bike Lanes** cross-section. The Rosedale Avenue protected bike lanes may prove to be the most difficult project to implement as property acquisition is required along the frontage of many of the properties along the corridor. This work should be prioritized as the corridor is an important east/west complete street that underserves active transportation users in its current form. A photo of a vehicle and cyclist sharing the lane is shown below to illustrate this. Other challenges include the need to relocate the utility poles along the road edge and some retaining wall considerations near the west extent. Parking is not currently permitted along Rosedale Avenue and that is likely how it would remain in the future given the constraints listed above.



Rosedale Avenue looking east towards Okanagan Street.

Wood Avenue MUP (Adair Street to Okanagan Street):

This corridor should be upgraded to the **Figure 9: Complete Street: Urban Collector Multi-Use Path** cross-section. The existing cross-section, shown in the photo below, has a wide sidewalk on the north side of the road tight to the property line that could remain in the future. This would lead to the multi-use path being constructed on the south side of the corridor. However, on the south side adjacent to the fairgrounds there is a large ditch with a creek. For this specific section, considerations such as omitting parking and reduced buffer widths, as well as a retaining wall may be needed to avoid construction in the riparian area of the creek. To the east at the Wood Avenue / Bridge Street intersection, the building on the southwest corner creates a large blind spot for eastbound vehicles turning right. In order to accommodate a multi-use path crossing on the south intersection leg, the intersection should be converted to an all-way stop to improve cyclist and pedestrian safety.



Wood Avenue looking west towards Highland Park Elementary.

Smith Drive Protected Bike Lanes (Pleasant Valley Road to Rosedale Avenue):

This corridor should be upgraded to the **Figure 8: Complete Street: Urban Collector Protected Bike Lanes** cross-section. Smith Drive is a commercial corridor with many parking lot access points to access the strip malls and fast-food restaurants near the highway. There are also bus bays on both sides of the road near the all-way stop intersection. As such, considerations for turning conflicts with active transportation users and higher traffic volumes must be paramount in design decisions. If a centre left turn lane is to be maintained, considerations for parking would need to be omitted and buffer widths would need to be compromised to their absolute minimums since the road right of way is too narrow enough to include all desired elements. See the photo below for the existing Smith Drive cross-section looking south towards the all-way stop intersection.



Smith Drive looking south towards the all-way stop intersection.

Given the challenges along the corridor, two other options are also possible to better accommodate active transportation users. The first would be a new route for vehicle traffic between the highway and the downtown from the all-way Smith Drive /Smith Drive intersection west towards Okanagan Avenue or Patterson Avenue as shown in **Figure 18**, this would reduce the vehicle demand for the Smith Drive corridor which could allow for the removal of the centre left turn lane to provide the needed space for protected bike lanes.



Figure 18: Possible Vehicle Routing Towards the Downtown

The second alternative may be more desirable. The focus of this alternative is to create a north/south off-street route on either side of the commercial development running behind the buildings on the west side of Smith Drive as well as in the highway right-out-way on the east side to accommodate active transportation users separate from vehicles. This has the advantage of removing turning conflicts between vehicles and active transportation users at each of the numerous driveway access points. Possible routing is shown on **Map 3: Long-Term Active Transportation Network**.

6.3.4 LONG-TERM PRIORITIES

Long-term there are some important priorities for the City to consider. Three of the top five long-term priority projects are all primary corridors to be included with the active transportation network spine and have been identified to have protected bike lanes. Ranked in order from most important to least the long-term priorities are listed below:

6. Okanagan Street Protected Bike Lanes (Wood Avenue to Rosedale Avenue)
7. Rosedale Avenue Protected Bike Lanes
8. Wood Avenue MUP (Adair Street to Okanagan Street)
9. Smith Drive Protected Bike Lanes (Pleasant Valley Road to Rosedale Avenue)
10. Future Trail Connections

SUPPORTING ACTIONS

6.3.5 UPDATING EXISTING POLICY DOCUMENTS

When the time comes to update or amend Armstrong's Official Community Plan (OCP) and the Community Amenity Contribution Policy, it is recommended to integrate the priorities and recommendations from the Armstrong Active Transportation Plan. This integration will ensure that land use and redevelopment policies actively support and encourage active transportation, fostering a healthier and more sustainable community. Aligning these policies with the active transportation plan will effectively promote walking, cycling, and other non-motorized modes of transportation throughout Armstrong.

6.3.6 SAFE ROUTES TO SCHOOL

A Safe Routes to School program is a collaborative process that brings together municipal/regional partners, the school community, and other organizations to identify barriers and opportunities for active transportation and address traffic safety concerns. The structure and process of the program may vary by jurisdiction, but generally, it includes several key phases:

- Program Set-up
- Data Collection & Analysis
- Planning
- Implementation
- Evaluation



A crossing guard stops traffic for a student in front of Armstrong Elementary.

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 Program⁷ 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 smartTRIPS⁸, which provides 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.

⁷ 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>

⁸ smartTRIPS Schools Program website. Available at: <https://www.smarttrips.ca/programs/school-programs-resources>

It is noted that most students in Armstrong likely live within a 2.5 km distance of school, which would make this type of program fairly effective. In collaboration with School District 83, surrounding municipalities, and first nations, it is recommended that the City look to establish a similar program and pilot it at select schools every year.

6.3.7 PROGRAMS & EDUCATION

Promoting active transportation through education and engagement is crucial for fostering a culture of physical activity in the community. Some strategies for achieving this include:

- Hosting a bike festival that includes activities such as a film festival, show and shine, family trail rides, and demo days. A suitable occasion for such an event could be the opening of a significant piece of active transportation infrastructure such as Shuswap North Okanagan Rail Trail. Vernon, BC has an excellent example of a [bike fest](#) that could be adapted to the Armstrong context.
- Continuously running a local [Speed Watch](#) program (RCMP), a volunteer-based educational initiative aimed at reducing speeding incidents and raising public awareness. Volunteers are trained by local RCMP, in partnership with ICBC.
- Supplying schools with resources like ICBC's [road safety resources for teachers](#), which provides free educational content on road safety while acknowledging limited capacities.
- Offering mobility scooter orientation training for seniors with the local RCMP to review rules of the road and safety.
- Supporting children's bike safety programs such as [Learn2Ride](#) or Bike Rodeo.
- Encouraging community participation in events such as [Go By Bike Week for Schools](#) or [Go By Bike Week](#), a provincially funded program.
- Endorsing local applications from schools or non-profit groups, such as enrollment in the [Active School Travel Pilot Program](#).
- Partnering with local businesses and organizations to offer incentives for active transportation users, such as discounts or rewards for those who bike or walk to work or to local shops.
- Creating a community map or app that highlights active transportation routes and points of interest, such as bike racks, water fountains, and restrooms.



Vernon's Bike Fest held a demo day as part of the event. Image retrieved from: <https://www.pinkbike.com/photo/17034614/>

6.3.8 AMENITIES

Below are recommended amenity upgrades that complement the overall active transportation network. These can be phased in to replace existing models or be added as the network develops over time.

- Accessible site furnishings.** Replacing or adding accessible site furnishings would accommodate persons with a broader range of physical abilities. This includes benches, chairs, and picnic tables at strategic locations in the City. Examples of accessible site furnishings are provided below.



Examples of a picnic table that can accommodate wheelchairs and a bench with a supportive back and armrests. Photos retrieved from: Uline.ca

- Bike Racks.** The following bike racks follow current best practices regarding performance criteria and generally work for all types of bikes. Examples of recommended bike rack styles (inverted U and post and ring) are shown below. These racks support the frame at two locations and make it easy for locking the frame to rack versus the schoolyard style, which typically lockup from ground level. Secure bike racks located along the downtown core will allow for cyclists to centrally park and walk to their destination(s).



Typical U-Rack



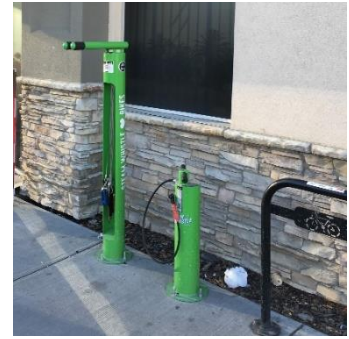
Typical Post and Ring



U-Racks installed on-street, in an existing car parking stall.

Providing tools and an air pump at bike parking locations can improve the overall experience for those who choose to ride to undertake their daily routine by making it more convenient for them to make quick repairs or adjustments to their bikes on-site. Additionally, providing an outlet for e-bike charging can also improve the overall experience for those who choose to ride. With e-bikes, it is important to have access to charging stations, as the battery needs to be charged regularly. This will ensure that e-bike riders have the ability to charge their bike's battery while they are on-site, so they can continue their journey without interruption. Overall, providing these amenities can make the experience of riding a bike more convenient and accessible for those who choose to ride for their daily routine, and can therefore encourage more people to choose active transportation.

- **Signage (Wayfinding) Enhancements.** Coordinated signage helps to support users to better navigate and understand the network around Armstrong. Below are examples of wayfinding signs and creative pavement markings:





Section 7: Implementation Strategy

7. IMPLEMENTATION STRATEGY

7.1 ACTION PLAN

The action plan provides an implementation strategy with the steps necessary to realize the vision of the Active Transportation Plan and assigns a target time frame. Even though the City will be responsible for the implementation of most actions, other important partners may need to be involved to help support the action and help deliver projects.

The implementation actions outlined in **Table 6** correspond to the associated section number in the report which includes further details about the item (when applicable). The implementation actions are separated into the following categories:

- **Quick Wins** – Actions that can be completed in the short term (1-5 years).
- **Long-Term Improvements** – Actions that have a longer time horizon and can be undertaken by the City to solidify the active transportation network (5-10+ years).
- **Supporting Actions** – Recommendations for bylaw and policy updates, education initiatives, programs, and partnerships that contribute to the programmatic and regulatory aspects, fostering a safe and well-maintained active transportation network.

Suggested implementation timeframes are also provided in **Table 6**. The timing gives a sense of priority and the overall time period in which the plan should be implemented. It is recognized however that given the City’s limited budget and the reliance on grant funding, timelines may have to adjust to suit. The general timing is at a pace for one active transportation project per year. The order in the table reflects priority with quick-win projects occurring first.

Long-term improvements beyond the 10-year timeline have not been included in the action plan. A reassessment of the active transportation network process should occur in ten years’ time to assess its progress and assign future priorities.

TABLE 6: ACTION PLAN

Quick Wins			
Action		Timeframe	Partner
6.2.A	Rail Trail MUP (Armstrong Elementary to Bridge St)	1 - 5 years	SD83, CP Rail
6.2.B	Downtown two-way Protected Bike Lanes + MUP connector to the east on PV Rd.	1 - 5 years	CP Rail
6.2.C	Bicycle boulevards (Fletcher Ave, Becker St)	1 - 5 years	-
6.2.D	Intersection Improvements 3x (Pleasant Valley Rd / Rosedale Ave, Okanagan Ave / Pleasant Valley Blvd, Mill St / Pleasant Valley Blvd)	1 - 5 years	CP Rail

Long Term Improvements			
Action		Timeframe	Partner
6.3.A	Okanagan Street Protected Bike Lanes (Wood Avenue to Rosedale Avenue)	5-10 years	-
6.3.B	Rosedale Avenue Protected Bike Lanes	5-10 years	-
6.3.C	Wood Ave MUP (Adair Street to Okanagan Street)	5-10 years	-
6.3.D	Smith Drive Protected Bike Lanes (Pleasant Valley Rd to Rosedale Ave)	5-10 years	-
6.3.E	Future Trail Connections	ongoing	MOTI, RDNO, CP Rail, Spallumcheen
Supporting Actions			
Action		Timeframe	Partner
5.3.A	Update Subdivision and Servicing Bylaw #1570 to Update Road Cross-Sections to a Complete Streets Approach Which Incorporates Active Transportation	1-3 years	-
5.3.B	Develop Snow Clearing Policy / Maintenance Policy That Accommodates Active Transportation in the Priority Matrix	1-3 years	-
6.4.A	Update or Amend the OCP policies to include recommendations from the ATP	1-5 years	-
6.4.B	Update or Amend the Community Amenity Contribution Policy so that future growth can contribute to improvements identified in the ATP	1-5 years	-
6.4.C	Work with Stakeholders to Develop a Safe Routes to School Program	1-5 years	SD83, Neighbour Municipalities, First Nations
6.4.D	Provide Funding and Support to Local Advocacy Groups for Programs to Educate and Encourage Active Transportation in the Community	ongoing	Local Advocacy Groups
6.4.E	Consider Amenity Updates Including Accessible Street Furniture, Bike Racks, and Wayfinding Signage With Street or Park Improvement Projects	ongoing	-
6.4.F	Consider Amenity Updates Including Accessible Street Furniture, Bike Racks, and Wayfinding Signage With Street or Park Improvement Projects	ongoing	-

7.2 FUNDING OPPORTUNITIES

With Armstrong's limited tax base and small population, the availability of grant funding, namely provincial and federal funding, is essential. The following grant funding is available to support the implementation of Armstrong's ATP:

CITY FUNDING

The City of Armstrong released its 2022-2026 Financial Plan as part of its municipal budget in 2022. This five-year budget outlines the allocation of financial resources to achieve the Council's goals. Transportation has a yearly budget of around \$900,000, with half of that dedicated to operations and maintenance. In 2021, the City received \$9,023,000 in general revenue, with 17% coming from grants.

Unfortunately, the current financial plan does not prioritize active transportation as the budget categorizes it under the general Transportation category. The City has the opportunity to allocate some of the limited funding from its Transportation budget to support the recommended improvements in the Active Transportation Plan.

Active transportation network maintenance requires ongoing effort, including specialized equipment for street sweeping and snow clearing. The previous year, the City allocated \$145,000 for snow clearing and \$42,000 for street sweeping. However, these budgets should be increased to accommodate the growth of active transportation infrastructure.

Grants are expected to play a significant role in funding active transportation projects, but yearly funding should also be allocated to reinforce its importance to the City's priorities. By allocating a dedicated budget for active transportation, the City can ensure its viability and prioritize its continued development.

PRIVATE DEVELOPMENT

In order to promote active transportation as the City continues to grow and develop, it is crucial to include investment in these facilities during the planning of new developments. The City has the authority to request financial contributions for active transportation infrastructure, such as sidewalks and cycling facilities, through bylaws and policies such as Armstrong OCP and the Community Amenity Contribution Policy. For new development applications along roads where pedestrian or cycling facilities are recommended in the long term, the City should direct the developer to the Active Transportation Plan and request a financial contribution to constructing part of these facilities as part of the frontage and roadway improvements. New roads built during development should also be evaluated for the potential of active transportation, particularly if they serve as through routes or have a road classification other than local.

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 2022 intake):

LOCAL GOVERNMENT CLIMATE ACTION PROGRAM (LGCAP)

The provincial government has announced a new funding program to help local governments tackle the impacts of climate change that will funnel \$76 million toward local projects over the next three years. This grant is the successor to the Climate Action Revenue Incentive Program (CARIP), which has now concluded.

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.

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.

7.3 MONITORING & EVALUATION

An effective plan requires ongoing monitoring and evaluation to assess its performance and determine its effectiveness. Regular monitoring allows for measuring progress and ensuring that investments are directed in the right way to achieve desired outcomes. It helps to identify successes, challenges, and areas for improvement, which can then be used to make adjustments to the plan as needed. Some possible progress indicators and measures of success are outlined in **Table 7** below. By tracking these and other relevant indicators, the City can determine the effectiveness of its ATP and make necessary adjustments to ensure it is meeting the needs of the community as time goes on.

TABLE 7: MONITORING AND EVALUATION

ATP Goal	Measure of Success	Indicator	Data Source
Foster a Culture of Active Transportation to Promote Healthier Lifestyles	City transportation-related GHG emissions	Tonnes	RDNO GHG Emissions Data / BC CEEI Emissions Data
	Number of hosted community active transportation events	Number	City / School District / Advocacy Groups
	Number of City owned bicycle parking stalls	Number	City
Improve Safety and Accessibility to Encourage Mode Choice	Walking, cycling, and transit mode share (commute)	%	Statistics Canada
	Number of collisions involving people walking and cycling (by type and intersection)	Number	ICBC / RCMP
	Total length of active transportation infrastructure cleared in the winter season	Total km	City
Establish an Integrated Network	Total length of active transportation network (by facility type)	Total km	City
	Undertake annual bicycle/pedestrian volume counts at key locations such as at the gateway for the rail trail or newly constructed	Users / Year	City / RDNO



City of Armstrong

